

P R O S P E C T U S

LUMP SUM SALE

BUTTE FALLS FIELD OFFICE
JACKSON MASTER UNIT

Medford Sale # ORM05-TS-2025.0001
July 24, 2025 (KD)

Big Dog Timber Sale
Jackson County, O&C

BID DEPOSIT REQUIRED: \$69,400.00

All timber designated for cutting in Sec. 20, N1/2NE1/4, NE1/4NW1/4, SE1/4NW1/4, Sec 21, S1/2NE1/4, S1/2NW1/4, SE1/4, Sec.24, S1/2NW1/4, SW1/4, NW ¼ SE1/4, Sec. 26, Lot 1, Lot 2, N1/2NE1/4, SW1/4NE1/4, SE1/4NW1/4, N1/2SW1/4, Sec. 28, SE1/4SW1/4, S1/2SE1/4, Sec.35, N1/2NW1/4, SE1/4NW1/4, NE1/4SW1/4, SW1/4NE1/4, NW1/4SE1/4, T.34S., R.02E., Sec.1, lot 1, lot 3, lot 4, lot 5, lot 6, lot 7, lot 8, S1/2NE1/4, E1/2SE1/4, Sec. 3, lot 1, lot 2, lot 8, lot 9, lot 10, lot 11, T.35., R.02E., Willamette Meridian.

Approx. Number Merch. Trees	Est. Volume MBF 32' Log	Species	Est. Volume MBF 16' Log	Appr. Price Per MBF*	Est. Volume Times Appraised Price
6,301	2,192	White Fir	2,654	\$47.60+	\$126,330.40
7,872	1,978	Douglas-fir	2,462	\$227.80	\$560,843.60
771	71	Incense Cedar	91	\$35.50+	\$3,230.50
348	61	Ponderosa Pine	81	\$33.30+	\$2,697.30
15,292	4,302		5,288		\$693,101.80

*Stumpage values have been determined by market value estimates and analytical appraisal methods were used to compute the appraised price. Additional information concerning the appraised price is available at the Medford District Office.

+ Stumpage values computed at 10 percent of Pond Value.

CRUISE INFORMATION – 3P cruise method was utilized in cruising of Big Dog TS. Douglas-fir, White fir, Ponderosa Pine and Incense Cedar have been cruised using the 3-P sampling methods to select sample trees. Maps showing the location and description of these sample trees are available at the Medford District Office. The sample trees have been measured using the volt system of measurement, and the volume expanded to a total sale volume. With respect to merchantable trees of all conifer species: the average tree is 16.4 inches DBHOB; the average gross merchantable log contains 82 bd. ft.; the total gross volume is approximately 5,834 MBF; and 91% recovery is expected (Average WF is 16.7 inches DBHOB; average gross merchantable log WF contains 89 bd. ft., and 93% recovery is expected). Bidders will be restricted to bidding on a unit (MBF) rate of the White Fir volume. All other species will be sold at appraised price per unit (MBF). The minimum bid increment will be \$0.10 per MBF.

LOG EXPORT AND SUBSTITUTION RESTRICTIONS - 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 use as a substitute for exported private timber.

The BLM has revised the log export restrictions special provision to reduce the log branding and painting requirements. The new requirements include branding of one end of all logs with a scaling diameter of over 10 inches. All loads of 11 logs or more, regardless of the diameter of the logs, will have a minimum of 10 logs branded on one end. All logs will be branded on loads of 10 logs or less. One end of all branded logs will be marked with yellow paint. At the discretion of the Contracting Officer, the Purchaser may be required to brand and paint all logs. The Purchaser shall bear any increased costs for log branding and painting. to brand and paint all logs. The Purchaser shall bear any increased costs for log branding and painting.

CUTTING AREA - Sixteen (16) units containing approximately two hundred eighty-two (282) acres must be logged.

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 public roads and through the contract area using public roads, BLM roads and, via Right-of-Way and Road Use Agreement M-2000.

Among other conditions, agreement M-2000 with John Hancock Life Insurance Co. requires completion of a license agreement between the Purchaser and John Hancock Life Insurance Co, road maintenance to be performed by the Purchaser or BLM, an estimated payment of a road surface replacement fee of \$440.37 (\$0.85/mbf), and an estimated road use fee of \$0.00. Agreement M-2000 with Siskiyou Timberlands requires completion of a license agreement between the Purchaser and Siskiyou Timberlands, road maintenance to be performed by the Purchaser or BLM, an estimated payment of a road surface replacement fee of \$2,003.66 (\$0.85/mbf), and an estimated road use fee of \$7,165.30. Agreement M-2000 with Smith requires completion of a license agreement between the Purchaser and Smith, road maintenance to be performed by the Purchaser or BLM, that the Licensee will place rock in lieu of surface replacement fees, and an estimated road use fee of \$0.00.

ROAD MAINTENANCE – The Purchaser will be required to maintain 13.90 miles of existing permanent BLM and private roads. The BLM will maintain the approximately 5.25 of existing BLM and private roads.

HELICOPTER LANDINGS - The contract will require the Purchaser to construct approximately 6 acres of permanent helicopter landings and 1 acres of temporary helicopter landings.

SOIL DAMAGE PREVENTION: Pursuant to Section 26 of Form 5450-3, Timber Sale Contract, the Purchaser shall not operate or cause to have operated on the contract area any tractor-type logging equipment when soil moisture content at six (6) inch depth exceeds twenty-five (25) percent by weight as determined by the oven dry method.

EQUIPMENT REQUIREMENTS

1. A yarding tractor not greater than 9 feet in track width equipped with a integral arch and winch system capable of lining logs at least 75 feet.
2. A subsoiler, wing-toothed subsoiler, excavator with ripping attachment, or equivalent is required.
3. A helicopter with a minimum dropline length of 200 feet.

SLASH DISPOSAL - Perform logging residue reduction and site preparation work on approximately one hundred eighty (180) acres of harvest area as directed by the Authorized Officer.

CONTRACT TERMINATION - Section 42 of the contraction 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;
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. 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.

PERFORMANCE BOND - A performance bond in the amount of 20% of the total purchase price will be required.

OTHER

1. Unit 1-1, 3-1, 3-2, 3-3, 21-2b, 21-3, 21-4, 24-5, 28-1, and 28-1SYA, as shown on exhibit A are selection harvest prescriptions.
2. Unit 1-2, 24-7 and 24-11, as shown on exhibit A are commercial thin harvest prescriptions. Unit 21-2, 21-2SYA and 21-5-1 as shown on exhibit A are or have portions that are group selection harvest prescriptions.
3. There are roadside vegetation maintenance units
4. No extension of time beyond the normal 30 days will be granted for completing bonding and contract signing requirements.
5. 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 44 of this Contract.
6. Purchaser shall be responsible for complying with all county, state, and federal laws and regulations that relate to the execution of this contract (See Sec. 29 of contract).
7. Directional falling is required.
8. There are predesignated skid trails in unit 1-1, 1-2, 28-1, and 28-1SYA.
9. Warning signs and a flagger(s) must be placed in advance of active operations or other equivalent protection must be used on roads to control traffic where hazardous conditions are created from forest activities as per OR-OSHA division 7 rules.
10. There are daily and seasonal restrictions in place on this sale.
11. Cleaning of equipment to eliminate noxious weed seeds is required prior to move-in of equipment onto federal lands.
12. There are lockable gates within the contract area.
13. Dust abatement may be required.
14. There are slash treatment and pile placement requirements in place for this sale (see SD-1 in the contract)
15. Purchaser should be aware there are logging residue reduction costs assessed under SD-5. Refer to The Purchaser may wet season haul, with the Authorized Officer's approval on the following roads: 34-2E-24.05 Seg A-C, 35-2E-11.00 Seg A, 35-2E-2.00 Seg A-D1, 35-2E-2.02. If the use of these roads during the wet season causes or begins to cause road damage or the transport of sediment into streams, the Authorized Officer may suspend wet season haul or require additional erosion control devices to prevent damage or off-site transportation of sediment. Additional rock may be required at the Purchaser's expense to repair any damage that occurs to the road during wet season haul.
16. The Purchaser may wet season haul on these roads that will be rocked under Exhibit C work, with the Authorized Officer's approval on the following roads: 34-2E-20.00 Seg A, C, B to Heli Landing, 34-2E-22.00 Seg A-C, 34-2E-26.00 Seg A, 34-2E-29.00 Seg A1-A3 (Spot Rocking on A3), 35-2E-2.00 Seg D2, 35-2E-2.03 Seg A1, and 35-2E-3.02 Seg A-B. If the use of these

roads during the wet season causes or begins to cause road damage or the transport of sediment into streams, the Authorized Officer may suspend wet season haul or require additional erosion control devices to prevent damage or off-site transportation of sediment. Additional rock may be required at the Purchaser's expense to repair any damage that occurs to the road during wet season haul.

The Purchaser shall have the option to rock road numbers 34-2E-20.00 Seg B beyond Heli Landing, 34-2E-24.00, 34-2E-24.01 Seg A-B, 34-2E-24.06 Seg A-B, 34-2E-26.00 Seg B-C, 35-2E-1.00 Seg A-B, 35-2E-1.01, 35-2E-1.02, 35-2E-1.03, 35-2E-1.04, 35-2E-2.01 Seg D-B, 35-2E-2.03 Seg A2-B, and 35-3E-6.00 Seg A-B, for wet weather haul. Purchaser option rocking depths will be determined and approved by the Authorized Officer. Any costs for rocking and installation of additional drainage features will be at the Purchaser's expense and shall be completed in accordance with the plans and specifications show in Exhibit C of this contract

PERMITS - The Jackson County Engineer has agreed to issue OVERLOAD PERMITS to haul over the Cobleigh Road trestle bridge. The Sale Units which will require haul across this bridge are: 21-2, 2b, 2SYA, 3, 4, 5; 28-1SYA, 1. Example specifications for typical 6 Axle Long and Short Logger configurations (88K Long Logger, 96k Short Logger), are shown below, and as reviewed and approved for permitting by the Jackson County Engineer. Other haul truck configurations may be permitted but must be submitted to Jackson County for approval.

17. Purchaser should be aware that additional wildlife restrictions could be applied if the species of concern is found within the distances listed to the contract area

- No confirmed den sites are located within 50 feet of proposed treatment areas, however, if a confirmed fisher den site is found: Maintain \geq 80 percent canopy cover within at least 50 feet of documented fisher natal and maternal dens. No activities may occur within stands. Maintain sufficient (at least 60%) canopy cover on a within-stand average basis. containing known fisher den sites from March 1 to July 30. Protect fisher denning structures by retaining \geq 24" diameter snags, down woody material, and live trees with cavities in the stand and if, for safety concerns, it is necessary to fall such snags or live trees with cavities, retain those cut trees or snags in the stand as additional down woody material. Do not apply vegetation treatments to all portions of the stand.
- Currently the whole sale area will have a seasonal restriction from March 1 to July 15 for NSO which could be extended up to September 30 until protocol surveys clear the units for the operating year. If NSO are determined to be within the sale area, the permanent restrictions below maybe modified into the contract.
 - Seasonally restrict timber harvest activities from March 1 to July 15 but may be extended up to September 30 if late nesting or nesting re-attempts are confirmed, within 0.25-mile of known active NSO sites or within 0.5-mile for helicopter operations and blasting. The seasonal restriction could be waived if non-nesting status is determined. If any new owls are discovered in harvest units following the sale date, activities would be halted until mitigation options are determined. Follow USFWS recommended noise disturbance distances for activities other than timber harvest to avoid disturbance to NSOs.
 - Seasonally restrict prescribed burning and site preparation with chainsaws from March 1 to July 15 within 0.25-mile of known active NSO nests. The seasonal restriction could be waived if non-nesting status is determined.
- If a gray wolf den or rendezvous site is identified prior to or during project activities, implement a seasonal restriction from April 1 to July 15 and suspend project activities located within one mile of a known den or rendezvous site. Because these sites are difficult to locate and can change from year to year, this would be assessed on an ongoing basis throughout the life of this project through annual updates and communication with the USFWS and Oregon Department of Fish and Wildlife.

NARRATIVE DESCRIPTION OF HOW TO GET TO THE TIMBER SALE AREA -

From the city of Medford take the Rogue Valley Express Way for 4.8 miles, turn left onto OR-62 and stay on it for 9.1 miles. Turn right on Butte Falls Highway and continue for 15.5 miles. Continue onto Broad St for 0.3 miles. Continue onto Laurel Ave for 0.2 mi. Slight left onto Fish Lake Road for 0.6 mi. Turn left onto Butte Falls-Prospect Highway and continue for 2 miles and arrive.

ENVIRONMENTAL ASSESSMENT - Environmental assessment (DOI-BLM-ORWA M050-2023-0001-EA) were prepared for this sale, and a Finding of No Significant Impact has been documented for each environmental assessment. These documents are available for inspection as background for this sale at the Medford District Office.

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SPECIAL PROVISIONS

THIS IS A SALE PROSPECTUS ONLY. THESE ARE THE SPECIAL PROVISIONS AS THEY WILL BE WRITTEN IN THE CONTRACT. ATTACHMENTS MAY NOT INCLUDE ALL EXHIBITS REFERRED TO IN THE CONTRACT PROVISIONS. THE COMPLETE CONTRACT, INCLUDING ALL EXHIBITS, IS AVAILABLE FOR INSPECTION AT THE MEDFORD INTERAGENCY OFFICE.

Sec. 43. 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 Government.

- (A) AR-1: All timber on the Reserve Area(s) as shown on Exhibit A and all orange painted and posted trees which are on or mark the boundaries of the Reserve Area(s).
- (B) IR-1: Approximately five thousand and seventy-two (5072) trees marked with orange paint above and below stump height in units 1-1, 1-2, 3-3, 21-2, 21-2b, 21-2SYA, 21-3, 21-4, 21-5, 24-5, 24-11, 28-1, 28-1SYA as shown on Exhibit A.
- (C) IR-1: Approximately one thousand eight hundred and twenty-one (1821) trees marked with white paint above and below stump height in units 24-7 as shown on Exhibit A.
- (D) IR-1: Approximately three (3) trees marked with an orange W located in Section 1 of T35S R03E as shown on Exhibit A.
- (E) IR-2: All timber except approximately two thousand four hundred and seven (2407) trees marked for cutting heretofore by the Government with blue paint above and below stump height in units 3-1, 3-2 and all RVM units as shown on Exhibit A.
- (F) IR-5: All young growth conifers less than eight (8) inches in diameter D.B.H.O.B. not damaged in the normal course of logging in all units as shown on Exhibit A.
- (G) IR-13: All dominant madrone, bigleaf maple and oak trees > 24 inches DBH in all units as shown on Exhibit A (which do not present a safety hazard as determined by the authorized officer). Trees felled for safety reasons shall be retained on site.
- (H) IR-13: All snags in all units as shown on Exhibit A (which do not present a safety hazard as determined by the authorized officer). Snags felled for safety reasons shall be retained on site.

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- (I) IR-14: Within all commercial harvest units as shown on Exhibit A retain existing large down woody material >20 inches in diameter at the large end and >20 feet in length; and down woody material 6-20 inches in diameter at the large end and >20 feet in length in decay classes III, IV, and V (USDI 2016c, pp. 62-63).

Section 44

(A) Log Exports

- (1) LE-1: 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.

(B) Logging

- (1) L-1: Before beginning operations on the contract area for the first time or after a shutdown of seven (7) days or more, 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

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commensurate with the terms and conditions of the contract which shall include measures needed to assure protection of the environment and watershed. (A pre-work conference between the Purchaser's authorized representative and the Authorized Officer's representative 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 trees designated for cutting shall be cut so that the resulting stumps shall not be lower than six (6) inches nor higher than twelve (12) inches measured from the ground on the uphill side of the tree. This height requirement may be reduced if approved by the Authorized Officer.
- (4) L-7: In all ground-based units shown on Exhibit A, all trees over twenty-one (21) inches DBH designated for cutting shall be felled and cut into log lengths not to exceed forty-four (44) feet. before being yarded.
- (5) L-7: In all cable units shown on Exhibit A, all trees designated for cutting shall be felled and cut into log lengths not to exceed forty-four (44) feet before being yarded.
- (6) L-8: In all ground-based units, as shown on Exhibit A, all trees twenty-one (21) inches D.B.H.O.B. and smaller designated for cutting shall be felled and whole tree yarded or yarded with tops attached except when excessive stand damage occurs as determined by the Authorized Officer. If excessive stand damage occurs all logs shall be completely limbed and bucked into a max log length of forty-four (44) feet prior to being yarded.
- (7) L-10: In the contract area shown on Exhibit A all trees designated for cutting which are within one hundred eighty-five (185) feet of the unit boundary shall be felled way from the unit boundary. The Purchaser shall notify the Authorized Officer three (3) days before beginning felling operations in the above area(s).
- (8) L-10: In the contract area shown on Exhibit A, all trees designated for cutting which are within one hundred eighty-five (185) feet of a private property line shall be felled away from the private property line. The Purchaser shall notify the Authorized Officer three (3) days before beginning felling operations in the above area(s).
- (9) L-10: In the contract area shown on Exhibit A, all trees designated for cutting which are within one hundred eighty-five (185) feet of the corner monument shall be felled away from the corner monument. The Purchaser shall notify the Authorized Officer three (3) days before beginning felling operations in the above area(s).

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- (10) L-10: In the contract area shown on Exhibit A, all trees designated for cutting which are within one hundred eighty-five (185) feet of any plant site, or reserve area boundary as shown on Exhibit A shall be felled away from the painted and posted boundary. The Purchaser shall notify the Authorized Officer three (3) days before beginning felling operations in the above area(s).
- (11) L-12: Yarding on the areas designated herein and shown on Exhibit A shall be done in accordance with the yarding requirements or limitations for the designated area.

Designated Area	Yarding Requirements or Limitations
All Units	<p>Purchasers shall provide a logging plan prior to logging and construction of pre-designated roads, landings, and skid trails. In this logging plan, the purchaser shall identify whether they will utilize the pre-designated roads, landings, or skid trails specified in the contract and will include any proposed alternatives to the use of pre-designated roads, landings, and skid trails. Any proposed alternate road, landing, or skid trail location will require analysis by the Interdisciplinary Team prior to approval. If an alternate location is approved and used in lieu of a pre-designated location: 1) the pre-designated road, landing, or skid trail shall not be built, 2) the timber in the pre-designated ROW shall not be harvested, 3) the associated ROW timber volume will be modified out of the contract, and 4) any difference between proposed and pre-designated construction costs exceeding \$2500 will be modified in the contract. If no reasonable alternative is proposed and approved, the purchaser shall utilize pre-designated roads, landings, and skid trails as shown on Exhibit A and C.</p> <p>Mechanized equipment is prohibited from entering the timber reserve or internal skips as painted/posted/flagged and or as shown on Exhibit A unless approved by the authorized officer.</p> <p>During logging or forest management operations, use techniques, such as directional falling, to prevent damage to fences, cattle guards, livestock watering troughs and other improvements. If damage to range improvements does occur, the BLM shall be</p>

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	<p>notified immediately, and proper repair or replacement would occur within two weeks. Proper repair of fences and gates includes keeping wire properly attached to posts, splicing or replacing broken wire in kind, repairing structures such as corners, stress panels or gates, and any other work necessary to keep improvements functional. Repair of structures such as stress or corner panels and gates requires pre-approval by BLM staff. Repair or cleaning of cattle guards damaged or filled with sediment by logging activities would require approval of BLM road engineering staff for structural integrity and public safety compliance.</p> <p>During logging and forest management activities, operators shall keep all gates closed and all livestock containment systems functional to keep livestock in authorized areas.</p> <p>Do not machine pile slash within Riparian Reserves (RRs) unless in established landing in RRs and approved by the authorizing officer after consulting with Soils and/or Hydrologist to make sure that it is located in a stable location with no hydrologic connectivity.</p> <p>Locate temporary routes, permanent roads, and landings on stable locations, such as ridge tops, stable benches, or flats where feasible. Use existing jeep roads, skid trails, and landings where possible. Locate newly constructed routes and landings away from slide areas, headwalls, seeps, springs, high landslide hazard locations, and RRs, unless there is no practicable alternative. Locate new routes in locations to minimize stream crossings. Locations would be approved by the Authorized Officer before construction.</p> <p>Logging system breaks are flagged in orange/white. Silviculture breaks are flagged in yellow.</p> <p>Where trees are cut for yarding corridors, skid trails, landings, road construction, maintenance, and improvement in the Inner Zone or Middle Zone, retain cut trees in adjacent stands as down woody material or move cut trees for placement in streams for fish habitat restoration, at the discretion of the BLM. In the Outer Zone, retain cut trees in adjacent stands as down woody material, move cut trees for placement in streams for fish habitat restoration, or sell trees, at the discretion of the BLM.</p>
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Oversized Tree Restrictions (1-2, 24-7, 24-11)	All trees over 40 inches DBH with a birthdate prior to 1850 felled for skid trails or safety reasons must be felled, bucked, and removed to an area adjacent to and outside of the skid trail ROW. Where trees are bucked at the large ends, the purchaser shall put a "X" of paint with a color approved by the authorized officer. These trees/logs shall not be yarded to the landing.
Oversized Tree Restrictions (1-1, 3-1, 3-2,3-3, 21-2, 21-2sya, 21-2b, 21-3, 21-4, 21-5, 24-5, 28-1, 28-1sya)	All trees over 36 inches DBH with a birthdate prior to 1850 felled for skid trails or safety reasons must be felled, bucked, and removed to an area adjacent to and outside of the skid trail ROW. Where trees are bucked at the large ends, the purchaser shall put a "X" of paint with a color approved by the authorized officer. These trees/logs shall not be yarded to the landing.
Ground Based Units (1-1, 1-2, 3-1, 3-3, 21-2SYA, 21-3, 21-4, 24-5, 24-7, 28-1, 28-1SYA)	<p>Mechanized felling equipment must have an arm capable of reaching at least twenty (20) feet.</p> <p>No front-end loaders are permitted.</p> <p>Yarding tractor width will not be greater than twelve (12) feet as measured from the outer edges of the standard width dozer blade in the straight position, or nine (9) feet as measured from the outer edges of standard width track shoes.</p> <p>Yarding tractors will be equipped with integral arches capable of suspending one end of the log clear of the ground and winch systems capable of lining logs at least seventy-five (75) feet.</p> <p>One end suspension is required in all ground based units.</p> <p>No mechanized equipment shall travel up or down draw bottoms. Crossing the draw shall be permitted where approved by the authorized officer.</p> <p>Mechanized equipment shall not travel through plant site buffers shown on Exhibit A.</p>

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	<p>Do not operate machinery for timber harvest within 50 feet of streams (slope distance), except where machinery is on improved roads, designated stream crossings, or where equipment entry into the 50-foot zone would not increase the potential for sediment delivery into the stream.</p> <p>Incorporate existing skid trails and landings as a priority over creating new trails and landings where feasible, into a designated trail network for ground-based harvesting equipment. Limit designated skid trails to <15 percent of the harvest unit area to reduce displacement or compaction to acceptable limits. Consider proper spacing (on average 100 feet), skid trail direction and location relative to terrain and stream channel features.</p> <p>Locate skid trails to minimize disturbance to down woody material. Where skid trails encounter large down woody material, a section would be bucked out for equipment access. The remainder would be left in place and would not be disturbed unless they pose a safety hazard.</p> <p>Limit width of skid trails to single-width or what is operationally necessary for the approved equipment. Where multiple machines are used, provide a minimum sized pullout for passing.</p> <p>Limit non-specialized skidders or tracked equipment to slopes generally less than 35 percent except when using previously constructed trails or accessing isolated ground-based harvest areas requiring short trails over steeper pitches. Limit non-specialized skidders or tracked equipment to slopes less than 35 percent, except when using previously constructed trails or accessing isolated ground-based harvest areas requiring short trails over steeper pitches. End-line yarding may occur on slopes over 35 percent for short distances where needed. Ground-based equipment would be stationed outside of the area greater than 35 percent unless the conditions above are met. Also, limit the use of this equipment when surface displacement creates trenches, depressions, excessive removal of organic horizons, or when disturbance would channel water and sediment as overland flow. Create skips, defer</p>
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	<p>portions of units or change logging systems to helicopter where the soils show indicators of mass movement.</p> <p>Limit the use of specialized ground-based mechanized equipment (those machines specifically designed to operate on slopes greater than 35 percent which includes tethered ground-based equipment) to slopes less than 50 percent, except when using previously constructed skid trails, adequate slash mat (to minimize erosion and displacement) or accessing isolated short skid trails over steeper pitches. Stop the use of this equipment if surface displacement creates trenches, depressions, excessive removal of organic horizons, or if disturbance would channel water and sediment as overland flow. Unit design would be determined based on specific equipment and operator capabilities and would be monitored during implementation by the Authorized Officer with input from the soil scientist and/or hydrologist.</p> <p>The location of the tractor skid roads must be clearly designated on the ground, at locations approved by the Authorized Officer</p> <p>Block skid trails to prevent public motorized vehicle use and other unauthorized use by October 15 of the year of harvest unless a waiver is in place for ground-based yarding to extend the dry season. Place woody debris or other appropriate barriers (e.g., rocks, logs, and slash) on the first 100 feet of skid trails leading off system roads or landing areas in all ground-based yarding units upon completion of yarding to block and discourage unauthorized vehicle use. If there is not enough available slash to cover the first 100 feet of skid trails, apply seed and mulch to the area.</p> <p>If operators are using feller-bunchers or cut-to-length harvesters off designated skid trails: Allow mechanized equipment capable of creating and walking on slash (such as a cut-to-length system) to work off designated skid trails for one or two passes on at least eight inches of slash and under dry soil conditions (less than 25% soil moisture content. The Authorized Officer, with input from the soil scientist, can provide waiver for soil moisture if minimal soil disturbance is expected to occur due to site conditions. Allow mechanized equipment (feller-buncher systems) to work off designated skid trails during the dry season (soil moisture content</p>
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	<p>less than 20%) for one or two passes only (one round-trip). The BLM may issue a waiver of the soil moisture if minimal soil disturbance would occur based on site conditions. Use low, ground-pressure equipment off designated skid trails. Restrict all other use of ground-based equipment to designated skid trails. Stop equipment use off designated skid trails if logging equipment is causing soil disturbance above a Class 1 (Page-Dumroese, Abbott, Rice 2009, p. 6, 14, 15, and 27-33), or as determined by the Authorized Officer.</p> <p>Landing location must be approved by the authorized officer.</p> <p>Limit landings to 0.5-acre or less for tractor units.</p> <p>In upland units, allow harvesting operations (cutting and transporting logs) when ground is frozen or adequate snow cover exists to prevent soil compaction and displacement. The Authorized Officer would consult with a watershed specialist (hydrologist, soils scientist, or fisheries biologist) to determine appropriate conditions. If conditions change during operations where detrimental soil compaction and displacement is occurring, operations would be stopped immediately.</p> <p>Minimize the area where more than half of the depth of the organically enriched upper horizon (topsoil) is removed when conducting forest management operations.</p> <p>For all units with predesignated skid trails as shown on Exhibit A and flagged in the field with yellow/white candy stripe tied with red, the purchaser shall use those skid trails unless a new location is approved by the authorized officer. Predesignated landings and skids may require excavation.</p>
Unit 28-1 (Ground Based)	Yarding and mechanized equipment shall be limited to using the predesignated existing skid trail

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Helicopter Units (3-2, 21-2, 2-2b, 21-5, 24-11)	<p>Keep service pad and helispot construction no larger than necessary and obtain approval from the Contract Administrator before construction.</p> <p>Lift logs vertically (without horizontal movement) to a height above the adjacent leave trees.</p> <p>Vertically lift multiple log turns from a small enough radius to result in minimal damage to the residual forest stand as determined by the Authorized Officer.</p> <p>Restrict aerial operations within 0.5 miles of any residence to an operating time of 6:00am to 6:00pm, Monday through Friday.</p> <p>A dropline with a minimum length of two hundred (200) feet is required.</p> <p>For Helicopter units whole tree yarding will be allowed as long as residual stand damage is minimized. Yarding of unmerchantable material is not required. If excessive stand damage occurs as determined by the authorized officer, trees will be required to be bucked into lengths no longer than forty-four (44) feet and will be completely limbed prior to being yarded.</p>
Roadside Vegetation Maintenance Units	<p>Mechanized logging equipment shall be restricted to the existing roads where clearing is to occur.</p> <p>Directionally fell away from all plants sites, streams, springs, wetlands, ponds and pump chances as shown on Exhibit A maps.</p>

- (12) L-14: No falling, yarding, loading or mechanized equipment is permitted in or through the timber reserve area as shown in Exhibit A and as posted (unless otherwise approved by the Authorized officer).
- (13) L-17: Landings shown on Exhibit A shall be placed at the approximate location(s) as shown on Exhibit A. Any alternative landing sites must be approved by the Contracting Officer in the written operations and logging plan.
- (14) L-19: No road construction, landing construction, skid trail construction, skid trail blocking, road renovation, road reconstruction, road decommissioning, road blocking/barricade construction, rocking, water bar construction, soil ripping, shall

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be conducted within contract area between October 15 of one calendar year and May 15 of the following calendar year, both days inclusive, or when soil moisture exceeds 25% as directed by the contracting officer.

- (15) L-19 No ground-based yarding and soil decompaction operations shall be conducted within contract area between October 15 of one calendar year and May 15 of the following calendar year, both days inclusive, or when soil moisture exceeds 25% as directed by the contracting officer.
- (16) L-19: No landing operations, rock haul and log haul between October 15 of one calendar year and May 15 of the following calendar year, both days inclusive. The Purchaser may wet season haul, with the Authorized Officer's approval on the following roads: 34-2E-24.05 Seg A-C, 35-2E-11.00 Seg A, 35-2E-2.00 Seg A-D1, 35-2E-2.02 If the use of these roads during the wet season causes or begins to cause road damage or the transport of sediment into streams, the Authorized Officer may suspend wet season haul or require additional erosion control devices to prevent damage or off-site transportation of sediment. Additional rock may be required at the Purchaser's expense to repair any damage that occurs to the road during wet season haul.

The Purchaser may wet season haul on these roads that will be rocked under Exhibit C work, with the Authorized Officer's approval on the following roads: 34-2E-20.00 Seg A, C, B to Heli Landing, 34-2E-22.00 Seg A-C, 34-2E-26.00 Seg A, 34-2E-29.00 Seg A1-A3 (Spot Rocking on A3), 35-2E-2.00 Seg D2, 35-2E-2.03 Seg A1, and 35-2E-3.02 Seg A-B. If the use of these roads during the wet season causes or begins to cause road damage or the transport of sediment into streams, the Authorized Officer may suspend wet season haul or require additional erosion control devices to prevent damage or off-site transportation of sediment. Additional rock may be required at the Purchaser's expense to repair any damage that occurs to the road during wet season haul.

The Purchaser shall have the option to rock road numbers 34-2E-20.00 Seg B beyond Heli Landing, 34-2E-24.00, 34-2E-24.01 Seg A-B, 34-2E-24.06 Seg A-B, 34-2E-26.00 Seg B-C, 35-2E-1.00 Seg A-B, 35-2E-1.01, 35-2E-1.02, 35-2E-1.03, 35-2E-1.04, 35-2E-2.01 Seg D-B, 35-2E-2.03 Seg A2-B, and 35-3E-6.00 Seg A-B, for wet weather haul. Purchaser option rocking depths will be determined and approved by the Authorized Officer. Any costs for rocking and installation of additional drainage features will be at the Purchaser's expense and shall be

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completed in accordance with the plans and specifications show in Exhibit C of this contract.

- (17) L-20: No operations within section 21 of T34S R02E as shown on Exhibit A shall be conducted between February 1 and August 15 of the same calendar year, both days inclusive.
- (18) L-20: No operations shall be conducted on the sale between March 1 and July 15, both days inclusive (Spotted Owl). This restriction shall be extended to September 30 if it can be shown from Spotted Owl surveys conducted in accordance with accepted standards that Spotted Owl nesting and/or fledgling activities are occurring during the year of harvest. This restriction may be waived for all, or portions of the sale if it can be shown from Spotted Owl surveys conducted in accordance with accepted standards that Spotted Owl nesting and/or fledgling activities are not occurring during the year of harvest.
- (19) L-23: The Purchaser shall provide 2 flaggers to control traffic on the Butte Falls/Prospect Highway where it passes by Unit 1-2 whenever felling timber within 300 ft of the county road.
- (20) L-24: Before cutting and removing any trees necessary to facilitate logging in all units as shown on Exhibit A, the Purchaser shall identify the location of skid roads, cable yarding roads, and tailhold, tieback, guyline, lift, intermediate support, 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 the following conditions must be met:
 - (a) All skid roads, cable yarding roads, and tailhold, tieback, guyline, lift, intermediate support, and danger trees 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 contract 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 Authorized Officer, the width of each skid road shall be limited to twelve (12) feet, and cable yarding roads shall be limited to fifteen (15) feet.
 - (b) The Purchaser may immediately cut and remove additional timber to clear skid roads, cable yarding roads, and tailhold, tieback, guyline, lift,

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intermediate support, and danger trees when the trees have been marked with green 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 Sec. 3.(b) of the contract or sufficient bonding has been provided in accordance with Sec. 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 Sec. 9 of the contract; or, Authorized Officer determines that the species of trees are not listed in Exhibit B of this contract 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 Sec. 8 or Sec. 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.

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- (f) The Government may reserve trees previously designated for cutting and removal by applying orange paint or blacking out blue paint as replacements for additional trees cut and removed for skid roads and/or cable yarding roads when the Authorized Officer determines such reservation is necessary to maintain stand densities consistent with objectives set forth in the management prescription(s). The volume of this timber to be reserved will be determined by the Authorized Officer in accordance with Bureau of Land Management prescribed procedures and the value shall be based on the unit prices shown in Exhibit B of the contract. The Purchaser agrees that the Total Purchase Price shall be reduced accordingly through a unilateral modification to the contract executed by the Contracting Officer.

- (21) L-32: In ROW 3, where new construction of a landing is required for logging access as shown on Exhibit A, Purchaser shall during road construction fell, buck, and remove to an area adjacent to and outside of the road right-of-way two (2) trees marked with blue "C/L" which are greater than or equal to thirty six (36) inch diameter at breast height and a birthdate prior to 1850. Where trees are bucked at the large ends, the purchaser shall put a "X" of paint with a color approved by the authorized officer to ensure that the logs are not yarded and shipped. No adjustments of volume or value shall be made to meet these requirements. The Purchaser shall tally all trees by diameter class and species on a daily basis. The tally may be requested by the Authorized Officer at any time during falling operations. At the end of falling operations a completed tree tally shall be submitted to the Authorized Officer.

(C) ROAD CONSTRUCTION, MAINTENANCE, AND USE (R)

- (1) R-1: The Purchaser shall construct, improve, renovate, and/or decommission all roads and structures in strict accordance with the plans and specifications shown on Exhibit C and Exhibit D, which is attached hereto and made a part hereof.

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- (2) R-1a: Any required construction, improvement, or renovation of structures and roads shall be completed and accepted, in accordance with Section 18, prior to the removal of any timber, except right-of-way timber, over that road.
- (3) R-1b: The Purchaser shall renovate, use, and place into long term storage roads, 35-2E-1.02, 35-2E-1.04, 35-2E-2.03, 35-3E-6.0 Seg B by October 15th of the same respective operating season.
- (4) R-2: The Purchaser is authorized to use the roads listed and shown on Exhibit D Section 3000 for the removal of Government timber sold under the terms of this contract, provided that the Purchaser pay the required maintenance and rockwear obligations described in Provision R-2b. The Purchaser shall pay current Bureau of Land Management maintenance fees and rockwear for the sale of additional timber under modification to the contract.
- (5) R-2a: With the prior written approval of the Authorized Officer, the Purchaser may arrange for cooperative maintenance with other users of roads included in Provision R-2f of this contract; provided, that such cooperative arrangement shall not relieve the Purchaser of his 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.
- (6) R-2b: The Purchaser shall pay the Government a road maintenance and rockwear fee of ***twenty-four thousand nine hundred seventy two dollars and 99/100 (\$24,972.99)*** for the transportation of timber included in this contract price over said roads. The above maintenance amount is for the use of 19.15 miles of road or less. If the total road maintenance and rockwear fee does not exceed five hundred and no/100 dollars (\$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 and no/100 dollars (\$500.00), the Authorized Officer shall establish an installment schedule of payments of the maintenance and rockwear obligations.
- (7) R-2e: The Contracting Officer may at any time, by written notice, terminate the Purchaser's operator road maintenance obligations and require instead payment of current Bureau of Land Management road maintenance and rockwear fees for the particular surface type of the roads involved. These fees will be applied to the

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remaining contract volume on the sale area, as determined by the Authorized Officer, to be transported over the roads listed in Exhibit D Section 3000. If the total road maintenance and rockwear fee does not exceed five hundred and no/100 dollars (\$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 and no/100 dollars (\$500.00), the Authorized Officer shall establish an installment schedule of payments of the maintenance and rockwear obligations.

- (8) R-2f: The Purchaser shall perform any required road repair and maintenance work on roads identified as Purchaser maintenance, under the terms of Exhibit D, Road Maintenance Specifications, of this contract, which is attached hereto and made a part hereof. The Purchaser shall perform any required road repair and maintenance work on roads used by them, under the terms of Exhibit D, Road Maintenance Specifications, of this contract, which is attached hereto and made a part hereof.
- (9) R-3: In the use of Road Nos 35-2E-2.3 A1 & A2 the Purchaser shall comply with the conditions of Right-of-Way and Road Use Agreement M-2000 between the United States and John Hancock Life Insurance. This document is available for inspection at the Medford District Office.

These conditions include:

- (a) Payment of a road rockwear obligation of ***four hundred forty dollars and 37/100 (\$440.37)*** to John Hancock Life Insurance, payable at the time indicated in the License Agreement.
- (b) Payment of a road use obligation of ***zero dollars and 00/100 (\$0.00)*** to John Hancock Life Insurance, payable at the time indicated in the License Agreement.
- (c) Prior to the use of said roads, the Purchaser shall furnish the Authorized Officer a properly signed copy of the executed License Agreement.

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- (d) Default by the Purchaser of said Right-of-Way and Road Use Agreement, or any License Agreement executed pursuant thereto, for failure to pay appropriate road use fees shall be considered a violation of this contract. The amount of unpaid fees shall be considered as the amount of damage suffered by the Government as a result of the violation of this provision.
- (10) R-3: In the use of Road Nos 34-2E-22.0 B, 34-2E-24.1 A, 34-2E-29.0 A3, 35-2E-2.1 C1, 35-2E-2.1 C2, 35-2E-2.1 D, and 35-3E-6.0 A the Purchaser shall comply with the conditions of Right-of-Way and Road Use Agreement No M-2000, between the United States of America and Siskiyou Timberlands LLC. This document is available for inspection at the Medford District Office.
- These conditions include:
- (a) Payment of a road rockwear obligation of ***two thousand three dollars and 66/100 (\$2,003.66)*** to Siskiyou Timberlands LLC., payable at the time indicated in the License Agreement.
- (b) Payment of a road use obligation of ***seven thousand one hundred sixty-five dollars and 30/100 (\$7,165.30)*** to Siskiyou Timberlands, payable at the time indicated in the License Agreement.
- (c) Prior to the use of said roads, the Purchaser shall furnish the Authorized Officer a properly signed copy of the executed License Agreement.
- (d) Default by the Purchaser of said Right-of-Way and Road Use Agreement, or any License Agreement executed pursuant thereto, for failure to pay appropriate road use fees shall be considered a violation of this contract. The amount of unpaid fees shall be considered as the amount of damage suffered by the Government as a result of the violation of this provision.

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- (11) R-3: In the use of Road No 34-2E-29.0 A1 the Purchaser shall comply with the conditions of Right-of-Way and Road Use Agreement No M-2000, between the United States of America and Smith. This document is available for inspection at the Medford District Office.

These conditions include:

- (a) Placement of *rock in lieu of surface replacement fees* at the time indicated in the License Agreement.
 - (b) Payment of a road use obligation of *zero dollars and 00/100 (\$0.00)* to Smith, payable at the time indicated in the License Agreement.
 - (c) Prior to the use of said roads, the Purchaser shall furnish the Authorized Officer a properly signed copy of the executed License Agreement.
 - (d) Default by the Purchaser of said Right-of-Way and Road Use Agreement, or any License Agreement executed pursuant thereto, for failure to pay appropriate road use fees shall be considered a violation of this contract. The amount of unpaid fees shall be considered as the amount of damage suffered by the Government as a result of the violation of this provision.
- (12) R-3c: The Purchaser agrees that if they elect to use any other private road, which is the subject of a right-of-way agreement with the Government for the removal of Government timber sold under the terms of this contract, Purchaser shall request and agree to the modification of this contract to provide for such use and for allowances for amortization of the Government's share of the capital investment of any such road.
- (13) 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

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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.

- (14) 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.

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The Purchaser shall be responsible for repair of any damage to roads or structures caused by the use tracked 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 requirement set forth in Sec. 26 of this contract, the Purchaser shall prepare a Spill Prevention, Control, and Countermeasure Plan for all hazardous substances to be used in the contract area. Such plan shall include identification of Purchaser's representatives responsible for supervising initial containment action for releases and subsequent cleanup. In addition, such plan shall follow all applicable State of Oregon Department of Environmental Quality guidelines for spill prevention and containment of petroleum products (Oregon Administrative Rules, Chapter 340, Department of Environmental Quality, Division 142, Oil and Hazardous Materials Emergency Response Requirements). During operations the operator would be required to have a BLM-approved spill plan or other applicable contingency plan. In the event of any release of oil or hazardous substance, as defined in Oregon Administrative Rules (OAR) 340-142-0005 (9)(d) and (15), into the soil, water, or air, the operator would immediately implement the site's plan. As part of the plan, the operator would be required to have spill containment kits present on the site during operations. The operator would be required to be in compliance with OAR 629-605-0130 of the Forest Practices Act, Compliance with the Rules and Regulations of the Department of Environmental Quality. Notification, removal, transport, and disposal of oil, hazardous substances, and hazardous wastes would be accomplished in accordance with OAR 340-142, Oil and Hazardous Materials Emergency Response Requirements, contained in Oregon Department of Environmental Quality regulations (SP-05, SP-06, and SP-07).
- (2) E-1: In addition to the requirement set forth in Sec. 26 of this contract, the Purchaser shall store all hazardous materials and petroleum products in durable containers placed outside of Riparian Reserves. Locate so an accidental spill would be contained nor drain into any stream system (SP-03).

Refuel equipment a minimum of 175 feet from streams, ponds, or other wet areas. Store equipment containing reportable quantities of toxic fluids outside of the

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Riparian Reserve. Hydraulic fluid and fuel lines would be in proper working condition in order to minimize leakage into streams (SP-03).

- (3) E-1: In addition to the requirement set forth in Sec. 26 of this contract, the Purchaser shall restrict ground-based yarding and soil decompaction operations from October 15 to May 15 generally, or when soil moisture exceeds 25%. The Authorized Officer may issue a waiver, with support from the BLM soil scientist and based on site conditions.
- (4) E-1: In addition to the requirement set forth in Sec. 26 of this contract, the Purchaser shall comply with the following. Road renovation and improvement would occur during the dry season (May 15 to October 15). Variations in these dates would be permitted dependent upon weather and soil moisture conditions and with a specific erosion control plan (e.g., rocking, waterbarring, seeding, mulching, barricading) as determined by the Authorized Officer in consultation with aquatic and/or soils scientists. All road and landing construction activities would be stopped when a storm event resulted in degrading conditions as evidenced by turbid runoff, turbid ditch flow, ponding, or rutting or other displacement in excess of two inches. Watershed specialists would closely monitor storms that result in precipitation and would convey pertinent information to the Authorized Officer. Similarly, the Authorized Officer would convey road, landing, and ditch conditions to the aquatic and/or soil specialists.
- (5) E-1: In addition to the requirement set forth in Sec. 26 of this contract, the Purchaser shall construct road barricades as specified on Exhibit C, at locations where an existing barricade has been removed to provide for harvest access. Barricades shall be in place by October 15 of each calendar year.
- (6) E-1: In addition to the requirement set forth in Sec. 26 of this contract, the Purchaser shall block skid trails to prevent public motorized vehicle use and other unauthorized use by October 15 of the year of harvest unless a waiver is in place for ground-based yarding to extend the dry season. Place woody debris or other appropriate barriers (e.g., rocks, logs, and slash) on the first 100 feet of skid trails leading off system roads or landing areas in all ground-based yarding units upon completion of yarding to block and discourage unauthorized vehicle use. If there is not enough available slash to cover the first 100 feet of skid trails, apply seed and mulch to the area.
- (7) E-1: In addition to the requirement set forth in Sec. 26 of this contract, the Purchaser shall revegetate disturbed soils with locally adapted native seeds and

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plant materials as prescribed by the field office botanist, and mulch. Need would be determined by the authorized officer in consultation with the field office botanist, based on the level of disturbance and the presence of priority non-native invasive plants. Planting and/or seeding would occur between September 1 to March 31 or as otherwise approved by authorized officer in consultation with the field office botanist.

The Purchaser shall furnish the specific seed mixture prescribed by the Authorized Officer, which will include up to 3 grasses and 2 forbs from the following list, but may include substitutions approved by the Authorized Officer:

Grasses: *Achnatherum lemmonii*, *Bromus carinatus*, *Brumus vulgaris*, *Elymus glaucus*, *Festuca californica*, *Festuca roemerii*, *Koeleria macrantha*, *Poa secunda*, *Vulpia microstachys*

Forbs: *Achillea millefolium*, *Clarkia purpurea*, *Clarkia rhomboidea*, *Collinsia grandiflora*, *Eriophyllum lanatum*, *Lupinus bicolor*, *Madia elegans*, *Madia gracilis*

The proportion of each species in the mixture shall be prescribed by the Authorized Officer.

The Purchaser shall apply prescribed seed and straw mulch to acres designated for treatment, as directed by the Authorized Officer, at the following rates of application:

Grass seed	20 to 25 lbs/acre (cumulative, all species)
Forb seed	0.5 to 2 lbs/acre (cumulative, all species)
Straw mulch	1000 lbs/acre

The Purchaser shall apply seed and straw mulch between September 1 March 31 of the year of harvest. Deviations from that timing must be approved by the Authorized Officer. The Purchaser shall notify the Authorized Officer at least 5 days in advance of the date that he/she intends to commence revegetation and soil stabilization work.

If the Purchaser furnishes seed from any source other than the BLM, that seed shall meet the following minimum test standards:

<u>Test</u>	<u>Grasses</u>	<u>(%)</u>	<u>Forbs (%)</u>
Purity:	95	80	
Germination:	85	70	
Other species/weed content (max):	0.2	0.2	
Noxious weed content:	Prohibited	Prohibited	

Furnished seed shall meet the minimum requirements for either Yellow Tag Source Identified Seed or Blue Tag Certified Class Seed, as defined by the

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Association of Official Seed Certifying Agencies. Seed source shall be approved by the Authorized Officer and shall be from the EPA Level III Ecoregion in which the project occurs. For each lot of seed, the Purchaser shall furnish the Authorized Officer a Seed Test result from a certified seed testing lab (e.g., Oregon State University), which shall include: test date; lot number; seed source; and results of test for purity, germination, and weed content. All seed lots must have been tested within the previous 12 months to be accepted. Seed that has become wet, moldy, or otherwise damaged shall not be accepted. Seed must be available to the Authorized Officer for inspection at least 5 days in advance of commencing revegetation work.

- (8) E-1: In addition to the requirement set forth in Sec. 26 of this contract, the Purchaser shall Ensure hay, straw, and mulch are certified as free of prohibited noxious vegetative parts or seeds. Hay must be from native grasses only. Straw or hay must be obtained from the BLM or purchased from growers certified by the Oregon Department of Agriculture's Weed Free Forage and Mulch Program or approved by the project botanist. Apply native seed and certified weed-free mulch to areas, such as cut and fill slopes and waste disposal sites, that have the potential for sediment delivery to wetlands, Riparian Reserves, floodplains and waters of the state. Apply seed upon completion of construction and as early as practicable to increase germination and growth.
- (9) E-1: In addition to the requirement set forth in Sec. 26 of this contract, the Purchaser shall apply erosion-control techniques (e.g. water bar, seed, mulch, scatter chipped material, or scatter limbs and other fine material) on skid trails, forwarder trails, yarding corridors, landings, and other disturbed areas where potential for soil erosion or delivery to waterbodies, floodplains, and wetlands exist, or as identified by the Authorized Officer.
- (10) E-1: In addition to the requirement set forth in Sec. 26 of this contract, the Purchaser shall Decommission temporary roads upon completion of use. Decompact (using equipment approved by Authorized Officer) and water bar all temporary routes and associated landings, and roads identified for full decommissioning to a depth of 18 inches or bedrock (whichever is shallower). Avoid subsoiling areas near tree roots and where there are rocks larger than 2 feet across. Apply seed and mulch and block upon completion of use. Seeding and mulching would occur in the same operational season that construction activities.

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- (11) E-1: In addition to the requirement set forth in Sec. 26 of this contract, the Purchaser shall Restrict the use of motorized equipment and vehicles to existing roads within the following naturally occurring special habitats to maintain their ecological function: seeps, springs, wetlands, natural ponds, and natural meadows.
- (12) E-1: In addition to the requirement set forth in Sec. 26 of this contract, the Purchaser shall when installing temporary culverts, use washed rock as backfill material. Use geotextile fabric as necessary where washed rock will spread with traffic and cannot be practicably retrieved.
- (13) E-1: In addition to the requirement set forth in Sec. 26 of this contract, the Purchaser shall remove temporary crossing structures promptly after use. Follow practices under the closure/decommissioning section for removing stream crossing drainage structures and reestablishing the natural drainage.
- (14) E-1: In addition to the requirement set forth in Sec. 26 of this contract, the Purchaser shall not cut vegetation within the extent of the unstable areas that are above or adjacent to stream channels and are likely to deliver material such as sediment and logs to the stream if the unstable area fails. Extend the Riparian Reserves to include stable areas between such an unstable area where there is potential for the failure to reach the stream.
- (15) E-1: In addition to the requirement set forth in Sec. 26 of this contract, the Purchaser shall not cut vegetation within 25 feet of natural ponds < 1 acre or wetlands < 1 acre (including seeps and springs), and constructed water impoundments (e.g., canal ditches and pump chances of any size).
- (16) E-1: In addition to the requirement set forth in Sec. 26 of this contract, the Purchaser shall not operate machinery for timber harvest within 50 feet of streams (slope distance), except where machinery is on improved roads, designated stream crossings, or where equipment entry into the 50-foot zone would not increase the potential for sediment delivery into the stream.
- (17) 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 Package (special provisions), which is attached hereto and made a part hereof.
 - (a) Water-bar all pre-designated skid trails, designated skid trails, and forwarder trails used for logging activities in all ground based units shown on Exhibit

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A., at locations approved by the authorized officer, by October 15 of the year of harvest.

(b) Install water-bars at the same time as subsoiling (if both are required) unless skid trails are needed to complete harvest the following season. In that case, water bars would be constructed and straw would be applied to exposed soil prior to fall rains to reduce sedimentation during winter months. Water-bar spacing on tractor skid trails would be based on the RMP erosion-control measures for timber harvest, which considers slope and soil series.

(18) E-5: The Purchaser shall notify the Authorized Officer in writing by February 1 of each calendar year in which operations are expected to take place on the contract area between March 1 and September 30, both days inclusive. If notification is not received by the Authorized Officer by February 1, felling, bucking, yarding, road construction, or any other activity with the potential to disturb nesting owls may not be allowed during this time period.

(19) E-7: In order to prevent the spread of noxious weeds (and *Phytophthora lateralis*), the Purchaser shall (steam clean or pressure wash) all equipment traveling off system roads or temporary routes prior to entry onto BLM lands (and between sale locations if operating in areas infested with weeds.) 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) Miscellaneous

M-2: The Government, at its option, may administratively check scale any portion of the timber removed from the contract area, and if necessary, conduct check scaling of independent scalers contracted to BLM for administrative check scaling purposes. The Purchaser hereby agrees to place Government supplied load tickets on each load of logs as directed by the Authorized Officer, and make such contract timber available for such scaling at a location or locations to be designated or approved in writing by the Authorized Officer. At the approved location or locations and as directed by the Authorized Officer, the Purchaser shall either make loaded logs available for ramp scaling, or provide an area for logs to be safely rolled out for scaling, to unload logs from trucks, and to place logs in a manner so that both ends and three faces of each log are visible for scaling, and to reload or remove logs after scaling has been completed. In the event that BLM elects to administratively check scale and if such scaling causes a delay in log transportation or yard operations, a reduction will be made to the total purchase price by applying a value of \$1.00 to \$5.00 per thousand board feet times the

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volume actually administratively check scaled as determined by the Authorized Officer. Any reduction in total purchase price under the terms of this provision shall be full compensation to the Purchaser for any expense or loss incurred as a result of any delay in log transportation and/or yard operations. Such adjustment to the total purchase price shall be made by unilateral modification of the contract executed by the Contracting Officer. Scaling will be conducted by BLM scalers, and/or independent scalers contracted to BLM. A copy of the scale report will be made available to the Purchaser upon request.

(F) 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:
 1. Prior to the operation of power driven equipment in construction or logging operations under this contract during the closed fire season or periods of fire danger, the purchaser shall ensure that planned operations will be in full compliance with the current Fire Season Requirements issued by the State of Oregon, Department of Forestry and the Medford District Bureau of Land Management.

Current State of Oregon, Department of Forestry requirements can be found online at: <https://www.oregon.gov/ODF/Fire/Pages/Restrictions.aspx>

(G) Slash Disposal and Site Preparation

1. SD-4 Logging Residue Reduction. In addition to the requirements of Sect.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 logging residue reduction and site preparation measure(s) required by this contract:

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Prior to commencement of any operation under this section of the contract, a slash disposal and site preparation pre-work conference between the purchaser's representative and the Authorized Officer must be held at a location designated by the Authorized Officer. All slash disposal and site preparation shall be done in accordance with the plans developed at this pre-work conference.

Slash, as defined for this section, shall mean all material (brush, limbs, tops, unmerchantable stems, and chunks) severed or knocked over as a result of purchasers operations under the terms of this contract, including material cut during slashing activities for the purposes of fuels reduction.

Refueling of chainsaws and other equipment will be done no closer than one hundred fifty (150) feet of any stream or wet area. Spilled fuel and oil would be cleaned up and would be disposed of at an approved disposal site.

1. For Igniting, Burning, Mop-up of Piles on Units:

- a. One work leader(s) Firefighter Type 1 (FFT1) qualified according to National Wildfire Coordinating Group (NWCG) Wildland Fire Qualifications System guide, PMS 310-1) to supervise crew and equipment operations, and to serve as Purchaser's representative.
- b. Two-person crew Firefighter Type 2 (FFT2) qualified according to National Wildfire Coordination Group (NWCG) Wildland Fire Qualifications System guide, PMS 310-1, with sufficient fuel for burning, four (3) drip torches, one (1) power saw, and one (1) backpack pump, one (1) tool for each crew member.
- c. The crew shall arrive on the project area with radios capable of inter-crew communications and communication with a BLM representative at a ratio of one (1) radio per every five (5) crew members.
- d. All ignition and mop-up personnel will be directly supervised by a BLM representative.

Aircraft and pilots used for Logging Residue Reduction or the suppression of escaped fires from Logging Residue Reduction operations, shall be acquired from a list of aircraft and pilots approved (i.e., carded for these specific activities) by the Office of Aircraft Services or the U.S. Forest Service. This list is available

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from BLM District Offices upon request.

All listed personnel shall be physically fit, experienced and fully capable of functioning as required. In addition, all listed personnel shall be qualified according to the National Wildfire Coordinating Group (NWCG) Wildland Fire Qualification System Guide, PMS-310-1 and provide documentation of these qualifications. On the day of ignition all listed personnel shall be fluent in speaking and understanding English, clothing shall consist of long pants and long sleeved shirts, and be of approved aramid fabric (Nomex™ or equivalent), as well as being free of diesel fuel oil. All personnel shall wear lug sole boots with minimum eight (8) inch tall uppers that provide ankle support, approved hardhats and leather gloves. Personnel who do not meet these requirements or do not have proper clothing and personal protective equipment (PPE) will not be allowed to participate. All listed tools and equipment shall be in good usable condition. All power-driven equipment shall be fully fueled and available for immediate use. During periods of use under this subsection, the Purchaser shall provide fuel and maintenance for all such power-driven equipment.

Except as provided hereafter for fire escapement, the Purchaser shall continue the required assistance in mop up on each cutting unit shown on Exhibit A for seventy-two (72) hours, as directed by the Authorized Officer within a five (5) day period commencing at 8:00 a.m. the day following the completion of ignition in that unit, or until released from such service by the Government, whichever occurs first.

In event of a fire escapement, the Purchaser's personnel and equipment shall, under supervision of the Authorized Officer, take action to control and mop up the escaped fire until released from such service by the Government. If it becomes necessary to use furnished personnel and equipment for the suppression of a fire which escapes from the prescribed fire area for a period beyond the remainder of the day in which the fire escapes, then the Government shall, at its option: (1) reimburse the Purchaser for such additional use of personnel and equipment at wage rates shown in the current Administratively Determined Pay Rates for the Western Area and at equipment rates shown in the current Oregon-Washington Interagency Fire Fighting Equipment Rental Rates schedule until the Purchaser is released from such service by the Government; or (2) release the Purchaser from additional suppression work and assume responsibility for suppressing the escaped fire.

In situations where an escaped fire is controlled and contained by an adequate fire break (i.e., trail, road, stream, rock formation, etc.), the Government may permit

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the Purchaser to remove personnel for that day; provided that all mop up work on the escaped fire is included with mop up work on the prescribed fire area. In such an event, the Purchaser must sign a statement of agreement to complete mop up work on all escaped fire areas concurrently with mop up work on the prescribed fire area.

SD-1a LOP AND SCATTER

Lop and scatter all slash as directed by the Authorized Officer , concurrently with normal felling operations. All tops and side branches must be free of the central stem so that such slash is reduced to the point that it is within eighteen (18) inches of the ground at all points.

SD-1b HANDPILE AND BURN Handpile all slash as directed by the Authorized Officer in accordance with the following specifications:

- A. Piling shall be accomplished by hand. Finished piles shall be tight and free of earth.
- B. Pile all slash which is between one (1) and six (6) inches in diameter on the large end and exceeds three (3) feet in length.
- C. A six (6) foot by six (6) foot sheet of four (4) mil polyethylene black plastic shall be placed in each pile in a manner such that approximately one-third ($\frac{1}{3}$) of the pile lies above it to hold it in place and so that a two (2) foot by two (2) foot dry ignition point is maintained for one (1) year or until burned. The ignition point will consist of fine fuel material such as needles, small limbs, and branches less than one-half ($\frac{1}{2}$) inch in diameter and free of dirt. Piles shall be constructed by aligning individual pieces in the same direction and placing the heavier slash on top. Piles shall have a stable base to prevent toppling. The long axis of individual pieces shall be oriented up and down the slope. Protruding pieces shall be trimmed to allow covering in a manner that permits the pile to shed water. Height shall be no less than four (4) feet and no greater than six (6) feet; width shall not exceed six (6) feet; piles shall be circular and not windrowed. No pile shall be located within sixty (60) feet of fish-bearing, perennial streams or within thirty-five (35) feet from non-fish-bearing, intermittent streams. Piles shall not be located on down logs, stumps, talus slopes, roadways, or drainage ditches. No

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pile shall be located within ten (10) feet of reserve trees, any other pile, or unit boundary. No pile shall be located within twenty-five (25) feet of designated wildlife trees. No portion of the pile will be under the crown of any living conifer tree.

- D. Operations required by this provision shall be kept current with yarding as directed by the Authorized Officer and shall be conducted as follows:
- a. Units shall be piled and covered during the same season that they are logged. Piling shall be completed in each unit or portion thereof, within eight (8) weeks after being notified of BLM site treatment determination.

SD-1c EXCAVATOR PILE AND BURN. Pile all slash in units or portions of units as designated by the Authorized officer in accordance with the following specifications:

- A. Piling shall be accomplished with a track-mounted excavator with track shoes producing less than ten (10) pounds per square inch ground pressure. The excavator shall be equipped with a hydraulic thumb or rotating, controllable grapple head. The machine shall have a minimum reach of twenty-five (25) feet. Finished piles shall be tight and free of earth. No portion of the excavator pile will be within 25 feet of the dripline of any living conifer tree.
- B. Pile all slash, brush and downed hardwoods which are greater than two (2) inch and less than sixteen (16) inches in diameter on the large end and exceed two (2) feet in length. Existing reproduction of commercial coniferous species shall be protected where feasible.
- C. Unmerchantable logs greater than sixteen (16) inches on the small end shall be left in place, or positioned so that they will not be burned.
 - a. Prior to the commencement of piling work, all equipment shall meet the approval of the Authorized Officer.

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- C. Excavators are limited to designated skid roads approved by the Authorized Officer.
- D. Additional trails needed shall be approved by the Authorized Officer, and the excavator shall be limited to one pass on these trails. The excavator shall pile by walking over the slash and working back to the designated trails. Existing reproduction of commercial coniferous species shall be protected where feasible.
- E. A ten (10) foot by ten (10) foot cover of four (4) mil black plastic or equivalent material shall cap each excavator pile to maintain a dry ignition point. The cover shall be firmly fixed to each pile to hold it in place. Covering shall be done at time of piling.
- F. Operations required by this provision shall be kept current with yarding as directed by the Authorized Officer and shall be conducted as follows: Units shall be piled and covered during the same season that they are logged. Piling shall be completed in each unit or portion thereof, within eight (8) weeks after being notified of BLM site treatment determination

SD-1f LANDING PILES

- A. Logging Residue Reduction In addition to the requirements of Sections 15 and 25 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 Purchaser for such hazard, the Purchaser shall remain responsible to the Government for performance of the following hazard reduction and logging residue reduction measures required of them by this contract: (1) Landing pile construction and covering: Within thirty (30) feet of the edge of each landing, all tops, broken pieces, limbs and debris between two (2) and eight (8) inches in diameter at the large end and longer than three (3) feet in length shall be piled. Landing piles shall be kept free of dirt and located adjacent to roads at least twenty (20) feet from any Reserve Tree and/or as directed by the Authorized Officer. Upon completion of landing piling, and no later than September 30 of the same year of piling, the Purchaser shall prepare the landing piles for burning by securely covering each pile with a minimum 10-foot-by-10-foot cover of four (4) MIL polyethylene or alternate material as set forth in OAR 629-048-0210. The cover shall cap

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each landing pile to maintain a dry ignition point and shall be firmly fixed to each pile to hold it in place. To meet ignition and combustion needs, larger piles may require additional PE sheeting. Piles with material extending more than two (2) feet beyond the general contour of the pile shall be flattened or trimmed to allow for covering in a manner that permits the piles to shed water and to prevent tearing during wind events. Pile trimming or flattening shall be done prior to pile covering. Pieces of burnable material shall be placed on top of the plastic cover to secure it from moving and to prevent it from blowing off during strong winds. Landing pile size should not exceed a height of sixteen (16) feet or sixteen (16) feet in diameter. 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.

- B. As directed by Authorized Officer, for a distance of thirty (30) feet from the perimeter of each landing along any rocky road, all logs more than eight (8) inches diameter at the small end and longer than eight (8) feet in length shall be decked or windrowed at the location designated by the Authorized Officer except logs removed from the contract area. If a log or a piece of a log meeting or exceeding the above specifications is bucked, all portions of that log shall be yarded and decked at the above-described location. Logging residue meeting this requirement shall not be piled for burning but shall be segregated into separate piles that are no closer than twenty (20) feet from residue piles that will be burned.

- 2. SD-5 Perform logging residue reduction and site preparation work on approximately one hundred eighty (180) acres of harvest area as directed by the Authorized Officer.
 - (a) The required work shall consist of any treatment or combination of treatments listed in the table below, as determined by the Authorized Officer and specified in writing by the Contracting Officer. The number of acres of each treatment shall be determined by the Authorized Officer.

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- (b) The following treatments were assumed for appraisal purposes on this contract:

Treatment/Level	Cost Per Acre	Number of Acres	Total Cost Per Treatment Type
Hand Pile/Cover Slash	\$650.00	30	\$19,500.00
Hand Pile Burn	\$125.00	30	\$3,750.00
Excavator Pile/Cover	\$550.00	150	\$82,500.00
Excavator Pile Burn	\$125.00	150	18,750.00
Total Appraised Cost			\$124,500.00

- (c) The total Purchase Price set forth in Section 2 shall be adjusted by the amount that the total cost of the site preparation treatments designated pursuant to Section 41(G)(2)(a) differs from: one hundred twenty four thousand five hundred dollars (\$124,500.00) as calculated by using the estimated acres determined by the Authorized Officer and the per acre costs listed in Section 41(G)(2)(a).

In case of injury to personnel or damage to equipment furnished by the Purchaser as required by this subsection, liability shall be borne by the Purchaser, unless such injury or damage is caused by Government negligence.

Time is of the essence in complying with this provision. In the event the Purchaser fails to provide the personnel and equipment required herein, the Purchaser shall be responsible for all additional costs incurred by the Government in disposing of slash including but not limited to the wages and other costs of providing federal employees and others as substitute labor force, the cost of providing substitute equipment and appropriate additional overhead expenses. If the Purchaser's failure results in deferral of burning and new conditions necessitate additional site preparation work and/or use of additional personnel and equipment to accomplish planned burning, the Purchaser also shall be responsible for such additional costs.

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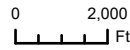
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Possible Waived Times are Hatched

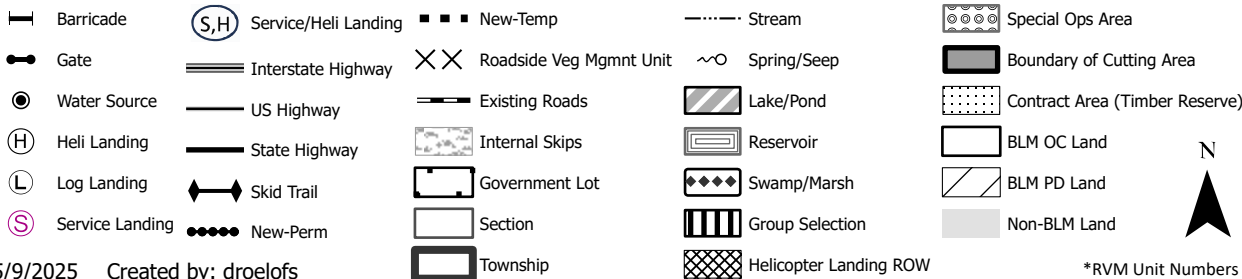
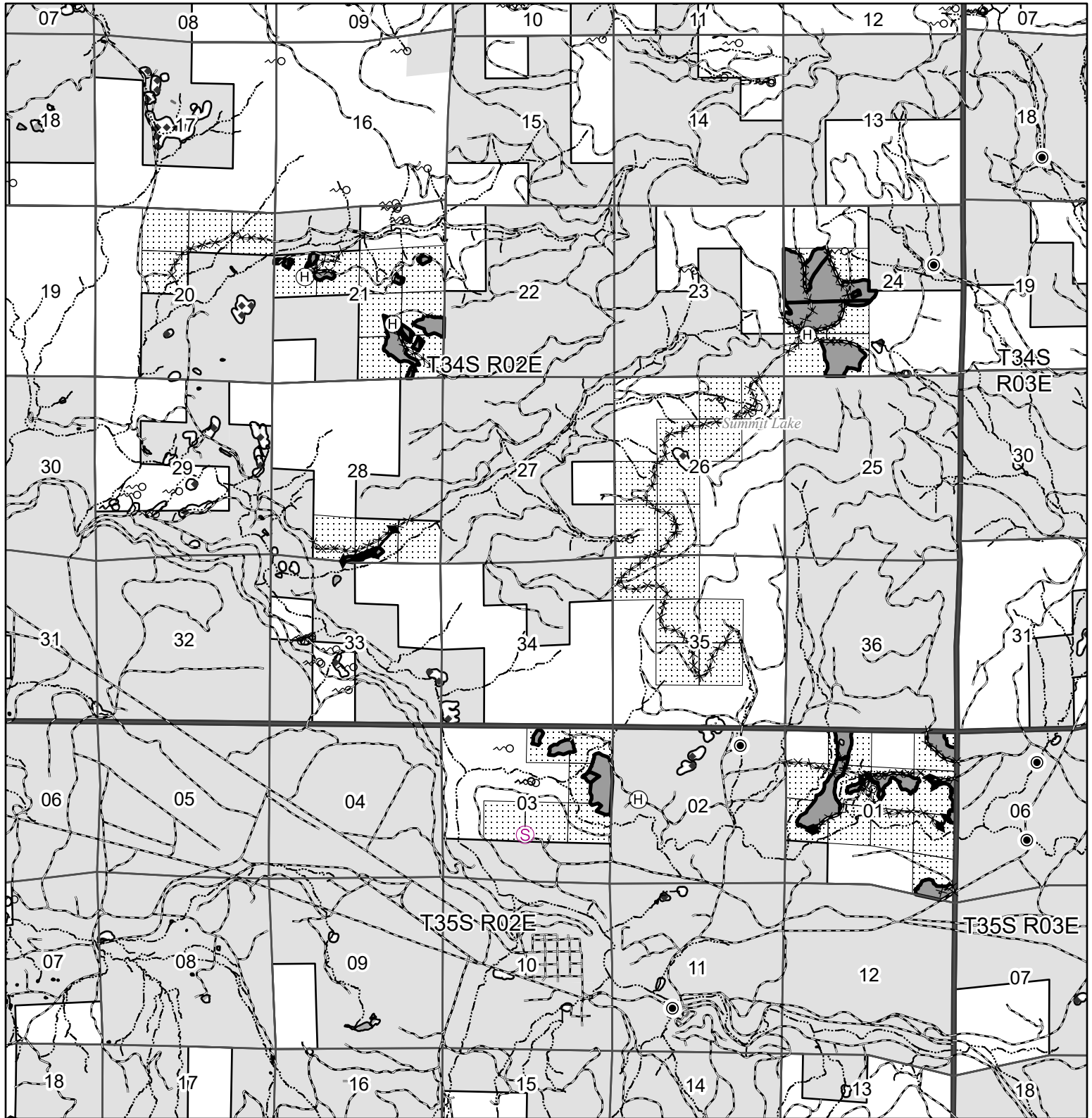
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* Additional restrictions will apply if a gray wolf den is found within one mile of a treatment area, if a fisher den site is found within 50 feet of proposed treatment area, or if a bald/golden eagle is found within 660 feet of a treatment area (see portions of the land may have this risk-mining restriction waived since previous surveys have been conducted).

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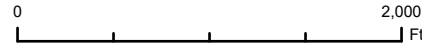
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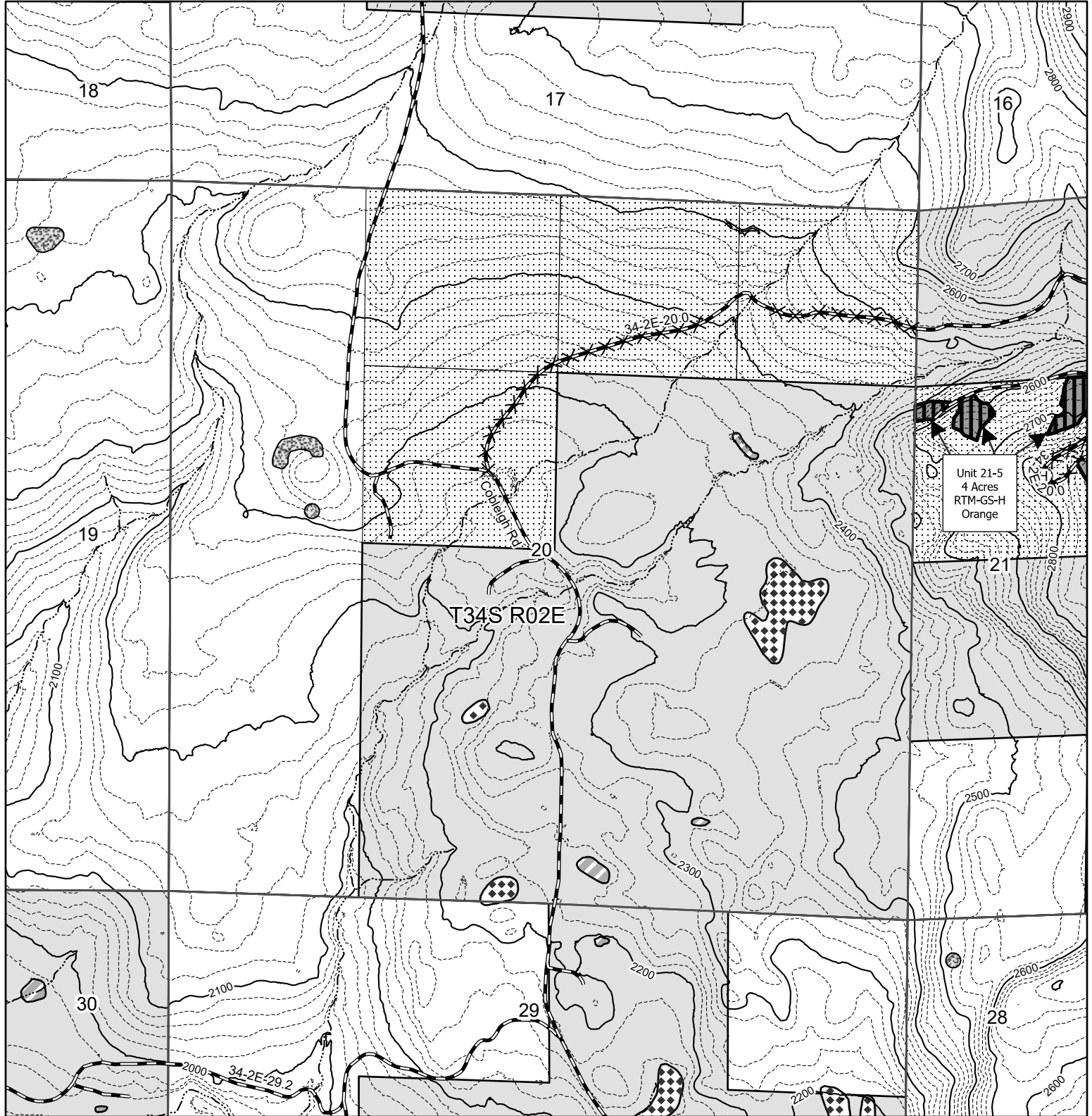
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| — Barricade | (S,H) Service/Heli Landing | ■ ■ ■ New-Temp | ▭ Township | ▨ Helicopter Landing ROW |
| — Gate | ▬ Interstate Highway | ▨ Plant Sites | — Stream | ▨ Special Ops Area |
| ● Water Source | — US Highway | × × Roadside Veg Mgmt Unit | ~○ Spring/Seep | ▨ Boundary of Cutting Area |
| (H) Heli Landing | — State Highway | — Existing Roads | ▨ Lake/Pond | ▨ Contract Area (Timber Reserve) |
| (L) Log Landing | ↔ Skid Trail | ▨ Internal Skips | ▨ Reservoir | ▨ BLM OC Land |
| (S) Service Landing | ● ● ● New-Perm | ▨ Government Lot | ▨ Swamp/Marsh | ▨ BLM PD Land |
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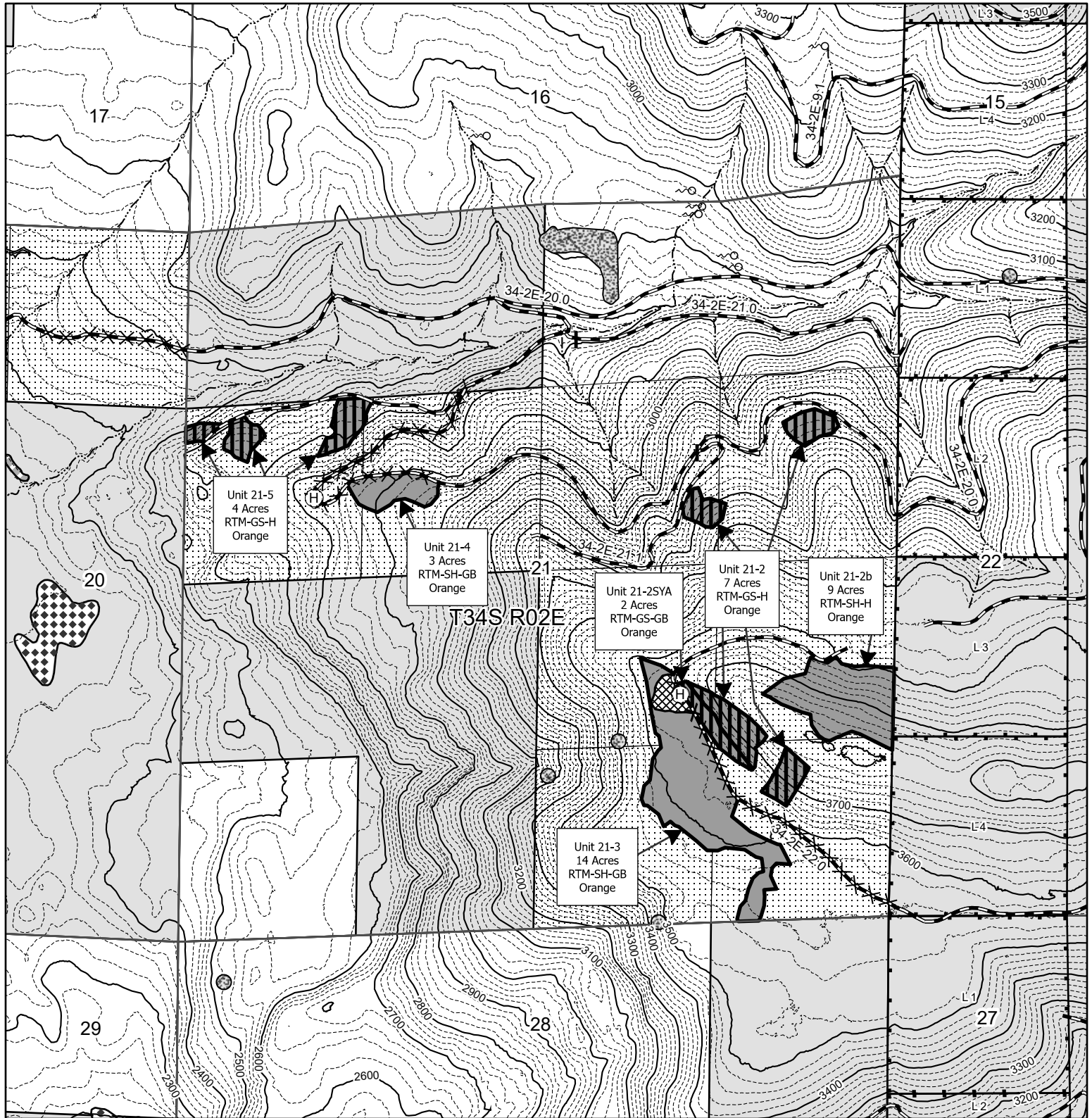


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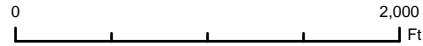


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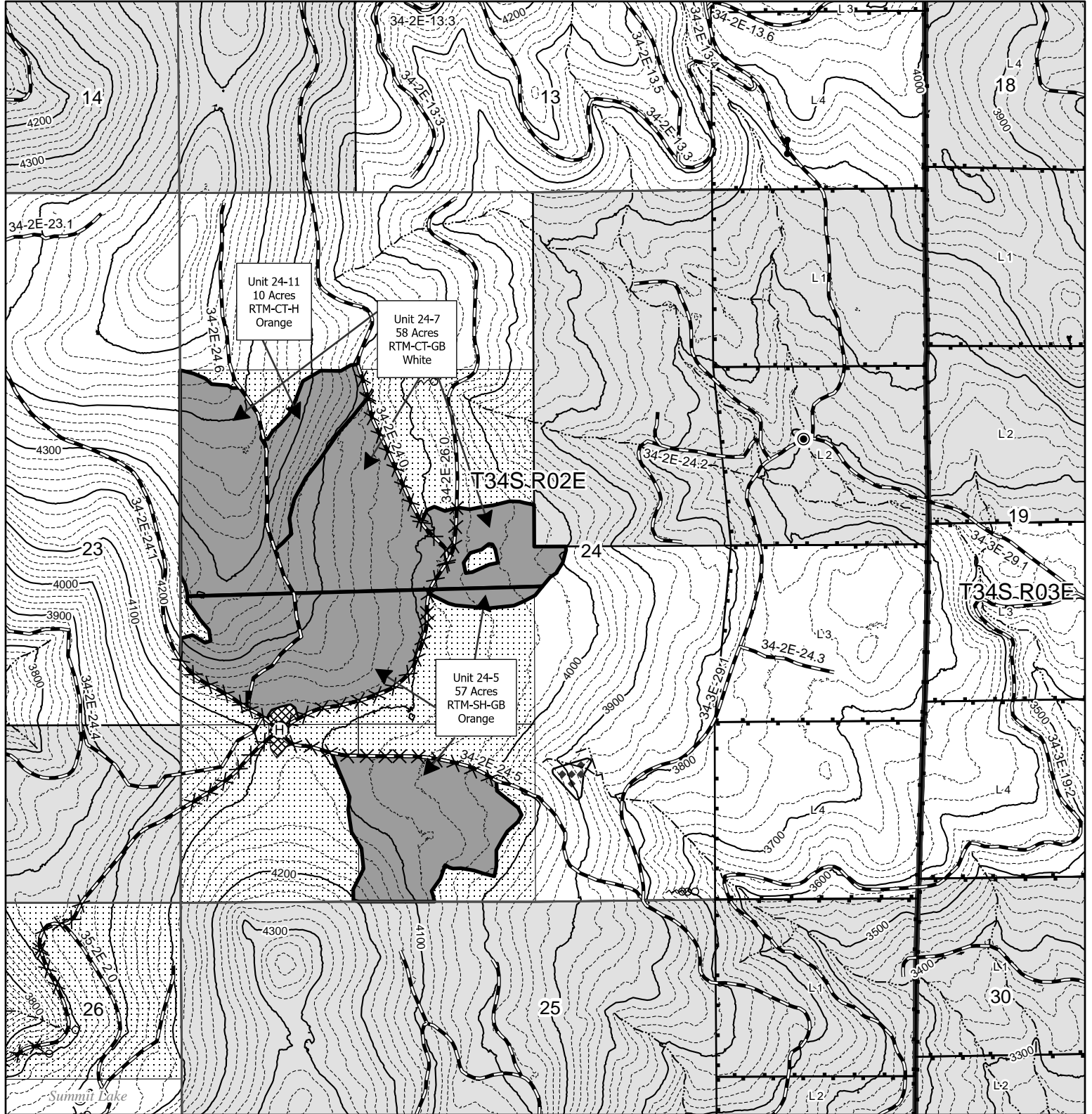


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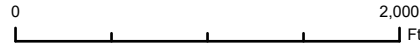


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| Water Source | US Highway | Existing Roads | Lake/Pond | Contract Area (Timber Reserve) |
| Heli Landing | State Highway | Internal Skips | Reservoir | BLMOC Land |
| Log Landing | Skid Trail | Government Lot | Swamp/Marsh | BLM PD Land |
| Service Landing | New-Perm | Section | Group Selection | Non-BLM Land |
| | | Township | Helicopter Landing ROW | |

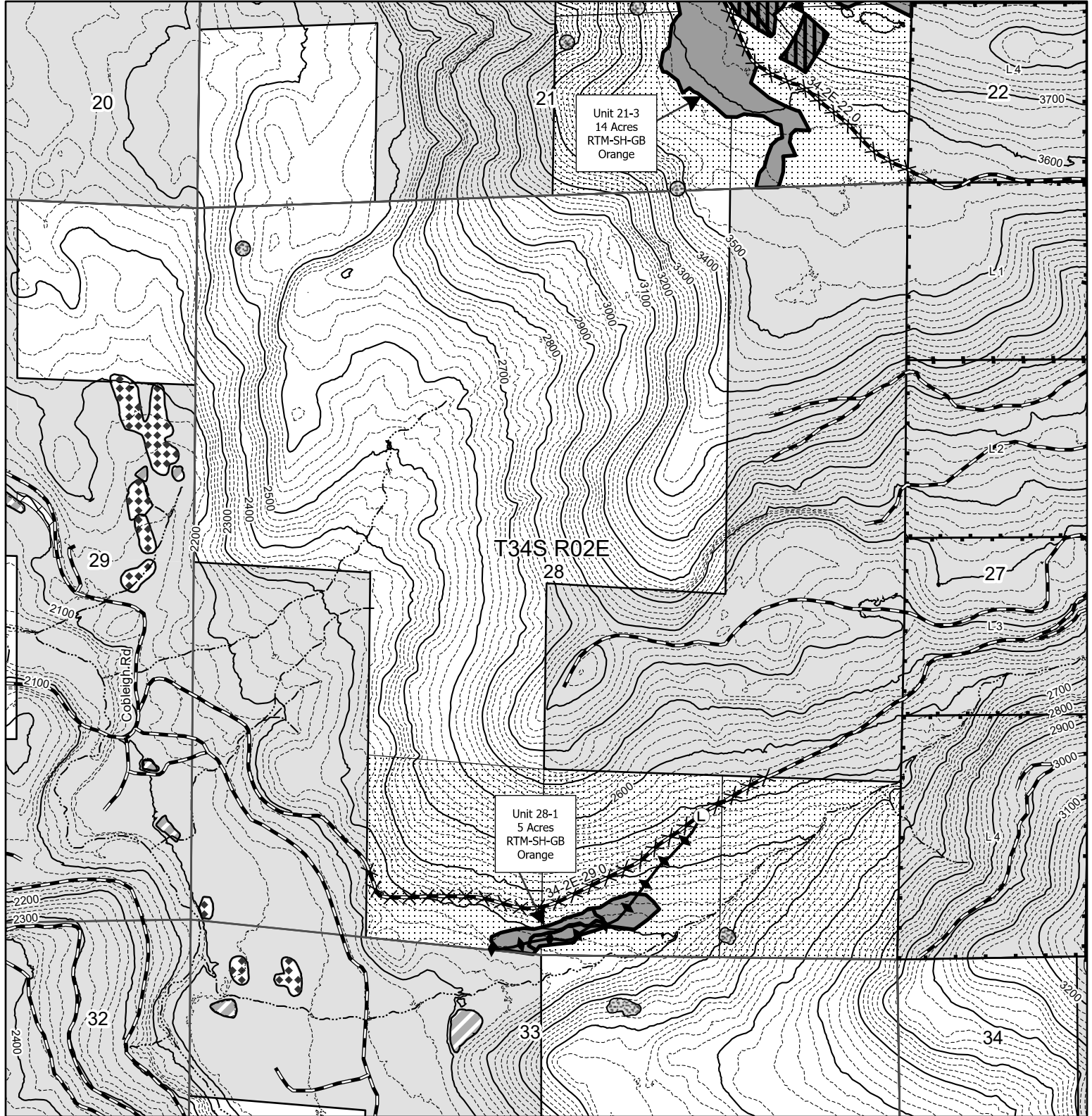
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| ● Water Source | — US Highway | × × Roadside Veg Mgmt Unit | ~○ Spring/Seep | ▨ Boundary of Cutting Area |
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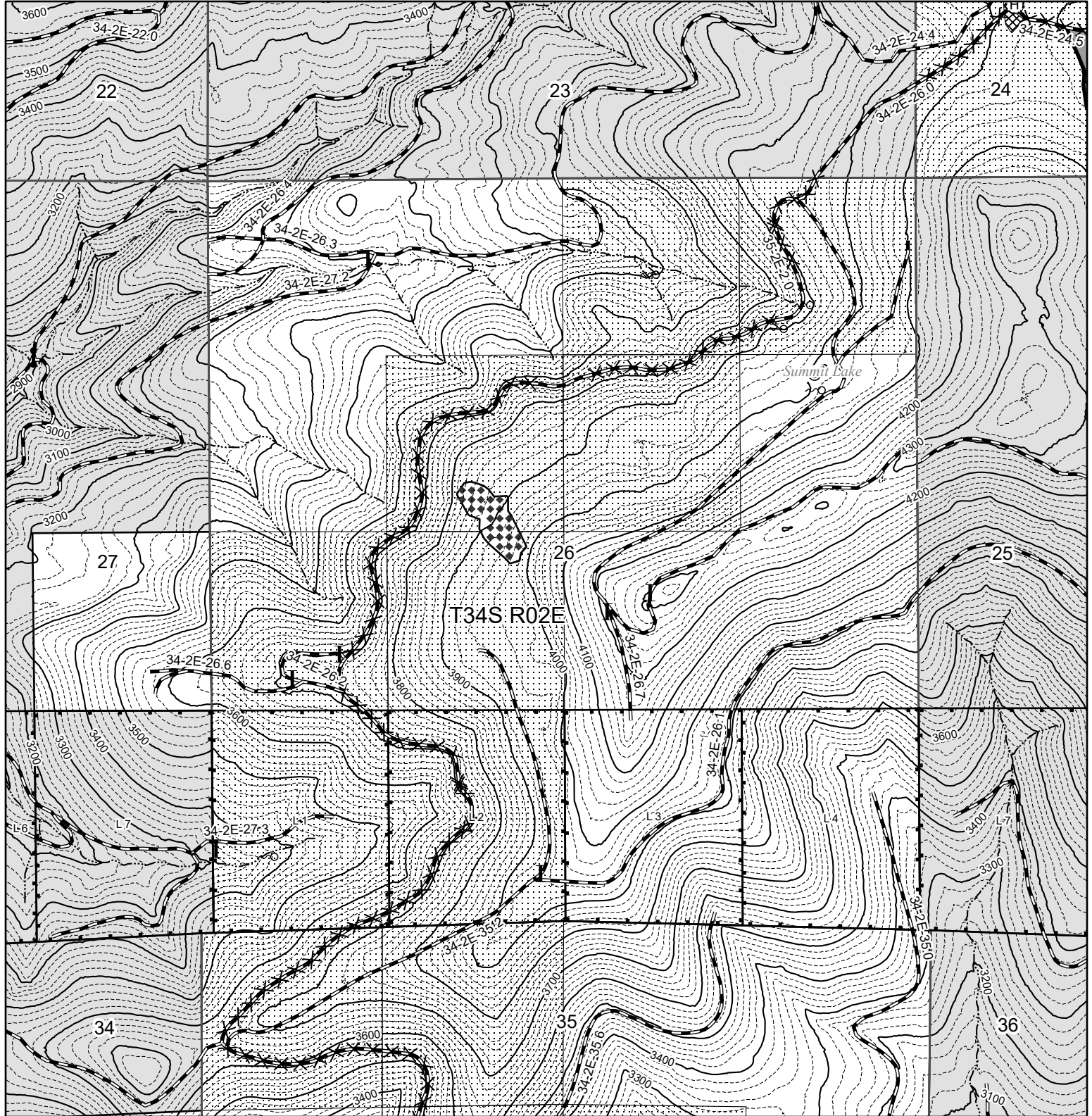


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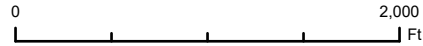


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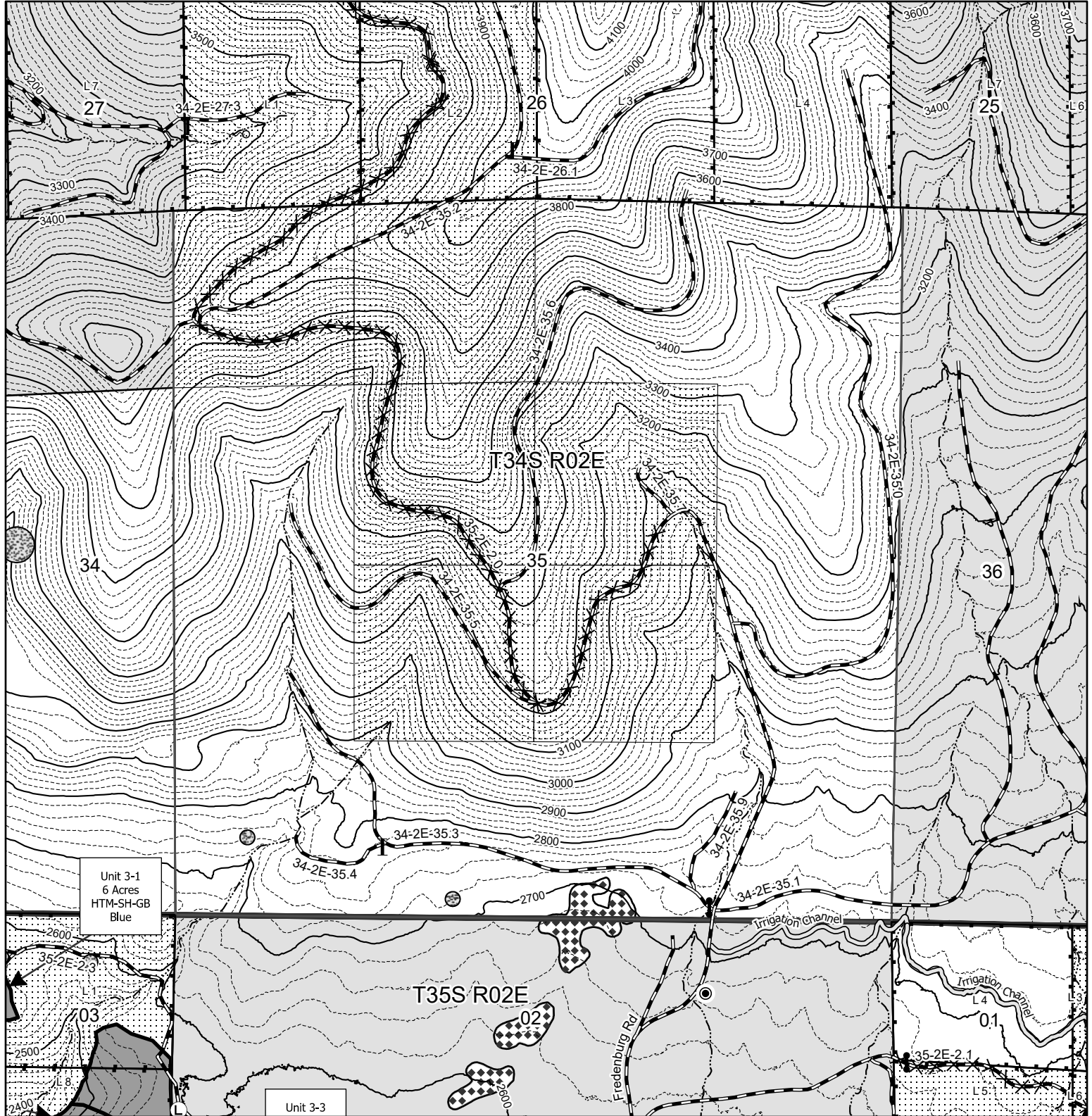
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| | Section | Group Selection | Non-BLM Land | |

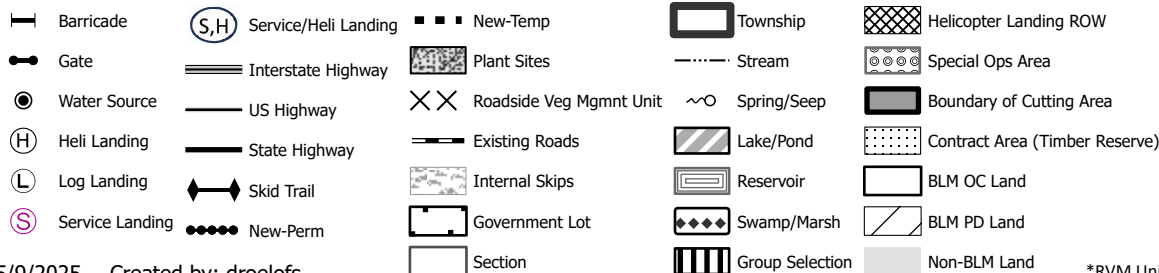
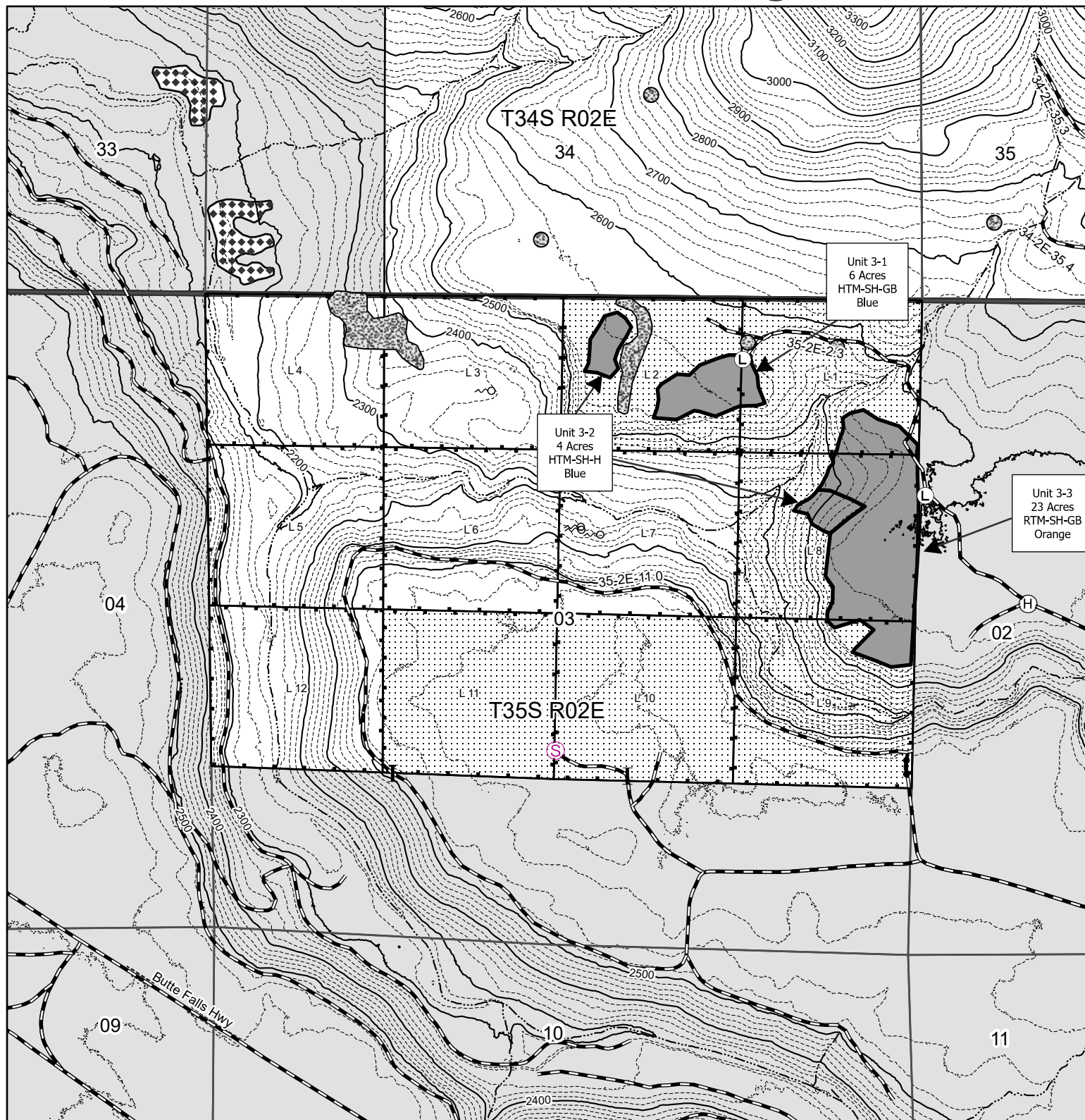


RTM= Reserve Tree mark
HTM= Harvest Tree Mark
CT = Commercial Thin
SH= Selection Harvest
GS= Group Selection Harvest
GB= Ground Based
H= Helicopter

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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. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.

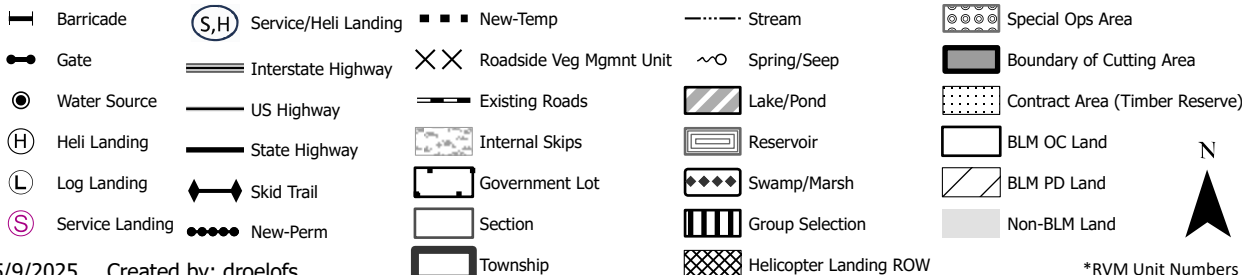
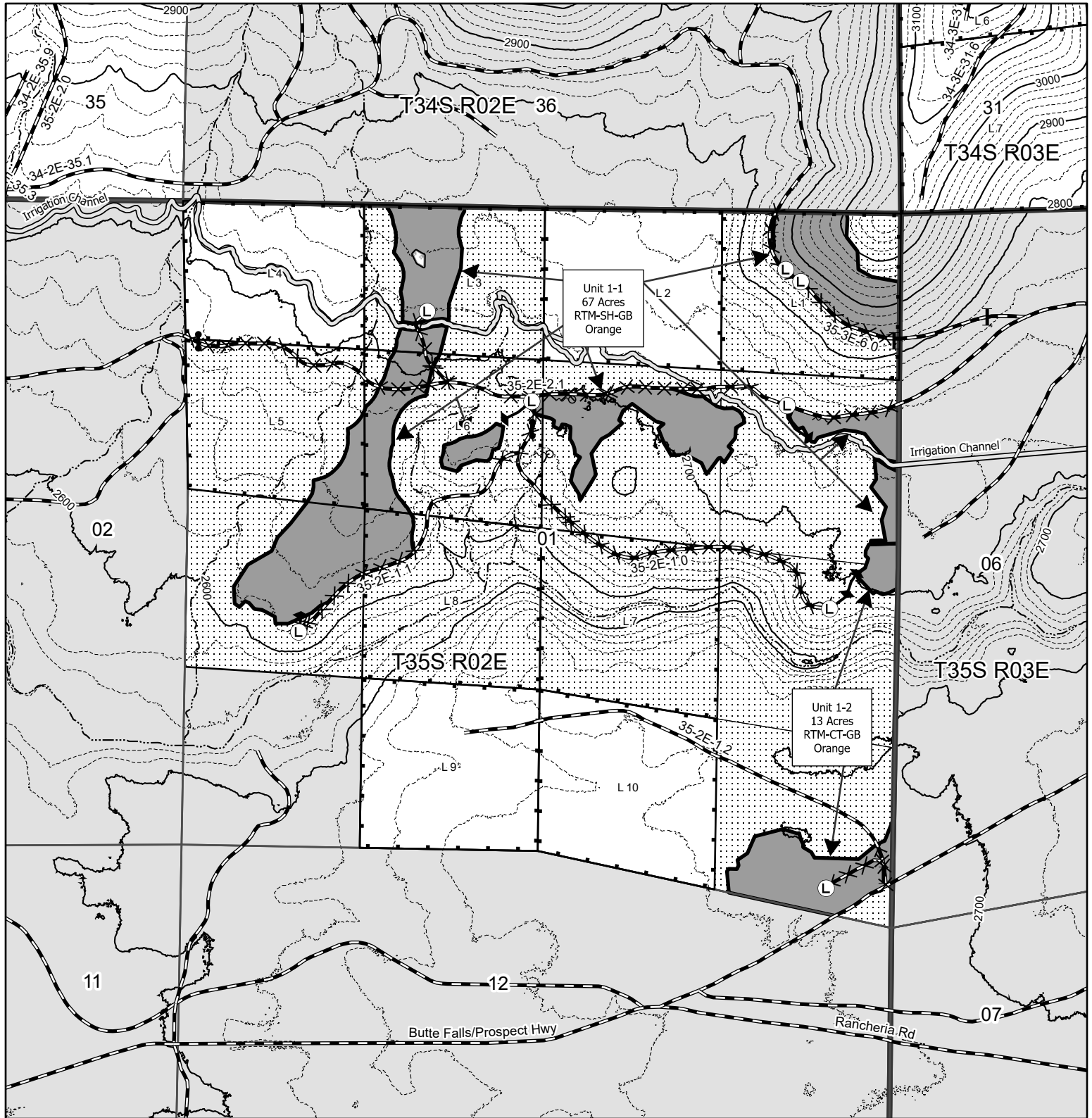


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Information for Timber Sale Notice, Prospectus, Sec. 43 & 44

Big Dog TS 2.0 Timber Sale

ORM05-TS-2025.0001

Approx # of trees	Est Volume MBF 32'	Species	Est Volume MBF 16'	Appraised \$/MBF	Appraised Value (\$)
6,301	2,192.0	White Fir	2,654.0	\$47.60 *	\$126,330.40
7,872	1,978.0	Douglas Fir	2,462.0	\$227.80	\$560,843.60
771	71.0	Incense-cedar	91.0	\$35.50 *	\$3,230.50
348	61.0	Ponderosa Pine	81.0	\$33.30 *	\$2,697.30
15,292	4,302.0		5,288.0		\$693,101.80

* Minimum Stumpage values were used to compute the Appraised Price/MBF (10.00% of Pond Value)

CRUISED BY:	Parks, Miller.
CRUISE COMPLETED:	July 2024
COMBINED SAMPLING ERROR:	7.96%

CRUISE DESIGN/METHOD Description:
3P cruise on all species. Form Class: DF=79, WF=81, IC=66, PP=76. Vol/KPI: DF=45.8, WF=56.8, IC=22.1, PP=37.4. Sum of KPI's: DF=53,755, WF=46,725, IC=4,117, PP=2,166. Combined sampling error = 7.96%. Number of 3P samples: DF=72, WF=77, IC=8, PP=16.

TRACT FEATURES

ALL SPECIES

QM DBH	16.4	INCHES
GM LOG	82	BD FT
Total Gross Volume	5,834	MBF
Recovery	91	%
Salvage	0	MBF
Export	0	MBF

Dominant Species: **White Fir**

QM DBH	16.7	INCHES
GM Log	89	BD FT

Recovery	94	%
Salvage	0	MBF

EXPORT VOLUME (LE-1)	Port Orford Cedar	0	MBF
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Reserve Tree Paint Color	Reserve Tree Count
	0

Harvest Tree Paint Color	Harvest Tree Count
Blue	2,407



**United States
Department of the Interior
Bureau of Land Management**

Timber Appraisal

Sale Name: Big Dog TS 2.0	Sale Date: Thursday, July 24, 2025
BLM District: Medford DO	Unit of Measure: 16' MBF
Contract #: ORM05-TS-2025.0001	Contract Term: 36 months
Sale Type: Advertised	Contract Mechanism: 5450-003
	Lump Sum Sale of Timber and other Wood Products

Content

Timber Appraisal Summary
Stumpage Summary
Unit Summary
Stump to Truck
Transportation
Engineering Allowances
Other Allowances

Prepared By: Miller, Tait N - 6/17/2025

Approved By: Parks, Corey J - 6/17/2025

Legal Description of Contract Area

Land Status	County	Township	Range	Section	Subdivision	Meridian
O&C	Jackson	34S	2E	20	N1/2NE1/4, NE1/4NW1/4, SE1/4NW1/4.	Willamette
O&C	Jackson	34S	2E	21	S1/2NE1/4, S1/2NW1/4, SE1/4.	Willamette
O&C	Jackson	34S	2E	24	S1/2NW1/4, SW1/4, NW1/4SE1/4.	Willamette
O&C	Jackson	34S	2E	26	Lot 1, Lot 2, N1/2NE1/4, SW1/4NE1/4, SE1/4NW1/4, N1/2SW1/4.	Willamette
O&C	Jackson	34S	2E	28	SE1/4SW1/4, S1/2SE1/4.	Willamette
O&C	Jackson	34S	2E	35	N1/2NW1/4, SE1/4, NW1/4, NE1/4SW1/4, SW1/4NE1/4.	Willamette
O&C	Jackson	35S	2E	1	Lots 1, 3, 4, 5, 6, 7, 8, S1/2NE1/4, E1/2SE1/4.	Willamette
O&C	Jackson	35S	2E	3	Lots 1, 2, 8, 9, 10, 11.	Willamette

Species Totals

Species	Net	Gross Merch	Gross	# of Merch Logs	# of Cull Logs	# of Trees
White Fir	2,654.0	2,814.0	2,819.0	31,398	318	6,301
Douglas Fir	2,462.0	2,813.0	2,821.0	35,577	766	7,872
Incense-cedar	91.0	97.0	107.0	1,615	32	771
Ponderosa Pine	81.0	86.0	87.0	1,376	36	348
Totals	5,288.0	5,810.0	5,834.0	69,966	1,152	15,292

Cutting Area Acres

Regeneration Harvest Acres	Partial Cut Acres	Right of Way Acres	Total Acres	Net Volume per Acre
0.0	282.0	11.0	293.0	18.0

Logging Costs

Stump to Truck	\$1,018,095.88
Transportation	\$390,297.18
Road Construction	\$561,817.55
Maintenance/Rockwear	\$24,972.99
Road Use	\$7,165.30
Other Allowances	\$147,100.00
Total:	\$2,149,448.90

Total Logging Cost per MBF: \$406.48

Utilization Centers

Location	Distance	% of Net Volume
White City, OR	30.0 miles	98%
Eugene, OR	200.0 miles	2%

Profit & Risk

Profit	11%
Risk	1%
Total Profit & Risk	12%

Tract Features

Quadratic Mean DBH	16.4 in
Average GM Log	82 bf
Average Volume per Acre	18.0 mbf
Recovery	91%
<u>Net MBF volume:</u>	
Green	5,288.0 mbf
Salvage	0 mbf
Export	0 mbf
<u>Ground Base Logging:</u>	
Percent of Sale Volume	85%
Average Yarding Slope	10%
Average Yarding Distance	400 ft
<u>Cable Logging:</u>	
Percent of Sale Volume	0%
Average Yarding Slope	0%
Average Yarding Distance	0 ft
<u>Aerial Logging:</u>	
Percent of Sale Volume	15%
Average Yarding Slope	40%
Average Yarding Distance	1450 ft

Cruise

Cruise Completed July 2024
Cruised By Parks, Miller.
Cruise Method

3P cruise on all species. Form Class: DF=79, WF=81, IC=66, PP=76. Vol/KPI: DF=45.8, WF=56.8, IC=22.1, PP=37.4. Sum of KPI's: DF=53,755, WF=46,725, IC=4,117, PP=2,166. Combined sampling error = 7.96%. Number of 3P samples: DF=72, WF=77, IC=8, PP=16.

Stumpage Computation

Species	# of Trees	Net Volume	Pond Value	(-) Profit & Risk	(-) Logging Costs	(+) Marginal Log Value	Appraised Price/MBF	Appraised Value (\$)
White Fir	6,301	2,654.0	\$475.31	\$57.04	\$406.48	\$0.00	\$47.60 *	\$126,330.40
Douglas Fir	7,872	2,462.0	\$711.48	\$85.38	\$406.48	\$8.19	\$227.80	\$560,843.60
Incense-cedar	771	91.0	\$354.99	\$42.60	\$406.48	\$0.00	\$35.50 *	\$3,230.50
Ponderosa Pine	348	81.0	\$332.89	\$39.95	\$406.48	\$0.00	\$33.30 *	\$2,697.30
Totals	15,292	5,288.0						\$693,101.80

* Minimum Stumpage values were used to compute the Appraised Price/MBF (10.00% of Pond Value)

Percent of Volume By Log Grade

Species	Peeler	No. 1 Sawmill	Special Mill	No. 2 Sawmill	No. 3 Sawmill	No. 4 Sawmill	Camp Run
White Fir			1.0%	73.0%	23.0%	3.0%	

Species	No. 1 & 2 Peeler	No. 3 Peeler	Special Mill	No. 2 Sawmill	No. 3 Sawmill	No. 4 Sawmill	Camp Run
Douglas Fir		1.0%	6.0%	60.0%	28.0%	5.0%	

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%

Species	No. 1 Sawmill	No. 2 Sawmill	No. 3 Sawmill	No. 4 Sawmill	No. 5 Sawmill	No. 6 Sawmill	Camp Run
Ponderosa Pine				54.0%	40.0%	6.0%	

Marginal Log Volume By Grade

Species	Utility Cull	Peeler Cull
Douglas Fir	94	69

Unit: 1-1

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	580.0	663.0	664.0	1,808
White Fir	439.0	466.0	467.0	1,204
Incense-cedar	12.0	13.0	14.0	100
Ponderosa Pine	3.0	3.0	3.0	9
Totals:	1,034.0	1,145.0	1,148.0	3,121

Net Volume/Acre: 15.4 MBF

Regeneration Harvest	0.0
Partial Cut	67.0
Right of Way	0.0
Total Acres:	67.0

Unit: 1-2

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	114.0	130.0	130.0	447
White Fir	57.0	60.0	60.0	177
Incense-cedar	6.0	6.0	7.0	46
Ponderosa Pine	4.8	5.2	5.7	20
Totals:	181.8	201.2	202.7	690

Net Volume/Acre: 14.0 MBF

Regeneration Harvest	0.0
Partial Cut	13.0
Right of Way	0.0
Total Acres:	13.0

Unit: 3-1

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	69.0	78.0	78.0	324
White Fir	1.0	1.0	1.0	2
Incense-cedar	0.1	0.1	0.1	1
Totals:	70.1	79.1	79.1	327

Net Volume/Acre: 11.7 MBF

Regeneration Harvest	0.0
Partial Cut	6.0
Right of Way	0.0
Total Acres:	6.0

Unit: 3-2

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	69.0	79.0	79.0	257
White Fir	11.0	12.0	12.0	30
Ponderosa Pine	0.3	0.3	0.3	2
Totals:	80.3	91.3	91.3	289

Unit: 3-3

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	375.0	429.0	430.0	1,078
White Fir	46.0	49.0	49.0	128
Ponderosa Pine	3.0	3.5	3.5	8
Incense-cedar	1.0	1.0	1.0	13
Totals:	425.0	482.5	483.5	1,227

Unit: 21-2

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	161.0	184.0	184.0	344
White Fir	103.0	109.0	109.0	248
Incense-cedar	8.5	8.8	9.0	40
Ponderosa Pine	3.0	3.0	3.0	4
Totals:	275.5	304.8	305.0	636

Unit: 21-2b

Species	Net	Gross Merch	Gross	# of Trees
White Fir	150.0	159.0	160.0	320
Douglas Fir	6.0	6.0	6.0	27
Incense-cedar	0.3	0.3	0.3	2
Totals:	156.3	165.3	166.3	349

Net Volume/Acre: 20.1 MBF

Regeneration Harvest	0.0
Partial Cut	4.0
Right of Way	0.0
Total Acres:	4.0

Net Volume/Acre: 18.5 MBF

Regeneration Harvest	0.0
Partial Cut	23.0
Right of Way	0.0
Total Acres:	23.0

Net Volume/Acre: 39.4 MBF

Regeneration Harvest	0.0
Partial Cut	7.0
Right of Way	0.0
Total Acres:	7.0

Net Volume/Acre: 17.4 MBF

Regeneration Harvest	0.0
Partial Cut	9.0
Right of Way	0.0
Total Acres:	9.0

Unit: 21-2 SYA

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	20.0	23.0	23.0	57
White Fir	10.0	11.0	11.0	23
Incense-cedar	0.4	0.4	0.4	4
Totals:	30.4	34.4	34.4	84

Net Volume/Acre: 15.2 MBF

Regeneration Harvest	0.0
Partial Cut	2.0
Right of Way	0.0
Total Acres:	2.0

Unit: 21-3

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	142.0	162.0	162.0	402
White Fir	70.0	74.0	74.0	158
Incense-cedar	2.6	3.1	3.1	32
Ponderosa Pine	0.3	0.3	0.3	2
Totals:	214.9	239.4	239.4	594

Net Volume/Acre: 15.4 MBF

Regeneration Harvest	0.0
Partial Cut	14.0
Right of Way	0.0
Total Acres:	14.0

Unit: 21-4

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	50.0	57.0	57.0	204
Ponderosa Pine	2.0	2.0	2.0	14
Incense-cedar	0.3	0.4	0.4	6
Totals:	52.3	59.4	59.4	224

Net Volume/Acre: 17.4 MBF

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

Unit: 21-5

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	74.0	85.0	85.0	205
White Fir	22.0	23.0	23.0	50
Incense-cedar	2.0	3.0	3.0	8
Totals:	98.0	111.0	111.0	263

Net Volume/Acre: 24.5 MBF

Regeneration Harvest	0.0
Partial Cut	4.0
Right of Way	0.0
Total Acres:	4.0

Unit: 24-5

Species	Net	Gross Merch	Gross	# of Trees
White Fir	828.0	878.0	879.0	1,896
Douglas Fir	183.0	209.0	210.0	562
Incense-cedar	3.0	3.0	3.5	32
Totals:	1,014.0	1,090.0	1,092.5	2,490

Net Volume/Acre: 17.8 MBF

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

Unit: 24-7

Species	Net	Gross Merch	Gross	# of Trees
White Fir	713.0	757.0	757.5	1,592
Douglas Fir	194.0	222.0	226.0	454
Incense-cedar	8.5	9.0	10.0	45
Totals:	915.5	988.0	993.5	2,091

Net Volume/Acre: 15.8 MBF

Regeneration Harvest	0.0
Partial Cut	58.0
Right of Way	0.0
Total Acres:	58.0

Unit: 24-11

Species	Net	Gross Merch	Gross	# of Trees
White Fir	142.0	150.0	151.0	313
Douglas Fir	34.0	39.0	39.0	78
Totals:	176.0	189.0	190.0	391

Net Volume/Acre: 17.6 MBF

Regeneration Harvest	0.0
Partial Cut	10.0
Right of Way	0.0
Total Acres:	10.0

Unit: 28-1

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	66.0	75.0	75.0	269
Incense-cedar	18.0	18.0	21.2	139
Ponderosa Pine	4.0	4.0	4.0	15
Totals:	88.0	97.0	100.2	423

Net Volume/Acre: 17.6 MBF

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

Unit: ROW-1

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	18.0	20.0	20.0	55
Ponderosa Pine	9.0	9.0	9.5	42
White Fir	5.0	5.0	5.0	17
Incense-cedar	0.4	0.4	0.5	3
Totals:	32.4	34.4	35.0	117

Net Volume/Acre: 32.4 MBF

Regeneration Harvest	0.0
Partial Cut	0.0
Right of Way	1.0
Total Acres:	1.0

Unit: ROW-21

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	28.0	32.0	32.0	52
Ponderosa Pine	12.0	13.0	13.0	53
White Fir	5.0	5.0	5.0	6
Incense-cedar	1.5	1.5	2.0	11
Totals:	46.5	51.5	52.0	122

Net Volume/Acre: 46.5 MBF

Regeneration Harvest	0.0
Partial Cut	0.0
Right of Way	1.0
Total Acres:	1.0

Unit: ROW-24

Species	Net	Gross Merch	Gross	# of Trees
White Fir	15.0	16.0	16.0	24
Douglas Fir	10.0	12.0	12.0	26
Incense-cedar	2.0	2.0	2.0	13
Totals:	27.0	30.0	30.0	63

Net Volume/Acre: 27.0 MBF

Regeneration Harvest	0.0
Partial Cut	0.0
Right of Way	1.0
Total Acres:	1.0

Unit: RVM-1

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	60.0	69.0	69.0	248
White Fir	18.0	19.0	19.0	52
Ponderosa Pine	3.0	3.5	3.5	20
Incense-cedar	1.0	1.5	1.5	8
Totals:	82.0	93.0	93.0	328

Net Volume/Acre: 82.0 MBF

Regeneration Harvest	0.0
Partial Cut	0.0
Right of Way	1.0
Total Acres:	1.0

Unit: RVM-3

Species	Net	Gross Merch	Gross	# of Trees
Ponderosa Pine	3.0	3.5	3.5	14
Incense-cedar	1.0	1.0	1.0	8
Douglas Fir	1.0	1.0	1.0	1
Totals:	5.0	5.5	5.5	23

Net Volume/Acre: 5.0 MBF

Regeneration Harvest	0.0
Partial Cut	0.0
Right of Way	1.0
Total Acres:	1.0

Unit: RVM-20

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	3.0	3.0	3.0	10
Ponderosa Pine	2.5	2.5	2.5	10
Incense-cedar	0.9	1.0	1.0	6
Totals:	6.4	6.5	6.5	26

Net Volume/Acre: 6.4 MBF

Regeneration Harvest	0.0
Partial Cut	0.0
Right of Way	1.0
Total Acres:	1.0

Unit: RVM-21

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	20.0	23.0	23.0	113
Ponderosa Pine	3.0	3.0	3.0	12
Incense-cedar	1.5	2.0	2.0	12
White Fir	1.0	1.0	1.0	2
Totals:	25.5	29.0	29.0	139

Net Volume/Acre: 25.5 MBF

Regeneration Harvest	0.0
Partial Cut	0.0
Right of Way	1.0
Total Acres:	1.0

Unit: RVM-24

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	49.0	56.0	56.0	202
White Fir	11.0	12.0	12.0	26
Incense-cedar	4.0	4.0	5.0	43
Totals:	64.0	72.0	73.0	271

Net Volume/Acre: 64.0 MBF

	0.0
Partial Cut	0.0
Right of Way	1.0
Total Acres:	1.0

Unit: RVM-26

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	86.0	98.0	99.0	423
Incense-cedar	11.0	12.0	13.0	148
White Fir	6.0	6.0	6.5	28
Ponderosa Pine	0.1	0.2	0.2	1
Totals:	103.1	116.2	118.7	600

Net Volume/Acre: 103.1 MBF

Regeneration Harvest	0.0
Partial Cut	0.0
Right of Way	1.0
Total Acres:	1.0

Unit: RVM-28

Species	Net	Gross Merch	Gross	# of Trees
Ponderosa Pine	8.0	9.0	9.0	26
Douglas Fir	5.0	6.0	6.0	15
Incense-cedar	4.0	4.5	5.0	39
Totals:	17.0	19.5	20.0	80

Net Volume/Acre: 17.0 MBF

Regeneration Harvest	0.0
Partial Cut	0.0
Right of Way	1.0
Total Acres:	1.0

Unit: RVM-35

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	45.0	52.0	52.0	211
Ponderosa Pine	20.0	21.0	21.0	96
Incense-cedar	1.0	1.0	1.0	12
White Fir	1.0	1.0	1.0	5
Totals:	67.0	75.0	75.0	324

Net Volume/Acre: 67.0 MBF

Regeneration Harvest	0.0
Partial Cut	0.0
Right of Way	1.0
Total Acres:	1.0

Comments:

R/W = Right of way and RVM

Total Stump To Truck	Net Volume	\$/MBF
\$1,018,095.88	5,288.0	\$192.53

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

Yarding System	Unit of Measure	# of Units of Measure	\$/Unit of Measure	Total Cost	Remarks
Helicopter	GM MBF	896.0	\$468.05	\$419,372.80	
Wheel Skidder	GM MBF	97.0	\$182.49	\$17,701.53	Wheel skidder = Long skid 28-1
Feller Buncher	GM MBF	4,285.0	\$124.91	\$535,239.35	Feller Buncher = Mechanized
Shovel	GM MBF	532.0	\$57.10	\$30,377.20	Shovel = ROW/RVM
Subtotal				\$1,002,690.88	

Additional Costs

Item	Unit of Measure	# of Units of Measure	\$/Unit of Measure	Total Cost	Remarks
Snag Falling	Day	1.0	\$800.00	\$800.00	snag falling @ sec. 3 landing
Flaggers	Each	2.0	\$280.00	\$560.00	L-23 stip. Unit 1-2. 1 day/2 flaggers.
Oversize trees	Each	2.0	\$250.00	\$500.00	L-32 stip. ROW-3.
Subtotal				\$1,860.00	

Additional Moves

Equipment	Unit of Measure	# of Units of Measure	\$/Unit of Measure	Total Cost	Remarks
Loader	Hour	18.0	\$205.00	\$3,690.00	6 GB moves @ 3hr/move
Stroke Delimber	Hour	18.0	\$205.00	\$3,690.00	6 GB moves @ 3 hr/move
Loader #2	Hour	9.0	\$205.00	\$1,845.00	3 heli moves @ 3hr/move
Feller Buncher	Hour	18.0	\$160.00	\$2,880.00	6 GB moves @ 3hr/move
Wheel Skidder	Hour	9.0	\$160.00	\$1,440.00	3 GB moves @ 3 hr/move
Subtotal				\$13,545.00	

Comments:

Shovel = ROW / RVM. Bucking and loading only. Engineering package includes cutting of RVM / ROW volume.

Loader #2 = helicopter

Total	Net Volume	\$/MBF
\$390,297.18	5,288.0	\$73.81

Utilization Center	One Way Mileage	Description	Unit of Measure	# of Units	\$/Unit of Measure	Total Cost	% of Sale Volume
Eugene, OR	200.0	IC	GM MBF	97.0	\$220.12	\$21,351.64	2%
White City, OR	30.0	DF, WF, PP, SP	GM MBF	5,713.0	\$64.58	\$368,945.54	98%

Engineering Allowances

Total	Net Volume	\$/MBF
\$593,955.84	5,288.0	\$112.32

Cost Item	Total Cost
Road Construction:	\$561,817.55
Road Maintenance/Rockwear:	\$24,972.99
Road Use Fees:	\$7,165.30

Total	Net Volume	\$/MBF
\$147,100.00	5,288.0	\$27.82

Environmental Protection

Cost item	Total Cost
Barricades	\$1,500.00
Waterbar skids	\$4,550.00
Woody Debris 100'	\$2,700.00
Landing Clean-up	\$2,400.00
Equipment Washing #4	\$550.00
Equipment Washing #1	\$900.00
Equipment Washing #2	\$900.00
Equipment Washing #3	\$900.00
Subtotal	\$14,400.00

Logging

Cost item	Total Cost
Directional felling	\$1,500.00
Skid location	\$1,300.00
Skid construction	\$3,000.00
Landing Construction	\$2,400.00
Subtotal	\$8,200.00

Slash Disposal & Site Prep

Cost item	Total Cost
Hand Pile Burn	\$3,750.00
Excavator Pile Burn	\$18,750.00
Excavator Pile / Cover	\$82,500.00
Hand Pile / Cover	\$19,500.00
Subtotal	\$124,500.00

Comments:

Equipment Washing #1 = Loader for 2 seasons

Equipment Washing #2 = Processor for 2 seasons

Equipment Washing #3 = Feller Buncher

Equipment Washing #4 = Skidder

Directional felling = L-10 stip fall away from P/L, skip, etc.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Version: 8.0.0.22

Updated: 11/4/2022

Summary of All Roads and Projects

T.S. Contract Name: Big Dog Tract No: ORM05-TS-2025.0001 Sale Date: 24/07/2025

Prepared by: MBonsi Ph: *2308 Print Date: 5/20/2025 2:51:24 PM

Construction: 0.00 sta

Improve: 60.20 sta Renov: 951.46 sta Decom: 0.00 sta Temp: 0.00 sta

200 Clearing and Grubbing: 6.86 acres	\$69,764.76
300 Excavation:	\$0.00
Haul < 500 ft: 0 sta-yds	
Haul > 500 ft: 0 yd-mi	
400 Drainage:	\$7,183.60
Culvert: 104.00 lf	DownSpout: 0.00 lf
PolyPipe: 0.00 lf	
500 Renovation:	\$32,928.52
Blading 19.16 mi	
700-1200 Surfacing:	\$409,353.13
Commercial Quarry Name: Hailicka 1 1/2" 8,781.00 LCY	
Commercial Quarry Name: Hailicka 4" 3,756.00 LCY	
Commercial Quarry Name: Hailicka Rip Rap 5.00 LCY	
1300 Geotextiles:	\$0.00
1400 Slope Protection:	\$0.00
1800 Soil Stabilization: 3.72 acres	\$4,394.47
Includes Small Quantity Factor of 1.38	
1900 Cattleguards:	\$1,171.16
2100 RoadSide Brushing:	\$11,875.50
Mechanical Brushing: 27.89 acres	
2300 Engineering: 0.00 sta.	\$0.00
2400 Minor Concrete:	\$0.00
2500 Gabions:	\$0.00
8000 Miscellaneous:	\$12,378.39
Mobilization: Const. \$8,955.62 Surf. \$3,812.40.....	\$12,768.02
Quarry Development:	\$0.00

Total: 5,288 mbf @ \$106.244/mbf = \$561,817.55

Notes:

Quantities shown are estimates only and not pay items.

Surfacing Quantities are loose cubic yards.

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Big Dog Sale Date: 24/07/2025

Road Number: 34-2E-20.00 A Road Name:

Road Renovation: 1.2 mi 14 ft Subgrade 3 ft ditch

200 Clearing and Grubbing: 0.00 acres \$2,683.88

300 Excavation: \$0.00

400 Drainage: \$0.00

Culvert: 0.00 lf

DownSpout: 0.00 lf

PolyPipe: 0.00 lf

500 Renovation: \$2,208.31

Blading 1.20 mi

700-1200 Surfacing: \$63,509.22

Quarry Name: Hailicka 1 1/2" 1,459.00 LCY

Quarry Name: Hailicka 4" 716.00 LCY

Quarry Name: Hailicka Rip Rap 5.00 LCY

1300 Geotextiles: \$0.00

1400 Slope Protection: \$0.00

1800 Soil Stabilization: 0.10 acres \$118.04

Includes Small Quantity Factor of 1.38

1900 Cattleguards: \$0.00

2100 RoadSide Brushing (Mechanical):1.75 acres \$495.09

2300 Engineering: 0.00 sta. \$0.00

2400 Minor Concrete: \$0.00

2500 Gabions: \$0.00

8000 Miscellaneous: \$0.00

Mobilization: Const. \$1,125.71 Surf. \$662.66..... \$1,788.36

Quarry Development: \$0.00

Total: \$70,802.91

Notes:

Quantities shown are estimates only and not pay items.

Surfacing Quantities shown are loose cubic yards.

Road Construction Worksheet

Road Number: 34-2E-20.00 A Road Name:

Section 200 Clearing and Grubbing:

RVM

RVM Clearing 0.84 Acre x \$1,511.17/Acre = \$1,269.38

RVM Grubbing 0.42 Acre x \$2,842.27/Acre = \$1,193.75

Shoulder Repair Backhoe - 1/4mile/hr .58 Mile x \$380.60/Mile = \$220.75

Subtotal: \$2,683.88

Section 300 Excavation:

Subtotal: \$0.00

Section 400 Drainage:

Subtotal: \$0.00

Section 500 Renovation:

Blading: \$923.61/mi x 1.20 mi = \$1,108.33

Compaction: \$415.02/mi x 1.20 mi = \$498.02

Clean Culverts: \$501.63/mi x 1.20 mi = \$601.96

Subtotal: \$2,208.31

Section 700-1200 Surfacing:

Commercial Quarry Name: Hailicka 1 1/2"

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
1.20mi	13.5ft	14ft	4in	2%					

Rock Volume = 1,459.00 LCY

Purchase Price / Royalty: \$18.50/LCY x 1,459.00 LCY = \$26,991.50

Processing: \$1.20/LCY x 1,459.00 LCY = \$1,750.80

Compaction: \$1.38/LCY x 1,459.00 LCY = \$2,013.42

Basic Rock Haul cost: \$1.62/LCY x 1,459.00 LCY = \$2,363.58

Rock Haul +15% grades: \$2.43/LCY-mi x 1,459.00 LCY x 0.60 mi= \$2,127.22

Rock Haul -15% grades: \$1.21/LCY-mi x 1,459.00 LCY x 4.15 mi= \$7,326.37

Basic Water Haul cost: \$0.79/LCY x 1,459.00 LCY = \$1,152.61

Water Haul -15% grades: \$0.17/LCY-mi x 1,459.00 LCY x 1.80 mi= \$446.45

Water Haul St&Co Roads: \$0.10/LCY-mi x 1,459.00 LCY x 2.12 mi= \$309.31

Commercial Quarry Name: Hailicka 4"

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.60mi	13ft	14ft	4in	2%					

Rock Volume = 716.00 LCY

Purchase Price / Royalty: \$18.50/LCY x 716.00 LCY = \$13,246.00

Processing: \$1.20/LCY x 716.00 LCY = \$859.20

Compaction: \$1.38/LCY x 716.00 LCY = \$988.08

Basic Rock Haul cost: \$1.62/LCY x 716.00 LCY = \$1,159.92

Rock Haul -15% grades: \$1.21/LCY-mi x 716.00 LCY x 1.20 mi= \$1,039.63

Rock Haul St& Co Roads: \$0.54/LCY-mi x 716.00 LCY x 4.15 mi= \$1,604.56

Commercial Quarry Name: Hailicka Rip Rap

Comment: MP .49 splashpad

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
									5 LCY

Rock Volume = 5.00 LCY

Purchase Price / Royalty: \$18.50/LCY x 5.00 LCY = \$92.50

Basic Rock Haul cost: \$1.62/LCY x 5.00 LCY = \$8.10

Rock Haul +15% grades: \$2.43/LCY-mi x 5.00 LCY x 0.40 mi= \$4.86

Rock Haul -15% grades: \$1.21/LCY-mi x 5.00 LCY x 4.15 mi= \$25.11

Subtotal: \$63,509.22

Section 1300 Geotextiles:

Subtotal: \$0.00

Road Number: 34-2E-20.00 A Continued

Section 1400 Slope Protection:

Subtotal: \$0.00

Section 1800 Soil Stabilization:

 Dry Method with Mulch: \$728.40/acre x 0.10 acres = \$72.84

 Includes Small Quantity Factor of 1.38

 + Seed Cost: \$132.00/acre x 0.10 acres = \$13.20

 + Mulch Cost: \$320.00/acre x 0.10 acres = \$32.00

Subtotal: \$118.04

Section 1900 Cattleguards:

Subtotal: \$0.00

Section 2100 Roadside Brushing:

Mechanical Brushing

 Brushing width Left: 6ft. Right: 6ft.

 RoadSide Brushing Light: \$282.91/acre x 1.75 acres = \$495.09

Subtotal: \$495.09

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 - 12.57% of total Costs = \$1,125.71

 Surfacing - 17.38% by rock volume = \$662.66

Subtotal: \$1,788.36

Quarry Development:

 Based on 17.38% of total rock volume

Subtotal: \$0.00

Total: \$70,802.91

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Big Dog Sale Date: 24/07/2025

Road Number: 34-2E-20.00 B-C Road Name: Dog Ck Ml

Road Renovation: 0.78 mi 14 ft Subgrade 3 ft ditch

200 Clearing and Grubbing: 1.00 acres	\$5,913.95
300 Excavation:	\$0.00
400 Drainage:	\$2,273.76
Culvert: 36.00 lf	
DownSpout: 0.00 lf	
PolyPipe: 0.00 lf	
500 Renovation:	\$1,435.40
Blading 0.78 mi	
700-1200 Surfacing:	\$49,965.21
Quarry Name: Hailicka 4" 1,618.00 LCY	
1300 Geotextiles:	\$0.00
1400 Slope Protection:	\$0.00
1800 Soil Stabilization: 0.11 acres	\$129.84
Includes Small Quantity Factor of 1.38	
1900 Cattleguards:	\$0.00
2100 RoadSide Brushing (Mechanical):1.13 acres	\$787.43
2300 Engineering: 0.00 sta.	\$0.00
2400 Minor Concrete:	\$0.00
2500 Gabions:	\$0.00
8000 Miscellaneous:	\$0.00
Mobilization: Const. \$986.91 Surf. \$491.82.....	\$1,478.74
Quarry Development:	\$0.00

Total: \$61,984.33

Notes:

Quantities shown are estimates only and not pay items.

Surfacing Quantities shown are loose cubic yards.

Road Construction Worksheet

Road Number: 34-2E-20.00 B-C Road Name: Dog Ck Ml

Section 200 Clearing and Grubbing:

Clearing - Medium (Clearing): Adjustment Factor (1.67)

1-15% (Avg Side Slopes): Adjustment Factor (0)

Pile and Burn (Slash): Adjustment Factor (1.28)

Total Adjustment Factor: $1.67 + 0 + 1.28 + 0 = 2.95$

Base Cost/Acre: \$1,198.05 x Adjustment Factor: 2.95 x Total Acres: 1.00 = \$3,534.25

RVM

RVM Clearing 0.72 Acre x \$1,511.17/Acre = \$1,088.04

RVM Grubbing 0.35 Acre x \$2,842.27/Acre = \$994.79

Shoulder Repair Backhoe - 1/4mile/hr .78 Mile x \$380.60/Mile = \$296.87

Subtotal: \$5,913.95

Section 300 Excavation:

Subtotal: \$0.00

Section 400 Drainage:

Aluminized MP 1.58 Hi Priority 24 inch 16 ga 36 lf x \$63.16/lf = \$2,273.76

Subtotal: \$2,273.76

Section 500 Renovation:

Blading: \$923.61/mi x 0.78 mi = \$720.42

Compaction: \$415.02/mi x 0.78 mi = \$323.72

Clean Culverts: \$501.63/mi x 0.78 mi = \$391.27

Subtotal: \$1,435.40

Section 700-1200 Surfacing:

Commercial Quarry Name: Hailicka 4"

Comment: Heli Landing H7

<u>Length</u>	<u>TopW</u>	<u>BotW</u>	<u>Depth</u>	<u>CWid</u>	<u>#TOs</u>	<u>Width</u>	<u>F.W.L</u>	<u>Taper</u>	<u>Other</u>
									185 LCY

Rock Volume = 185.00 LCY

Purchase Price / Royalty: \$18.50/LCY x 185.00 LCY = \$3,422.50

Processing: \$1.20/LCY x 185.00 LCY = \$222.00

Compaction: \$1.38/LCY x 185.00 LCY = \$255.30

Basic Rock Haul cost: \$1.62/LCY x 185.00 LCY = \$299.70

Rock Haul -15% grades: \$1.21/LCY-mi x 185.00 LCY x 1.80 mi= \$402.93

Rock Haul St& Co Roads: \$0.54/LCY-mi x 185.00 LCY x 4.15 mi= \$414.59

Commercial Quarry Name: Hailicka 4"

<u>Length</u>	<u>TopW</u>	<u>BotW</u>	<u>Depth</u>	<u>CWid</u>	<u>#TOs</u>	<u>Width</u>	<u>F.W.L</u>	<u>Taper</u>	<u>Other</u>
0.60mi	13ft	14ft	8in	2%					

Rock Volume = 1,433.00 LCY

Purchase Price / Royalty: \$18.50/LCY x 1,433.00 LCY = \$26,510.50

Processing: \$1.20/LCY x 1,433.00 LCY = \$1,719.60

Compaction: \$1.38/LCY x 1,433.00 LCY = \$1,977.54

Basic Rock Haul cost: \$1.62/LCY x 1,433.00 LCY = \$2,321.46

Rock Haul +15% grades: \$2.43/LCY-mi x 1,433.00 LCY x 1.50 mi= \$5,223.29

Rock Haul -15% grades: \$1.21/LCY-mi x 1,433.00 LCY x 4.15 mi= \$7,195.81

Subtotal: \$49,965.21

Section 1300 Geotextiles:

Subtotal: \$0.00

Section 1400 Slope Protection:

Subtotal: \$0.00

Section 1800 Soil Stabilization:

Comment: Culvert Replacement MP1.58 & Stump Removal

Road Number: 34-2E-20.00 B-C Dog Ck Ml Continued

Dry Method with Mulch: $\$728.40/\text{acre} \times 0.11 \text{ acres} = \80.12	
Includes Small Quantity Factor of 1.38	
+ Seed Cost: $\$132.00/\text{acre} \times 0.11 \text{ acres} = \14.52	
+ Mulch Cost: $\$320.00/\text{acre} \times 0.11 \text{ acres} = \35.20	
	Subtotal: \$129.84
Section 1900 Cattleguards:	
	Subtotal: \$0.00
Section 2100 Roadside Brushing:	
Mechanical Brushing	
RoadSide Brushing Medium: $\$471.51/\text{acre} \times 0.23 \text{ acres} = \108.45	
RoadSide Brushing Heavy: $\$754.42/\text{acre} \times 0.90 \text{ acres} = \678.98	
	Subtotal: \$787.43
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 - 11.02% of total Costs = \$986.91	
Surfacing - 12.90% by rock volume = \$491.82	
	Subtotal: \$1,478.74
Quarry Development:	
Based on 12.90% of total rock volume	
	Subtotal: \$0.00
	Total: \$61,984.33

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Big Dog Sale Date: 24/07/2025

Road Number: 34-2E-22.00 A-C Road Name: Dog Crk

Road Renovation: 1.51 mi 15 ft Subgrade 3 ft ditch

200 Clearing and Grubbing: 1.14 acres	\$6,582.60
300 Excavation:	\$0.00
400 Drainage:	\$614.96
Culvert: 0.00 lf	
DownSpout: 0.00 lf	
PolyPipe: 0.00 lf	
500 Renovation:	\$1,471.43
Blading 1.51 mi	
700-1200 Surfacing:	\$78,025.23
Quarry Name: Hailicka 1 1/2" 1,898.00 LCY	
Quarry Name: Hailicka 4" 195.00 LCY	
1300 Geotextiles:	\$0.00
1400 Slope Protection:	\$0.00
1800 Soil Stabilization: 0.10 acres	\$121.44
Includes Small Quantity Factor of 1.38	
1900 Cattleguards:	\$0.00
2100 RoadSide Brushing (Mechanical):2.20 acres	\$660.12
2300 Engineering: 0.00 sta.	\$0.00
2400 Minor Concrete:	\$0.00
2500 Gabions:	\$0.00
8000 Miscellaneous:	\$0.00
Mobilization: Const. \$1,426.83 Surf. \$636.21.....	\$2,063.04
Quarry Development:	\$0.00

Total: \$89,538.83

Notes:

Quantities shown are estimates only and not pay items.

Surfacing Quantities shown are loose cubic yards.

Road Construction Worksheet

Road Number: 34-2E-22.00 A-C Road Name: Dog Crk

Section 200 Clearing and Grubbing:

Clearing - Medium (Clearing): Adjustment Factor (1.67)

1-15% (Avg Side Slopes): Adjustment Factor (0)

Pile and Burn (Slash): Adjustment Factor (1.28)

greater than 40' (Avg Clearing Widths): Adjustment Factor (0)

Total Adjustment Factor: $1.67 + 0 + 1.28 + 0 = 2.95$

Base Cost/Acre: $\$1,198.05 \times$ Adjustment Factor: $2.95 \times$ Total Acres: $1.14 = \$4,029.04$

RVM

RVM Clearing 0.67 Acre \times $\$1,511.17/\text{Acre} = \$1,012.48$

RVM Grubbing 0.34 Acre \times $\$2,842.27/\text{Acre} = \966.37

Shoulder Repair Backhoe - 1/4mile/hr 1.51 Mile \times $\$380.60/\text{Mile} = \574.71

Subtotal: \$6,582.60

Section 300 Excavation:

Subtotal: \$0.00

Section 400 Drainage:

Reconstruct AWD

Tractor: D7 with winch 2 hr \times $\$244.69/\text{hr} = \489.38

Excavator -Small (1.5 CY) 1 hr \times $\$125.58/\text{hr} = \125.58

Subtotal: \$614.96

Section 500 Renovation:

Blading w/o Ditches: $\$559.44/\text{mi} \times 1.51 \text{ mi} = \844.75

Compaction: $\$415.02/\text{mi} \times 1.51 \text{ mi} = \626.68

Subtotal: \$1,471.43

Section 700-1200 Surfacing:

Commercial Quarry Name: Hailicka 1 1/2"

Comment: Rock to heli landing

<u>Length</u>	<u>TopW</u>	<u>BotW</u>	<u>Depth</u>	<u>CWid</u>	<u>#TOs</u>	<u>Width</u>	<u>F.W.L</u>	<u>Taper</u>	<u>Other</u>
1.51mi	14ft	15ft	4in						

Rock Volume = 1,898.00 LCY

Purchase Price / Royalty: $\$18.50/\text{LCY} \times 1,898.00 \text{ LCY} = \$35,113.00$

Processing: $\$1.20/\text{LCY} \times 1,898.00 \text{ LCY} = \$2,277.60$

Compaction: $\$1.38/\text{LCY} \times 1,898.00 \text{ LCY} = \$2,619.24$

Basic Rock Haul cost: $\$1.62/\text{LCY} \times 1,898.00 \text{ LCY} = \$3,074.76$

Rock Haul +15% grades: $\$2.43/\text{LCY-mi} \times 1,898.00 \text{ LCY} \times 4.00 \text{ mi} = \$18,448.56$

Rock Haul -15% grades: $\$1.21/\text{LCY-mi} \times 1,898.00 \text{ LCY} \times 2.43 \text{ mi} = \$5,580.69$

Basic Water Haul cost: $\$0.79/\text{LCY} \times 1,898.00 \text{ LCY} = \$1,499.42$

Water Haul -15% grades: $\$0.17/\text{LCY-mi} \times 1,898.00 \text{ LCY} \times 4.44 \text{ mi} = \$1,432.61$

Water Haul St&Co Roads: $\$0.10/\text{LCY-mi} \times 1,898.00 \text{ LCY} \times 3.74 \text{ mi} = \709.85

Commercial Quarry Name: Hailicka 4"

Comment: AWD & Heli landing H9

<u>Length</u>	<u>TopW</u>	<u>BotW</u>	<u>Depth</u>	<u>CWid</u>	<u>#TOs</u>	<u>Width</u>	<u>F.W.L</u>	<u>Taper</u>	<u>Other</u>
									195 LCY

Rock Volume = 195.00 LCY

Purchase Price / Royalty: $\$18.50/\text{LCY} \times 195.00 \text{ LCY} = \$3,607.50$

Processing: $\$1.20/\text{LCY} \times 195.00 \text{ LCY} = \234.00

Compaction: $\$1.38/\text{LCY} \times 195.00 \text{ LCY} = \269.10

Basic Rock Haul cost: $\$1.62/\text{LCY} \times 195.00 \text{ LCY} = \315.90

Rock Haul +15% grades: $\$2.43/\text{LCY-mi} \times 195.00 \text{ LCY} \times 4.74 \text{ mi} = \$2,246.05$

Rock Haul -15% grades: $\$1.21/\text{LCY-mi} \times 195.00 \text{ LCY} \times 2.53 \text{ mi} = \596.95

Subtotal: \$78,025.23

Section 1300 Geotextiles:

Subtotal: \$0.00

Road Number: 34-2E-22.00 A-C Dog Crk Continued

Section 1400 Slope Protection:

Subtotal: \$0.00

Section 1800 Soil Stabilization:

Dry Method with Mulch: \$728.40/acre x 0.10 acres = \$72.84

Includes Small Quantity Factor of 1.38

+ Seed Cost: \$132.00/acre x 0.10 acres = \$13.20

+ Fertilizer Cost: \$34.00/acre x 0.10 acres = \$3.40

+ Mulch Cost: \$320.00/acre x 0.10 acres = \$32.00

Subtotal: \$121.44

Section 1900 Cattleguards:

Subtotal: \$0.00

Section 2100 Roadside Brushing:

Mechanical Brushing

Brushing width Left: 6ft. Right: 6ft.

RoadSide Brushing Light: \$282.91/acre x 2.00 acres = \$565.82

RoadSide Brushing Medium: \$471.51/acre x 0.20 acres = \$94.30

Subtotal: \$660.12

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 - 15.93% of total Costs = \$1,426.83

Surfacing - 16.69% by rock volume = \$636.21

Subtotal: \$2,063.04

Quarry Development:

Based on 16.69% of total rock volume

Subtotal: \$0.00

Total: \$89,538.83

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Big Dog Sale Date: 24/07/2025

Road Number: 34-2E-24.00 Road Name: Sanitiam Peak Rd

Road Renovation: 0.31 mi 17 ft Subgrade 3 ft ditch

200 Clearing and Grubbing: 0.00 acres	\$1,451.73
300 Excavation:	\$0.00
400 Drainage:	\$0.00
Culvert: 0.00 lf	
DownSpout: 0.00 lf	
PolyPipe: 0.00 lf	
500 Renovation:	\$570.48
Blading 0.31 mi	
700-1200 Surfacing:	\$0.00
1300 Geotextiles:	\$0.00
1400 Slope Protection:	\$0.00
1800 Soil Stabilization: 0.10 acres	\$118.04
Includes Small Quantity Factor of 1.38	
1900 Cattleguards:	\$0.00
2100 RoadSide Brushing (Mechanical):0.45 acres	\$339.49
2300 Engineering: 0.00 sta.	\$0.00
2400 Minor Concrete:	\$0.00
2500 Gabions:	\$0.00
8000 Miscellaneous:	\$0.00
Mobilization: Const. \$40.45 Surf. \$0.00.....	\$40.45
Quarry Development:	\$0.00

Total: \$2,520.19

Notes:

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

Road Construction Worksheet

Road Number: 34-2E-24.00 Road Name: Sanitiam Peak Rd

Section 200 Clearing and Grubbing:

RVM

RVM Clearing 0.45 Acre x \$1,511.17/Acre = \$680.03

RVM Grubbing 0.23 Acre x \$2,842.27/Acre = \$653.72

Shoulder Repair Backhoe - 1/4mile/hr .31 Mile x \$380.60/Mile = \$117.99

Subtotal: \$1,451.73

Section 300 Excavation:

Subtotal: \$0.00

Section 400 Drainage:

Subtotal: \$0.00

Section 500 Renovation:

Blading: \$923.61/mi x 0.31 mi = \$286.32

Compaction: \$415.02/mi x 0.31 mi = \$128.66

Clean Culverts: \$501.63/mi x 0.31 mi = \$155.51

Subtotal: \$570.48

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:

Dry Method with Mulch: \$728.40/acre x 0.10 acres = \$72.84

Includes Small Quantity Factor of 1.38

+ Seed Cost: \$132.00/acre x 0.10 acres = \$13.20

+ Mulch Cost: \$320.00/acre x 0.10 acres = \$32.00

Subtotal: \$118.04

Section 1900 Cattleguards:

Subtotal: \$0.00

Section 2100 Roadside Brushing:

Mechanical Brushing

RoadSide Brushing Heavy: \$754.42/acre x 0.45 acres = \$339.49

Subtotal: \$339.49

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:

Road Number: 34-2E-24.00 Sanitiam Peak Rd Continued

Construction - 0.45% of total Costs = \$40.45

Surfacing - 0.00% by rock volume = \$0.00

Subtotal: \$40.45

Quarry Development:

Based on 0.00% of total rock volume

Subtotal: \$0.00

Total: \$2,520.19

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Big Dog Sale Date: 24/07/2025

Road Number: 34-2E-24.01 A Road Name: Dudley Usfs

Road Renovation: 0.17 mi 16 ft Subgrade 3 ft ditch

200 Clearing and Grubbing: 0.00 acres	\$768.46
300 Excavation:	\$0.00
400 Drainage:	\$0.00
Culvert: 0.00 lf	
DownSpout: 0.00 lf	
PolyPipe: 0.00 lf	
500 Renovation:	\$227.57
Blading 0.17 mi	
700-1200 Surfacing:	\$0.00
1300 Geotextiles:	\$0.00
1400 Slope Protection:	\$0.00
1800 Soil Stabilization: 0.10 acres	\$118.04
Includes Small Quantity Factor of 1.38	
1900 Cattleguards:	\$0.00
2100 RoadSide Brushing (Mechanical):0.25 acres	\$117.88
2300 Engineering: 0.00 sta.	\$0.00
2400 Minor Concrete:	\$0.00
2500 Gabions:	\$0.00
8000 Miscellaneous:	\$0.00
Mobilization: Const. \$20.09 Surf. \$0.00.....	\$20.09
Quarry Development:	\$0.00

Total: \$1,252.03

Notes:

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

Road Construction Worksheet

Road Number: 34-2E-24.01 A Road Name: Dudley Usfs

Section 200 Clearing and Grubbing:

RVM

RVM Clearing 0.24 Acre x \$1,511.17/Acre = \$362.68

RVM Grubbing 0.12 Acre x \$2,842.27/Acre = \$341.07

Shoulder Repair Backhoe - 1/4mile/hr 0.17 Mile x \$380.60/Mile = \$64.70

Subtotal: \$768.46

Section 300 Excavation:

Subtotal: \$0.00

Section 400 Drainage:

Subtotal: \$0.00

Section 500 Renovation:

Blading: \$923.61/mi x 0.17 mi = \$157.01

Compaction: \$415.02/mi x 0.17 mi = \$70.55

Subtotal: \$227.57

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:

Dry Method with Mulch: \$728.40/acre x 0.10 acres = \$72.84

Includes Small Quantity Factor of 1.38

+ Seed Cost: \$132.00/acre x 0.10 acres = \$13.20

+ Mulch Cost: \$320.00/acre x 0.10 acres = \$32.00

Subtotal: \$118.04

Section 1900 Cattleguards:

Subtotal: \$0.00

Section 2100 Roadside Brushing:

Mechanical Brushing

RoadSide Brushing Medium: \$471.51/acre x 0.25 acres = \$117.88

Subtotal: \$117.88

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 = \$20.09

Road Number: 34-2E-24.01 A Dudley Usfs Continued

Surfacing - 0.00% by rock volume = \$0.00

Subtotal: \$20.09

Quarry Development:

Based on 0.00% of total rock volume

Subtotal: \$0.00

Total: \$1,252.03

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Big Dog Sale Date: 24/07/2025

Road Number: 34-2E-24.05 Road Name: Santiam E Gr

Road Renovation: 0.32 mi 17 ft Subgrade 0 ft ditch

200 Clearing and Grubbing: 0.00 acres	\$1,470.65
300 Excavation:	\$0.00
400 Drainage:	\$0.00
Culvert: 0.00 lf	
DownSpout: 0.00 lf	
PolyPipe: 0.00 lf	
500 Renovation:	\$428.36
Blading 0.32 mi	
700-1200 Surfacing:	\$0.00
1300 Geotextiles:	\$0.00
1400 Slope Protection:	\$0.00
1800 Soil Stabilization: 0.10 acres	\$118.04
Includes Small Quantity Factor of 1.38	
1900 Cattleguards:	\$0.00
2100 RoadSide Brushing (Mechanical):0.47 acres	\$221.61
2300 Engineering: 0.00 sta.	\$0.00
2400 Minor Concrete:	\$0.00
2500 Gabions:	\$0.00
8000 Miscellaneous:	\$0.00
Mobilization: Const. \$36.52 Surf. \$0.00.....	\$36.52
Quarry Development:	\$0.00

Total: \$2,275.18

Notes:

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

Road Construction Worksheet

Road Number: 34-2E-24.05 Road Name: Santiam E Gr

Section 200 Clearing and Grubbing:

RVM

RVM Clearing 0.46 Acre x \$1,511.17/Acre = \$695.14

RVM Grubbing 0.23 Acre x \$2,842.27/Acre = \$653.72

Shoulder Repair Backhoe - 1/4mile/hr .32 Mile x \$380.60/Mile = \$121.79

Subtotal: \$1,470.65

Section 300 Excavation:

Subtotal: \$0.00

Section 400 Drainage:

Subtotal: \$0.00

Section 500 Renovation:

Blading: \$923.61/mi x 0.32 mi = \$295.56

Compaction: \$415.02/mi x 0.32 mi = \$132.81

Subtotal: \$428.36

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:

Dry Method with Mulch: \$728.40/acre x 0.10 acres = \$72.84

Includes Small Quantity Factor of 1.38

+ Seed Cost: \$132.00/acre x 0.10 acres = \$13.20

+ Mulch Cost: \$320.00/acre x 0.10 acres = \$32.00

Subtotal: \$118.04

Section 1900 Cattleguards:

Subtotal: \$0.00

Section 2100 Roadside Brushing:

Mechanical Brushing

RoadSide Brushing Medium: \$471.51/acre x 0.47 acres = \$221.61

Subtotal: \$221.61

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 - 0.41% of total Costs = \$36.52

Road Number: 34-2E-24.05 Santiam E Gr Continued

Surfacing - 0.00% by rock volume = \$0.00

Subtotal: \$36.52

Quarry Development:

Based on 0.00% of total rock volume

Subtotal: \$0.00

Total: \$2,275.18

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Big Dog Sale Date: 24/07/2025

Road Number: 34-2E-24.06 Road Name: Dudley Mountain Sout

Road Improvement: 0.52 mi 14 ft Subgrade 0 ft ditch

200 Clearing and Grubbing: 1.57 acres	\$5,736.86
300 Excavation:	\$0.00
400 Drainage:	\$0.00
Culvert: 0.00 lf	
DownSpout: 0.00 lf	
PolyPipe: 0.00 lf	
500 Renovation:	\$632.30
Blading 0.52 mi	
700-1200 Surfacing:	\$0.00
1300 Geotextiles:	\$0.00
1400 Slope Protection:	\$0.00
1800 Soil Stabilization: 0.10 acres	\$118.04
Includes Small Quantity Factor of 1.38	
1900 Cattleguards:	\$0.00
2100 RoadSide Brushing (Mechanical):0.76 acres	\$358.35
2300 Engineering: 0.00 sta.	\$0.00
2400 Minor Concrete:	\$0.00
2500 Gabions:	\$0.00
8000 Miscellaneous:	\$0.00
Mobilization: Const. \$111.66 Surf. \$0.00.....	\$111.66
Quarry Development:	\$0.00

Total: \$6,957.21

Notes:

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

Road Construction Worksheet

Road Number: 34-2E-24.06 Road Name: Dudley Mountain Sout

Section 200 Clearing and Grubbing:

Clearing - Medium (Clearing): Adjustment Factor (1.67)

1-15% (Avg Side Slopes): Adjustment Factor (0)

Pile and Burn (Slash): Adjustment Factor (1.28)

20-40' (Avg Clearing Widths): Adjustment Factor (0.1)

Total Adjustment Factor: $1.67 + 0 + 1.28 + 0.1 = 3.05$

Base Cost/Acre: \$1,198.05 x Adjustment Factor: 3.05 x Total Acres: 1.57 = \$5,736.86

Subtotal: \$5,736.86

Section 300 Excavation:

Subtotal: \$0.00

Section 400 Drainage:

Subtotal: \$0.00

Section 500 Renovation:

Blading w/o Ditches: $\$559.44/\text{mi} \times 0.52 \text{ mi} = \290.91

Compaction: $\$415.02/\text{mi} \times 0.52 \text{ mi} = \215.81

Remove boulder barricade

Excavator -Small (1.5 CY) 1 hr x \$125.58/hr = \$125.58

Subtotal: \$632.30

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:

Dry Method with Mulch: $\$728.40/\text{acre} \times 0.10 \text{ acres} = \72.84

Includes Small Quantity Factor of 1.38

+ Seed Cost: $\$132.00/\text{acre} \times 0.10 \text{ acres} = \13.20

+ Mulch Cost: $\$320.00/\text{acre} \times 0.10 \text{ acres} = \32.00

Subtotal: \$118.04

Section 1900 Cattleguards:

Subtotal: \$0.00

Section 2100 Roadside Brushing:

Mechanical Brushing

RoadSide Brushing Medium: $\$471.51/\text{acre} \times 0.76 \text{ acres} = \358.35

Subtotal: \$358.35

Section 2300 Engineering:

Subtotal: \$0.00

Section 2400 Minor Concrete:

Subtotal: \$0.00

Section 2500 Gabions:

Subtotal: \$0.00

Section 8000 Miscellaneous:

Road Number: 34-2E-24.06 Dudley Mountain Sout Continued

Subtotal: \$0.00

Mobilization:

Construction - 1.25% of total Costs = \$111.66

Surfacing - 0.00% by rock volume = \$0.00

Subtotal: \$111.66

Quarry Development:

Based on 0.00% of total rock volume

Subtotal: \$0.00

Total: \$6,957.21

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Big Dog Sale Date: 24/07/2025

Road Number: 34-2E-26.00 A-C Road Name: Santiam Peak

Road Renovation: 0.87 mi 14 ft Subgrade 3 ft ditch

200 Clearing and Grubbing: 1.12 acres \$7,163.14

300 Excavation: \$0.00

400 Drainage: \$0.00

Culvert: 0.00 lf

DownSpout: 0.00 lf

PolyPipe: 0.00 lf

500 Renovation: \$1,601.03

Blading 0.87 mi

700-1200 Surfacing: \$27,765.97

Quarry Name: Hailicka 1 1/2" 517.00 LCY

Quarry Name: Hailicka 4" 185.00 LCY

1300 Geotextiles: \$0.00

1400 Slope Protection: \$0.00

1800 Soil Stabilization: 0.10 acres \$118.04

Includes Small Quantity Factor of 1.38

1900 Cattleguards: \$0.00

2100 RoadSide Brushing (Mechanical):1.27 acres \$958.11

2300 Engineering: 0.00 sta. \$0.00

2400 Minor Concrete: \$0.00

2500 Gabions: \$0.00

8000 Miscellaneous: \$0.00

Mobilization: Const. \$613.40 Surf. \$213.39..... \$826.79

Quarry Development: \$0.00

Total: \$38,433.07

Notes:

Quantities shown are estimates only and not pay items.

Surfacing Quantities shown are loose cubic yards.

Road Construction Worksheet

Road Number: 34-2E-26.00 A-C Road Name: Santiam Peak

Section 200 Clearing and Grubbing:

Clearing - Medium (Clearing): Adjustment Factor (1.67)

1-15% (Avg Side Slopes): Adjustment Factor (0)

Pile and Burn (Slash): Adjustment Factor (1.28)

greater than 40' (Avg Clearing Widths): Adjustment Factor (0)

Total Adjustment Factor: $1.67 + 0 + 1.28 + 0 = 2.95$

Base Cost/Acre: $\$1,198.05 \times$ Adjustment Factor: $2.95 \times$ Total Acres: $1.12 = \$3,958.36$

RVM

RVM Clearing 0.98 Acre \times $\$1,511.17/\text{Acre} = \$1,480.95$

RVM Grubbing 0.49 Acre \times $\$2,842.27/\text{Acre} = \$1,392.71$

Shoulder Repair Backhoe - 1/4mile/hr 0.87 Mile \times $\$380.60/\text{Mile} = \331.12

Subtotal: \$7,163.14

Section 300 Excavation:

Subtotal: \$0.00

Section 400 Drainage:

Subtotal: \$0.00

Section 500 Renovation:

Blading: $\$923.61/\text{mi} \times 0.87 \text{ mi} = \803.54

Compaction: $\$415.02/\text{mi} \times 0.87 \text{ mi} = \361.07

Clean Culverts: $\$501.63/\text{mi} \times 0.87 \text{ mi} = \436.42

Subtotal: \$1,601.03

Section 700-1200 Surfacing:

Commercial Quarry Name: Hailicka 1 1/2"

<u>Length</u>	<u>TopW</u>	<u>BotW</u>	<u>Depth</u>	<u>CWid</u>	<u>#TOs</u>	<u>Width</u>	<u>F.W.L</u>	<u>Taper</u>	<u>Other</u>
0.41mi	14ft	14.5ft	4in	2%					

Rock Volume = 517.00 LCY

Purchase Price / Royalty: $\$18.50/\text{LCY} \times 517.00 \text{ LCY} = \$9,564.50$

Processing: $\$1.20/\text{LCY} \times 517.00 \text{ LCY} = \620.40

Compaction: $\$1.38/\text{LCY} \times 517.00 \text{ LCY} = \713.46

Basic Rock Haul cost: $\$1.62/\text{LCY} \times 517.00 \text{ LCY} = \837.54

Rock Haul +15% grades: $\$2.43/\text{LCY-mi} \times 517.00 \text{ LCY} \times 4.50 \text{ mi} = \$5,653.40$

Rock Haul -15% grades: $\$1.21/\text{LCY-mi} \times 517.00 \text{ LCY} \times 6.10 \text{ mi} = \$3,815.98$

Basic Water Haul cost: $\$0.79/\text{LCY} \times 517.00 \text{ LCY} = \408.43

Water Haul -15% grades: $\$0.17/\text{LCY-mi} \times 517.00 \text{ LCY} \times 3.60 \text{ mi} = \316.40

Water Haul St&Co Roads: $\$0.10/\text{LCY-mi} \times 517.00 \text{ LCY} \times 0.38 \text{ mi} = \19.65

Commercial Quarry Name: Hailicka 4"

<u>Length</u>	<u>TopW</u>	<u>BotW</u>	<u>Depth</u>	<u>CWid</u>	<u>#TOs</u>	<u>Width</u>	<u>F.W.L</u>	<u>Taper</u>	<u>Other</u>
									185 LCY

Rock Volume = 185.00 LCY

Purchase Price / Royalty: $\$18.50/\text{LCY} \times 185.00 \text{ LCY} = \$3,422.50$

Processing: $\$1.20/\text{LCY} \times 185.00 \text{ LCY} = \222.00

Compaction: $\$1.38/\text{LCY} \times 185.00 \text{ LCY} = \255.30

Basic Rock Haul cost: $\$1.62/\text{LCY} \times 185.00 \text{ LCY} = \299.70

Rock Haul -15% grades: $\$1.21/\text{LCY-mi} \times 185.00 \text{ LCY} \times 4.50 \text{ mi} = \$1,007.33$

Rock Haul St& Co Roads: $\$0.54/\text{LCY-mi} \times 185.00 \text{ LCY} \times 6.10 \text{ mi} = \609.39

Subtotal: \$27,765.97

Section 1300 Geotextiles:

Subtotal: \$0.00

Section 1400 Slope Protection:

Subtotal: \$0.00

Road Number: 34-2E-26.00 A-C Santiam Peak Continued

Section 1800 Soil Stabilization:

Dry Method with Mulch: $\$728.40/\text{acre} \times 0.10 \text{ acres} = \72.84

Includes Small Quantity Factor of 1.38

+ Seed Cost: $\$132.00/\text{acre} \times 0.10 \text{ acres} = \13.20

+ Mulch Cost: $\$320.00/\text{acre} \times 0.10 \text{ acres} = \32.00

Subtotal: \$118.04

Section 1900 Cattleguards:

Subtotal: \$0.00

Section 2100 Roadside Brushing:

Mechanical Brushing

RoadSide Brushing Heavy: $\$754.42/\text{acre} \times 1.27 \text{ acres} = \958.11

Subtotal: \$958.11

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 - 6.85% of total Costs = \$613.40

Surfacing - 5.60% by rock volume = \$213.39

Subtotal: \$826.79

Quarry Development:

Based on 5.60% of total rock volume

Subtotal: \$0.00

Total: \$38,433.07

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Big Dog Sale Date: 24/07/2025

Road Number: 34-2E-29.00A1-3 Road Name: Divide-Box Ck End

Road Renovation: 3.24 mi 14 ft Subgrade 3 ft ditch

200 Clearing and Grubbing: 0.00 acres	\$2,999.95
300 Excavation:	\$0.00
400 Drainage:	\$2,147.44
Culvert: 34.00 lf	
DownSpout: 0.00 lf	
PolyPipe: 0.00 lf	
500 Renovation:	\$5,962.44
Blading 3.24 mi	
700-1200 Surfacing:	\$70,616.59
Quarry Name: Hailicka 1 1/2" 2,501.00 LCY	
1300 Geotextiles:	\$0.00
1400 Slope Protection:	\$0.00
1800 Soil Stabilization: 0.11 acres	\$129.84
Includes Small Quantity Factor of 1.38	
1900 Cattleguards:	\$571.16
2100 RoadSide Brushing (Mechanical):4.71 acres	\$2,220.81
2300 Engineering: 0.00 sta.	\$0.00
2400 Minor Concrete:	\$0.00
2500 Gabions:	\$0.00
8000 Miscellaneous:	\$0.00
Mobilization: Const. \$1,380.71 Surf. \$760.23.....	\$2,140.94
Quarry Development:	\$0.00

Total: \$86,789.18

Notes:

Quantities shown are estimates only and not pay items.

Surfacing Quantities shown are loose cubic yards.

Road Construction Worksheet

Road Number: 34-2E-29.00A1-3 Road Name: Divide-Box Ck End

Section 200 Clearing and Grubbing:

RVM

RVM Clearing 0.94 Acre x \$1,511.17/Acre = \$1,420.50

RVM Grubbing 0.47 Acre x \$2,842.27/Acre = \$1,335.87

Shoulder Repair Backhoe - 1/4mile/hr 0.64 Mile x \$380.60/Mile = \$243.58

Subtotal: \$2,999.95

Section 300 Excavation:

Subtotal: \$0.00

Section 400 Drainage:

Aluminized Med Priority MP 1.42 24 inch 16 ga 34 lf x \$63.16/lf = \$2,147.44

Subtotal: \$2,147.44

Section 500 Renovation:

Blading: \$923.61/mi x 3.24 mi = \$2,992.50

Compaction: \$415.02/mi x 3.24 mi = \$1,344.66

Clean Culverts: \$501.63/mi x 3.24 mi = \$1,625.28

Subtotal: \$5,962.44

Section 700-1200 Surfacing:

Commercial Quarry Name: Hailicka 1 1/2"

<u>Length</u>	<u>TopW</u>	<u>BotW</u>	<u>Depth</u>	<u>CWid</u>	<u>#TOs</u>	<u>Width</u>	<u>F.W.L</u>	<u>Taper</u>	<u>Other</u>
0.48mi	13ft	14ft	6in	5%					

Rock Volume = 885.00 LCY

Purchase Price / Royalty: \$18.50/LCY x 885.00 LCY = \$16,372.50

Processing: \$1.20/LCY x 885.00 LCY = \$1,062.00

Compaction: \$1.38/LCY x 885.00 LCY = \$1,221.30

Basic Rock Haul cost: \$1.62/LCY x 885.00 LCY = \$1,433.70

Rock Haul +15% grades: \$2.43/LCY-mi x 885.00 LCY x 0.25 mi= \$537.64

Rock Haul -15% grades: \$1.21/LCY-mi x 885.00 LCY x 2.53 mi= \$2,709.25

Basic Water Haul cost: \$0.79/LCY x 885.00 LCY = \$699.15

Water Haul -15% grades: \$0.17/LCY-mi x 885.00 LCY x 0.90 mi= \$135.41

Water Haul St&Co Roads: \$0.10/LCY-mi x 885.00 LCY x 3.74 mi= \$330.99

Commercial Quarry Name: Hailicka 1 1/2"

Comment: 80 CY for spot rocking on Seg A3

<u>Length</u>	<u>TopW</u>	<u>BotW</u>	<u>Depth</u>	<u>CWid</u>	<u>#TOs</u>	<u>Width</u>	<u>F.W.L</u>	<u>Taper</u>	<u>Other</u>
1.25mi	13ft	14ft	4in	5%					80 LCY

Rock Volume = 1,616.00 LCY

Purchase Price / Royalty: \$18.50/LCY x 1,616.00 LCY = \$29,896.00

Processing: \$1.20/LCY x 1,616.00 LCY = \$1,939.20

Compaction: \$1.38/LCY x 1,616.00 LCY = \$2,230.08

Basic Rock Haul cost: \$1.62/LCY x 1,616.00 LCY = \$2,617.92

Rock Haul +15% grades: \$2.43/LCY-mi x 1,616.00 LCY x 0.60 mi= \$2,356.13

Rock Haul -15% grades: \$1.21/LCY-mi x 1,616.00 LCY x 2.53 mi= \$4,947.06

Basic Water Haul cost: \$0.79/LCY x 1,616.00 LCY = \$1,276.64

Water Haul -15% grades: \$0.17/LCY-mi x 1,616.00 LCY x 0.90 mi= \$247.25

Water Haul St&Co Roads: \$0.10/LCY-mi x 1,616.00 LCY x 3.74 mi= \$604.38

Subtotal: \$70,616.59

Section 1300 Geotextiles:

Subtotal: \$0.00

Section 1400 Slope Protection:

Subtotal: \$0.00

Section 1800 Soil Stabilization:

Road Number: 34-2E-29.00A1-3 Divide-Box Ck End Continued

Comment: Culvert replacement MP 1.42 & Stump Removal
Dry Method with Mulch: $\$728.40/\text{acre} \times 0.11 \text{ acres} = \80.12
Includes Small Quantity Factor of 1.38
+ Seed Cost: $\$132.00/\text{acre} \times 0.11 \text{ acres} = \14.52
+ Mulch Cost: $\$320.00/\text{acre} \times 0.11 \text{ acres} = \35.20

Subtotal: \$129.84

Section 1900 Cattleguards:
MP 0.01 Cattleguard cleaning
Clean cattleguard 1 EA x $\$571.16/\text{EA} = \571.16

Subtotal: \$571.16

Section 2100 Roadside Brushing:
Mechanical Brushing
RoadSide Brushing Medium: $\$471.51/\text{acre} \times 4.71 \text{ acres} = \$2,220.81$

Subtotal: \$2,220.81

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 - 15.42% of total Costs = $\$1,380.71$
Surfacing - 19.94% by rock volume = $\$760.23$

Subtotal: \$2,140.94

Quarry Development:
Based on 19.94% of total rock volume

Subtotal: \$0.00

Total: \$86,789.18

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Big Dog Sale Date: 24/07/2025

Road Number: 35-2E-1.00 A-B Road Name: Section 1 East Spur

Road Renovation: 0.64 mi 14 ft Subgrade 0 ft ditch

200 Clearing and Grubbing: 0.00 acres	\$2,604.54
300 Excavation:	\$0.00
400 Drainage:	\$0.00
Culvert: 0.00 lf	
DownSpout: 0.00 lf	
PolyPipe: 0.00 lf	
500 Renovation:	\$1,286.56
Blading 0.64 mi	
700-1200 Surfacing:	\$0.00
1300 Geotextiles:	\$0.00
1400 Slope Protection:	\$0.00
1800 Soil Stabilization: 0.10 acres	\$118.04
Includes Small Quantity Factor of 1.38	
1900 Cattleguards:	\$0.00
2100 RoadSide Brushing (Mechanical):0.93 acres	\$438.50
2300 Engineering: 0.00 sta.	\$0.00
2400 Minor Concrete:	\$0.00
2500 Gabions:	\$0.00
8000 Miscellaneous:	\$0.00
Mobilization: Const. \$72.55 Surf. \$0.00.....	\$72.55
Quarry Development:	\$0.00

Total: \$4,520.19

Notes:

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

Road Construction Worksheet

Road Number: 35-2E-1.00 A-B Road Name: Section 1 East Spur

Section 200 Clearing and Grubbing:

RVM

RVM Clearing 0.81 Acre x \$1,511.17/Acre = \$1,224.05

RVM Grubbing 0.40 Acre x \$2,842.27/Acre = \$1,136.91

Shoulder Repair Backhoe - 1/4mile/hr .64 Mile x \$380.60/Mile = \$243.58

Subtotal: \$2,604.54

Section 300 Excavation:

Subtotal: \$0.00

Section 400 Drainage:

Subtotal: \$0.00

Section 500 Renovation:

Blading: \$923.61/mi x 0.64 mi = \$591.11

Compaction: \$415.02/mi x 0.64 mi = \$265.61

Clean Culverts: \$501.63/mi x 0.64 mi = \$321.04

Remove Gate Posts

Backhoe 1 hr x \$108.79/hr = \$108.79

Subtotal: \$1,286.56

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:

Dry Method with Mulch: \$728.40/acre x 0.10 acres = \$72.84

Includes Small Quantity Factor of 1.38

+ Seed Cost: \$132.00/acre x 0.10 acres = \$13.20

+ Mulch Cost: \$320.00/acre x 0.10 acres = \$32.00

Subtotal: \$118.04

Section 1900 Cattleguards:

Subtotal: \$0.00

Section 2100 Roadside Brushing:

Mechanical Brushing

RoadSide Brushing Medium: \$471.51/acre x 0.93 acres = \$438.50

Subtotal: \$438.50

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: 35-2E-1.00 A-B Section 1 East Spur Continued

Mobilization:

Construction - 0.81% of total Costs = \$72.55

Surfacing - 0.00% by rock volume = \$0.00

Subtotal: \$72.55

Quarry Development:

Based on 0.00% of total rock volume

Subtotal: \$0.00

Total: \$4,520.19

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Big Dog Sale Date: 24/07/2025

Road Number: 35-2E-1.01 Road Name: Section 1 West Spur

Road Renovation: 0.44 mi 14 ft Subgrade 3 ft ditch

200 Clearing and Grubbing: 0.00 acres	\$1,223.09
300 Excavation:	\$0.00
400 Drainage:	\$0.00
Culvert: 0.00 lf	
DownSpout: 0.00 lf	
PolyPipe: 0.00 lf	
500 Renovation:	\$809.71
Blading 0.44 mi	
700-1200 Surfacing:	\$0.00
1300 Geotextiles:	\$0.00
1400 Slope Protection:	\$0.00
1800 Soil Stabilization: 0.10 acres	\$118.04
Includes Small Quantity Factor of 1.38	
1900 Cattleguards:	\$0.00
2100 RoadSide Brushing (Mechanical):0.64 acres	\$301.77
2300 Engineering: 0.00 sta.	\$0.00
2400 Minor Concrete:	\$0.00
2500 Gabions:	\$0.00
8000 Miscellaneous:	\$0.00
Mobilization: Const. \$40.00 Surf. \$0.00.....	\$40.00
Quarry Development:	\$0.00

Total: \$2,492.62

Notes:

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

Road Construction Worksheet

Road Number: 35-2E-1.01 Road Name: Section 1 West Spur

Section 200 Clearing and Grubbing:

RVM

RVM Clearing 0.36 Acre x \$1,511.17/Acre = \$544.02

RVM Grubbing 0.18 Acre x \$2,842.27/Acre = \$511.61

Shoulder Repair Backhoe - 1/4mile/hr .44 Mile x \$380.60/Mile = \$167.46

Subtotal: \$1,223.09

Section 300 Excavation:

Subtotal: \$0.00

Section 400 Drainage:

Subtotal: \$0.00

Section 500 Renovation:

Blading: \$923.61/mi x 0.44 mi = \$406.39

Compaction: \$415.02/mi x 0.44 mi = \$182.61

Clean Culverts: \$501.63/mi x 0.44 mi = \$220.72

Subtotal: \$809.71

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:

Dry Method with Mulch: \$728.40/acre x 0.10 acres = \$72.84

Includes Small Quantity Factor of 1.38

+ Seed Cost: \$132.00/acre x 0.10 acres = \$13.20

+ Mulch Cost: \$320.00/acre x 0.10 acres = \$32.00

Subtotal: \$118.04

Section 1900 Cattleguards:

Subtotal: \$0.00

Section 2100 Roadside Brushing:

Mechanical Brushing

RoadSide Brushing Medium: \$471.51/acre x 0.64 acres = \$301.77

Subtotal: \$301.77

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:

Road Number: 35-2E-1.01 Section 1 West Spur Continued

Construction - 0.45% of total Costs = \$40.00

Surfacing - 0.00% by rock volume = \$0.00

Subtotal: \$40.00

Quarry Development:

Based on 0.00% of total rock volume

Subtotal: \$0.00

Total: \$2,492.62

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Big Dog Sale Date: 24/07/2025

Road Number: 35-2E-1.02 Road Name: N Fork Butte Crk

Road Renovation: 0.06 mi 14 ft Subgrade 0 ft ditch

200 Clearing and Grubbing: 0.00 acres	\$257.42
300 Excavation:	\$0.00
400 Drainage:	\$0.00
Culvert: 0.00 lf	
DownSpout: 0.00 lf	
PolyPipe: 0.00 lf	
500 Renovation:	\$303.16
Blading 0.06 mi	
700-1200 Surfacing:	\$0.00
1300 Geotextiles:	\$0.00
1400 Slope Protection:	\$0.00
1800 Soil Stabilization: 0.10 acres	\$118.04
Includes Small Quantity Factor of 1.38	
1900 Cattleguards:	\$0.00
2100 RoadSide Brushing (Mechanical):0.09 acres	\$25.46
2300 Engineering: 0.00 sta.	\$0.00
2400 Minor Concrete:	\$0.00
2500 Gabions:	\$0.00
8000 Miscellaneous:	\$0.00
Mobilization: Const. \$11.48 Surf. \$0.00.....	\$11.48
Quarry Development:	\$0.00

Total: \$715.56

Notes:

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

Road Construction Worksheet

Road Number: 35-2E-1.02 Road Name: N Fork Butte Crk

Section 200 Clearing and Grubbing:

RVM

RVM Clearing 0.08 Acre x \$1,511.17/Acre = \$120.89

RVM Grubbing 0.04 Acre x \$2,842.27/Acre = \$113.69

Shoulder Repair Backhoe - 1/4mile/hr 0.06 Mile x \$380.60/Mile = \$22.84

Subtotal: \$257.42

Section 300 Excavation:

Subtotal: \$0.00

Section 400 Drainage:

Subtotal: \$0.00

Section 500 Renovation:

Blading w/o Ditches: \$559.44/mi x 0.06 mi = \$33.57

Compaction: \$415.02/mi x 0.06 mi = \$24.90

Remove earth barricade

Tractor: D7 with winch 1 hr x \$244.69/hr = \$244.69

Subtotal: \$303.16

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:

Dry Method with Mulch: \$728.40/acre x 0.10 acres = \$72.84

Includes Small Quantity Factor of 1.38

+ Seed Cost: \$132.00/acre x 0.10 acres = \$13.20

+ Mulch Cost: \$320.00/acre x 0.10 acres = \$32.00

Subtotal: \$118.04

Section 1900 Cattleguards:

Subtotal: \$0.00

Section 2100 Roadside Brushing:

Mechanical Brushing

Brushing width Left: 6ft. Right: 6ft.

RoadSide Brushing Light: \$282.91/acre x 0.09 acres = \$25.46

Subtotal: \$25.46

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: 35-2E-1.02 N Fork Butte Crk Continued

Mobilization:

Construction - 0.13% of total Costs = \$11.48

Surfacing - 0.00% by rock volume = \$0.00

Subtotal: \$11.48

Quarry Development:

Based on 0.00% of total rock volume

Subtotal: \$0.00

Total: \$715.56

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Big Dog Sale Date: 24/07/2025

Road Number: 35-2E-1.03 Road Name: Ditch X-ing Spur

Road Renovation: 0.13 mi 14 ft Subgrade 0 ft ditch

200 Clearing and Grubbing: 0.71 acres	\$2,594.38
300 Excavation:	\$0.00
400 Drainage:	\$0.00
Culvert: 0.00 lf	
DownSpout: 0.00 lf	
PolyPipe: 0.00 lf	
500 Renovation:	\$126.68
Blading 0.13 mi	
700-1200 Surfacing:	\$0.00
1300 Geotextiles:	\$0.00
1400 Slope Protection:	\$0.00
1800 Soil Stabilization: 0.10 acres	\$118.04
Includes Small Quantity Factor of 1.38	
1900 Cattleguards:	\$0.00
2100 RoadSide Brushing (Mechanical):0.19 acres	\$53.75
2300 Engineering: 0.00 sta.	\$0.00
2400 Minor Concrete:	\$0.00
2500 Gabions:	\$0.00
8000 Miscellaneous:	\$2,378.39
Mobilization: Const. \$85.98 Surf. \$0.00.....	\$85.98
Quarry Development:	\$0.00

Total: \$5,357.22

Notes:

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

Road Construction Worksheet

Road Number: 35-2E-1.03 Road Name: Ditch X-ing Spur

Section 200 Clearing and Grubbing:

Clearing - Medium (Clearing): Adjustment Factor (1.67)

1-15% (Avg Side Slopes): Adjustment Factor (0)

Pile and Burn (Slash): Adjustment Factor (1.28)

20-40' (Avg Clearing Widths): Adjustment Factor (0.1)

Total Adjustment Factor: $1.67 + 0 + 1.28 + 0.1 = 3.05$

Base Cost/Acre: \$1,198.05 x Adjustment Factor: 3.05 x Total Acres: 0.71 = \$2,594.38
Subtotal: \$2,594.38

Section 300 Excavation:

Subtotal: \$0.00

Section 400 Drainage:

Subtotal: \$0.00

Section 500 Renovation:

Blading w/o Ditches: $\$559.44/\text{mi} \times 0.13 \text{ mi} = \72.73

Compaction: $\$415.02/\text{mi} \times 0.13 \text{ mi} = \53.95

Subtotal: \$126.68

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:

Dry Method with Mulch: $\$728.40/\text{acre} \times 0.10 \text{ acres} = \72.84

Includes Small Quantity Factor of 1.38

+ Seed Cost: $\$132.00/\text{acre} \times 0.10 \text{ acres} = \13.20

+ Mulch Cost: $\$320.00/\text{acre} \times 0.10 \text{ acres} = \32.00

Subtotal: \$118.04

Section 1900 Cattleguards:

Subtotal: \$0.00

Section 2100 Roadside Brushing:

Mechanical Brushing

Brushing width Left: 6ft. Right: 6ft.

RoadSide Brushing Light: $\$282.91/\text{acre} \times 0.19 \text{ acres} = \53.75

Subtotal: \$53.75

Section 2300 Engineering:

Subtotal: \$0.00

Section 2400 Minor Concrete:

Subtotal: \$0.00

Section 2500 Gabions:

Subtotal: \$0.00

Section 8000 Miscellaneous:

Temp Bridge placement

Road Number: 35-2E-1.03 Ditch X-ing Spur Continued

Excavator - Large (3 CY) 3 hr x \$166.61/hr = \$499.83
General Laborer 4 hr x \$56.30/hr = \$225.20
General Laborer 4 hr x \$56.30/hr = \$225.20
Lowboy 4 hr x \$137.50/hr = \$550.00
Lowboy 4 hr x \$137.50/hr = \$550.00
Crew Cab or 3/4 Ton Pickup 4 hr x \$82.04/hr = \$328.16

Subtotal: \$2,378.39

Mobilization:

Construction - 0.96% of total Costs = \$85.98
Surfacing - 0.00% by rock volume = \$0.00

Subtotal: \$85.98

Quarry Development:

Based on 0.00% of total rock volume

Subtotal: \$0.00

Total: \$5,357.22

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Big Dog Sale Date: 24/07/2025

Road Number: 35-2E-1.04 Road Name: N Fork Butte Crk Spu

Road Renovation: 0.09 mi 14 ft Subgrade 0 ft ditch

200 Clearing and Grubbing: 0.00 acres	\$444.78
300 Excavation:	\$0.00
400 Drainage:	\$0.00
Culvert: 0.00 lf	
DownSpout: 0.00 lf	
PolyPipe: 0.00 lf	
500 Renovation:	\$87.70
Blading 0.09 mi	
700-1200 Surfacing:	\$0.00
1300 Geotextiles:	\$0.00
1400 Slope Protection:	\$0.00
1800 Soil Stabilization: 0.10 acres	\$118.04
Includes Small Quantity Factor of 1.38	
1900 Cattleguards:	\$0.00
2100 RoadSide Brushing (Mechanical):0.13 acres	\$36.78
2300 Engineering: 0.00 sta.	\$0.00
2400 Minor Concrete:	\$0.00
2500 Gabions:	\$0.00
8000 Miscellaneous:	\$0.00
Mobilization: Const. \$11.21 Surf. \$0.00.....	\$11.21
Quarry Development:	\$0.00

Total: \$698.51

Notes:

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

Road Construction Worksheet

Road Number: 35-2E-1.04 Road Name: N Fork Butte Crk Spu

Section 200 Clearing and Grubbing:

RVM

RVM Clearing 0.14 Acre x \$1,511.17/Acre = \$211.56

RVM Grubbing 0.07 Acre x \$2,842.27/Acre = \$198.96

Shoulder Repair Backhoe - 1/4mile/hr 0.09 Mile x \$380.60/Mile = \$34.25

Subtotal: \$444.78

Section 300 Excavation:

Subtotal: \$0.00

Section 400 Drainage:

Subtotal: \$0.00

Section 500 Renovation:

Blading w/o Ditches: \$559.44/mi x 0.09 mi = \$50.35

Compaction: \$415.02/mi x 0.09 mi = \$37.35

Subtotal: \$87.70

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:

Dry Method with Mulch: \$728.40/acre x 0.10 acres = \$72.84

Includes Small Quantity Factor of 1.38

+ Seed Cost: \$132.00/acre x 0.10 acres = \$13.20

+ Mulch Cost: \$320.00/acre x 0.10 acres = \$32.00

Subtotal: \$118.04

Section 1900 Cattleguards:

Subtotal: \$0.00

Section 2100 Roadside Brushing:

Mechanical Brushing

Brushing width Left: 6ft. Right: 6ft.

RoadSide Brushing Light: \$282.91/acre x 0.13 acres = \$36.78

Subtotal: \$36.78

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:

Road Number: 35-2E-1.04 N Fork Butte Crk Spu Continued

Construction - 0.13% of total Costs = \$11.21

Surfacing - 0.00% by rock volume = \$0.00

Subtotal: \$11.21

Quarry Development:

Based on 0.00% of total rock volume

Subtotal: \$0.00

Total: \$698.51

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Big Dog Sale Date: 24/07/2025

Road Number: 35-2E-11.00 A Road Name: N Fk Butte Ck Medco

Road Renovation: 0.66 mi 16 ft Subgrade 0 ft ditch

200 Clearing and Grubbing: 0.00 acres	\$0.00
300 Excavation:	\$0.00
400 Drainage:	\$0.00
Culvert: 0.00 lf	
DownSpout: 0.00 lf	
PolyPipe: 0.00 lf	
500 Renovation:	\$974.22
Blading 0.66 mi	
700-1200 Surfacing:	\$0.00
1300 Geotextiles:	\$0.00
1400 Slope Protection:	\$0.00
1800 Soil Stabilization: 0.00 acres	\$0.00
1900 Cattleguards:	\$0.00
2100 RoadSide Brushing (Mechanical):0.96 acres	\$271.59
2300 Engineering: 0.00 sta.	\$0.00
2400 Minor Concrete:	\$0.00
2500 Gabions:	\$0.00
8000 Miscellaneous:	\$0.00
Mobilization: Const. \$20.32 Surf. \$0.00.....	\$20.32
Quarry Development:	\$0.00
Total:	\$1,266.13

Notes:

Quantities shown are estimates only and not pay items.

Surfacing Quantities shown are loose cubic yards.

Road Construction Worksheet

Road Number: 35-2E-11.00 A Road Name: N Fk Butte Ck Medco

Section 200 Clearing and Grubbing:

Subtotal: \$0.00

Section 300 Excavation:

Subtotal: \$0.00

Section 400 Drainage:

Subtotal: \$0.00

Section 500 Renovation:

Blading w/o Ditches: \$559.44/mi x 0.66 mi = \$369.23

Compaction: \$415.02/mi x 0.66 mi = \$273.91

Clean Culverts: \$501.63/mi x 0.66 mi = \$331.08

Subtotal: \$974.22

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

Brushing width Left: 6ft. Right: 6ft.

RoadSide Brushing Light: \$282.91/acre x 0.96 acres = \$271.59

Subtotal: \$271.59

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 - 0.23% of total Costs = \$20.32

Surfacing - 0.00% by rock volume = \$0.00

Subtotal: \$20.32

Quarry Development:

Based on 0.00% of total rock volume

Subtotal: \$0.00

Road Number: 35-2E-11.00 A N Fk Butte Ck Medco Continued

Total: \$1,266.13

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Big Dog Sale Date: 24/07/2025

Road Number: 35-2E-2.00 A-D Road Name: Fredenburg Butte

Road Renovation: 4.06 mi 16 ft Subgrade 3 ft ditch

200 Clearing and Grubbing: 0.00 acres	\$13,426.74
300 Excavation:	\$0.00
400 Drainage:	\$0.00
Culvert: 0.00 lf	
DownSpout: 0.00 lf	
PolyPipe: 0.00 lf	
500 Renovation:	\$7,471.46
Blading 4.06 mi	
700-1200 Surfacing:	\$57,053.80
Quarry Name: Hailicka 1 1/2" 1,535.00 LCY	
1300 Geotextiles:	\$0.00
1400 Slope Protection:	\$0.00
1800 Soil Stabilization: 0.10 acres	\$118.04
Includes Small Quantity Factor of 1.38	
1900 Cattleguards:	\$600.00
2100 RoadSide Brushing (Mechanical):5.91 acres	\$2,786.62
2300 Engineering: 0.00 sta.	\$0.00
2400 Minor Concrete:	\$0.00
2500 Gabions:	\$0.00
8000 Miscellaneous:	\$0.00
Mobilization: Const. \$1,328.65 Surf. \$466.59.....	\$1,795.25
Quarry Development:	\$0.00

Total: \$83,251.90

Notes:

Quantities shown are estimates only and not pay items.

Surfacing Quantities shown are loose cubic yards.

Road Construction Worksheet

Road Number: 35-2E-2.00 A-D Road Name: Fredenburg Butte

Section 200 Clearing and Grubbing:

RVM

RVM Clearing 4.27 Acre x \$1,511.17/Acre = \$6,452.70

RVM Grubbing 2.06 Acre x \$2,842.27/Acre = \$5,855.08

Shoulder Repair Backhoe - 1/4mile/hr 2.94 Mile x \$380.60/Mile = \$1,118.96

Subtotal: \$13,426.74

Section 300 Excavation:

Subtotal: \$0.00

Section 400 Drainage:

Subtotal: \$0.00

Section 500 Renovation:

Blading: \$923.61/mi x 4.06 mi = \$3,749.86

Compaction: \$415.02/mi x 4.06 mi = \$1,684.98

Clean Culverts: \$501.63/mi x 4.06 mi = \$2,036.62

Subtotal: \$7,471.46

Section 700-1200 Surfacing:

Commercial Quarry Name: Hailicka 1 1/2"

<u>Length</u>	<u>TopW</u>	<u>BotW</u>	<u>Depth</u>	<u>CWid</u>	<u>#TOs</u>	<u>Width</u>	<u>F.W.L</u>	<u>Taper</u>	<u>Other</u>
1.11mi	14ft	15ft	4in	10%					

Rock Volume = 1,535.00 LCY

Purchase Price / Royalty: \$18.50/LCY x 1,535.00 LCY = \$28,397.50

Processing: \$1.20/LCY x 1,535.00 LCY = \$1,842.00

Compaction: \$1.38/LCY x 1,535.00 LCY = \$2,118.30

Basic Rock Haul cost: \$1.62/LCY x 1,535.00 LCY = \$2,486.70

Rock Haul +15% grades: \$2.43/LCY-mi x 1,535.00 LCY x 2.92 mi= \$10,891.75

Rock Haul -15% grades: \$1.21/LCY-mi x 1,535.00 LCY x 5.30 mi= \$9,843.96

Basic Water Haul cost: \$0.79/LCY x 1,535.00 LCY = \$1,212.65

Water Haul -15% grades: \$0.17/LCY-mi x 1,535.00 LCY x 1.00 mi= \$260.95

Subtotal: \$57,053.80

Section 1300 Geotextiles:

Subtotal: \$0.00

Section 1400 Slope Protection:

Subtotal: \$0.00

Section 1800 Soil Stabilization:

Dry Method with Mulch: \$728.40/acre x 0.10 acres = \$72.84

Includes Small Quantity Factor of 1.38

+ Seed Cost: \$132.00/acre x 0.10 acres = \$13.20

+ Mulch Cost: \$320.00/acre x 0.10 acres = \$32.00

Subtotal: \$118.04

Section 1900 Cattleguards:

Repair broken cross bar

Weld loose crossbar 2 hr x \$300.00/hr = \$600.00

Subtotal: \$600.00

Section 2100 Roadside Brushing:

Mechanical Brushing

RoadSide Brushing Medium: \$471.51/acre x 5.91 acres = \$2,786.62

Subtotal: \$2,786.62

Road Number: 35-2E-2.00 A-D Fredenburg Butte Continued

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 - 14.84% of total Costs = \$1,328.65

Surfacing - 12.24% by rock volume = \$466.59

Subtotal: \$1,795.25

Quarry Development:

Based on 12.24% of total rock volume

Subtotal: \$0.00

Total: \$83,251.90

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Big Dog Sale Date: 24/07/2025

Road Number: 35-2E-2.01 B-B2 Road Name: Sec 1 Sp

Road Renovation: 1.05 mi 17 ft Subgrade 3 ft ditch

200 Clearing and Grubbing: 0.00 acres	\$3,683.81
300 Excavation:	\$0.00
400 Drainage:	\$2,147.44
Culvert: 34.00 lf	
DownSpout: 0.00 lf	
PolyPipe: 0.00 lf	
500 Renovation:	\$2,182.52
Blading 1.05 mi	
700-1200 Surfacing:	\$0.00
1300 Geotextiles:	\$0.00
1400 Slope Protection:	\$0.00
1800 Soil Stabilization: 0.10 acres	\$118.04
Includes Small Quantity Factor of 1.38	
1900 Cattleguards:	\$0.00
2100 RoadSide Brushing (Mechanical):1.53 acres	\$432.85
2300 Engineering: 0.00 sta.	\$0.00
2400 Minor Concrete:	\$0.00
2500 Gabions:	\$0.00
8000 Miscellaneous:	\$10,000.00
Mobilization: Const. \$302.81 Surf. \$0.00.....	\$302.81
Quarry Development:	\$0.00

Total: \$18,867.48

Notes:

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

Road Construction Worksheet

Road Number: 35-2E-2.01 B-B2 Road Name: Sec 1 Sp

Section 200 Clearing and Grubbing:

RVM

RVM Clearing 1.12 Acre x \$1,511.17/Acre = \$1,692.51

RVM Grubbing 0.56 Acre x \$2,842.27/Acre = \$1,591.67

Shoulder Repair Backhoe - 1/4mile/hr 1.05 Mile x \$380.60/Mile = \$399.63

Subtotal: \$3,683.81

Section 300 Excavation:

Subtotal: \$0.00

Section 400 Drainage:

Aluminized mp 0.80 24 inch 16 ga 34 lf x \$63.16/lf = \$2,147.44

Subtotal: \$2,147.44

Section 500 Renovation:

Comment: Ditchline sporadic

Blading: \$923.61/mi x 1.05 mi = \$969.79

Compaction: \$415.02/mi x 1.05 mi = \$435.77

Clean Culverts: \$501.63/mi x 1.05 mi = \$526.71

Remove Barricade

Tractor: D7 with rippers 1 hr x \$250.25/hr = \$250.25

Subtotal: \$2,182.52

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:

Dry Method with Mulch: \$728.40/acre x 0.10 acres = \$72.84

Includes Small Quantity Factor of 1.38

+ Seed Cost: \$132.00/acre x 0.10 acres = \$13.20

+ Mulch Cost: \$320.00/acre x 0.10 acres = \$32.00

Subtotal: \$118.04

Section 1900 Cattleguards:

Subtotal: \$0.00

Section 2100 Roadside Brushing:

Mechanical Brushing

Brushing width Left: 6ft. Right: 6ft.

RoadSide Brushing Light: \$282.91/acre x 1.53 acres = \$432.85

Subtotal: \$432.85

Section 2300 Engineering:

Subtotal: \$0.00

Section 2400 Minor Concrete:

Subtotal: \$0.00

Section 2500 Gabions:

Subtotal: \$0.00

Road Number: 35-2E-2.01 B-B2 Sec 1 Sp Continued

Section 8000 Miscellaneous:

Replace Gate

Remove Pipe Gate and Install Mega Gate, MP 1.74

1 EA x \$10,000.00/EA = \$10,000.00

Subtotal: \$10,000.00

Mobilization:

Construction - 3.38% of total Costs = \$302.81

Surfacing - 0.00% by rock volume = \$0.00

Subtotal: \$302.81

Quarry Development:

Based on 0.00% of total rock volume

Subtotal: \$0.00

Total: \$18,867.48

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Big Dog Sale Date: 24/07/2025

Road Number: 35-2E-2.01 C1-D Road Name: Sec 1 Sp

Road Renovation: 0.7 mi 17 ft Subgrade 0 ft ditch

200 Clearing and Grubbing: 0.00 acres	\$0.00
300 Excavation:	\$0.00
400 Drainage:	\$0.00
Culvert: 0.00 lf	
DownSpout: 0.00 lf	
PolyPipe: 0.00 lf	
500 Renovation:	\$682.12
Blading 0.70 mi	
700-1200 Surfacing:	\$0.00
1300 Geotextiles:	\$0.00
1400 Slope Protection:	\$0.00
1800 Soil Stabilization: 0.00 acres	\$0.00
1900 Cattleguards:	\$0.00
2100 RoadSide Brushing (Mechanical):1.02 acres	\$288.57
2300 Engineering: 0.00 sta.	\$0.00
2400 Minor Concrete:	\$0.00
2500 Gabions:	\$0.00
8000 Miscellaneous:	\$0.00
Mobilization: Const. \$15.83 Surf. \$0.00.....	\$15.83
Quarry Development:	\$0.00
Total:	\$986.52

Notes:

Quantities shown are estimates only and not pay items.

Surfacing Quantities shown are loose cubic yards.

Road Construction Worksheet

Road Number: 35-2E-2.01 C1-D Road Name: Sec 1 Sp

Section 200 Clearing and Grubbing:

Subtotal: \$0.00

Section 300 Excavation:

Subtotal: \$0.00

Section 400 Drainage:

Subtotal: \$0.00

Section 500 Renovation:

Blading w/o Ditches: \$559.44/mi x 0.70 mi = \$391.61

Compaction: \$415.02/mi x 0.70 mi = \$290.51

Subtotal: \$682.12

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:

Comment: Culvert replacement MP 0.06, 0.80, 0.97 from the East

Subtotal: \$0.00

Section 1900 Cattleguards:

Subtotal: \$0.00

Section 2100 Roadside Brushing:

Mechanical Brushing

Brushing width Left: 6ft. Right: 6ft.

RoadSide Brushing Light: \$282.91/acre x 1.02 acres = \$288.57

Subtotal: \$288.57

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 - 0.18% of total Costs = \$15.83

Surfacing - 0.00% by rock volume = \$0.00

Subtotal: \$15.83

Quarry Development:

Based on 0.00% of total rock volume

Subtotal: \$0.00

Road Number: 35-2E-2.01 C1-D Sec 1 Sp Continued

Total: \$986.52

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Big Dog Sale Date: 24/07/2025

Road Number: 35-2E-2.02 Road Name: Medco Mainline

Road Renovation: 0.45 mi 17 ft Subgrade 0 ft ditch

200 Clearing and Grubbing: 0.00 acres	\$0.00
300 Excavation:	\$0.00
400 Drainage:	\$0.00
Culvert: 0.00 lf	
DownSpout: 0.00 lf	
PolyPipe: 0.00 lf	
500 Renovation:	\$664.24
Blading 0.45 mi	
700-1200 Surfacing:	\$0.00
1300 Geotextiles:	\$0.00
1400 Slope Protection:	\$0.00
1800 Soil Stabilization: 0.00 acres	\$0.00
1900 Cattleguards:	\$0.00
2100 RoadSide Brushing (Mechanical):0.65 acres	\$183.89
2300 Engineering: 0.00 sta.	\$0.00
2400 Minor Concrete:	\$0.00
2500 Gabions:	\$0.00
8000 Miscellaneous:	\$0.00
Mobilization: Const. \$13.83 Surf. \$0.00.....	\$13.83
Quarry Development:	\$0.00
Total:	\$861.97

Notes:

Quantities shown are estimates only and not pay items.

Surfacing Quantities shown are loose cubic yards.

Road Construction Worksheet

Road Number: 35-2E-2.02 Road Name: Medco Mainline

Section 200 Clearing and Grubbing:

Subtotal: \$0.00

Section 300 Excavation:

Subtotal: \$0.00

Section 400 Drainage:

Subtotal: \$0.00

Section 500 Renovation:

Blading w/o Ditches: $\$559.44/\text{mi} \times 0.45 \text{ mi} = \251.75

Compaction: $\$415.02/\text{mi} \times 0.45 \text{ mi} = \186.76

Clean Culverts: $\$501.63/\text{mi} \times 0.45 \text{ mi} = \225.73

Subtotal: \$664.24

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

Brushing width Left: 6ft. Right: 6ft.

RoadSide Brushing Light: $\$282.91/\text{acre} \times 0.65 \text{ acres} = \183.89

Subtotal: \$183.89

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 - 0.15% of total Costs = \$13.83

Surfacing - 0.00% by rock volume = \$0.00

Subtotal: \$13.83

Quarry Development:

Based on 0.00% of total rock volume

Subtotal: \$0.00

Road Number: 35-2E-2.02 Medco Mainline Continued

Total: \$861.97

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Big Dog Sale Date: 24/07/2025

Road Number: 35-2E-2.03 A-B Road Name: Fredenburg Meadow

Road Renovation: 1.34 mi 16 ft Subgrade 0 ft ditch

200 Clearing and Grubbing: 0.00 acres	\$0.00
300 Excavation:	\$0.00
400 Drainage:	\$0.00
Culvert: 0.00 lf	
DownSpout: 0.00 lf	
PolyPipe: 0.00 lf	
500 Renovation:	\$2,252.22
Blading 1.34 mi	
700-1200 Surfacing:	\$34,558.08
Quarry Name: Hailicka 1 1/2" 871.00 LCY	
Quarry Name: Hailicka 4" 185.00 LCY	
1300 Geotextiles:	\$0.00
1400 Slope Protection:	\$0.00
1800 Soil Stabilization: 0.00 acres	\$0.00
1900 Cattleguards:	\$0.00
2100 RoadSide Brushing (Mechanical):1.95 acres	\$551.67
2300 Engineering: 0.00 sta.	\$0.00
2400 Minor Concrete:	\$0.00
2500 Gabions:	\$0.00
8000 Miscellaneous:	\$0.00
Mobilization: Const. \$609.42 Surf. \$320.99.....	\$930.41
Quarry Development:	\$0.00

Total: \$38,292.38

Notes:

Quantities shown are estimates only and not pay items.

Surfacing Quantities shown are loose cubic yards.

Road Construction Worksheet

Road Number: 35-2E-2.03 A-B Road Name: Fredenburg Meadow

Section 200 Clearing and Grubbing:

Subtotal: \$0.00

Section 300 Excavation:

Subtotal: \$0.00

Section 400 Drainage:

Subtotal: \$0.00

Section 500 Renovation:

Blading w/o Ditches: \$559.44/mi x 1.34 mi = \$749.65

Compaction: \$415.02/mi x 1.34 mi = \$556.13

Barricade Removal

Remove Earth Berm 2 EA x \$473.22/EA = \$946.44

Subtotal: \$2,252.22

Section 700-1200 Surfacing:

Commercial Quarry Name: Hailicka 1 1/2"

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.66mi	14ft	15ft	4in	5%					

Rock Volume = 871.00 LCY

Purchase Price / Royalty: \$18.50/LCY x 871.00 LCY = \$16,113.50

Processing: \$1.20/LCY x 871.00 LCY = \$1,045.20

Compaction: \$1.38/LCY x 871.00 LCY = \$1,201.98

Basic Rock Haul cost: \$1.62/LCY x 871.00 LCY = \$1,411.02

Rock Haul +15% grades: \$2.43/LCY-mi x 871.00 LCY x 1.13 mi= \$2,391.68

Rock Haul -15% grades: \$1.21/LCY-mi x 871.00 LCY x 5.13 mi= \$5,406.56

Basic Water Haul cost: \$0.79/LCY x 871.00 LCY = \$688.09

Water Haul -15% grades: \$0.17/LCY-mi x 871.00 LCY x 3.00 mi= \$444.21

Commercial Quarry Name: Hailicka 4"

Comment: Rock for heli landing

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
									185 LCY

Rock Volume = 185.00 LCY

Purchase Price / Royalty: \$18.50/LCY x 185.00 LCY = \$3,422.50

Processing: \$1.20/LCY x 185.00 LCY = \$222.00

Compaction: \$1.38/LCY x 185.00 LCY = \$255.30

Basic Rock Haul cost: \$1.62/LCY x 185.00 LCY = \$299.70

Rock Haul +15% grades: \$2.43/LCY-mi x 185.00 LCY x 1.13 mi= \$507.99

Rock Haul -15% grades: \$1.21/LCY-mi x 185.00 LCY x 5.13 mi= \$1,148.35

Subtotal: \$34,558.08

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

Brushing width Left: 6ft. Right: 6ft.

Road Number: 35-2E-2.03 A-B Fredenburg Meadow Continued

RoadSide Brushing Light: \$282.91/acre x 1.95 acres = \$551.67	Subtotal:	\$551.67
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 - 6.80% of total Costs = \$609.42		
Surfacing - 8.42% by rock volume = \$320.99	Subtotal:	\$930.41
Quarry Development:		
Based on 8.42% of total rock volume	Subtotal:	\$0.00
	Total:	\$38,292.38

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Big Dog Sale Date: 24/07/2025

Road Number: 35-2E-3.02 A-B Road Name: Medco Mainline

Road Improvement: 0.15 mi 15 ft Subgrade 0 ft ditch

200 Clearing and Grubbing: 0.51 acres	\$8,517.10
300 Excavation:	\$0.00
400 Drainage:	\$0.00
Culvert: 0.00 lf	
DownSpout: 0.00 lf	
PolyPipe: 0.00 lf	
500 Renovation:	\$619.39
Blading 0.15 mi	
700-1200 Surfacing:	\$27,859.02
Quarry Name: Hailicka 4" 857.00 LCY	
1300 Geotextiles:	\$0.00
1400 Slope Protection:	\$0.00
1800 Soil Stabilization: 2.00 acres	\$2,360.79
Includes Small Quantity Factor of 1.38	
1900 Cattleguards:	\$0.00
2100 RoadSide Brushing (Mechanical):0.22 acres	\$62.24
2300 Engineering: 0.00 sta.	\$0.00
2400 Minor Concrete:	\$0.00
2500 Gabions:	\$0.00
8000 Miscellaneous:	\$0.00
Mobilization: Const. \$642.96 Surf. \$260.50.....	\$903.46
Quarry Development:	\$0.00

Total: \$40,322.01

Notes:

Quantities shown are estimates only and not pay items.

Surfacing Quantities shown are loose cubic yards.

Road Construction Worksheet

Road Number: 35-2E-3.02 A-B Road Name: Medco Mainline

Section 200 Clearing and Grubbing:

Clearing - Light (Clearing): Adjustment Factor (0.93)

1-15% (Avg Side Slopes): Adjustment Factor (0)

Pile and Burn (Slash): Adjustment Factor (1.28)

20-40' (Avg Clearing Widths): Adjustment Factor (0.1)

Total Adjustment Factor: $0.93 + 0 + 1.28 + 0.1 = 2.31$

Base Cost/Acre: $\$1,198.05 \times \text{Adjustment Factor: } 2.31 \times \text{Total Acres: } 0.51 = \$1,411.42$

Landing Grubbing

RVM Grubbing 2.5 Acre $\times \$2,842.27/\text{Acre} = \$7,105.68$

Subtotal: \$8,517.10

Section 300 Excavation:

Subtotal: \$0.00

Section 400 Drainage:

Subtotal: \$0.00

Section 500 Renovation:

Blading w/o Ditches: $\$559.44/\text{mi} \times 0.15 \text{ mi} = \83.92

Compaction: $\$415.02/\text{mi} \times 0.15 \text{ mi} = \62.25

Remove Barricade

Remove Earth Berm 1 EA $\times \$473.22/\text{EA} = \473.22

Subtotal: \$619.39

Section 700-1200 Surfacing:

Commercial Quarry Name: Hailicka 4"

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.15mi	14ft	15ft	8in						

Rock Volume = 377.00 LCY

Purchase Price / Royalty: $\$18.50/\text{LCY} \times 377.00 \text{ LCY} = \$6,974.50$

Processing: $\$1.20/\text{LCY} \times 377.00 \text{ LCY} = \452.40

Compaction: $\$1.38/\text{LCY} \times 377.00 \text{ LCY} = \520.26

Basic Rock Haul cost: $\$1.62/\text{LCY} \times 377.00 \text{ LCY} = \610.74

Rock Haul +15% grades: $\$2.43/\text{LCY-mi} \times 377.00 \text{ LCY} \times 1.42 \text{ mi} = \$1,300.88$

Rock Haul -15% grades: $\$1.21/\text{LCY-mi} \times 377.00 \text{ LCY} \times 5.13 \text{ mi} = \$2,340.15$

Commercial Quarry Name: Hailicka 4"

Comment: Service Landing S2

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
									480 LCY

Rock Volume = 480.00 LCY

Purchase Price / Royalty: $\$18.50/\text{LCY} \times 480.00 \text{ LCY} = \$8,880.00$

Processing: $\$1.20/\text{LCY} \times 480.00 \text{ LCY} = \576.00

Compaction: $\$1.38/\text{LCY} \times 480.00 \text{ LCY} = \662.40

Basic Rock Haul cost: $\$1.62/\text{LCY} \times 480.00 \text{ LCY} = \777.60

Rock Haul +15% grades: $\$2.43/\text{LCY-mi} \times 480.00 \text{ LCY} \times 1.53 \text{ mi} = \$1,784.59$

Rock Haul -15% grades: $\$1.21/\text{LCY-mi} \times 480.00 \text{ LCY} \times 5.13 \text{ mi} = \$2,979.50$

Subtotal: \$27,859.02

Section 1300 Geotextiles:

Subtotal: \$0.00

Section 1400 Slope Protection:

Subtotal: \$0.00

Section 1800 Soil Stabilization:

Dry Method with Mulch: $\$728.40/\text{acre} \times 2.00 \text{ acres} = \$1,456.79$

Includes Small Quantity Factor of 1.38

+ Seed Cost: $\$132.00/\text{acre} \times 2.00 \text{ acres} = \264.00

Road Number: 35-2E-3.02 A-B Medco Mainline Continued

+ Mulch Cost: \$320.00/acre x 2.00 acres = \$640.00

Subtotal: \$2,360.79

Section 1900 Cattleguards:

Subtotal: \$0.00

Section 2100 Roadside Brushing:

Mechanical Brushing

Brushing width Left: 6ft. Right: 6ft.

RoadSide Brushing Light: \$282.91/acre x 0.22 acres = \$62.24

Subtotal: \$62.24

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 - 7.18% of total Costs = \$642.96

Surfacing - 6.83% by rock volume = \$260.50

Subtotal: \$903.46

Quarry Development:

Based on 6.83% of total rock volume

Subtotal: \$0.00

Total: \$40,322.01

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Big Dog Sale Date: 24/07/2025

Road Number: 35-3E-6.00 A-B Road Name: Sec 36 Jeep Rd

Road Improvement: 0.47 mi 17 ft Subgrade 0 ft ditch

200 Clearing and Grubbing: 0.81 acres	\$2,241.67
300 Excavation:	\$0.00
400 Drainage:	\$0.00
Culvert: 0.00 lf	
DownSpout: 0.00 lf	
PolyPipe: 0.00 lf	
500 Renovation:	\$931.22
Blading 0.47 mi	
700-1200 Surfacing:	\$0.00
1300 Geotextiles:	\$0.00
1400 Slope Protection:	\$0.00
1800 Soil Stabilization: 0.10 acres	\$118.04
Includes Small Quantity Factor of 1.38	
1900 Cattleguards:	\$0.00
2100 RoadSide Brushing (Mechanical):0.68 acres	\$282.91
2300 Engineering: 0.00 sta.	\$0.00
2400 Minor Concrete:	\$0.00
2500 Gabions:	\$0.00
8000 Miscellaneous:	\$0.00
Mobilization: Const. \$58.29 Surf. \$0.00.....	\$58.29
Quarry Development:	\$0.00

Total: \$3,632.13

Notes:

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

Road Construction Worksheet

Road Number: 35-3E-6.00 A-B Road Name: Sec 36 Jeep Rd

Section 200 Clearing and Grubbing:

Clearing - Light (Clearing): Adjustment Factor (0.93)

1-15% (Avg Side Slopes): Adjustment Factor (0)

Pile and Burn (Slash): Adjustment Factor (1.28)

20-40' (Avg Clearing Widths): Adjustment Factor (0.1)

Total Adjustment Factor: $0.93 + 0 + 1.28 + 0.1 = 2.31$

Base Cost/Acre: \$1,198.05 x Adjustment Factor: 2.31 x Total Acres: 0.81 = \$2,241.67
Subtotal: \$2,241.67

Section 300 Excavation:

Subtotal: \$0.00

Section 400 Drainage:

Subtotal: \$0.00

Section 500 Renovation:

Blading w/o Ditches: $\$559.44/\text{mi} \times 0.47 \text{ mi} = \262.94

Compaction: $\$415.02/\text{mi} \times 0.47 \text{ mi} = \195.06

Remove Barricade

Remove Earth Berm 1 EA x $\$473.22/\text{EA} = \473.22

Subtotal: \$931.22

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:

Dry Method with Mulch: $\$728.40/\text{acre} \times 0.10 \text{ acres} = \72.84

Includes Small Quantity Factor of 1.38

+ Seed Cost: $\$132.00/\text{acre} \times 0.10 \text{ acres} = \13.20

+ Mulch Cost: $\$320.00/\text{acre} \times 0.10 \text{ acres} = \32.00

Subtotal: \$118.04

Section 1900 Cattleguards:

Subtotal: \$0.00

Section 2100 Roadside Brushing:

Mechanical Brushing

Brushing width Left: 6ft. Right: 6ft.

RoadSide Brushing Light: $\$282.91/\text{acre} \times 0.20 \text{ acres} = \56.58

RoadSide Brushing Medium: $\$471.51/\text{acre} \times 0.48 \text{ acres} = \226.32

Subtotal: \$282.91

Section 2300 Engineering:

Subtotal: \$0.00

Section 2400 Minor Concrete:

Subtotal: \$0.00

Section 2500 Gabions:

Subtotal: \$0.00

Road Number: 35-3E-6.00 A-B Sec 36 Jeep Rd Continued

Section 8000 Miscellaneous:

Subtotal: \$0.00

Mobilization:

Construction - 0.65% of total Costs = \$58.29

Surfacing - 0.00% by rock volume = \$0.00

Subtotal: \$58.29

Quarry Development:

Based on 0.00% of total rock volume

Subtotal: \$0.00

Total: \$3,632.13

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Mobilization Costs - Construction and Surfacing

T.S. Contract Name: Big Dog Sale Date: 24/07/2025

Average Mobilization distance = 50 miles Factor = 1.00

Mobilization: Construction

Comment: Lump Sum for Lowboy Mob around Cobleigh Bridge

Fire Equipment: 1 ea x (1.00 x \$91.00/ea + 8 mi x \$5.06/mi)= \$131.48
Graders-all: 1 ea x (1.00 x \$536.00/ea + 8 mi x \$18.44/mi)= \$683.52
Brush Cutter: 1 ea x (1.00 x \$536.00/ea) = \$536.00
Rollers & Comp: 1 ea x (1.00 x \$536.00/ea + 8 mi x \$27.67/mi)= \$757.36
Excavators (Lg): 1 ea x (1.00 x \$1176.00/ea + 8 mi x \$33.32/mi)= \$1,442.56
RTBackhoes 24/30: 1 ea x (1.00 x \$399.00/ea + 8 mi x \$7.16/mi)= \$456.28
Tractors <= D7: 1 ea x (1.00 x \$856.00/ea + 8 mi x \$48.94/mi)= \$1,247.52
Dump Truck<=15cy: 1 ea x (1.00 x \$124.00/ea + 8 mi x \$5.15/mi)= \$165.20
Water Truck: 1 ea x (1.00 x \$131.00/ea + 10 mi x \$5.47/mi)= \$185.70
Equipment Washing: 9 ea x (\$250.00) /ea = \$2,250.00
Lump Sum: \$#,##0.00

Subtotal: \$8,955.62

Mobilization: Surfacing

Fire Equipment: 1ea x (1.00 x \$91.00/ea + 10 mi x \$5.06/mi)= \$141.60
Graders-all: 1ea x (1.00 x \$536.00/ea + 10 mi x \$18.44/mi)= \$720.40
Rollers & Comp: 1ea x (1.00 x \$536.00/ea + 10 mi x \$27.67/mi)= \$536.00
Dump Truck<=15cy: 4ea x (1.00 x \$124.00/ea + 10 mi x \$5.15/mi)= \$702.00
Water Truck: 1ea x (1.00 x \$131.00/ea + 10 mi x \$5.47/mi)= \$185.70
Equipment Washing: 5 ea x (\$250.00) /ea = \$1,250.00

Subtotal: \$3,812.40

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Summary of Construction Quantities

T.S. Contract Name: Big Dog Sale Date: 24/07/2025

Road Number	Const	Improv	Renov	Decomm	Temp
34-2E-20.00 A			63.36		
34-2E-20.00 B-C			41.18		
34-2E-22.00 A-C			79.73		
34-2E-24.00			16.37		
34-2E-24.01 A			8.98		
34-2E-24.05			16.9		
34-2E-24.06		27.46			
34-2E-26.00 A-C			45.94		
34-2E-29.00A1-3			171.07		
35-2E-1.00 A-B			33.79		
35-2E-1.01			23.23		
35-2E-1.02			3.17		
35-2E-1.03			6.86		
35-2E-1.04			4.75		
35-2E-11.00 A			34.85		
35-2E-2.00 A-D			214.37		
35-2E-2.01 B-B2			55.44		
35-2E-2.01 C1-D			36.96		
35-2E-2.02			23.76		
35-2E-2.03 A-B			70.75		
35-2E-3.02 A-B		7.92			
35-3E-6.00 A-B		24.82			
Total Sta:		60.20	951.46		

200 Clearing and Grubbing	Clearing acres
34-2E-20.00 A	0.0
34-2E-20.00 B-C	1.0
34-2E-22.00 A-C	1.1
34-2E-24.00	0.0
34-2E-24.01 A	0.0
34-2E-24.05	0.0
34-2E-24.06	1.6
34-2E-26.00 A-C	1.1
34-2E-29.00A1-3	0.0
35-2E-1.00 A-B	0.0
35-2E-1.01	0.0
35-2E-1.02	0.0
35-2E-1.03	0.7
35-2E-1.04	0.0
35-2E-11.00 A	0.0
35-2E-2.00 A-D	0.0
35-2E-2.01 B-B2	0.0
35-2E-2.01 C1-D	0.0
35-2E-2.02	0.0
35-2E-2.03 A-B	0.0
35-2E-3.02 A-B	0.5
35-3E-6.00 A-B	0.8

Totals: 6.86

Landing Grubbing 35-2E-3.02 A-B

RVM Grubbing 2.5 Acre

RVM 35-2E-2.00 A-D

Continuation of Construction Quantities

	RVM Clearing	4.27 Acre
	RVM Grubbing	2.06 Acre
	Shoulder Repair Backhoe - 1/4mile/hr	2.94 Mile
RVM	35-2E-2.01 B-B2	
	RVM Clearing	1.12 Acre
	RVM Grubbing	0.56 Acre
	Shoulder Repair Backhoe - 1/4mile/hr	1.05 Mile
RVM	35-2E-1.04	
	RVM Clearing	0.14 Acre
	RVM Grubbing	0.07 Acre
	Shoulder Repair Backhoe - 1/4mile/hr	0.09 Mile
RVM	35-2E-1.02	
	RVM Clearing	0.08 Acre
	RVM Grubbing	0.04 Acre
	Shoulder Repair Backhoe - 1/4mile/hr	0.06 Mile
RVM	35-2E-1.01	
	RVM Clearing	0.36 Acre
	RVM Grubbing	0.18 Acre
	Shoulder Repair Backhoe - 1/4mile/hr44 Mile
RVM	35-2E-1.00 A-B	
	RVM Clearing	0.81 Acre
	RVM Grubbing	0.40 Acre
	Shoulder Repair Backhoe - 1/4mile/hr64 Mile
RVM	34-2E-29.00A1-3	
	RVM Clearing	0.94 Acre
	RVM Grubbing	0.47 Acre
	Shoulder Repair Backhoe - 1/4mile/hr	0.64 Mile
RVM	34-2E-26.00 A-C	
	RVM Clearing	0.98 Acre
	RVM Grubbing	0.49 Acre
	Shoulder Repair Backhoe - 1/4mile/hr	0.87 Mile
RVM	34-2E-24.05	
	RVM Clearing	0.46 Acre
	RVM Grubbing	0.23 Acre
	Shoulder Repair Backhoe - 1/4mile/hr32 Mile
RVM	34-2E-24.01 A	
	RVM Clearing	0.24 Acre
	RVM Grubbing	0.12 Acre
	Shoulder Repair Backhoe - 1/4mile/hr	0.17 Mile
RVM	34-2E-24.00	
	RVM Clearing	0.45 Acre
	RVM Grubbing	0.23 Acre
	Shoulder Repair Backhoe - 1/4mile/hr31 Mile
RVM	34-2E-22.00 A-C	
	RVM Clearing	0.67 Acre
	RVM Grubbing	0.34 Acre
	Shoulder Repair Backhoe - 1/4mile/hr	1.51 Mile
RVM	34-2E-20.00 B-C	
	RVM Clearing	0.72 Acre
	RVM Grubbing	0.35 Acre
	Shoulder Repair Backhoe - 1/4mile/hr78 Mile
RVM	34-2E-20.00 A	
	RVM Clearing	0.84 Acre
	RVM Grubbing	0.42 Acre
	Shoulder Repair Backhoe - 1/4mile/hr58 Mile

300 Excavation

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

Continuation of Construction Quantities

400 Drainage

Road Number	CMP Culvert	Polypipes	Downspouts
34-2E-20.00 B-C	36 lf	0 lf	0 lf
34-2E-29.00A1-3	34 lf	0 lf	0 lf
35-2E-2.01 B-B2	34 lf	0 lf	0 lf
Total Drainage:	<u>104 lf</u>	<u>0 lf</u>	<u>0 lf</u>

Culvert Qty	Aluminized	Galvanized	Poly Pipe
12 inch	0 lf	0 lf	
18 inch	0 lf	0 lf	0 lf
24 inch	104 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		
24 inch	0 lf	0 lf	0 lf
30 inch			0 lf

Reconstruct AWD 34-2E-22.00 A-C

Tractor: D7 with winch 2 hr
Excavator -Small (1.5 CY) 1 hr

500 Renovation	Blade Miles	Slide cy
34-2E-20.00 A	1.20	0
34-2E-20.00 B-C	0.78	0
34-2E-22.00 A-C	1.51	0
34-2E-24.00	0.31	0
34-2E-24.01 A	0.17	0
34-2E-24.05	0.32	0
34-2E-24.06	0.52	0
34-2E-26.00 A-C	0.87	0
34-2E-29.00A1-3	3.24	0
35-2E-1.00 A-B	0.64	0
35-2E-1.01	0.44	0
35-2E-1.02	0.06	0
35-2E-1.03	0.13	0
35-2E-1.04	0.09	0
35-2E-11.00 A	0.66	0
35-2E-2.00 A-D	4.06	0
35-2E-2.01 B-B2	1.05	0
35-2E-2.01 C1-D	0.70	0
35-2E-2.02	0.45	0
35-2E-2.03 A-B	1.34	0
35-2E-3.02 A-B	0.15	0
35-3E-6.00 A-B	0.47	0

Totals:	<u>19.16</u>	<u>0</u>
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Barricade Removal 35-2E-2.03 A-B
Remove Earth Berm 2 EA
Remove Barricade 35-3E-6.00 A-B
Remove Earth Berm 1 EA
Remove Barricade 35-2E-2.01 B-B2

Tractor: D7 with rippers 1 hr

Continuation of Construction Quantities

Remove Barricade	35-2E-3.02 A-B	
Remove Earth Berm		1 EA
Remove boulder barricade	34-2E-24.06	
Excavator -Small (1.5 CY)		1 hr
Remove earth barricade	35-2E-1.02	
Tractor: D7 with winch		1 hr
Remove Gate Posts	35-2E-1.00 A-B	
Backhoe		1 hr

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: Hailicka 1 1/2"

Commercial	Roadway	Turnouts	Other	
34-2E-22.00 A-C	1,898	0	0	1,898
34-2E-29.00A1-3	885	0	0	885
35-2E-2.00 A-D	1,535	0	0	1,535
35-2E-2.03 A-B	871	0	0	871
34-2E-20.00 A	1,459	0	0	1,459
34-2E-26.00 A-C	517	0	0	517
34-2E-29.00A1-3	1,536	0	80	1,616
Totals:	8,701	0	80	8,781

Quarry Name: Hailicka 4"

Commercial	Roadway	Turnouts	Other	
34-2E-22.00 A-C	0	0	195	195
35-2E-3.02 A-B	377	0	0	377
35-2E-3.02 A-B	0	0	480	480
34-2E-20.00 B-C	0	0	185	185
34-2E-20.00 B-C	1,433	0	0	1,433
35-2E-2.03 A-B	0	0	185	185
34-2E-26.00 A-C	0	0	185	185
34-2E-20.00 A	716	0	0	716
Totals:	2,526	0	1,230	3,756

Quarry Name: Hailicka Rip Rap

Commercial	Roadway	Turnouts	Other	
34-2E-20.00 A	0	0	5	5
Totals:	0	0	5	5

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
34-2E-20.00 A	0.0	0.0	0.0
34-2E-20.00 B-C	0.0	0.0	0.0

Continuation of Construction Quantities

34-2E-22.00 A-C	0.0	0.0	0.0
34-2E-24.00	0.0	0.0	0.0
34-2E-24.01 A	0.0	0.0	0.0
34-2E-24.05	0.0	0.0	0.0
34-2E-24.06	0.0	0.0	0.0
34-2E-26.00 A-C	0.0	0.0	0.0
34-2E-29.00A1-3	0.0	0.0	0.0
35-2E-1.00 A-B	0.0	0.0	0.0
35-2E-1.01	0.0	0.0	0.0
35-2E-1.02	0.0	0.0	0.0
35-2E-1.03	0.0	0.0	0.0
35-2E-1.04	0.0	0.0	0.0
35-2E-2.00 A-D	0.0	0.0	0.0
35-2E-2.01 B-B2	0.0	0.0	0.0
35-2E-3.02 A-B	0.0	0.0	0.0
35-3E-6.00 A-B	0.0	0.0	0.0

Totals:	0.00	3.72	0.00
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Small Quantity Factor of 1.38 used

1900 Cattleguards

MP 0.01 Cattleguard cleaning	34-2E-29.00A1-3	
Clean cattleguard		1 EA
Repair broken cross bar	35-2E-2.00 A-D	
Weld loose crossbar		2 hr

2100 RoadSide Brushing acres

34-2E-20.00 A - Mechanical Brushing	1.8
34-2E-20.00 B-C - Mechanical Brushing	1.1
34-2E-22.00 A-C - Mechanical Brushing	2.2
34-2E-24.00 - Mechanical Brushing	0.5
34-2E-24.01 A - Mechanical Brushing	0.3
34-2E-24.05 - Mechanical Brushing	0.5
34-2E-24.06 - Mechanical Brushing	0.8
34-2E-26.00 A-C - Mechanical Brushing	1.3
34-2E-29.00A1-3 - Mechanical Brushing	4.7
35-2E-1.00 A-B - Mechanical Brushing	0.9
35-2E-1.01 - Mechanical Brushing	0.6
35-2E-1.02 - Mechanical Brushing	0.1
35-2E-1.03 - Mechanical Brushing	0.2
35-2E-1.04 - Mechanical Brushing	0.1
35-2E-11.00 A - Mechanical Brushing	1.0
35-2E-2.00 A-D - Mechanical Brushing	5.9
35-2E-2.01 B-B2 - Mechanical Brushing	1.5
35-2E-2.01 C1-D - Mechanical Brushing	1.0
35-2E-2.02 - Mechanical Brushing	0.7
35-2E-2.03 A-B - Mechanical Brushing	2.0
35-2E-3.02 A-B - Mechanical Brushing	

35-3E-6.00 A-B - Mechanical Brushing 0.2
0.7

Totals: 27.89

2300 Engineering stations

Totals: 0.00

2400 Minor Concrete

Totals: No Quantities

Continuation of Construction Quantities

2500 Gabions

Totals: No Quantities

8000 Miscellaneous

Replace Gate 35-2E-2.01 B-B2

Remove Pipe Gate and Install Mega Gate, MP 1.74 1 EA

Temp Bridge placement 35-2E-1.03

Excavator - Large (3 CY) 3 hr

General Laborer 4 hr

General Laborer 4 hr

Lowboy 4 hr

Lowboy 4 hr

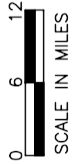
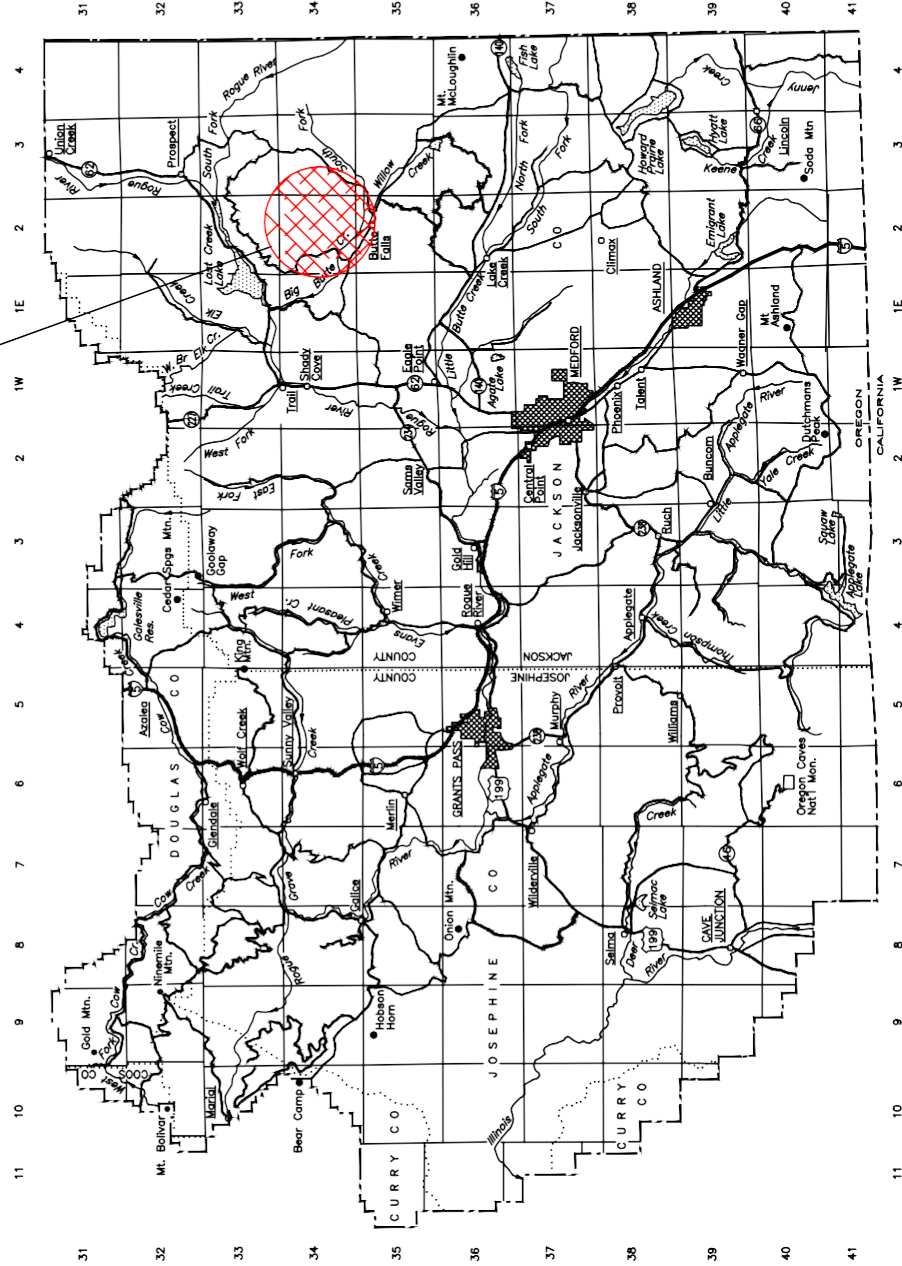
Crew Cab or 3/4 Ton Pickup 4 hr

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
MEDFORD DISTRICT

EXHIBIT C-1
SHEET 1 OF 1

BIG DOG TIMBER SALE
TRACT NO. ORM05-TS-2025.0001

PROJECT LOCATION



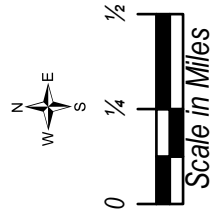
ALWAYS
THINK
SAFETY

Exhibit No.	Description
C-1	TITLE SHEET
C-2	ROAD LOCATION MAP
C-3	ESTIMATE OF QUANTITIES
C-4	SPECIFICATION SHEET
C-5	ROAD SPECIFICATIONS
C-6	ROAD RENOVATION AND IMPROVEMENT WORK LIST
C-7	SPECIAL PROVISIONS
C-8	ROADSIDE BRUSHING & RVM DETAILS
C-9.1	DRAINAGE AND EROSION CONTROL DETAILS
C-9.2	TYPICAL ARMORED WATER DIP DETAILS
C-10	TYPICAL ROAD DATA
C-11	RD SURFACING & CURVE WIDENING
C-12.1	CULVERT LIST
C-12.2	CULVERT BAND DETAILS
C-12.3	CULVERT INSTALLATION DETAILS
C-12.4	CULVERT DOWNSPOUTS

REV. NO.	DESCRIPTION	DATE	APPROV.
	UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT MEDFORD DISTRICT - MEDFORD, OREGON		
BIG DOG TITLE SHEET			
DESIGNED _____			
REVIEWED _____			
APPROVED _____			
DRAWN DKL	SCALE AS SHOWN		
DATE APRIL 2023	SHEET 1 OF 1		
DRAWING NO.	ORM05-TS-2025.0001-C1		



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Water Source







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Road Projects

- | | |
|--|---------------------------------|
|  | Road to be Renovated |
|  | Road to be Renovated and Rocked |
|  | Designated Skid |
|  | Roadside Veg Management |

Roads by Surface

-  Paved
 Rocked
 Natural
 Unknown

Landings

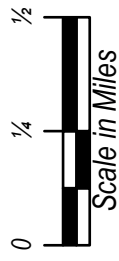
- helicopter
log
service

Harvest Units

- Harvest Units

Ownership

- ☐ Bureau of Land Management
☒ U.S. Forest Service
☐ Private Individual or Company



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TIMBER SALE ROAD SPECIFICATIONS

TABLE OF CONTENTS

SECTION	DESCRIPTION
100	General
200	Clearing and Grubbing
300	Excavation and Embankment
400	Pipe Culverts
500	Renovation and Improvement of Existing Roads
600	Watering
900	Aggregate Base Course - Screened Rock
1200	Aggregate Surface Course - Crushed Rock
1300	Geotextiles
1400	Slope Protection
1600	Quarry and Borrow Pit Development
1700	Erosion Control
1800	Soil Stabilization
1900	Cattle Guards and Bypass Gates
2100	Roadside Brushing

TIMBER SALE ROAD SPECIFICATIONS

GENERAL – 100

101 - Prework Conference(s):

A prework conference will be held prior to the start of new construction, improvement, renovation, surfacing, and seeding/mulching operations. The Purchaser shall request the conference at least 72 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

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.

TIMBER SALE ROAD SPECIFICATIONS

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 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.

TIMBER SALE ROAD SPECIFICATIONS

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 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.

TIMBER SALE ROAD SPECIFICATIONS

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.

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.

Typical Cross Sections - Cross-sectional plane of a typical roadway; showing natural

TIMBER SALE ROAD SPECIFICATIONS

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.

102a - Tests Used in These Specifications:

<u>AASHTO T 11</u>	Quantity of rock finer than No. 200 sieve.
<u>AASHTO T 27</u>	Sieve analysis of fine and coarse aggregate using sieves with square openings; gradation.
<u>AASHTO T 89</u>	Liquid limit of material passing the No. 40 sieve. Water content at which the soil passes from a plastic to a liquid state.
<u>AASHTO T 90</u>	Plastic limits and plasticity index of soil. a. Plastic limit - lowest water content at which the soil remains plastic. b. Plasticity index - range of water content, within which the material is in a plastic state. Numerical difference between the liquid and plastic limits of the soil.
<u>AASHTO T 96</u>	Resistance to abrasion of small size coarse aggregate by use of the Los Angeles machine.
<u>AASHTO T 99</u>	Relationship between soil moisture and density of soil. Method A - 4" mold, soil passing a No. 4 sieve 25 blows/layer & 3 layers. Method C - 4" mold, soil passing a 3/4 inch sieve 25 blows/layer & 3 layers. Method D - 6" mold, soil passing a 3/4 inch sieve. 56 blows/layer & 3 layers.
<u>AASHTO T 119</u>	Slump of hydraulic cement concrete.
<u>AASHTO T 152</u>	Air content of freshly mixed concrete.

TIMBER SALE ROAD SPECIFICATIONS

- | | |
|--|--|
| <u>AASHTO T 166</u> | Specific Gravity of compacted Bituminous Mixtures. |
| <u>AASHTO T 176</u> | Shows relative portions of fine dust or claylike materials in soil or graded aggregate. |
| <u>AASHTO T 180</u> | (OSHD 106-71) moisture density relationship of soil same as AASHTO T 99 proctor but uses a 10-lb rammer & 18-in drop height. |
| <u>AASHTO T 191</u> | <u>Sand Cone.</u> Density of soil in place: For subgrade use 6-inch or 12-inch cone. For rock surfacing for 1-1/2-inch minus to 3-inch minus use 12-inch cone. |
| <u>AASHTO T 205</u> | <u>Rubber balloon.</u> Density of soil in place. Use for compacted or firmly bonded soil. |
| <u>AASHTO T 209</u> | Maximum Specific Gravity of Bituminous Paving Mixtures. |
| <u>AASHTO T 210</u> | Durability of aggregates based on resistance to produce fines. |
| <u>AASHTO T 224</u> | Correction for coarse particles in the soil. |
| <u>AASHTO T 238</u> | Density of Soil and Soil-Aggregate in place by nuclear methods. |
| <u>AASHTO T 248</u> | Reducing field samples of aggregate to testing size by mechanical splitter, quartering, or miniature stockpile sampling. |
| <u>ASTM D 4564</u> | Determination of relative density of cohesionless soils. |
| <u>DMSO (dimethyl sulfide)</u> Determines volume of expanding clays in aggregates. Usually associated with marine basalts. | |
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|------|---|---|
| 103 | - | Compaction equipment shall meet the following requirements: |
| 103a | - | <u>Padded Drum (Tamping) Rollers.</u> The unit shall consist of a drum with pads, be either self propelled or towed by a tractor, and capable of operating at a speed of 6 mph. The drum shall be no less than 48 inches in diameter over the pads and no less than 60 inches in width. The pads shall have a minimum height of 3 inches, and a face area of no less than 14 square inches. The weight at drum shall be no less than 8000 lb. |
| 103b | - | <u>(Sheepfoot) (Tamping) rollers.</u> A tamping roller unit shall consist of two watertight metal drums mounted in frames in such manner as to be fully oscillating, together with a tractor having sufficient weight and power under |

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actual working conditions to pull the roller drums at a minimum speed of 2.5 miles per hour. The drums shall be no less than 60 inches in diameter and no less than 54 inches in length, measured at the drum's surface, and shall be studded with tamping feet projecting no less than 7 inches from the face of the drums.

The distance between circumferential rows of tamper feet shall be such that the diagonal distance from any foot to the nearest foot in each adjacent row shall be no more than 12 inches. The cross-sectional area of the face of each tamper foot, measured perpendicular to the axis of the stud, shall be no less than 5-1/2 square inches nor more than 8 square inches.

The weight of the tamping-roller unit shall be such as to exert a minimum pressure of 250 pounds per square inch on the ground area in contact with the tamping feet, and the roller shall be so designed that the weight may be increased to exert a pressure up to 500 pounds per square inch on the ground area in contact with the tamping feet. The ground pressure shall be determined by dividing the total weight of the roller unit, not including the weight of the tractor, by the total cross-sectional area of the tamping feet in one row of tamping feet parallel to the axis of the roller.

- 103c - Smooth-wheel power rollers. Smooth-wheel power rollers shall either be of the 3-wheel type, weighing no less than 10 tons, or of the tandem type, 2-wheel or 3-wheel, weighing no less than 8 tons. Smooth-wheel roller shall provide compression of 325 pounds per linear inch of width of rear wheels or drum.
- 103d - Pneumatic-tired rollers. Pneumatic-tired rollers shall be of the double-axle type equipped with pneumatic tires each of equal size and type. The spacing between the sidewalls of adjacent tires shall not exceed 5 inches and the rear tires shall be staggered in relation to the front tires. The rolling width of the unit shall be no less than 60 inches, exclusive of the power unit. The roller shall be so constructed that the contact pressure is uniformly distributed on all of the tires, and the tires shall be inflated to maintain the air pressure in the several tires within a total tolerance of 5 pounds per square inch. The roller shall be so constructed that the total weight shall be between 1,000 and 2,000 pounds per tire. The actual operating weight of the rollers shall be as ordered by the Authorized Officer.

Each pneumatic-tired roller shall be drawn by equipment having sufficient power and weight under normal working condition to pull the roller at a minimum speed of 5 miles per hour, or it may be self-propelled to obtain a minimum speed of 5 miles per hour.
- 103e - Grid roller. A grid roller shall consist of two or more cylindrical drums independently mounted on a common shaft in a rigid frame. Each drum shall have a minimum outside diameter of 5 feet and a minimum width of 2 feet 6 inches. The overall width of the roller exclusive of frame shall be no less than 5 feet 6

TIMBER SALE ROAD SPECIFICATIONS

inches of which no more than 6 inches shall be used for center spacing between two roller drums. The face of the drums shall have the appearance of woven open-mesh made by interlacing bars of no less than 1-1/4 inches nor more than 1-3/4 inches diameter space spaced on 4-1/2 inches to 5-1/2 inches center. Net opening between the bars shall be no less than 3 inches nor more than 4 inches. The roller shall be so constructed that counterweights can be used to adjust the gross weight of the roller to no less than 27,000 pounds. The grid roller shall be drawn by a power unit capable of propelling the fully loaded roller through 6 inches of loose embankment material at a speed of at least 4 miles per hour.

- 103f - Vibratory roller. The drum diameter shall be no less than 48 inches, the drum width no less than 58 inches, and have a turning radius of 15 feet or less. Vibration frequency shall be regulated in steps to 1400, 1500, and 1600 vibrations per minute (VPM), corresponding to engine speeds of 1575, 1690, and 1800 RPM. The centrifugal force developed shall be 7 tons at 1600 RPM. It shall be activated by a power unit of no less than 25 horsepower. The vibratory roller shall be self-propelled or drawn by a vehicle of sufficient horsepower to enable the unit to travel through a loose layer of material at a speed ranging from 0.9 mile to 1.8 miles per hour, as directed by the Authorized Officer.

The towing vehicle and roller or self-propelled unit meeting the above requirements shall be considered a vibratory roller unit.

- 103g - Vibratory compactor. Vibratory compactors shall consist of multiple or gang-type compacting units or pads with a minimum variable width of 2 feet. It shall be self-contained and capable of compacting material as required.
- 103h - Drum drive self-propelled vibratory grid roller. The unit shall consist of one cylindrical drum with a drum diameter of no less than 56 inches, nor more than 66 inches and the drum width shall be 84 inches. Vibration frequency shall be regulated in steps from 1200 to 1800 vibrations per minute (VPM), and the centrifugal force developed shall be at least 40,000 pounds at 1800 RPM. The vibratory grid roller shall be self-propelled and have a power unit of no less than 112 horsepower. The "grid" design shall be a herringbone or z-bar pattern around the circumference of the drum. The grid bars shall be 1 inch in height and spaced no more than 8-1/2 inches apart.
- 103i - Other. Compaction equipment approved by the Authorized Officer.

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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 6 feet back from the bottom of the ditch, and 6 feet out from the shoulder of the fill side of the road.
- 202a - Where clearing limits for structures have not been staked or shown on the plans, the limits shall extend 6 feet out from the outside edge of the structure.
- 202b - Where clearing limits for borrow pits or quarries, stockpile sites, channel changes, and ditches have not been staked or shown on the plans, the limits shall extend 6 feet back of the top of the cut slope and 6 feet outside of the outside slope lines.
- 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 as shown on the plans.
- 203a - Brush under 1 feet in height need not be cut within the limits established for clearing.
- 203b - Standing trees and snags to be cleared shall be felled within the limits established for clearing unless otherwise authorized.
- 203c - Disposal of logs from private timber cleared within the limits established as shown on the plans or 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 in accordance with Subsections 204a, and 204b, and 204c, and 204d, and 204e between the top of the cut slope and the toe of the fill slope.
- 204a - Stumps, including those overhanging cut banks, shall be removed within the required excavation limits.
- 204c - On excavated areas, roots and embedded wood shall be removed to a depth no

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less than 6 inches below the subgrade.

- 204b - Stumps and other protruding objects shall be completely removed within the limits of required embankments having heights of less than 4 feet. When authorized, stumps and other nonperishable objects may be left provided they do not extend more than 6 inches above the existing ground line.
- 204d - On areas to be occupied by embankments having heights greater than 4 feet, no stump or portion thereof shall remain within 3 feet of embankment subgrades or slope surfaces after grubbing is completed.
- 204e - Roots and embedded wood material shall be removed to a depth no less than 1 foot below embankment subgrades or slope surfaces.

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205 - Clearing and grubbing debris shall not be placed or permitted to remain in or under road embankment sections.

Road No.	From M.P./Sta	To M.P./Sta	Total Miles	Activity Type	Disposal Method
34-2E-20.00 A	0.00	0.40	1.10	Rdside Veg. Mgt.	Pile
34-2E-20.00 A	0.52	0.73		Rdside Veg. Mgt.	Pile
34-2E-20.00 B	1.49	1.98		Rdside Veg. Mgt.	Pile
34-2E-22.00 C	1.05	1.51	0.46	Rdside Veg. Mgt.	Pile
34-2E-24.00	0.00	0.31	0.31	Rdside Veg. Mgt.	Pile
34-2E-24.01	0.00	0.17	0.17	Rdside Veg. Mgt.	Pile
34-2E-24.05	0.00	0.32	0.32	Rdside Veg. Mgt.	Pile
34-2E-24.06	0.00	0.52	0.52	ROW Clear & Grub	Pile
34-2E-26.00	0.00	0.05	0.68	Rdside Veg. Mgt.	Pile
34-2E-26.00	0.24	0.87		Rdside Veg. Mgt.	Pile
34-2E-29.00	0.48	1.13	0.64	Rdside Veg. Mgt.	Pile
35-2E-1.00	0.00	0.08	0.56	Rdside Veg. Mgt.	Pile
35-2E-1.00	0.16	0.64		Rdside Veg. Mgt.	Pile
35-2E-1.01	0.00	0.04	0.25	Rdside Veg. Mgt.	Pile
35-2E-1.01	0.23	0.44		Rdside Veg. Mgt.	Pile
35-2E-1.02	0.00	0.06	0.06	Rdside Veg. Mgt.	Pile
35-2E-1.03	0.00	0.13	0.13	ROW Clear & Grub	Pile
35-2E-1.04	0.00	0.09	0.09	Rdside Veg. Mgt.	Pile
35.2E-2.00	0.83	2.60	2.83	Rdside Veg. Mgt.	Pile
35.2E-2.00	2.64	2.69		Rdside Veg. Mgt.	Pile
35.2E-2.00	2.74	2.85		Rdside Veg. Mgt.	Pile
35.2E-2.00	2.96	3.43		Rdside Veg. Mgt.	Pile
35.2E-2.00	3.54	3.80		Rdside Veg. Mgt.	Pile
35.2E-2.00	3.89	4.06		Rdside Veg. Mgt.	Pile
35-2E-2.01	0.70	0.80	0.58	Rdside Veg. Mgt.	Pile
35-2E-2.01	0.94	1.29		Rdside Veg. Mgt.	Pile
35-2E-2.01	1.36	1.40		Rdside Veg. Mgt.	Pile
35-2E-2.01	1.66	1.75		Rdside Veg. Mgt.	Pile
35-2E-3.02	0.00	0.15	0.15	ROW Clear & Grub	Pile
35-3E-6.00	0.18	0.47	0.29	ROW Clear & Grub	Pile

TIMBER SALE ROAD SPECIFICATIONS

- 206 - Clearing and grubbing debris shall be disposed of by burning in accordance with Subsection 207, and/or burying in accordance with Subsection 208, and/or chipping in accordance with Subsection 209 and/or scattering in accordance with Subsection 210, and/or piling in accordance with Subsection 211, and as shown on the plans.
- 206a - Notwithstanding Subsections 204, 204a, 204d, 205, clearing and grubbing debris resulting from landing construction as shown on Exhibit A, 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.
- 207 - The Purchaser shall prepare a burning plan for the disposal of clearing and grubbing debris in accordance with local and state laws, rules, and regulations. The plan shall be approved in writing by the Authorized Officer prior to burning.
- 207a - Burning shall utilize methods which produce intense heat with no visible smoke emissions except that minimal emissions of smoke associated with starting and stopping the operations will be tolerated. Prior to beginning burning the Purchaser shall obtain a burning permit from the regulating authority enforcing the air pollution control standards for the area and shall furnish a copy of the permit to the Authorized Officer. At the conclusion of each burning session, the fire shall be completely extinguished so that no smoldering debris remains. Debris to be burned shall be dirt free. Final placement of debris into the actual burning area shall be done with a crane, loader, or other suitable lifting equipment. The use of dozers will not be permitted, unless they are equipped with a brush blade. Stumps larger than 3 feet in diameter shall be split prior to burning.
- 207b - The Purchaser may use a burning method of his own choosing which complies with the requirements of Subsection 207a and has the prior written approval of the Authorized Officer.
- 208 - Trees and limbs 4 inches in diameter and smaller, and rotten logs and similarly decomposed, degradable vegetation shall be broken down into pieces not larger than 4 inches in diameter and 3 feet in length and shall be distributed in thin layers throughout those embankment portions which are 3 feet or more below subgrade elevation. The debris shall be placed in a manner to prevent bunching or nesting and be clear of culvert pipe and structures.
- 208a - Clearing debris larger than 4 inches in diameter including stumps, firm logs, and other firm large pieces, that are not removed from the contract area by the Purchaser, shall be disposed of by burying in trenches or bury bays as designated by the Authorized Officer as shown on the plans between the outer edges of embankment slopes and the clearing limits. The trenches shall not be constructed

TIMBER SALE ROAD SPECIFICATIONS

beneath drainage ditches or in areas that will be subject to measurable amounts of free-flowing water. The debris shall be placed in layers with the stumps, logs, and large pieces distributed to avoid nesting. Each successive layer shall be covered with earth or other suitable embankment material by the land-fill methods so as to fill voids. The final surface shall be covered with a minimum of 2 feet of excavated earth or other approved embankment material.

- 208b - Trees, firm logs, and other firm large pieces, 4 inches in diameter and 8 feet in length and larger and not removed from the contract area by the Purchaser, shall be piled at locations determined by the Authorized Officer.
- 208c - Clearing debris shall be placed outside the roadway in a neat, compacted windrow laid approximately parallel and along the toe-line of embankment slopes. The top of the windrow shall not extend above the subgrade. Material in the windrow shall be matted down with construction equipment to form a compact and uniform pile. Windrows shall have 16-foot minimum breaks at least every 200 feet. Windrows shall not be placed against trees. A pioneer road may be constructed to provide an area for placement of windrows provided the excavated material is kept within the clearing limits and does not adversely affect the road construction.
- 209 - Clearing and grubbing debris shall be reduced to chips of an acceptable size and disposed of by scattering.
- 209a - Clearing and grubbing debris shall be reduced to chips having a maximum thickness of 2 inches and faces not exceeding 6 square inches on an individual surface. Chips will be used as a mulch and be produced and stockpiled at locations that will not interfere with construction and ultimately spread over designated portions of embankments and cut slopes in layers not to exceed 3 inches in loose thickness.

A chip blower approved by the Authorized Officer shall be used to apply the chips, and after placement of the chips, 50 pounds of available nitrogen per ton of chips shall be applied to the chipped areas.
- 210 - Disposal of clearing and grubbing debris and stumps and cull logs shall be by scattering over government owned lands outside of established clearing limits in a manner acceptable to the Authorized Officer. The areas for such scattering shall have the prior approval of the Authorized Officer.
- 210a - Disposal of clearing and grubbing debris and stumps and cull logs on non-government property by scattering, burning, chipping, and piling this material outside of clearing limits will be permitted provided the Purchaser obtains a written permit from the property owner on whose property the disposal is to be

TIMBER SALE ROAD SPECIFICATIONS

made. The Purchaser shall furnish the Authorized Officer a certified copy of the permit and a written release from the property owner absolving the Government from responsibilities in connection with the disposal of debris on said property.

- 210b - Clearing and grubbing debris and/or stumps and cull logs resulting from road construction on non-Government property shall be loaded and hauled to designated areas, as shown on the plan. Disposal shall be by burning in accordance with Subsection 207, and/or burying in accordance with Subsection 208, and/or chipping in accordance with Subsection 209, and/or scattering in Subsection 210, and/or piling in accordance with subsection 211.
- 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.
- 212 - No grading will be permitted prior to completion and approval by the Authorized Officer of the required clearing and grubbing work, except that stump grubbing may proceed with the excavation of the road prism.
- 213 - No clearing or grubbing debris shall be left lodged against standing trees

EXCAVATION AND EMBANKMENT - 300

- 301 - This work shall consist of excavating, overhaul, placement of embankments, backfilling, borrowing, leveling, ditching, grading, insloping, outsloping, 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, and typical cross sections shown on the plans.
- 302 - Excavation shall also consist of the excavation of road and landing cut sections, borrow sites, backfilling, leveling, ditching, grading, compaction, and other earth moving work necessary for the construction of the roadway in accordance with these specifications and conforming to the lines, grades, dimensions, and typical cross sections shown on the plans and as marked on the ground with stakes or metal tags.
- 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.

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- 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 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, 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.
- 305b - Embankment materials shall be placed in successive parallel layers on areas cleared of stumps, cull logs, brush, sod, and other vegetative and deleterious materials, except as provided under Subsection 204. Roadway embankments of earth material shall be placed in horizontal layers not exceeding 8 inches in depth.
- 305c - Embankments formed of material containing less than 25 percent rock not larger than 8 inches in the greatest dimension shall be placed in 12-inch layers. Material containing more than 25 percent rock not larger than 12 inches in the greatest dimension shall be placed in successive layers not exceeding 2 feet in thickness.
- 305d - Where embankments are constructed predominantly of blasted rock material, depth of layers shall not exceed 4 feet. Rock fragments having dimensions greater than 4 feet will be permitted provided that they have no dimensions greater than 6 feet and that clearance between adjacent fragments is adequate for the placing and compacting of material in horizontal layers as specified, and that no part of the larger fragments comes within 4 feet of subgrade.

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- 306 - Layers of embankment selected borrow final subgrade and selected roadway excavation material as specified under Subsections 305a and 305b shall be moistened or dried to a uniform optimum moisture content suitable for maximum density and compacted to full width with compacting equipment conforming to requirements of Subsections 103a, 103b, 103c, 103d, 103e, 103f, 103g, 103h, 103i, and in accordance with the following table:

Landing No.	Road No.	Subsection 306	Landing Type
H-7	34-2E-20.00	306f	Log
H-12	34-2E-24.05	306a	Log/Service
H-8	35-2E-2.03	306f	Log
S-2	35-2E-3.02	306a	Service

- 306a - Minimum compaction for each layer of embankment, selected borrow, and selected roadway excavation material placed at optimum moisture shall be 1 hour of continuous compacting for each 150 cubic yards in place, 4 stations or road, and 6 passes over each fill width layer or fraction thereof.
- 306b - Compacted materials shall have a uniform density of no less than 85 percent of the maximum density as determined by a testing device calibrated by the incremental test method specified under Subsection 307.
- 306c - Compacted materials shall have a uniform density of no less than 85 percent of the maximum density as determined by AASHTO T 99, Method A or Method D.
- 306d - Compacted materials within 3 feet of the established subgrade elevation shall have a density in place of no less than 95 percent of maximum density, and below the 3-foot limit, these materials shall have a density in place of no less than 90 percent of maximum density. Maximum density shall be determined by AASHTO T 99, Method A or Method D.
- 306e - The final subgrade except landings and temporary roads shall be compacted to full width with compacting equipment conforming to the requirements of Subsections 103a, 103b, 103c, 103d, 103e, 103f, 103g, 103h, and 103i. Minimum compaction shall be 1 hour of continuous compacting for each 8 stations of road or a fraction of as measured along the center line of the constructed road. Landings and temporary roads shall be compacted by routing construction equipment over full width.
- 306f - Compaction of embankment layers placed as specified under Subsection 305b

TIMBER SALE ROAD SPECIFICATIONS

above shall be accomplished by routing construction equipment over full width of embankment structures except as specified in Subsection 306.

- 306g - All fill slopes shall be compacted to 75 percent of maximum density, either by walking with cat/excavator or by pressing with excavator bucket, to prevent surface erosion and raveling.
- 307 - The Purchaser shall establish control sections as shown on the plans and/or determined by the Authorized Office on which the incremental measurements of compaction by a nuclear densometer, penetrometer or Clegg hammer can be made. No more than 3 sections will be required for the designated road and each section will not exceed 500 feet in length. Construction conditions under which the tests are conducted shall approximate normal construction conditions for the type of compaction work required in Subsection 306b. Compaction achieved on these control sections shall be used to establish calibration standards for the nuclear densometer, penetrometer, or Clegg hammer for the rest of the project.
- 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 no less than 1 foot and no more than 3 feet beyond the top of the cut. Rounding shall be performed in soils that can be shaped without ripping or blasting.
- 310 - Serrated cut slopes shall be constructed so that the final slope line shall consist of a series of steps. The step rise and tread dimensions shall be as shown on the plans.
- 310a - Steps are to be constructed on an approximately horizontal grade as determined by visual inspection. Construction on the first step shall begin immediately below the top of the cut. Each successive step shall be constructed in the opposite direction from the construction of the preceding one to minimize build up of loose excavated material at the ends of the cuts. Loose material at the end of the cuts shall be removed and the steps blended into the natural groundline. Where rock too hard to rip is encountered within a cut, steps shall be blended into the rock.
- 310b - Each step shall be completed before beginning the following one, except when permitted by the Authorized Officer; portions of steps may be constructed at the ends of cuts to accommodate general construction practices.

TIMBER SALE ROAD SPECIFICATIONS

- 311 - In solid rock cuts where pockets that will not drain are formed by blasting below the subgrade elevation, drainage shall be provided by ditching to the edge of the subgrade and backfilling to grade, and compacting the pockets and the ditch with rock fragments, gravel, or other suitable porous material.
- 312 - When material, except solid rock, encountered in cuts at subgrade, is suitable for use in forming the finished roadbed, the top 6-inch layer of the subgrade shall be thoroughly scarified for the full width of the roadbed. Roots, sod, and other deleterious material or stones that will not pass a 6-inch square opening shall be removed. The scarified material shall be processed to the optimum moisture content suitable for maximum density and compacted in accordance with these specifications.
- 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 306.
- 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 306. Unsuitable material shall be disposed of as directed by the Authorized Officer.
- 315 - Borrow material required for the construction of embankment or for other portions of the work shall be obtained from sources as shown on the plans.
- 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.
- 317 - Selected borrow shall consist of talus material, finely broken rock, gravel, or other material of granular or favorable characteristics from sources shown on the plans.
- 317a - Where indicated on the plans, the Purchaser shall conserve excavation material consisting of talus material, gravel, finely broken rock, or other material of granular or favorable characteristics for placement on the top portions of the roadbed as shown on the plans and as directed by the Authorized Officer.

TIMBER SALE ROAD SPECIFICATIONS

- 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 306.
- 318a - Selected borrow or selected roadway excavation material shall be uniformly spread on the roadbed to a depth which, after compaction, will provide the depth shown on the plans. Compaction shall be accomplished by routing construction and hauling equipment over the full width of the roadbed.
- 319 - Borrow pits shall be subject to the development, operation, and reclamation requirements set forth under Section 1600 of these specifications.
- 320 - Ditches shall conform to the slope, grade, dimensions, 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.
- 321a - Excess construction materials specified under Subsection 321 shall be loaded, hauled, and placed as embankment as shown on the plans for the roadbed.
- 321b - Excess construction material as specified under Subsection 321 shall be loaded, hauled, and disposed of at disposal sites as shown in the plans.
- 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.
- 322 - When so indicated on the plans, selected coarse rock encountered in the excavation shall be conserved for slope protection or special rock embankment purposes and placed in accordance with the requirements and details of section 1400 of these specifications and as shown on the plans.

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- 323 - In the construction of stream-crossing embankment sections, natural stream flow shall be maintained unless otherwise provided.
- 324 - Excavated material shall not be allowed to cover boles of standing trees to a depth in excess of 1 foot on the uphill side.
- 325 - Where shown on the plans, topsoil shall be conserved from areas of excavation or embankment. Topsoil shall consist of friable earth material which may include the natural or native sod and be reasonably free of undesirable subsoil, large roots, wood refuse, and coarse gravel or stones which might interfere with the sowing of seed, growth of grasses, or subsequent maintenance of grass-covered areas. The removed topsoil shall be transported and deposited in stockpiles at locations shown on the plans.
- 326 - Conserved topsoil shall be uniformly spread and compacted over areas shown on the plans, and as staked on the ground, and as directed by the Authorized Officer.
- 327 - The finished grading shall be approved in writing by the Authorized Officer in segments. The Purchaser shall give the Authorized Officer 3 days notice prior to final inspection of the grading operations, and start of surfacing operations.
- 328 - The Purchaser shall adopt methods and procedures in using explosives, which will prevent damage to adjacent landscape features, and which will minimize scattering rocks and other debris outside the road prism.
- 328a - The Purchaser shall establish and be responsible for blasting techniques and shall furnish the Authorized Officer, prior to starting drilling operations, a blasting plan specifying drill-hole diameter, drill-hole spacing, depth of drilling, type of explosive to be used, loading pattern, sequence of firing, the location where the plan is to be used, and other relevant data. Acceptance of the drilling and blasting plan does not relieve the Purchaser of responsibility or liability for the results of the blasting.

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PIPE CULVERTS - 400

- 401 - This work shall consist of furnishing and installing pipe culverts, splashpads, and full round downspouts 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 upon installation of the appurtenance structures. 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. See Exhibit C-12.1, Culvert List, for locations.
- 402 - The pipe culverts and pipe-arch culverts as shown on the plans, shall be installed in such a manner as not to impede fish passage. Installation shall conform to the lines, grades, dimensions, and typical cross sections shown on the plans.
- 403 - Grade culverts shall have a gradient of from 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. See Exhibit C-12.3 for installation details.
- 404 - Damage to the spelter, or burn back in excess of 3/8 inch, shall be wire brushed and painted with two coats of zinc-rich paint on zinc-coated, steel pipe and aluminum-rich paint on aluminum or aluminum-coated pipe.
- 405 - Corrugated steel riveted and helical pipe culverts and pipe-arch culverts and special sections shall conform to the requirements of AASHTO M 36 and AASHTO M 218 or AASHTO M 274 as specified on the plans.
- 405a - Corrugated-aluminized steel-welded pipe culverts and pipe-arch culverts and special sections shall conform to the requirements of AASHTO M 36 and AASHTO M 218, AASHTO M 274, or AASHTO M 289 as specified on the plans.
- 405b - Corrugated-aluminum-alloy pipe culverts and pipe-arch culverts shall conform to the requirements of AASHTO M 196.
- 405c - Corrugated-steel-structural plate pipe culverts and pipe-arch culverts shall conform to the requirements of AASHTO M 167, except that single plates may exceed 75 pounds in weight.
- 405d - Corrugated-aluminum-structural plate pipe culverts and pipe-arch culverts and special sections shall conform to the requirements of AASHTO M 219.

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- 405e - Corrugated-polyethylene pipe for culverts 12-inch through 36-inch diameter shall meet the requirements of AASHTO M 294.
- Corrugated-polyethylene pipe for culverts 42-inch through 60-inch diameter shall meet the requirements of AASHTO M 294-03, Type D or Type S.
- Corrugated-polyethylene pipe for culverts to be used for downspouts 12-inch through 60-inch diameter shall meet the requirements of AASHTO M 294-03, Type C.
- Installation will be subject to the same specification as other pipe materials.
- 405f - Ring gaskets for rigid pipe shall meet the requirements of AASHTO M 198. Continuous flat gaskets for flexible metal pipe shall meet the requirements of ASTM D 1056, with grade RE 41 used for bands with projections or flat bands, and grade RE 43 used for corrugated bands. When used with metal pipe with annular reformed ends, the ring gasket shall be one-fourth greater in diameter than the depth of the corrugation. Gasket thickness for bands with projections or flat bands shall be 1/2 inch greater than the nominal depth of the corrugation and shall be 3/8 inch for corrugated bands. For pipe with flanged ends, a butyl-rubber-strip gasket shall be placed inside the channel band.
- 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. See Exhibit C-12.2 for band details.
- 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.
- 406b - Coupling bands produced from flat galvanized steel sheets with impressed dimples will be permitted only for connecting annular corrugated steel pipe to helically corrugated steel pipe. Such coupling bands shall conform to the width requirements shown on the plans.
- 406c - Elbow sections used in conjunction with full-round pipe culvert downspouts shall be connected at both ends by "Hugger"-type bands, and "O" ring neoprene gaskets shall be inserted between the band and pipe as shown on the plans to insure a water-tight joint.
- 406d - Pipe culverts and pipe-arch culverts shall be connected with "Hugger"-type,

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flanged-end, or annular coupling bands using sleeve gaskets, "O"-ring neoprene gaskets, or 1-inch neoprene flat gaskets as shown on the plans and/or as directed by the Authorized Officer.

- 406e - Bituminous coated bands or a full-size gasket shall be used to join aluminum pipe culvert to galvanized steel pipe culvert.
- 406f - Channel-type or flanged-end coupling bands may be used on helical pipe with reformed rolled ends and flanged specifically to receive these bands. Such coupling bands shall conform to the requirements shown on the plans.
- 407 - Special sections, such as elbows, branch connections, and flared-end sections, shall be of the same gauge as the pipe to which they are joined, and shall conform to the requirements of AASHTO M 36 and AASHTO M 218 or AASHTO M 274.
- 407a - Flumes and half rounds conforming to the material and construction requirements shall be constructed for culverts as shown on the plans, and at the specified locations.
- 407b - Full round culvert downspouts conforming to the material and construction requirements shall be constructed for culverts as shown on the plans and at the specified locations.
- 407c - Flexible butyl-rubber, plastomate, nylon-vinyl fabric, and neoprene fabric sleeves conforming to the material and construction requirements shall be constructed for culverts as shown on the plans and at the specified locations.
- 408 - Pipe culverts and pipe-arch culverts shall be placed on the bed starting at the downstream end with the inside circumferential laps pointing downstream and with the longitudinal laps at the side or quarter points. Coupling bands of the type required under these specifications shall be installed so as to provide the circumferential and longitudinal strength necessary to preserve the pipe alignment, prevent separation of the pipe sections, and minimize infiltration of fill material.
- 409 - Structural-plate pipe culverts and pipe-arch culverts shall be installed in accordance with the plans and detailed erection instructions furnished by the manufacturer. One copy of the erection instructions shall be submitted to the Authorized Officer 3 days prior to erection.
- 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

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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 Exhibit C-12.3 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 selected granular or fine readily compactable soil material crushed rock material in accordance with Section 1200 gradation C.
- 413 - Pipe culverts and pipe-arch culverts shall be bedded on a selected granular, crushed rock material in accordance with Section 1200 gradation C, or fine readily compactable soil material having a depth of no less than 6 inches as shown on the plans. Foundation material shall be of uniform density throughout the length of the structure and shall be shaped to fit the pipe.
- 414 - The invert grade of the bedding shall be cambered in accordance with the requirements and details shown on the plans and as directed by the Authorized Officer.
- 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.
- 415 - Inspection of pipe culverts having a diameter of 48 inches and pipe-arch culverts having a height of 40 inches or a cross sectional area of 13 or larger shall be made before backfill is placed. Culverts found to be out of alignment or damaged shall be replaced, reinstalled, or repaired as directed by the Authorized Officer at the Purchaser's expense.
- 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 gradation C, 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.
- 417 - For pipe culverts, side-fill material conforming to the requirements of Subsection 416 shall be placed and compacted under the haunches of the pipe, and shall be brought up evenly and simultaneously on both sides of the pipe to 1 foot above

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the pipe, in layers not exceeding 8 inches in depth and 1 pipe diameter/span, or a minimum of 1 foot in width each side of, and adjacent to, the full length of the pipe barrel. Each layer shall be moistened or dried to a uniform moisture content suitable for maximum compaction and immediately compacted by approved hand or pneumatic tampers.

- 418 - Side fills beyond the compaction limits specified under Subsection 417 shall be compacted as specified under Section 300.
- 419 - The pipe culverts after being bedded and backfilled as required by these specifications shall be protected by a 1.5-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.
- 420 - Perforated pipe for underdrains shall be placed in accordance with plans and specifications. Pipe sections shall be securely joined together with perforations down. Inlets of underdrains shall be plugged, and outlets shall be covered with securely fastened fiberglass insect screens. Underdrain locations shall be identified with Culvert Markers.
- 421 - Trenches and bedding rock necessary for the installation of perforated pipe shall conform to the lines, grades, dimensions, and typical diagram as shown on the plans.
- 422 - Drain rock shall be carefully placed on geotextile material required in section 1300, to prevent damage or displacement. A minimum 4-inch bedding of drain rock shall be placed and compacted in the bottom of the trench before installing the underdrain pipe. Underdrain pipe shall be firmly embedded in this layer and drain rock placed to the height shown on the plans, or as directed by the Authorized Officer, and then compacted. Care shall be taken not to displace the underdrain pipe or the covering at open joints. Geotextile material shall be overlapped on top of the drain rock a minimum of 1 foot, as shown on the plans. Backfill shall then be placed and compacted in 1-foot lifts to the required grades.
- 423 - Construction of catch basins and ditch dams conforming to lines, grades, dimensions and typical diagrams shown on the plans, shall be required for culverts.
- 423a - Culvert catch basins shall be excavated to a depth of 1 foot below the bottom of the existing culvert inlets.
- 424 - Construction of splash pads energy dissipaters conforming to lines, grades, dimensions and typical diagram shown on the plans, shall be required for culverts

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- 425 - Where pervious materials are used for backfill and bedding, collars consisting of selected impervious material shall be placed at the inlet and at various intervals along the pipe barrel as shown on the plans and 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 for any fees required. The Purchaser shall remove the old culverts from the work site prior to road acceptance.
- 429 - Keep the excavation site dewatered so that the installation of culverts is completed under dry conditions. Dispose of excess water by using pumping or natural drainage ways near the site. Provide for downstream waterflow with no more than 10% increase in natural stream turbidity due to transport of excavated material or sediment during construction. Diversion streams shall not be returned to the natural channel until all in-stream work has been completed.

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RENOVATION AND IMPROVEMENT 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, shown on the plans and as marked on the ground with stakes.
- 501a - This work shall include the removal and disposal of slides in accordance with these specifications (and as marked on the ground with stakes or metal tags).
- 502 - The existing road surface shall be scarified (where needed) to its full width and to a depth of 6 inches to eliminate surface irregularities and bladed and shaped to the lines, grades, dimensions, and typical cross sections shown on the plans and as marked on the ground with stakes.
- 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.
- 503 - Debris from slides shall be disposed of as directed by the Authorized Officer.
- 503a - Debris from the slides shall be hauled to designated disposal sites or shall be used as embankment as shown on the plans and marked on the ground.
- 504 - Scarified material and existing road surface shall be uniformly moistened or dried to the optimum moisture content suitable for maximum density and compacted to full width with equipment conforming to requirements of Subsections 103f, 103g and 103i and in accordance with Subsection 504a.
- 504a - Minimum compaction required shall be 1 hour of continuous rolling for each 5 stations of road or fraction thereof, as measured along the centerline per layer of material.
- 504b - A uniform density of no less than 85 percent of the maximum density as determined by a nuclear testing device or penetrometer calibrated in accordance with Subsection 505 shall be attained.
- 504c - A uniform density of no less than 95 percent of the maximum density as determined by AASHTO T 99, Method A, C, or D.

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- 505 - The Purchaser shall establish control sections of road as shown on the plans and as determined by the Authorized Officer on which the incremental measurements of compaction by a nuclear densometer or penetrometer can be made. No more than 3 sections will be required for the designated road. Sections will not exceed 500 feet in length. Construction conditions under which the tests are made shall approximate normal construction conditions for the type of compaction work required in Subsection 306 and 306a. Calibration of the nuclear densometer or penetrometer by this procedure shall constitute the basis for determining compliance with the density specified under Subsection 504b.
- 506 - The inlet end of designated existing drainage structures shall be cleared of vegetative debris and boulders that are of sufficient size to obstruct normal stream flow. Pipe inverts shall be cleared of sediment and other debris lodged in the barrel of the pipe. The outflow area of 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.
- 507 - New drainage structures at the following locations shall be placed with structures of the type, gauge, diameter, and length shown on the plans and in accordance with the placement requirements set forth under section 400 of these specifications.
- 508 - Vegetation encroaching on the roadbed and the drainage ditches of existing roads shall be removed by cutting and disposed of in accordance with Subsection 2100 of these specifications.
- 509 - The finished grading shall be approved in writing by the Authorized Officer 3 day prior to surfacing operations. The Purchaser shall give the Authorized Officer 3 days notice prior to final inspection of the grading operations.

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WATERING - 600

- 601 - This work shall consist of furnishing and applying water required for the compaction of embankments, roadbeds, backfills, base courses, surface courses, 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 where the road crosses private property.
- 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.
- 604 - Water required under these specifications shall be obtained at the time(s) and at the locations indicated below:

Willamette Meridian				Dates Available	
Common Name	Section	T	R	From	To
Fredenburg	26	34S	02E	June 15	Sept 15

Use of the water source is subject to applicable State water regulations. In the event that the required water is not available at the location specified, water shall be obtained from a source approved by the Authorized Officer. A reduction shall be made in the total purchase price to reflect additional hauling distance based on rental rates from current BLM Timber Appraisal Cost Schedules.

- 605 - The Purchaser shall secure the necessary water permits and pay all required water fees for use of the water source(s) selected by the Purchaser and approved by the Authorized Officer.
- 606 - The Purchaser shall construct pump chances and heliponds as shown in the plans and as directed by the Authorized Officer.

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AGGREGATE BASE COURSE - 900 SCREENED ROCK MATERIAL

- 901 - This work shall consist of furnishing, hauling, and placing one or more lifts of screened rock material on roadbeds and landings approved for placing screened rock material in accordance with these specifications and conforming to the dimensions and typical cross sections shown on the plans.
- 902 - Screened rock materials used in this work shall be obtained from the sources shown on the plans. Development and mining of such sources shall be in accordance with Subsection 1601 and Subsection 1602.
- 902a - Screened rock materials to be used in this work may be obtained from source selected by the Purchaser, at his option, providing the rock materials furnished comply with these specifications and the sources are approved in writing by the Authorized Officer prior to use.
- 903 - Screened rock material shall conform to the following gradation requirements:

Table 903

SCREENED ROCK MATERIAL GRADATION REQUIREMENTS

Percentage by Weight Passing Square Mesh Sieves
(AASHTO T 27)

Sieve Designation	Gradation			
	A	B	C	D
4 inch	100			
3 inch	95-100	100		
2 inch		95-100	100	
1-1/2 inch			95-100	100
1 inch				95-100
No. 4	11-44	16-49	21-54	26-59
No. 200	2-15	2-15	0-15	0-15

- 904 - Screened rock material retained on the No. 4 sieve shall have a percentage of loss of no more than 35 at 500 revolutions as determined by AASHTO T 96.
- 904a - Screened rock material shall show a durability value of no less than 35 as

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determined by AASHTO T 210.

- 905 - The roadbed as shaped and compacted under sections 300 and 500 of these specifications, shall be approved in writing by the Authorized Officer prior to placement of screened rock materials. Notification for final inspection, prior to rocking, shall be 72 hours prior to that inspection and shall be 10 days prior to start of rock operations.
- 906 - Screened rock material shall be placed in layers not to exceed 6 inches in thickness. Where the required total thickness is more than 6 inches, the rock material shall be shaped and compacted in two or more layers of approximately equal thickness.
- 906a - Screened rock materials used to repair or reinforce a soft, muddy, frozen, yielding, or rutted subgrades shall not be construed as surfacing under this specification.
- 907 - Filler or binder material obtained from sources shown on the plans and approved by the Authorized Officer shall be uniformly blended with the screened rock material on the road. Filler or binder materials shall be free from stones, vegetative matter, and other deleterious materials.
- 908 - Screened rock material shall be blade-processed and spread to required dimensions. Processing shall be performed in such a manner as to minimize aggregate segregation.
- 909 - Screened rock material shall be compacted by routing construction and hauling equipment over the full width of each layer placed.
- 910 - Screened rock material, bladed and shaped as specified, shall be moistened or dried to optimum moisture content for maximum compaction and compacted to full width by compaction equipment conforming to the requirements of Subsections 103a, 103b, 103c, 103e, 103f, 103g, 103h, and 103i. Minimum compaction shall be 1 hour or continuous compacting for each 150 cubic yards of screened rock material placed per layer or 6 passes over each full-width layer, or fraction thereof.
- 911 - The Purchaser shall place in stockpile screened rock material at sites shown on the plans. Such material shall be used as shown on the plans and as directed by the Authorized Officer. Crushed sandstone material so stockpiled shall be placed on the designated roads prior to termination of the timber sale contract. This work not required for road acceptance under Section 18 of this contract.

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- 912 - Acceptance tests will be made at the source from samples taken of screened rock materials being produced. Test data obtained by BLM from testing screened rock materials shall be made available to the Purchaser.

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 and base courses 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.
- 1202 - Crushed rock materials used in this work shall consist of quarry rock, stone, gravel, or other approved materials obtained from sources shown on the plans. Development and mining of such sources shall be in accordance with Subsection 1601 and Subsection 1602 of these specifications.
- 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, no 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.

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- 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 27

GRADATION

Sieve Designation	C	C-1	D	D-1	E	E-1
1-1/2-inch	100	100	-	-	-	-
1-inch	-	-	100	100	-	-
3/4-inch	50-90	60-90	-	70-98	100	100
1/2-inch	-	-	-	-	-	70-98
No. 4	25-50	30-55	30-60	36-60	40-75	44-70
No. 8	-	22-43	-	25-47	-	30-54
No. 30	-	11-27	-	12-31	-	15-34
No. 40	5-25	-	5-30	-	5-35	-
No. 200	2-15	3-15	3-15	3-15	2-15	3-15

- 1204a - The Purchaser shall be required to take one sample for each 1,000 cubic yards of crushed rock material to be utilized, or a minimum of 1 sample per day, using AASHTO sampling procedures. The Purchaser shall submit samples to a certified lab or perform testing for gradation requirements using AASHTO T 11 and AASHTO T 27 testing procedures and also perform testing for sand equivalency requirements using AASHTO T 176 testing procedures. Prior to testing, each sample shall be split, making one half of the sample, with proper identification, available for testing by the Authorized Officer. Each sample and the results of Purchaser testing shall be made available to the Authorized Officer within 24 hours of sampling. The Purchaser shall provide test results for the first 500 cubic yards produced prior to commencing production crushing and hauling.
- 1205 - Crushed rock material retained on the No. 4 sieve shall have a percentage of loss of no more than 35 at 500 revolutions, as determined by AASHTO T 96.
- 1206 - Crushed rock material shall show a durability value of no less than 35 as determined by AASHTO T210.

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- 1206a - The crushed rock material shall show a loss of no 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 Procedure.
- 1207 - That portion of crushed rock material passing the No. 40 sieve, including blending filler, shall have a liquid limit of no more than 35 and a plasticity index of no less than 4 and no 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 no 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

Sand Equivalent	Percent Passing #200 Sieve AASHTO T 27
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.
- 1209 - Shaping and compacting of roadbed and/or base course shall be completed and approved in writing prior to placing crushed rock material, in accordance to the requirements of Subsections 300 and 500 for placing on the roadbed and landings

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and Subsections 900 for placing on the base course. 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 and landings and base course in accordance with these specifications and conforming to the lines, grades, dimensions, and typical cross sections shown on the plans and staked on the ground. 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.
- 1211 - Crushed rock material shall be compacted by routing construction and hauling equipment over the full width of each layer placed.
- 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 Subsections 103c, 103d, 103f, and 103h. Minimum compaction shall be 1 hour of continuous compacting for each 150 cubic yards of crushed rock material placed per layer for each 6 stations or 6 passes over each full-width layer, or fraction thereof.
- 1213 - Each layer of crushed rock material placed, uniformly processed, and shaped as specified shall be uniformly moistened or dried to the optimum moisture content suitable for maximum density and compacted to full width until a uniform density of no less than 5 percent of the maximum density is attained as determined by a nuclear testing device calibrated by the incremental test method specified under Subsection 1214 95 percent of maximum density is attained as determined by AASHTO T 99, Method C or D.
- 1214 - The Purchaser shall establish control sections as shown on the plans and as directed by the Authorized Officer on which incremental measurements of compaction by a nuclear testing device can be made. Construction conditions under which the tests are conducted shall approximate normal construction conditions for the type of compaction work required. Calibration of the nuclear

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testing device by this procedure shall constitute the basis for determining compliance with the required density.

- 1215 - The Purchaser is authorized to remove crushed rock material from BLM stockpiles for placement on the roads in accordance with the requirements and details shown on the plans. Additional crushed rock material required to complete the surfacing shall be furnished by the Purchaser in accordance with these specifications and as shown on the plans. The Purchaser shall maintain records of material removed from each of the stockpile sites designated above. These records shall be submitted to the Authorized Officer upon completion of the surfacing operation.
- 1216 - The Purchaser shall place in stockpile crushed rock material at sites shown on the plans. This work is not required for road acceptance under Section 18 of this contract.

Such material shall be used to reinforce and repair areas of deficient support which appear during the hauling operation. Crushed rock material so stockpiled shall be placed on the designated road prior to termination of the timber sale contract.
- 1217 - Prior to stockpiling Subsection 1204 crushed rock material, the stockpile sites shall be prepared by clearing and disposing of all trees, stumps, brush, and other debris in accordance with Section 200. The floor of each stockpile site shall be graded to a level and uniform cross section. A minimum of 1 foot of crushed rock material shall be placed and compacted on the entire floor area.
- 1218 - The equipment and methods used for stockpiling crushed rock material and for removing material from the stockpiles shall be such that minimum degradation or segregation of the material will result and that minimal amounts of foreign material will be incorporated into the crushed base material and that there will be no intermingling of stockpiled materials.
- 1219 - Upon completion of the work, stockpile sites designated on the plans as temporary shall be scarified as directed by the Authorized Officer, and mulched and seeded in accordance with Section 1800, and planted as directed by the Authorized Officer.
- 1219a - When shown on the plans, the access roads to the temporary stockpile sites shall be blocked, water-barred, scarified, mulched, seeded, and planted in accordance with Section 1800 and as directed by the Authorized Officer.

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- 1220 - Crushed rock material required under Section 1200 of these specifications shall first be placed in stockpile after crushing. The Purchaser shall notify the Authorized Officer a minimum of 3 days in advance of the date he intends to commence the crushing and stockpiling operations so that progressive test samples can be taken as the crushed rock material is produced. Sampled materials shall remain in stockpile until such time the Authorized Officer receives test results which indicate compliance with Subsections 1203, 1204, 1205, 1206, 1207, and 1208. Crushed rock material so tested shall be approved in writing by the Authorized Officer within 6 days from sampling date. Approved material may then be removed from stockpile for placement on the designated road. In no event shall the Purchaser place crushed rock materials on the road from sources other than the tested and approved stockpiles. Noncompliance with the requirements of this subsection shall constitute grounds for the rejection of all crushed rock materials furnished under this contract.

GEOTEXTILES – 1300

- 1301 - This work shall consist of furnishing, hauling, and installing geotextile material at the locations and in accordance with these specifications and the lines, grades, dimensions, and typical cross sections shown on the plans.
- 1302 - Use long-chain, synthetic polymers, composed of at least 95 percent by mass of polyolefins or polyesters, to manufacture geotextile or the threads used to sew geotextile.
- 1303 - Furnish to the Authorized Officer a commercial certification including the name of the manufacturer, product name, style number, chemical composition of the filaments or yarns, and other pertinent information to fully describe the geotextile.
- 1303a - Each roll of geotextile material shall be labeled to provide for identification of the material. Elevate and protect rolls with a waterproof cover if stored outdoors.
- 1303b - When using a geotextile for a permanent installation limit material exposure to ultraviolet radiation to less than 10 days. Geotextile material deemed to have been overexposed to sunlight by the Authorized Officer shall be rejected.
- 1304 - Where a geotextile brush barrier is shown on the plans, the geotextile material shall be laid over the upper-slope face of the barrier. The bottom of the geotextile material shall be trenched into the existing ground a minimum of 6 inches. The top of the geotextile material shall be tied, stapled, nailed, or otherwise securely fastened to the side or top of the brush barrier. Intermediate attachments of the

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geotextile material shall be by suitable ties, staples, or nails. A 12-inch overlap of geotextile material for vertical and horizontal piercing shall be maintained. Care must be exercised in securing the geotextile material to the brush barrier to avoid puncturing by protruding limbs.

- 1305 - Where a geotextile silt fence is shown on the plans, the geotextile material shall be laid against the fence on the upper slope face. The bottom of the geotextile material shall be trenched into the existing ground a minimum of 6 inches. The top of the geotextile material shall be tied, stapled, nailed, or otherwise securely fastened to the side or top of the silt fence. Intermediate attachments of the geotextile material shall be by suitable ties, staples, or nails. A 12-inch overlap of geotextile material for vertical and horizontal piercing shall be maintained. Care must be exercised in securing the geotextile material to the fence to avoid puncturing.
- 1306 - The geotextile material used to construct brush barriers and/or silt fences shall meet the following requirements:

TABLE 1306
Physical Requirements for Brush Barrier and Silt Fence

Property	Test Method ASTM	Units	Specifications		
			Type V-A	Type V-B ⁽²⁾	Type V-C ⁽³⁾
Grab Strength					
Machine Direction	D 4632	N	400	550	550
Cross Direction			400	450	450
Permittivity	D 4491	s ⁻¹	0.05	0.05	0.05
Apparent opening size	D 4751	mm	0.60 ⁽¹⁾	0.60 ⁽¹⁾	0.60 ⁽¹⁾
Ultraviolet stability	D 4355	%	70% after 500 hours of exposure		

(1) Maximum average roll value.

(2) Elongation at break ≥ 50 percent elongation (ASTM D 4632).

(3) Elongation at break < 50 percent elongation (ASTM D 4632).

- 1307 - Where subgrade reinforcement and material separation is required, clearing, grubbing, and excavation of the subgrade shall be completed prior to the placement of geotextile material. The subgrade shall be leveled and smoothed to remove lumps and depressions which exceed 6 inches in height and depth. Small pieces of woody debris shall be removed. Light vegetation, i.e., grasses, weeds, leaves, and other small woody debris, may be left in place.

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- 1308 - The geotextile material shall be installed directly on the prepared surface. Place the geotextile smooth and free of tension, stress, or wrinkles. Fold or cut the geotextile to conform to curves. Overlap in the direction of construction. Overlap the geotextile a minimum of 2 feet at the ends and sides of adjoining sheets or sew the geotextile joints according to manufacturer's recommendations. Do not place longitudinal overlaps below anticipated wheel loads. Hold the geotextile in place with pins, staples, or piles of cover material.

- 1309 - End-dump the cover material onto the geotextile from the edge of the geotextile or from previously placed cover material. Do not operate equipment directly on the geotextile. Spread the end-dumped pile of cover material maintaining a minimum lift thickness of 4 inches. Compact the cover material with rubber-tired or non-vibratory smooth drum rollers. Avoid sudden stops, starts, or turns of the construction equipment. Fill all ruts from construction equipment with additional cover material. Do not re-grade ruts with placement equipment.

- 1310 - Repair or replace all geotextile that is torn, punctured, or muddy. Remove the damaged area and place a patch of the same type of geotextile overlapping 3 feet beyond the damaged area.

- 1311 - Geotextile material used for subgrade reinforcement or material separation shall meet the following requirements:

TABLE 1311a
Physical Requirements for Separation Geotextile

Property	Test Method ASTM	Units	Specifications ⁽¹⁾		
			Type II-A	Type II-B	Type II-C
Grab strength	D 4632	N	1400/900	1100/700	800/500
Sewn seam strength	D 4632	N	1260/810	990/630	720/450
Tear strength	D 4533	N	500/350	400 ⁽³⁾ /250	300/180
Puncture strength	D 4833	N	500/350	400/250	300/180
Burst strength	D 3786	kPa	3500/1700	2700/1300	2100/950
Permittivity	D 4491	s ⁻¹	0.02	0.02	0.02
Apparent opening size	D 4751	mm	0.60 ⁽²⁾	0.60 ⁽²⁾	0.60 ⁽²⁾
Ultraviolet stability	D 4355	%	50% after 500 hours of exposure		

(1) The first values in a column apply to geotextiles that break at less than 50 percent elongation (ASTM D 4632). The second values in a column apply to geotextiles that break at greater than or equal to 50 percent elongation (ASTM D 4632).

(2) Maximum average roll value.

(3) The minimum average tear strength for woven monofilament geotextile is 245 N.

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TABLE 1311b
Physical Requirements for Stabilization Geotextile

Property	Test Method ASTM	Units	Specifications ⁽¹⁾	
			Type III-A	Type III-B
Grab strength	D 4632	N	1400/900	1100/700
Sewn seam strength	D 4632	N	1260/810	990/630
Tear strength	D 4533	N	500/350	400 ⁽³⁾ /250
Puncture strength	D 4833	N	500/350	400/250
Burst strength	D 3786	kPa	3500/1700	2700/1300
Permittivity	D 4491	s ⁻¹	0.43	0.43
Apparent opening size	D 4751	mm	0.60 ⁽²⁾	0.60 ⁽²⁾
Ultraviolet stability	D 4355	%	50% after 500 hours of exposure	

(1) The first values in a column apply to geotextiles that break at less than 50 percent elongation (ASTM D 4632). The second values in a column apply to geotextiles that break at greater than or equal to 50 percent elongation (ASTM D 4632).

(2) Maximum average roll value.

(3) The minimum average tear strength for woven monofilament geotextile is 245 N.

- 1312 - Where geotextile material is specified as filter wrap for underdrains it shall be inert to commonly encountered chemicals, mildew and rot resistant, resistant to ultraviolet light exposure, and insect and rodent resistant.
- 1313 - Trenches for underdrains shall be excavated to the dimensions and grades shown on the plans and adjusted to meet field conditions. Smooth the trench surfaces by removing all projections that may damage the geotextile. Minimum slope of trenches shall be one percent. The Authorized Officer shall have a minimum of 3 days notice in which to approve trenches prior to installation of the geotextile material, pipe, drain rock, or other backfill.
- 1314 - Geotextile material used as a filter shall be placed in a manner and at the locations shown on the plans. Place the long dimension of the geotextile parallel to the centerline of the trench. Position the geotextile, without stretching, in contact with the trench surface. Overlap the joints a minimum of 24 inches with the upstream geotextile placed over the downstream geotextile. Replace geotextile damaged during installation.

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1315 - Geotextile materials used for subsurface drainage shall meet the following requirements:

TABLE 1315
Physical Requirements for Subsurface Drainage Geotextile

Property	Test Method ASTM	Units	Specifications ⁽¹⁾					
			Type I-A	Type I-B	Type I-C	Type I-D	Type-I-E	Type I-F
Grab strength	D 4632	N	1100/700	1100/700	1100/700	800/500	800/500	800/500
Sewn seam strength	D 4632	N	990/630	990/630	990/630	720/450	720/450	720/450
Tear strength	D 4533	N	400 ⁽³⁾ /250	400 ⁽³⁾ /250	400 ⁽³⁾ /250	300/175	300/175	300/175
Puncture strength	D 4833	N	400/250	400/250	400/250	300/175	300/175	300/175
Burst strength	D 3786	kPa	2750/1350	2750/1350	2750/1350	2100/950	2100/950	2100/950
Permittivity	D 4491	s ⁻¹	0.5	0.2	0.1	0.5	0.2	0.1
Apparent opening size	D 4751	mm	0.43 ⁽²⁾	0.25 ⁽²⁾	0.22 ⁽²⁾	0.43 ⁽²⁾	0.25 ⁽²⁾	0.22 ⁽²⁾
Ultraviolet stability	D 4355	%	50% after 500 hours of exposure					

(1) The first values in a column apply to geotextiles that break at less than 50 percent elongation (ASTM D 4632). The second values in a column apply to geotextiles that break at greater than or equal to 50 percent elongation (ASTM D 4632).

(2) Maximum average roll value.

(3) The minimum average tear strength for woven monofilament geotextile is 245 N.

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SLOPE PROTECTION - 1400

- 1401 - This work shall consist of furnishing, hauling, and placing stone materials for splash pads in accordance with these specifications and conforming to the lines, grades, dimensions, and typical cross- sections shown on the plans.
- 1402 - Stone material shall consist of hard angular quarry rock blasted rock and coarse stone from roadway excavation of such quality that it will not disintegrate on exposure to water or weathering, and shall be graded in accordance with these specifications.

<i>Volume/ Cubic Foot</i>	<i>Average Dimension in inches</i>	<i>Approximate Weight in Pounds</i>
<i>12</i>	<i>27.5 x 27.5 x 27.5</i>	<i>2100</i>
<i>6</i>	<i>21.8 x 21.8 x 21.8</i>	<i>1050</i>
<i>4</i>	<i>19.1 x 19.1 x 19.1</i>	<i>700</i>
<i>3</i>	<i>17.3 x 17.3 x 17.3</i>	<i>525</i>
<i>1</i>	<i>12.0 x 12.0 x 12.0</i>	<i>175</i>
<i>2/3</i>	<i>10.5 x 12.0 x 12.0</i>	<i>120</i>
<i>1/2</i>	<i>9.5 x 9.5 x 9.5</i>	<i>88</i>
<i>1/3</i>	<i>8.3 x 8.3 x 8.3</i>	<i>60</i>
<i>1/4</i>	<i>7.6 x 7.6 x 7.6</i>	<i>44</i>
<i>1/6</i>	<i>6.6 x 6.6 x 6.6</i>	<i>30</i>
<i>1/8</i>	<i>6.0 x 6.0 x 6.0</i>	<i>22</i>
<i>1/100</i>	<i>2.6 x 2.6 x 2.6</i>	<i>2</i>

- 1404 - The material shall be well graded from the smallest to the maximum size specified. Stones smaller than the specified 10 percent size shall consist of spalls and fine rock fragments so distributed as to provide a stable compact mass.

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1405 - Rip rap shall conform to the following gradations:

TABLE 1405¹

Class	Range of Intermediate Dimensions ² (inches)	Range of Rock Mass ³ (pounds)	% of Rock Equal or Smaller by Count
0	6-8	18-42	100
	5-6	10-18	85
	2-5	1-10	50
	0-2	0-1	15
1	9-15	59-270	100
	7-11	28-110	85
	5-8	10-42	50
	3-6	2-18	15
2	15-21	270-750	100
	11-15	110-270	85
	8-11	42-110	50
	6-8	10-42	15
3	21-27	750-1600	100
	15-19	270-560	85
	11-14	110-220	50
	8-10	42-81	15
4	27-33	1600-2900	100
	19-23	560-990	85
	14-17	220-400	50
	9-12	59-140	15

¹Gradation includes spalls and rock fragments to provide a stable, dense mass.

²The intermediate dimension is the longest straight-line distance across the rock that is perpendicular to the rock's longest axis on the rock face with the largest projection plane.

³Rock mass is based on a specific gravity of 2.65 (165lbs/cu.ft.) and 85 percent of the cubic volume as calculated using the intermediate dimension.

1405a - Stone materials shall show a durability value of not less than 50 as determined by AASHTO T 210.

1405b Stone materials shall conform to a minimum apparent specific gravity of 2.50 and

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a maximum absorption of 4.2 percent as determined by AASHTO T 85.

- 1406 - The placement of slope protection stones by the end dumping method shall be conducted to prevent the stones from escaping beyond the embankment toe.
- 1406a - The embankment shall be placed in successive horizontal layers of sufficient depth to contain the maximum size rock present in the material. Spalls and finer fragments of stone other than specified in Subsection 1405 shall be used to chock the larger stones solidly in position and to fill voids between the major stones as laid in the embankment. The exposed face of the embankment shall be reasonably smooth and uniform; material shall be prevented from escaping beyond the toe of the structure.
- 1406b - Spaces in back of hand-laid embankment shall be filled with hand-tamped or rammed rock-spall material.
- 1407 - Determination of the acceptability of the slope protection material gradation will be through visual inspection and physical measurements by the Authorized Officer.
- 1408 - Trenches for slope protection structures shall be excavated to the lines, elevations, and typical diagram shown on the plans. They shall be of sufficient size to permit the placing of structure footing of the full widths and length shown. Trenches shall be approved by the Authorized Officer prior to placement of slope protection material.
- 1408a - Foundation trenches and other required excavation as shown on the plans shall be approved prior to placing the slope protection material.
- 1408b - The Purchaser shall excavate unsuitable roadway material as shown on the plans or directed by the Authorized Officer prior to the placement of the required rock blanket or structure.
- 1409 - Slope protection material shall be placed to form the cross sections shown on the plans. The face of the slope protection structure above the low-water line shall be uniform, free from humps, depressions, or large cavities.
- 1410 - The embankment slopes shall be protected or stabilized by placement of rock materials to form a slope-protection structure conforming to the construction requirements and details of these specifications.
- 1411 - Slope protection materials shall be placed on geotextile material conforming with

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requirements of Section 1300 for material separation and geotextile material repair.

QUARRY AND BORROW PIT DEVELOPMENT – 1600

- 1601 - This work shall consist of quarry and borrow pit development, and rehabilitation in accordance with these specifications and conforming to the lines, grades, dimensions, and typical cross sections shown on the plans.
- 1602 - The designated rock quarry and borrow pit sites shall be developed and mined in strict accordance with these specifications and the mining and reclamation plan shown on the plans. The Purchaser shall perform reclamation work in accordance with the requirements of Subsection 1617, as shown on the plans, and as directed by the Authorized Officer.
- 1602a - Use of sites on non-BLM ownership are subject to the terms and conditions of Rock Permits, and regulations as administered by the State of Oregon Department of Geology and Mineral Industries (DOGAMI) which may include, but are not limited to, the following requirements: payment of a royalty fee, obtaining liability insurance and performance bond, and compliance with rock quarry or borrow pit site development and reclamation plans.
- 1603 - If the Purchaser elects to use a rock source other than the designated source, the rock material produced shall comply with applicable sections of these specifications. If the alternate source is located on BLM ownership and a current BLM plan is not available, a development, mining, and reclamation plan shall be prepared by the Purchaser, and submitted for approval by the Authorized Officer. Development, mining, and reclamation work shall be in accordance with the approved plan and 1600 specifications.
- 1604 - If the designated source proves insufficient as to quantity and quality of the required rock material, the Purchaser shall, when ordered in writing by the Authorized Officer, move his operation to an alternate material source as shown on the plans and as selected by the Authorized Officer. Development, extraction, and reclamation work on the alternate source shall be in accordance with the mining and reclamation plans prepared by the BLM. An equitable adjustment will be made in the contract price.
- 1605 - Quarry access roads to designated or approved rock sources located on public lands and private lands under permit shall be constructed in accordance with the typical cross section and at the locations shown on the development, mining, and

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reclamation plans. Required road construction work, except surfacing, shall be approved by the Authorized Officer prior to the removal of road-embankment and/or surfacing materials.

- 1605a - Quarry access roads to the designated or approved rock sources located on public land and private lands under permit shall be constructed to the minimum necessary for rock hauling operations, with adequate drainage facilities to minimize channeling and soil erosion. Required road construction, except surfacing, shall be completed prior to the removal of road embankment or surfacing materials.
- 1605b - Quarry access roads to the designated or approved rock sources located on public land shall be surfaced with 8 inches, compacted depth, of screened-rock material conforming to requirements of Section 900, or crushed rock material conforming to requirements of Section 1200, Gradation D.
- 1605c - The operation of equipment related to the production of rock aggregate and quarry operations shall be confined to the quarry operations area and to the designated tractor trails as shown on the plans.
- 1606 - Prior to removal of overburden from the quarry site, topsoil shall be removed and stockpiled. Stockpiles shall not be covered by overburden or waste materials, and will be readily accessible for final backfilling and grading. The location of stockpile sites shall be shown on the mining and reclamation plans. Topsoil stockpiles shall be seeded and mulched to minimize erosion.
- 1607 - Slash, stumps, logs, and other organic debris from quarry operations shall be piled and burned in accordance with the requirements of Subsection 207, 207a, and 207b.
- 1607b - Slash, stumps, logs, and other organic debris shall be piled or windrowed in the location shown on the plans so that it can be returned to the quarry floor at the termination of operations as directed by the Authorized Officer.
- 1608 - Overburden or reject material which does not conform to the requirements of Subsections 1005 and 1006, 1205 and 1206 shall be wasted as shown on the plans shall be stockpiled and used or reclamation backfill.
- 1609 - Overburden, trees, stumps, logs, and loose rock shall be removed back from the edge of working quarry faces for a minimum distance of 20 feet.
- 1609a - Overburden and/or reject material shall be removed back from the upper edge of

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the quarry for a distance equal to one-half of the working face or a minimum of 15 feet whichever is greater. Overburden shall be sloped no steeper than 1 to 1.

- 1609b - Overburden and reject mineral material shall be placed as a "screening berm" between the road and the quarry as shown on the plans or as directed by the Authorized Officer.
- 1609c - Overburden and reject material shall be graded level over the quarry floor, graded level to construct a plant site, piled in orderly piles, or placed at the disposal sites shown on the plans, as directed by the Authorized Officer.
- 1610 - Waste disposal sites shall be selected and prepared to minimize erosion and establish conditions conducive to vegetative growth. Disposal areas shall be seeded, fertilized, and mulched in accordance with the requirements set forth in Section 1800 of these specifications.
- 1611 - The Purchaser shall notify the Authorized Officer in writing at least 7 days prior to commencing quarry operations.
- 1611a - The Purchaser shall not commence production drilling or crushing until the Authorized Officer has inspected and approved the site development in writing.
- 1612 - The Purchaser shall notify MSHA (Mining Safety and Health Administration) by standard form or telephone, and in accordance with part 56, Chapter 1 of Title 30 Code of Federal Regulations (CFR), of what date he intends to commence, terminate, and/or temporarily close down operations of the pit or quarry. Notice shall be submitted a minimum of 10 days prior to the proposed date of the action to be taken. Notification shall be submitted to:

Mining Safety and Health Administration
Albany, OR 97321
or
Mining Safety and Health Administration
Bellevue, WA 98004

The Purchaser shall also prepare and submit to MSHA the quarterly Employment Report and Injury and Illness Report for the mining operation.

- 1613 - The Purchaser shall comply with local and State Safety Codes covering quarrying operations, warning signs, seismic monitoring, and traffic control. All quarrying operations will be conducted by appropriately licensed personnel—i.e. blasting and powder handler's license, etc.

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- 1613a - The Purchaser shall submit a written blasting plan or modification of the plan to the Authorized Officer for the Quarry, 7 working days prior to the start of drilling. The plan shall include: a) plan view of delay pattern; b) cross section of a typical loaded hole; c) types of explosives; d) powder factor; e) burden spacing, hole diameter, depth of holes, and depth of subdrill; and f) number of lifts. Acceptance of the blasting plan does not relieve the Purchaser of the liability or responsibility for the results of the blasting.
- 1613b - Controlled blasting techniques shall be employed during production blasting to contain blasted rock. The quarry shall be shot in multiple lifts with no more than one-half of the total volume shot per lift.
- 1613 - The Purchaser shall submit to the Authorized Officer a blasting log showing "as built" data and a brief summary of the blasting results, within 10 days after blasting.
- 1614 - Rock materials extracted from the quarry walls shall be utilized or disposed of as shown on the plans. Secondary blasting or other methods shall be employed to reduce 75 percent of the quarried rock to a maximum 24 inches in any dimension.
- 1614a - Existing and oversized rock on the quarry floor shall be utilized before drilling and shooting new rock. Oversized boulders shall not be wasted but shall be broken and utilized concurrent with acceptable material.
- 1615 - Operations on the quarry site shall be so conducted that, both during and after completion of work, erosion will be minimized, and sediment will not enter streams or other bodies of water. Waste or disposal areas and quarry access roads shall be located, constructed, and maintained in a manner that will prevent sediment from entering live streams or other bodies of water. Noncombustible debris and silt-laden water material resulting from the quarry operations shall be placed in such waste or disposal areas as shown on the plans and directed by the Authorized Officer.
- 1616 - Upon completion of quarrying operations, overburden and waste materials shall be disposed of in accordance with requirements of the approved reclamation plan or in a manner approved in writing by the Authorized Officer.
- 1616a - Excavation retained for impoundment of water shall be shaped to provide safe access to water for persons, livestock, and wildlife, as shown on the plans and directed by the Authorized Officer.

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- 1617 - Upon completion of quarrying operations, required site reclamation measures shall be performed to the satisfaction of the Authorized Officer, including but not limited to the following:
- (a) Permanently seal or fill unused drill holes as directed by the Authorized Officer. Follow State of Oregon Department of Water Resources guidelines and requirements.
 - (b) Backfill pits and excavations with overburden and waste as directed by the Authorized Officer.
 - (c) Grade backfill material to the natural contour or desired landforms as directed by the Authorized Officer.
 - (d) Cover backfill material with previously stockpiled topsoil, performing final grading to produce a surface favorable to revegetation.
 - (e) Backfilled areas shall be seeded, fertilized, and mulched in accordance with the requirements set forth in Section 1800 of these specifications.
 - (f) Quarry access roads shall be scarified, then seeded or planted, as directed by the Authorized Officer.
 - (g) Construct waterbars and take other erosion control measures as directed by the Authorized Officer.
 - (h) Remove blockages from drainage systems, streams, and waterways, and restore streams and waterways to their original courses. Follow State of Oregon guidelines and requirements.
 - (i) Erect barricades on quarry access roads as directed by the Authorized Officer.
 - (j) Complete required site-reclamation measures within 14 days after final cessation of quarrying operations.
 - (k) Clear quarry benches and scale wall of loose or dislodged shot material and move to a designated location within the quarry.
- 1618 - The Purchaser shall establish, and be responsible for, controlled pre-splitting and production blasting techniques. The purchaser shall furnish the Authorized Officer, prior to starting drilling operations on a test section, a pre-splitting and production blasting plan specifying drill hole diameter, drill hole spacing, depth of drilling, type of explosives to be used, loading pattern, sequence of firing, the location where the plan is to be used, and other relevant data. The pre-splitting, production, drilling, and blasting plan is for record purposes only and will not absolve the Purchaser of his responsibility for using proper drilling and blasting procedures.
- 1619 - Rock excavating using controlled blasting shall begin with a short test section of a length approved by the Authorized Officer. The test section shall be pre-split, production drilled, blasted, and sufficient material excavated whereby the

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Authorized Officer can determine if the Purchaser proposed methods will produce satisfactory results and slope within the following tolerances:

A pre-split slope shall not deviate more than 6 inches from the front of the staked line nor more than 12 inches from the back of the staked slope line and shall be reasonably free of loose rock. Localized irregularities or surface variations outside the slope tolerances will be permitted, provided they do not constitute a safety hazard or an impairment to drainage courses or facilities.

- 1620 - Whenever the Purchaser's controlled blasting methods do not produce acceptable results, the Authorized Officer may require the Purchase to furnish a revised pre-splitting and production blasting plan to construct additional test sections prior to resuming full scale production.
- 1621 - Pre-split slopes constructed within the specified slope tolerance will be considered acceptably completed if in reasonably close conformity to the staked lines and slopes.

EROSION CONTROL - 1700

- 1701 - This work shall consist of measures to control soil erosion or water pollution during the construction operation through the use of berms, dikes, dams, sediment basins, fiber mats, netting, gravel, mulches, grasses, slope drains and other erosion control devices or methods in accordance with these specifications and conforming to the lines, grades, dimensions and typical cross sections shown on the plans.
- 1702 - The Purchaser shall construct dikes, dams, diversion channels, settling basins and other erosion control structures located outside of the road right-of-way in accordance with the requirements and details shown on the plans and as directed by the Authorized Officer.
- 1703 - This work shall consist of furnishing and installing brush barriers or sediment fences in accordance with these specifications and in reasonably close conformity with the lines and grades shown on the plans and as directed by the Authorized Officer.
- 1704 - The erosion control provisions specified under this Subsection shall be coordinated with the Soil Stabilization requirements of Section 1800.
- 1705 - The surface area of erodible earth material exposed at any one time by clearing

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and grubbing shall not exceed 21,780 square feet (0.50 acres) after October 15 without prior approval by the Authorized Officer.

- 1706 - The surface area of erodible earth material exposed at one time by excavation, borrow, or fill within the right-of-way shall not exceed 21,780 square feet (0.50 acres) after October 15 without prior approval by the Authorized Officer.
- 1706a - The Purchaser shall perform, during the same construction season specified in the plans, erosion control measures specified on all exposed excavation, borrow, and embankment areas.
- 1707 - Completed and partially completed segments of roads carried over the winter and early spring periods shall be stabilized by seeding, fertilizing, and mulching in accordance with Section 1800.
- 1708 - Newly constructed or re-opened native surface roads to be carried over the winter and early spring period, shall be water barred and blocked to vehicular traffic and shall be stabilized by seeding and mulching in accordance with Section 1800.
- 1708a - Road segments not completed during dry weather periods shall be winterized, by providing a well-drained roadway using water bars, maintaining drainage, and performing additional measures necessary to minimize erosion and other damage to the roadway, as directed by the Authorized Officer. Portions of roads not having surface rock in place will be blocked or barricaded to prevent vehicular traffic.
- 1709 - The ditch on roads shown below and/ or listed in the plans shall be shaped and lined with aggregate furnished under Sections 900 and 1200 in accordance with the cross section and details shown on the plans and as directed by the Authorized Officer.
- 1711 - The Purchaser shall construct energy dissipators for pipe culverts (splash pads) conforming to the requirements and details shown on the respective exhibits.
- 1712 - Where shown on the plans, the Purchaser shall provide erosion control measures for newly constructed ditches on steep grades which include but is not limited to, dumped stone, jute mesh, sod, check dams consisting of hay bales, and earth or stone. Width of protective lining or dam should extend far enough up the ditch slopes to effectively contain the runoff and prevent erosion and washout at the edges and prevent sediment from reaching live water.
- 1713 - Where newly constructed logging spur roads join with existing surfaced roads, the

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Purchaser shall construct a sag in the spur road profile and install culverts and settling basins in accordance with the requirements and details as shown on the plans and directed by the Authorized Office.

SOIL STABILIZATION – 1800

- 1801 - This work shall consist of seeding and mulching on designated cut, fill, borrow, disposal, and special areas in accordance with these specifications. This work is not required for road acceptance under Section 18 of this contract.
- 1802 - Soil stabilization work consisting of seeding and mulching shall be performed on existing roads and designated locations (culvert replacements) at the following locations:

Road No.	From Sta./M.P.	To Sta./M.P.
34-2E-20.00 B-C	1.58	1.58
34-2E-29.00 A3	1.42	1.42
35-2E-2.01	0.80	1.42

- 1802a - Soil stabilization work consisting of seeding and mulching shall be performed on new road construction, landings, culvert installations, stump removal, disturbed areas and waste disposal sites in accordance with these specifications and as shown on the plans.
- 1803 - Soil stabilization work as specified under Subsections 1802 and 1802a shall be performed during the following seasonal periods:

From: September 1	To: October 15 of the same year
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If soil stabilization of disturbed areas is not completed by the specified fall date, the Purchaser shall treat disturbed areas in accordance with Subsection 1707 and then complete the requirements of Section 1800 the next construction season. The Authorized Officer may modify the above seasonal dates to conform to existing weather conditions and changes in the construction schedule.

- 1803a - The Purchaser shall begin soil stabilization work within 10 days of the starting work date when notified by the Authorized Officer.

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- 1805a - The Purchaser shall provide in writing compliance with seed mixtures requirements specified under Subsection 1805. Seed weight and seed mixture type shall be shown on the tag attached to each sack.
- 1805b - Seed shall be sacked in quantities proportional to the capacity of the Purchaser's slurry tank and the required rate of application as specified under Subsection 1811.
- 1806a - Additional soil stabilization work consisting of seeding and mulching, may be required at the option of the Authorized Officer. Providing the additional stabilization is not due to Purchaser negligence as specified in Sec. 12 of the contract, a reduction in the total purchased price shall be made to offset the cost of furnishing and applying such additional stabilization material. Cost shall be based upon the unit price set forth in the current BLM Timber Appraisal Production Cost Schedule.
- 1808 - Mulch materials conforming to the requirements of Subsection 1808a shall be furnished by the Purchaser in the amounts specified under Subsection 1811 and applied in accordance with Subsection 1812.
- 1808a - Straw mulch shall be certified weed free from commercial grain fields and native grass fields. Straw mulch shall be from oats, wheat, rye, or other approved grain crops and shall be free from, mold, or other objectionable material. Straw mulch shall be in an air-dry condition and suitable for placement.
- 1808b - Wood cellulose fiber shall have the property of dispersing readily in water and shall have no toxic effect when combined with seed or other materials. The homogeneous slurry or mixture shall be capable of application with power spray equipment. A green-colored dye which is non-injurious to plant growth shall be used. Processed wood cellulose fiber shall be packaged in new, labeled containers in an air dry condition.

The Purchaser shall furnish a sample and descriptive literature to the Authorized Officer for approval prior to application. Processed wood cellulose fiber furnished by the Purchaser which has become wet or otherwise damaged in transit or storage will not be accepted.
- 1808c - Wood chips shall be 1/8-inch nominal thickness, with 50 percent having an area of no less than 1 square inch, nor more than 6 square inches. Wood chip mulch material shall be free from leaves, twigs, shavings, bark, or materials injurious to

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plant growth.

- 1809 - Mulch material shall be delivered to the work area in a dry state. Material found to be wet will not be accepted. Material to be used in the mulching operation may be stockpiled along the road designated for treatment provided that it is maintained in a dry state and has the approval of the Authorized Officer.
- 1810 - Bulk mulching material required under these specifications shall be delivered to the work area bound either by twine, string or hemp rope. Wire binding will not be permitted.
- 1811 - The Purchaser shall furnish and apply to approximately 3.75 acres designated for treatment as shown on the plans and as specified under Subsections 1802 1806a, a mixture of grass seed and mulch material at the following rate of application:

a. Two Stage:

Grass Seed	20 lbs./acre
Mulch	2,000 lbs./acre

The above proportion and application rate are subject to adjustment by the Authorized Officer during the application operation.

- 1812 - The Purchaser shall furnish and apply to the area designated for treatment as shown in the plans and as specified under Subsections 1802 and 1806, a mixture of water, grass seed. Fertilizer, and mulch material at the application rate to be determined by the Authorized Officer based on visual observation of trial applications.

Mulches shall be spread/placed in treatment areas to a depth of 2 inches to allow seed germination or as directed by the Authorized Officer. Treatment area will be covered evenly and completely. Mulch can be broadcast onto the soil surface by hand or with hand/mechanical operated spreaders.

- 1814 - The Purchaser may reduce the application rate on partially covered slopes and refrain from application on areas already well stocked with grass or on rock surfaces as determined by the Authorized Officer.
- 1815 - The seed, fertilizer, and mulch materials shall be placed by the hydraulic method in accordance with the requirements set forth in Subsection 1815a or dry method in accordance with the requirements set forth in Subsection 1815b.

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- 1815a - Hydraulic Method - The seed, fertilizer, and mulch materials shall be mixed with water to form a slurry and then applied under pressure by hydroseeder. Where only seed and fertilizer are to be applied hydraulically, the mulch material and tackifier, if specified, may be applied after the seeding operation.

When processed wood cellulose or fiber mulch material is to be incorporated as an integral part of the slurry mix, it shall be added after the seed and fertilizer have been thoroughly mixed.

- 1815b - Dry Method - Blowers, mechanical seeders, seed drills, landscape seeders, cultipacker seeders, fertilizer spreaders, or other approved mechanical seeding equipment may be used when seed and fertilizer are to be applied in dry form.

- 1816 - Hydraulic equipment used for the application of slurry shall meet the following requirements:

The equipment shall have a built-in agitation system. The slurry distribution lines shall be large enough to prevent stoppage. Discharge line shall be equipped with a set of hydraulic spray nozzles which will provide even distribution of the slurry on the various slopes to be treated. The slurry tank shall have a minimum operation capacity of 1300 gallons and shall be mounted on a traveling unit which will place the slurry tank and spray nozzles within sufficient proximity to the areas to be treated so as to provide uniform distribution without waste. Lug- or track-type units are not authorized. The hydroseeder must be capable of spraying the slurry a minimum distance of 100 feet. The nozzle, mounted on a stand, must be capable of traversing 360 degrees on a horizontal plane and a minimum of 70 degrees on a vertical plane.

All equipment and tanks (internally and externally) shall be cleaned before entering BLM lands. Tanks shall be cleaned prior to mixing BLM seed mixes to avoid application of unwanted plant species.

- 1816a - Hydromulch slurry mixing shall be with water and seed first, followed by fertilizer, and finally fiber. The time between mixing and application shall not exceed 1 hour.

- 1816b - Hydroseeding shall be performed in two steps. Water, seed, and fertilizer as specified in Subsection 1811, shall be mixed with a wood fiber tracer and applied to the area specified. The second step shall include the application of water and processed wood fiber, also specified in Subsection 1811, to be applied on the same area within an hour.

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- 1817 - At the beginning of each day's operation, a measured area will be seeded, fertilized, and mulched to assure uniform application.
- 1818 - The maximum distance to be seeded, fertilized, and mulched from the road centerline shall be 100 feet for the cut slopes and 150 feet for the fill slopes.
- 1819 - The Purchaser shall notify the Authorized Officer at least 3 days in advance of date he intends to commence the specified soil stabilization work.
- 1820 - When sprayed, the mix or slurry must overlap on the ground uniformly so that there will be no voids in the treated areas.
- 1821 - Mulch that collects at the end of culverts or accumulates to excessive depths on the slopes shall be evenly spread by hand methods, as directed by the Authorized Officer.
- 1822 - No materials shall be applied when wind velocities would prevent a uniform application of the mix or slurry or when winds would drift the mix or slurry spray outside of the designated treatment area.
- 1823 - Mix or slurry will not be applied above the upper edge of cut banks unless otherwise specified.
- 1824 - Twine, rope, sacks, and other debris resulting from the soil-stabilization operation shall be picked up and disposed of to the satisfaction of the Authorized Officer.

CATTLE GUARDS AND BYPASS GATES – 1900

- 1901 - This work shall consist of furnishing, hauling, installing, and the construction of cattleguards, complete with foundations and bypass gates in accordance with these specifications and conforming to the lines, grades, dimensions, and typical cross sections shown in the plans and as staked on the ground.
- 1902 - The Purchaser shall furnish and install steel cattleguard superstructures in accordance with Subsections 1902a, 1902b, and 1902c and as shown on the plans.
- 1902a - Cattleguard superstructures shall be constructed of structural steel conforming to ASTM A 36 specifications. Welds shall be secure and complete along both edges of cross pieces, at the frame joints, and shall conform to current specifications of the American Welding Society for Welded Highway and Railroad Bridges.

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- 1902b - Cattleguard superstructures shall be given one shop coat of a low VOC alkyd primer 2-3 mils dry after fabrication is completed. Two field coats of foliage green low VOC alkyd 2-3 mils dry paint enamel shall be applied upon completion of fabrication.
- 1902c - The Purchaser may furnish, in lieu of Subsection 1902, commercial cattleguard superstructures, providing such structures are designed for and will support U80 loading, and are of steel and welded construction, and are the nominal overall dimensions shown on the plans.
- 1902d - Replaced cattleguard grids, foundations, by-pass gates and end wings shall be disposed of as directed by the Authorized Officer.
- 1903 - The Purchaser shall construct timber, concrete, or precast concrete cattleguard substructures conforming to the requirements and details shown on the plans, in accordance with these specifications and as staked on the ground.
- 1903a - Lumber used in the construction of timber substructures shall be Douglas-fir number 1 or better. Lumber shall conform to AASHTO M 168 and be pressure treated. Incise all wood and make all dimensional cuts and holes in the wood before pressure treatment with chromated copper arsenate according to AASHTO M 133.
- 1903b - Concrete construction of cattleguard substructures shall conform to the requirements of Section 2400, Concrete Structures, of these specifications.
- 1904 - The cattleguard structure shall be constructed at right angles to the roadway.
- 1905 - Excavation for cattleguard substructures shall be to the lines, grades, and dimensions shown on the plans.
- 1906 - Where subsurface solid rock is encountered, it shall be excavated 6 inches below final grade and backfilled with a compactable granular material approved by the Authorized Officer to the lines, grades, and dimensions shown on the plans and shall be hand- or pneumatically tamped to a uniform density satisfactory to the Authorized Officer.
- 1906a - When the foundation material is soft or otherwise unsuitable, it shall be removed to a depth of 24 inches and replaced with granular material that has been approved in writing by the Authorized Officer.
- 1907 - Cattleguard structures shall not be used for a minimum period of 21 days after placing of concrete has been completed.
- 1908 - Prior to casting any members for precast substructures, the Purchaser shall notify the

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Authorized Officer of plant location and availability of forms for inspection. Authorized Officer shall be allowed 72 hours in which to inspect forms, placement of reinforcing steel, and any other pertinent features of the precasting operation.

Precast units shall not be transported until flexural strength has reached a minimum strength of 500 psi, or until they have reached the age of 10 days if flexural strength tests are not made.

Upon completion of installation, precast units shall be free of structural cracks, chipped and spalled edges, and honeycombing. Precast units shall be placed in an equalizing bed of sand or other granular material approved by the Authorized Officer at least 4 inches thick and conforming to the grades shown on the plans.

- 1909 - Backfill material shall be placed around the foundation to the finished grade shown on the plans. Backfill material shall be readily compactable soil or granular material free of excess moisture, muck, frozen materials, roots, sod, or other deleterious materials and devoid of rocks or stones larger than gravel size. The backfill shall be placed in layers not to exceed 6 inches in thickness. Each layer of backfill shall be hand or pneumatically tamped to a uniform density satisfactory to the Authorized Officer.
- 1910 - The cattleguard superstructure shall be securely fastened to the fence as shown on the plans. Where necessary, the locations and spacing of the anchor bolts shall be adjusted from that shown on the plans to fit the particular cattleguard furnished.
- 1911 - It shall be the responsibility of the Purchaser to modify the dimensions of the substructure to coincide with the dimensions of the commercial cattleguard furnished. This requirement especially refers to curb height. Tolerances shown on the plans shall be complied with in constructing the substructure for the type of cattleguard furnished.
- 1912 - Cattleguard structures shall be constructed so that the deck surface is 2 inches higher than the finished roadbed and profile grade.
- 1912b - The cattleguard structures may be constructed so that the decks are at the same grade as the existing surface.
- 1913 - Drainage for cattleguard bases shall be provided during and after construction. If necessary for adequate drainage, the Purchaser shall construct approach channels to the base-end openings as shown on the plans and as directed by the Authorized Officer.
- 1914 - Prior to the installation of the cattleguard superstructure, the interior area of the base shall be cleared of construction debris and excavated materials to the satisfaction of

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the Authorized Officer.

- 1915 - Bypass gates shall be provided in conjunction with cattleguard structures where shown on the plans. Gate materials and construction shall conform to the requirements and details shown on the plans.

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 exhibit C-8, 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.
- 2103 - Vegetation cut manually and/or mechanically less than 8 inches in diameter when measured at diameter breast height (DBH) shall be cut to a maximum height of 6 inches above the ground surface or above obstructions such as rocks or stumps on cut and fill slopes and all limbs below the **6-inch** area will be severed from the trunk.
- 2103a - Vegetation shall be cut and removed from the road bed between the outside shoulder and the ditch centerline and such vegetation shall be cut to a maximum height of 1 inch above the ground and running surface. Limbs below the **1-inch** area 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 eight (8) inches in diameter at diameter breast height (DBH) shall be limbed, so that no limbs extend into the treated area or over the roadbed to a height of 14 feet above the subgrade running surface of the roadway on cut and fill slopes, within the road prism-variable distance. Limbs shall be cut to within 6 inches of the trunk to produce a smooth vertical face. Removal of trees larger than eight (8) 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 14 feet in elevation above the running surface shall be cut as close to the trunk as possible without gouging the tree or going beyond the brushing limits.

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- 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.

- 2107 - Inside curves shall be brushed out for a sight distance of 200 feet chord distance or a middle ordinate distance of 25 feet whichever is achieved first. Overhanging limbs and vegetation in excess of 1 foot in height, shall be cut within these areas.

- 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 or chipped downslope from the roadway (unless otherwise noted in the work list) as indicated on Exhibit C-3 (Estimate of Quantities) and Exhibit C-6 (Road Renovation and Improvement Worklist). 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.

Road No.	From M.P.	To M.P.	Total Miles	Type
34-2E-20.00	0.00	1.98	1.98	Scatter
34-2E-22.00	0.00	1.51	1.51	Scatter
34-2E-24.00	0.00	0.31	0.31	Scatter
34-2E-24.01	0.00	0.17	0.17	Scatter
34-2E-24.05	0.00	0.32	0.32	Scatter
34-2E-24.06	0.00	0.52	0.52	Scatter
34-2E-26.00	0.00	0.87	0.87	Scatter
34-2E-29.00	0.00	3.24	3.24	Scatter
35-2E-1.00	0.00	0.64	0.64	Scatter
35-2E-1.01	0.00	0.44	0.44	Scatter
35-2E-1.02	0.00	0.06	0.06	Scatter
35-2E-1.03	0.00	0.13	0.13	Scatter
35-2E-1.04	0.00	0.09	0.09	Scatter
35-2E-2.00	0.00	4.06	4.06	Scatter
35-2E-2.01	0.00	1.75	1.75	Scatter
35-2E-2.02	0.00	0.45	0.45	Scatter
35-2E-2.03	0.00	1.34	1.34	Scatter
35-2E-3.02	0.00	0.15	0.15	Scatter
35-2E-11.00	0.00	0.66	0.66	Scatter
35-3E-6.00	0.00	0.47	0.47	Scatter

- 2110 - Vegetation 8 inches and smaller in diameter shall be chipped where indicated on Exhibit C-3 (Estimate of Quantities) and Exhibit C-6 (Road Renovation Worklist). Chips shall be scattered downslope from the runway. Vegetation over 8 inches in diameter shall be disposed of by direction of the Authorized Officer.

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- 2114 - Sections of roadway to have vegetation removed will be marked at start and stop points with red-topped painted stakes.
- 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.

BIG DOG TIMBER SALE Road Renovation Work List

Renovation/Improvement/Construction: This consists of road work to be performed on the road prior to timber haul from sale units. This work includes, but not limited to; clearing and grubbing, excavation for roads and landings, compacting, watering, blading and/or rolling the road surface, cleaning/constructing ditches where needed, cleaning or enlarging catch basins and outlets, replacing/installing new culverts, cleaning the entire barrel of all culverts, maintaining/constructing water dips, spot rocking, road surfacing, seeding and mulching, constructing water bars, and constructing barricades. Remove all down trees from road surface, ditch lines, culvert catch basins, and within brushing limits.

All culvert replacements shall be capped with 20 cubic yards (unless otherwise noted in the worklist) from Exhibit C-5, Section 1200 (Gradation C-1). All aggregate conforming to Exhibit C-5, Section 900 (Gradation A) and 1200 (Gradation C-1) shall be from commercial quarries. All turnout and truck turnaround widths are in addition to 16' subgrade widths.

Roadside Brushing and RVM: This work includes removing brush, non-merchantable trees, and merchantable trees along haul routes according to the dimensions specified in Exhibit C-8, prior to timber haul from sale units.

Removal of brush, and non-merchantable trees (conifers less than 8" DBH and all hardwoods), will be completed along all haul routes.

Removal of merchantable trees (conifers 8" DBH and larger) will be completed as designated in the work list and shown on Exhibit C-2, and be limited to those trees marked with blue paint outside of sale units and un- marked trees inside of sale units.

Debris resulting from these activities shall be disposed of by lop and scatter, pile and burn, or chipping in accordance with Exhibit C-5 Section 2109 and 205. Debris disposed of by lop and scatter shall not exceed 8 feet in length or be allowed to accumulate in concentrations but shall be further reduced or removed.

Concentrations will be defined as any debris, limbs or branches touching each other or piled on top of each other or any material sticking up over 2 feet in elevation above the ground. Cut trees or debris shall not be allowed to stand or lean against other standing uncut trees or brush.

All stumps that may hinder road maintenance, including road/shoulder/ditch blading operations and snow plowing, shall be removed or ground to 6" below subgrade. Any damage to the road/shoulder/ditch resulting from these activities shall be repaired. Disturbed soil from these activities will be treated in accordance with Exhibit C-5 Section 1802a.

ASC – Aggregate Surface Course
AWD – Armored water dip
BRSH – Brushing
CHPN – Chipping
CMP – Corrugated Metal Pipe
CY – Cubic yards
DBH – Diameter at Breast Height
IMPR – Improvement

Jct. – Junction
NAT – Natural Surface
PRR – Pit Run Rock Surface
Pvt. – Private
RENO – Renovation
SRFC - Surfacing
RVM – Roadside Vegetation Maintenance
WB – Water bar

Existing Roads Renovation/Improvement

<u>Road 34-2E-20.00 ASC</u>	
<u>Summary of work to be completed</u>	
RVM/ROW Cutting Stump Removal Brushing Cross Drain Maint CMP/WD install Ditch Maint Shaping Surfacing Seed/Mulch	
Mileposts	Remarks
0.00	Jct. Cobleigh Road. Begin RVM, BRSH, RENO, and SRFC 4" depth 1 1/2" minus.
0.39	Construct splash pad with 3 CY of Class 3 Rip Rap at outlet of culvert.
0.40	End RVM.
0.49	Construct splash pad with 5 CY of Class 3 Rip Rap at outlet of culvert.
0.52	Begin RVM.
0.59	Irrigation ditch.
0.73	Property line. End RVM.
1.20	Begin Segment C. Jct. 34-2E-20.00 (loop) keep right. End SRFC of 4" depth 1 1/2" minus. Begin SRFC 8" depth 4" minus.
1.27	Begin Segment B. Property line.
1.43	Property line.
1.49	Jct. 34-2E-21.02 (right). Property line. Begin RVM.
1.58	Replace CMP with 24" X 36' draw pipe.
1.80	Heli Landing (H7). Clear and grub landing. Place 185 CY 4" minus rock for log loading operations. End SRFC.
1.98	End RVM, BRSH, and RENO.

Road 34-2E-22.00 PRR

Summary of work to be completed

RVM/ROW Cutting
Stump Removal
Brushing
Cross Drain Maint
Ditch Maint
Shaping
Surfacing
Seed/Mulch

Mileposts	Remarks
0.00	Jct. 34-2E-29.00. Begin BRSH, RENO, and SRFC 4" depth 1 1/2" minus.
0.10	Begin Sement B.
0.75	Reconstruct AWD, add 10 CY 4" minus.
1.02	Jct. un-numbered road (left).
1.05	Property line. Begin RVM.
1.51	Heli landing (H9) (left). Clear and grub landing. Place 185 CY 4" minus for loading operations. End RVM, BRSH, RENO, and SRFC.

Road 34-2E-24.00 PRR

Summary of work to be completed

RVM/ROW Cutting
Stump Removal
Brushing
Cross Drain Maint
Ditch Maint
Shaping
Seed/Mulch

Mileposts	Remarks
0.00	Jct. 34-2E-26.00. Begin RVM, BRSH, and RENO.
0.31	End RVM, BRSH, and RENO.

<u>Road 34-2E-24.01 PRR</u>	
<u>Summary of work to be completed</u>	
RVM/ROW Cutting	
Stump Removal	
Brushing	
Cross Drain Maint	
Ditch Maint	
Shaping	
Seed/Mulch	
Mileposts	Remarks
0.00	Jct. 34-2E-26.00. Helicopter Landing (H12) (left and right), constructed under 34-2E-26.00 road in worklist. Begin RVM, BRSH, and RENO.
0.05	Jct. 34-2E-24.06 (right).
0.17	End RVM, BRSH, and RENO.

<u>Road 34-2E-24.05 AGG</u>	
<u>Summary of work to be completed</u>	
RVM/ROW Cutting	
Stump Removal	
Brushing	
Cross Drain Maint	
Ditch Maint	
Shaping	
Mileposts	Remarks
0.00	Jct. 34-2E-26.00. Helicopter Landing (H12) (right), constructed under 34-2E-26.00 road in worklist. Begin RVM, BRSH, and RENO.
0.18	Begin Segment B
0.29	Begin Segment C
0.32	End RVM, BRSH, and RENO.

Road 34-2E-24.06 ASC

Summary of work to be completed

Barricade removal
RVM/ROW Cutting
Stump Removal
Brushing
Cross Drain Maint
Ditch Maint
Shaping
Seed/Mulch

Mileposts	Remarks
0.00	Jct. 34-2E-24.01. Begin ROW Clear & Grub, BRSH, and IMPR.
0.01	Remove boulder barricade.
0.20	Begin Segment B
0.52	End ROW Clear & Grub, BRSH, and IMPR.

Road 34-2E-26.00 PRR

Summary of work to be completed

RVM/ROW Cutting
Stump Removal
Brushing
Cross Drain Maint
Ditch Maint
Shaping
Surfacing
Seed/Mulch

Mileposts	Remarks
0.00	Jct. 35-2E-2.00. Begin RVM, BRSH, RENO, and SRFC 4" depth 1 1/2" minus rock.
0.05	Property line. End RVM.
0.24	Property line. Begin RVM.
0.41	Jct. 34-2E-24.05 (right) and 34-2E-24.01 (left). Construct Helicopter Log Landing (H12) (left and right). Clear and grub landing. Place 185 CY 4" minus rock for loading operations. End SRFC. Begin Segment B.
0.78	Jct. 34-2E-24.00 (left). Begin Segment C
0.87	End RVM, BRSH, and RENO.

<u>Road 34-2E-29.00 ASC</u>	
<u>Summary of work to be completed</u>	
RVM/ROW Cutting	
Stump Removal	
Brushing	
Cross Drain Maint	
CMP/WD install	
Ditch Maint	
Shaping	
Surfacing	
Seed/Mulch	
Mileposts	Remarks
0.00	Jct. Cobleigh Road. Begin BRSH, RENO, and SRFC 6" depth 1 1/2" minus.
0.01	Cleanout and reset existing Cattle Guard.
0.10	Jct. Driveway (left).
0.49	Property line, begin Segment A2. Existing Cattle Guard. Begin RVM. End SRFC 6" depth, begin SRFC 4" depth 1 1/2" minus.
1.13	Property line, begin Segment A3. End RVM.
1.42	Replace CMP with 24" X 34'.
1.56	Jct. 34-2E-27.00 (right).
1.73	Mega gate. End SRFC.
1.97	Spot Rock 20 CY 1 1/2" minus.
2.22	Spot Rock 20 CY 1 1/2" minus.
2.32	Spot Rock 20 CY 1 1/2" minus.
2.59	Jct. un-numbered road (left).
2.95	Spot Rock 20 CY 1 1/2" minus over shallow CMP.
3.24	Jct. 34-2E-22.00 (left). End of BRSH, and RENO.

Road 35-2E-1.00 NAT

Summary of work to be completed

RVM/ROW Cutting
Stump Removal
Brushing
Cross Drain Maint
Shaping
Seed/Mulch

Mileposts	Remarks
0.00	Jct. 35-2E-2.01. Begin RVM, BRSH and RENO.
0.05	Remove guard rail gate and posts.
0.08	Jct. 35-2E-1.01 (right). Begin Segment B. End RVM.
0.16	Begin RVM.
0.64	End RVM, BRSH and RENO.

Road 35-2E-1.01 NAT

Summary of work to be completed

RVM/ROW Cutting
Stump Removal
Brushing
Cross Drain Maint
Shaping
Seed/Mulch
Winterization

Mileposts	Remarks
0.00	Jct. 35-2E-1.00. Begin RVM, BRSH and RENO.
0.04	End RVM.
0.23	Begin RVM.
0.44	End RVM, BRSH and RENO.

Road 35-2E-1.02 NAT

Summary of work to be completed

Barricade removal
RVM/ROW Cutting
Stump Removal
Brushing
Shaping
Seed/Mulch
Winterization

Mileposts	Remarks
0.00	Jct. Butte Falls/Prospect Hwy. Begin RVM, BRSH and RENO.
0.02	Remove barricade.
0.04	Jct. 35-2E-1.04 (left).
0.06	End RVM, BRSH and RENO.

Road 35-2E-1.03 NAT

Summary of work to be completed

RVM/ROW Cutting
Stump Removal
Brushing
Shaping
Seed/Mulch
Winterization

Mileposts	Remarks
0.00	Jct. 35-2E-2.01. Begin ROW Clear & Grub, RENO, and BRSH.
0.10	Install Government Furnished temporary bridge over irrigation ditch.
0.13	End ROW Clear & Grub, RENO, and BRSH.

Road 35-2E-1.04 NAT	
<u>Summary of work to be completed</u> RVM/ROW Cutting Stump Removal Brushing Shaping Seed/Mulch Winterization	
Mileposts	Remarks
0.00	Jct. 35-2E-1.02. Begin RVM, BRSH, and RENO.
0.09	End RVM, BRSH, and RENO.

<u>Road 35-2E-2.00 ASC</u>	
<u>Summary of work to be completed</u>	
RVM/ROW Cutting	
Stump Removal	
Brushing	
Cross Drain Maint	
Ditch Maint	
Shaping	
Surfacing	
Seed/Mulch	
Mileposts	Remarks
0.00	Jct. Fredenburg Road. Begin BRSH and RENO.
0.01	Repair Cattle Guard, cross bar broken.
0.18	Irrigation ditch crossing.
0.19	Cattle Guard. Property line.
0.21	Jct. 34-2E-35.01 (right). Begin Segment B.
0.22	Jct. 34-2E-35.03 (left).
0.65	Jct. 34-2E-35.00 (right). Begin Segment C1.
0.82	Jct. 34-2E-35.07 (right). Begin Segment C2.
0.83	Begin RVM.
1.23	Jct. 34-2E-35.05 (left). Begin Segment C3.
1.40	Jct. 34-2E-35.06 (right). Begin Segment C4.
2.10	Jct. 34-2E-35.02 (right), 34-2E-35.08 (left). Begin Segment D1.
2.60	End RVM.
2.64	Begin RVM.
2.69	End RVM.
2.74	Begin RVM.
2.79	Jct. 34-2E-26.02 (left, loop).
2.85	End RVM.
2.92	Jct. 34-2E-26.02 (left, loop). Begin Segment D2.
2.95	Begin SRFC 4" depth 1 1/2" minus.
2.96	Begin RVM.
3.43	End RVM.
3.54	Begin RVM.
3.80	End RVM.
3.89	Begin RVM.
4.06	Jct. 34-3E-26.00 (left). End RVM, BRSH, RENO, and SRFC.

Road 35-2E-2.01 ASC

Summary of work to be completed

RVM/ROW Cutting
Stump Removal
Brushing
Cross Drain Maint
CMP/WD install
Ditch Maint
Shaping
Seed/Mulch

Mileposts	Remarks
0.00	Jct. Butte Falls/Prospect Hwy. Begin BRSH and RENO.
0.10	Pvt. gate.
0.19	Jct. 35-3E-6.03 (right). Begin Segment C2.
0.49	Jct. 35-3E-6.00 (right). Begin Segment C1.
0.70	Property line. Begin RVM. Begin Segment B2.
0.80	Replace CMP with 24" X 34'. End RVM.
0.94	Begin RVM.
0.97	Irrigation ditch.
1.24	Jct. 35-2E-1.00 (left). Begin Segment B.
1.29	End RVM.
1.36	Jct. 35-2E-1.03 (right). Begin RVM.
1.40	End RVM.
1.66	Begin RVM.
1.75	Replace pipe gate with mega gate. End RVM, BRSH, and RENO.

Road 35-2E-2.02 ASC

Summary of work to be completed

Brushing
Cross Drain Maint
Ditch Maint
Shaping

Mileposts	Remarks
0.00	Jct. 35-2E-11.00. Begin BRSH and RENO.
0.31	Jct. un-numbered road (left).
0.45	Jct. 35-2E-3.02 (right). End BRSH and RENO.

Road 35-2E-2.03 ASC/NAT

Summary of work to be completed

Barricade removal
Brushing
Cross Drain Maint
Shaping
Surfacing

Mileposts	Remarks
0.00	Jct. Fredenburg Road. Begin BRSH, RENO, and SRFC 4" depth 1 1/2" minus.
0.23	Jct. Pvt. driveway (right).
0.52	Mega gate and Livestock gate.
0.66	Helicopter landing (H-8), place 185 CY of 4" minus for loading operations. End SRFC. Begin Segment A2.
0.92	Log Landing (left).
0.93	Property Line. Remove barricade. Begin Segment B.
1.07	Remove barricade.
1.30	Jct. un-numbered road (right).
1.34	Log Landing. End BRSH and RENO.

Road 35-2E-3.02 NAT

Summary of work to be completed

Barricade removal
Stump Removal
Brushing
Shaping
Surfacing
Seed/Mulch

Mileposts	Remarks
0.00	Jct. 35-2E-2.02. Begin ROW Clear and Grub, BRSH, IMPR, and SRFC 8" depth 4" minus.
0.04	Remove barricade.
0.15	Service landing (S-2). Place 480 CY 4" minus at 8" depth for service area. End ROW Clear and Grub, BRSH, IMPR, and SRFC. Grub all stumps in previously cut landing (2.5 acres).

<u>Road 35-2E-11.00 ASC</u>	
<u>Summary of work to be completed</u>	
Brushing	
Cross Drain Maint	
Ditch Maint	
Shaping	
Mileposts	Remarks
0.00	Jct. Fredenberg Road. Begin BRSH and RENO.
0.11	Pvt. Road (right).
0.66	Jct. 35-2E-2.02 (left). End BRSH and RENO.

<u>Road 35-3E-6.00 NAT</u>	
<u>Summary of work to be completed</u>	
Barricade removal	
RVM/ROW Cutting	
Stump Removal	
Brushing	
Shaping	
Seed/Mulch	
Mileposts	Remarks.
0.00	Jct. 35-2E-2.01. Begin BRSH and IMPR.
0.18	Property line. Remove barricade. Begin ROW Clear & Grub. Begin Segment B.
0.47	Property line. End ROW Clear & Grub, BRSH, and IMPR.

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SPECIAL PROVISIONS

1. EQUIPMENT:

- Construction equipment shall be washed prior to entering BLM lands. Removal of all dirt, grease, and plant parts that may carry noxious weed seeds or vegetative parts is required. Equipment shall be inspected by CO prior to entering BLM lands. Provide 48 hours' notice of inspection to BLM prior to mobilization.

2. SOIL STABILIZATION:

- All disturbed soil shall be seeded and mulched. Purchaser shall apply native grass seed and certified weed free straw mulch for soil stabilization operations. The Purchaser shall supply native seed and certified weed free straw. Native seed and certified weed free straw may be purchased from the BLM, if available.

3. DAMAGE:

- The Purchaser shall protect and is responsible for any damage to existing telephone lines, transmission lines, fiber optic lines, fences, ditches, and other existing improvements. Damage to utilities and existing improvements shall be promptly paid for or repaired to a condition which is, in the opinion of the Authorized Officer and the governing utility company, at least as good as the condition just prior to such damage.

4. DUST ABATEMENT:

- The application of dust abatement materials such as Lignin, Mag-chloride, or approved petroleum based dust abatement products shall be restricted from application just after severely wet weather, at stream crossings to be designated by the Authorized Officer, or other locations that could result in direct delivery to a water body.
- All dust abatement applications shall be approved by the Authorized Officer prior to application.

5. WATER SOURCES:

- The Purchaser is responsible for obtaining water and associated rights and permits.

6. PERMITS:

- All permits required are the responsibility of the Purchaser.
- The Jackson County Engineer has agreed to issue OVERLOAD PERMITS to haul over the Cobleigh Road trestle bridge. The Sale Units which will require haul across this bridge are: 21-2, 2b, 2SYA, 3, 4, 5; 28-1SYA, 1. Example specifications for typical 6 Axle Long and Short Logger configurations (88K Long Logger, 96k Short Logger), are shown below, and as reviewed and approved for permitting by the Jackson County Engineer. Other haul truck configurations may be permitted but must be submitted to Jackson County for approval.

Description of Hauling Equipment: Typical 6 Axle Long Logger												
Vehicle Width: 8'5"		Kingpin to Last Axle:				Semi-Trailer Length:			Comb Vehicle Length: 65'			
Axle Number	1	2	3	4	5	6	7	8	9	10	11	12
Number Of Tires Per Axle	2	2	4	4	4	4						
Distance Between Axles	12'6"	6'5"	4'7"	31'2"	4'3"							
Width of Axles at Tire Side Wall	7'5"	7'5"	7'10"	7'10"	7'9"	7'9"						
Weight per Axle (kips)	12.5	9.5	17.0	17.0	17.0	17.0						

Description of Hauling Equipment: Typical 6 Axle Short Logger												
Vehicle Width: 8'5"		Kingpin to Last Axle:				Semi-Trailer Length:			Comb Vehicle Length: 75'			
Axle Number	1	2	3	4	5	6	7	8	9	10	11	12
Number Of Tires Per Axle	2	2	4	4	4	4						
Distance Between Axles	13'7"	6'5"	4'7"	28'1"	15'7"							
Width of Axles at Tire Side Wall	7'5"	7'5"	7'10"	7'10"	7'9"	7'9"						
Weight per Axle (kips)	12.5	9.5	17.0	17.0	20.0	20.0						

7. CULVERT REMOVAL:

- When removing culverts unless constructing armored water dips, pull slopes back to the natural slope, or at least 2:1, to minimize sloughing, erosion, and the potential for the stream to undercut stream banks during periods of high stream flows. Remove excess sediment from stream channels during culvert removal, replacement, and installation activities. Apply seed and mulch to all disturbed or exposed soils at each stream culvert removal site

8. COMMERCIAL AGGREGATE

- If aggregate furnished for this work comes from a commercial source, then the aggregate shall be from an accredited weed free quarry or shall have been stockpiled in the period between November 1st and June 15th immediately prior to application. Aggregate which has been stockpiled between June 16th and October 31st of prior years will not be

accepted. Aggregate crushed between June 16th and October 31st of the same application year shall not be stockpiled for more than two weeks before application.

9. ROAD RENOVATION:

- Road renovation shall generally take place between May 15th and October 15th of the same year. Waivers may be granted from the Authorized Officer for working outside of this time period. Seasonal restrictions for stream work and wildlife may still apply.
- Loose material cleaned from ditch lines and/or slide material shall not be sidecast or placed where it can enter wetlands, riparian reserves, floodplains, and waters of the State.

10. STREAMS:

- All in-stream work shall be done from June 15 thru September 15 both days included.
- Construct silt fences 25 and 50 feet below culvert replacement sites (on live streams) to trap sediment and prevent it from entering nearby stream channels.
- Live streams shall be diverted around or through the work area in a manner that will minimize sedimentation downstream. Keep excavation site dewatered so that installation of culverts can be carried out only under dry conditions. Dispose of excess water by using natural drainage ways or devices near the site to the extent of their natural capacity and in a manner that will avoid damage to adjacent property. Utilize dewatering methods such as temporary sediment traps and/or silt fences for areas to be excavated. Provide for downstream water flow without significant transport of excavated material or sediment during construction. At no time shall turbidity limits exceed DEQ's water quality standards.
- Ensure that all large wood is retained in the stream channel during culvert cleaning activities by moving logs which had accumulated on the stream side of a culvert to the downstream side of the culvert.

11. TEMPORARY ROUTES

- All temp routes and native surfaced roads (that were previously closed before timber sale activities began) shall be winterized if access is needed over two dry seasons by October 15th. Winterization includes water barring, seeding, mulching, and barricading. All temp routes shall be ripped, water barred, barricaded, seeded, and mulched after use unless otherwise specified.
- Clearing, grubbing, and excavation activities shown on Exhibit C shall be performed in accordance with Exhibit C5, Section 200.
- Construction of temporary spur routes shall be to a subgrade width of 14'.
- All decommissioning shall be in accordance with Exhibit D-3 sections 3525 through 3526.

12. PERMANENT ROADS

- All permanent roads shall be winterized if access is needed over two dry seasons by October 15th unless the road is surfaced. Winterization includes water barring, seeding, mulching, and barricading.
- All roads placed into long term closure will be camouflaged and/or barricaded as per Exhibit D-3 section 3520 through 3524.

13. ROADSIDE BRUSHING

- While roadside brushing, there shall be no scarring or any other damage of the tree trunk or bole allowed.
- Use of Excavators and/or flailers for brush removal will be at the discretion of the Authorized Officer.
- All culvert inlets and outlets shall be brushed for a radius of 4'.
- All bridges shall be brushed 8 horizontal feet from the outer most portion of the structure.

14. WET SEASON HAUL

- The Purchaser may wet season haul, with the Authorized Officer's approval on the following roads: 34-2E-24.05 Seg A-C, 35-2E-11.00 Seg A, 35-2E-2.00 Seg A-D1, 35-2E-2.02 If the use of these roads during the wet season causes or begins to cause road damage or the transport of sediment into streams, the Authorized Officer may suspend wet season haul or require additional erosion control devices to prevent damage or off-site transportation of sediment. Additional rock may be required at the Purchaser's expense to repair any damage that occurs to the road during wet season haul.
- The Purchaser may wet season haul on these roads that will be rocked under Exhibit C work, with the Authorized Officer's approval on the following roads: 34-2E-20.00 Seg A, C, B to Heli Landing, 34-2E-22.00 Seg A-C, 34-2E-26.00 Seg A, 34-2E-29.00 Seg A1-A3 (Spot Rocking on A3), 35-2E-2.00 Seg D2, 35-2E-2.03 Seg A1, and 35-2E-3.02 Seg A-B. If the use of these roads during the wet season causes or begins to cause road damage or the transport of sediment into streams, the Authorized Officer may suspend wet season haul or require additional erosion control devices to prevent damage or off-site transportation of sediment. Additional rock may be required at the Purchaser's expense to repair any damage that occurs to the road during wet season haul.
- The Purchaser shall have the option to rock road numbers 34-2E-20.00 Seg B beyond Heli Landing, 34-2E-24.00, 34-2E-24.01 Seg A-B, 34-2E-24.06 Seg A-B, 34-2E-26.00 Seg B-C, 35-2E-1.00 Seg A-B, 35-2E-1.01, 35-2E-1.02, 35-2E-1.03, 35-2E-1.04, 35-2E-2.01 Seg D-B, 35-2E-2.03 Seg A2-B, and 35-3E-6.00 Seg A-B, for wet weather haul. Purchaser option rocking depths will be determined and approved by the Authorized Officer. Any costs for rocking and installation of additional drainage features will be at the Purchaser's expense and shall be completed in accordance with the plans and specifications show in Exhibit C of this contract.

EXHIBIT C8

SHEET 1 OF 1

Cutting Limit = C + D + B + F

B = Road Bed Subgrade (includes turnouts) Cut all vegetation to max. height of 1".

*C = 6 ft - Distance to be brushed on cut slope beyond centerline of ditch. Cut all vegetation to max height of 6".

D = Centerline of ditch to inside shoulder Cut all vegetation to max. height of 1".

*F = 6 ft - Distance to be brushed on fill slope beyond outside shoulder. Cut all vegetation to max height of 6".

V = 14 ft - Height of vertical cutting limit

All distances shown are horizontal except for V

NOTES:

Cutting and Removal of vegetation from ditches and roadway is incidental to brushing within cutting limits.

All merchantable roadside cut trees outside of timber sale units will be marked with blue paint. All merchantable roadside trees within timber sales units shall be cut unless painted orange or pink (reserve trees).

See Exhibit C-2 (Maps) and Exhibit C-6 (Road Renovation Worksheet) for Roadside Vegetation Management locations.

* = Roads identified for Roadside Vegetation Management shall have all brush, and non-merchantable/merchantable trees 8" DBH or greater (except reserve trees), cut within the cutting limits.

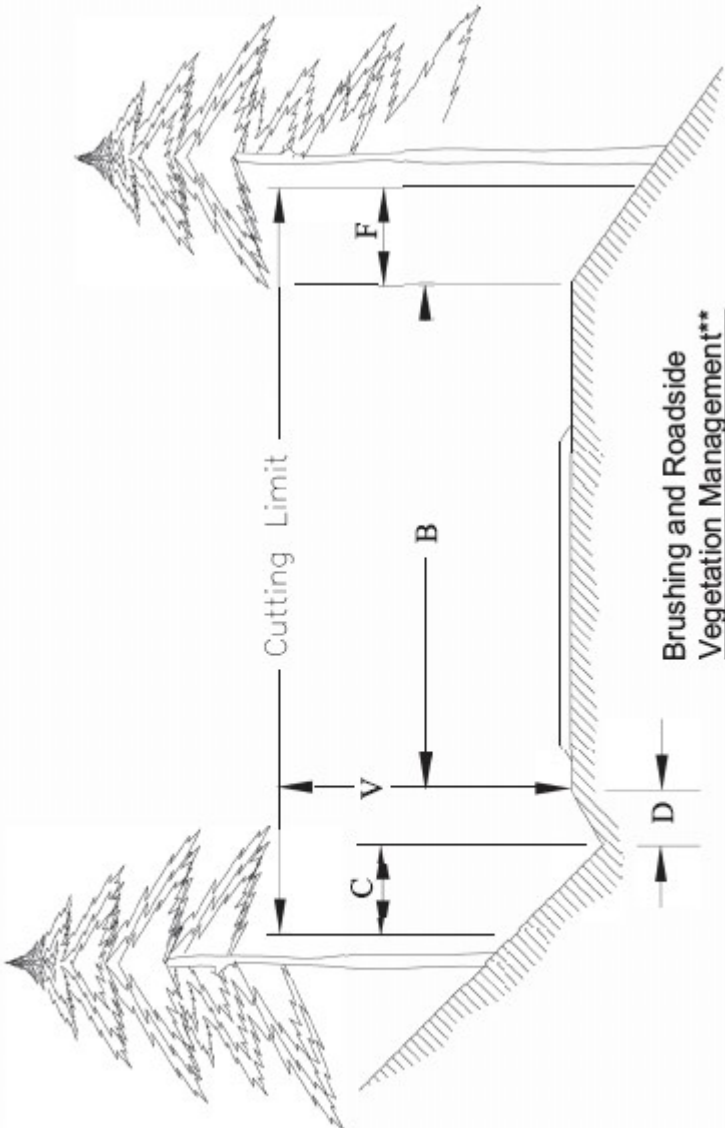
** = All stumps that may impede road maintenance equipment from properly maintaining the road and ditch line shall be grubbed or ground 6" below subgrade. Stump holes shall be filled (if needed) with suitable material and compacted.

*** = Excludes work for roadside vegetation management.

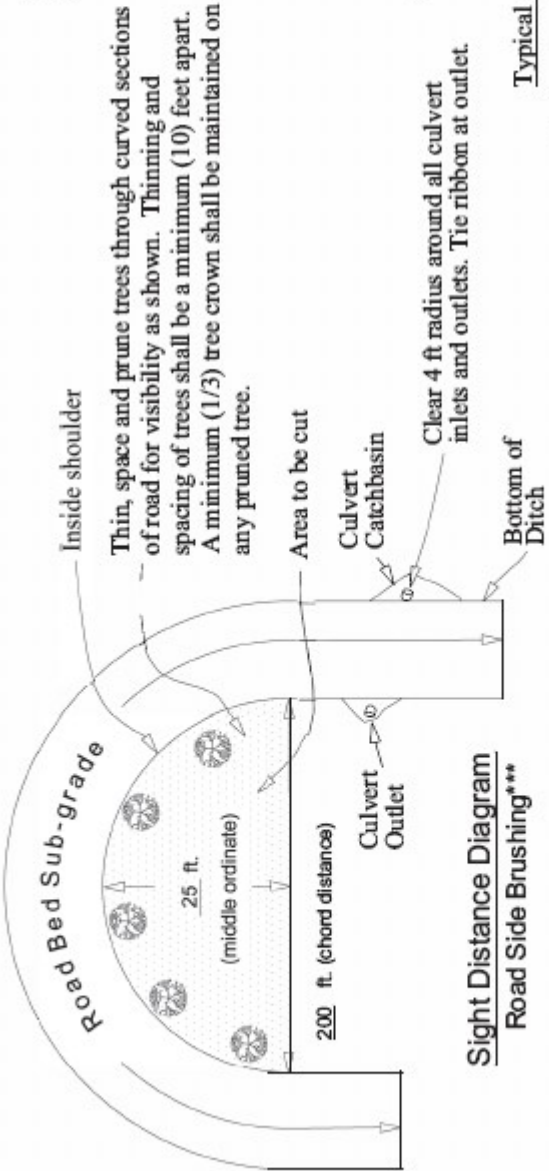
UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT MEDFORD DISTRICT - MEDFORD, OREGON			
ROADSIDE BRUSHING AND ROADSIDE VEGETATION MANAGEMENT DETAILS			
DRAWN	JWR	SCALE	NONE
DATE	April 2022	SHEET	1 OF 1
DRAWING NO. ORMO5-TS-2025.0001 CB			

Typical Road Bed Subgrade widths

One lane low traffic volume 12 to 16 ft
One lane medium traffic volume . . 16 to 20 ft
Two lane high volume traffic 20 to 40 ft
Turnouts 10 ft



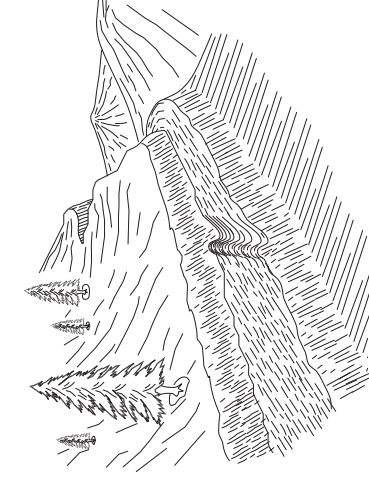
Inside Corner



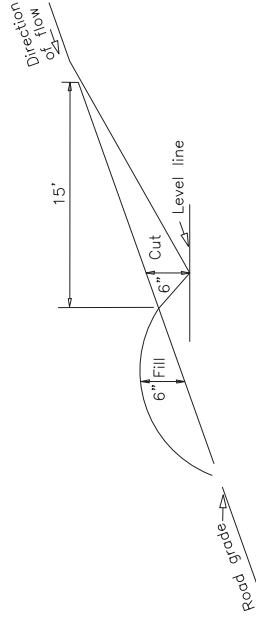
Sight Distance Diagram Road Side Brushing***



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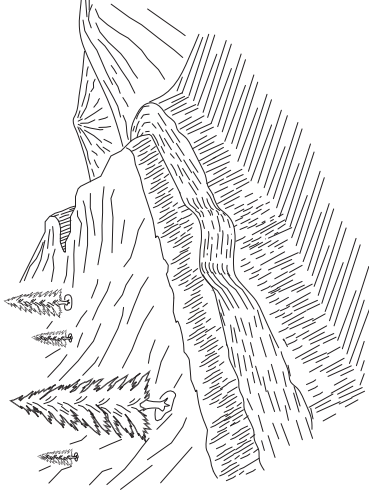
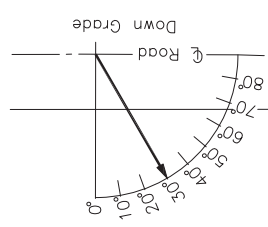


WATER_BAR

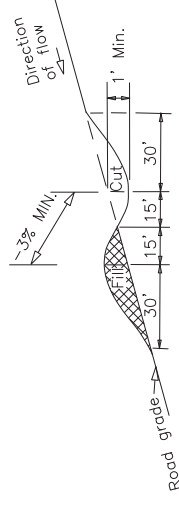


1. CROSS-DRAINS SHALL BE CONSTRUCTED AS SHOWN ABOVE.
2. EXACT LOCATION WILL BE FLAGGED BY THE AUTHORIZED OFFICER PRIOR TO CONSTRUCTION.
3. ALL CROSS DRAINS SHALL BE SKEWED 30 DEGREES.
4. THE CROSS-DRAINS INVERT SHALL BE SMOOTH AND FREE DRAINING.

SKIEW DIAGRAM



WATER DIP



1. WATER DIPS SHALL BE CONSTRUCTED AS SHOWN ABOVE.
2. EXACT LOCATION WILL BE FLAGGED BY THE AUTHORIZED OFFICER PRIOR TO CONSTRUCTION.
3. ALL WATER DIPS SHALL BE SKEWED 30 DEGREES.
4. THE LENGTH SHALL BE SUFFICIENT TO EXTEND FROM THE CUT BANK TO THE FILL SLOPE AND BE READILY CROSSED BY HIGH CLEARANCE TYPE VEHICLES.

REV.	NO.	DESCRIPTION	DATE	APPROV	
UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT MEDFORD DISTRICT — MEDFORD, OREGON					
<i>DRAINAGE & EROSION CONTROL DETAILS</i>					
DRAWN	JAB	SCALE	NONE		
DATE	FEBRUARY	2023	SHEET	1	OF 1
DRAWING NO.	ORM05-TS-2025 .0001-C9.1				

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EXHIBIT C-9.2
SHEET 1 OF 1
Big Dog T.S.

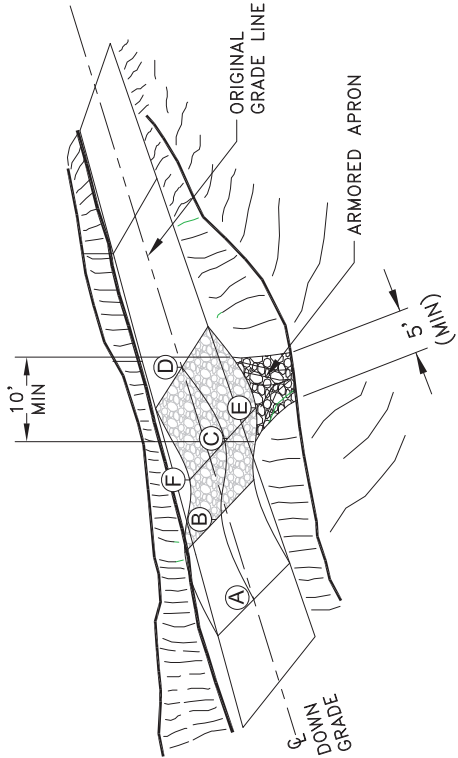
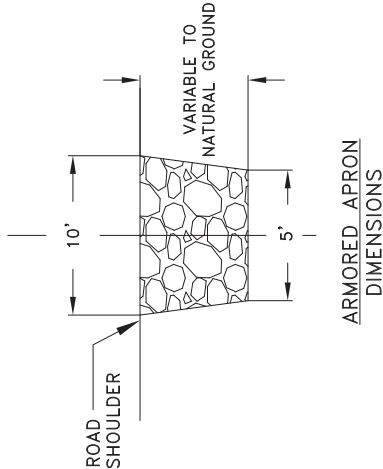
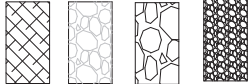
NOTES

- 1) THE WATER DIP INVERT SHALL BE SMOOTH AND FREE DRAINING.
- 2) THE MINIMUM DIFFERENCE IN ELEVATION BETWEEN THE SAG AND THE CREST OF THE WATER DIP ALONG THE CUTSLOPE HINGE POINT IS 1.0 FEET.
- 3) THE MINIMUM DIFFERENCE IN ELEVATION BETWEEN THE SAG AND THE CREST OF THE WATER DIP ALONG THE FILLSLOPE SHOULD BE 1.5 FEET.
- 4) SKEW DIP MINIMUM 15-30 DEGREES FROM PERPENDICULAR TO CENTERLINE.
- 5) EXCAVATED SOIL SHALL BE UTILIZED IN CONSTRUCTION OF WATER DIP. SIDECASTING OF VEGETATIVE MATTER IS PERMITTED.
- 6) 4" MINUS ROCK MATERIAL SHALL BE PLACED ON FILL SLOPE OF ARMORED WATERDIP.

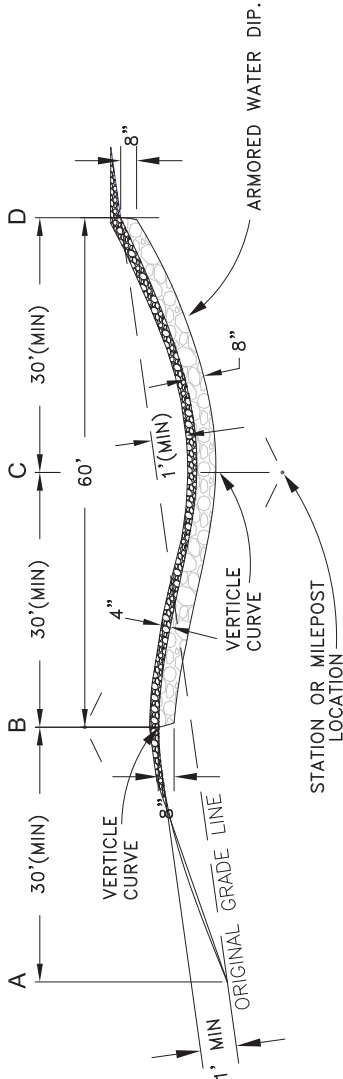
7) SEE ROAD RENOVATION WORKLIST FOR WATER DIPS TO BE ARMORED.

- 8) EACH DIP SHALL BE REINFORCED WITH 40 CUBIC YARDS OF 4" MINUS ROCK, ON ROADWAY AND 4" MINUS ROCK AT OUTFALL.
- 9) EACH DIP ON EXISTING ROCKED ROADS SHALL BE SURFACED WITH 20 CUBIC YARDS OF 1-1/2" MINUS ROCK, EXTENDING AND TAPERING IN DEPTH 20' ON EACH SIDE OF THE AWD, TO MEET THE EXISTING ROAD SURFACE. NATURAL SURFACE ROADS WILL ONLY USE THE 4" MINUS AGGREGATE.

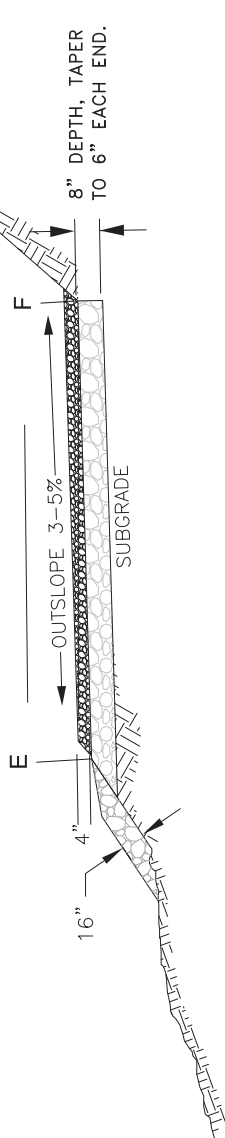
LEGEND



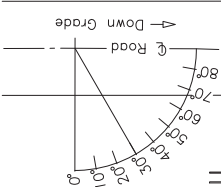
ROAD PROFILE ALONG A-B-C-D OF DRAIN DIP



ROAD PROFILE ALONG F-E OF DRAIN DIP



SKEW DIAGRAM



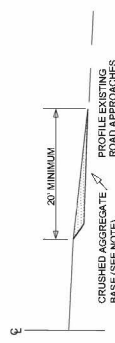
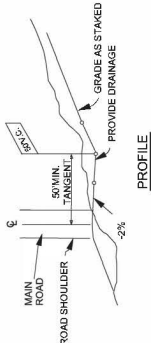
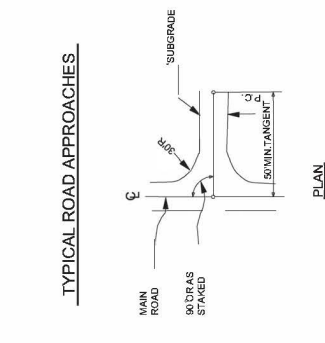
DRAWINGS NOT TO SCALE

TYPICAL ARMORED WATER DIP CONSTRUCTION DETAIL

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT MEDFORD DISTRICT - MEDFORD, OREGON		
TYPICAL ARMORED WATER DIP CONSTRUCTION		
DRAWN BY JAB	SCALE	NONE
DATE FEBRUARY 2023	SHEET	1 OF 1
DRAWING NO.	ORM05-TS-2025.0001-C9.2	

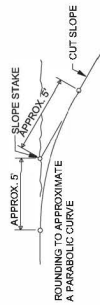
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EXHIBIT C-10
SHEET 1 OF 1
Big Dog T.S.

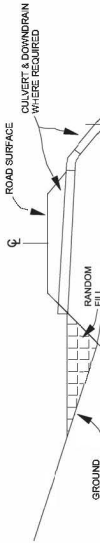


TYPICAL SURFACING SECTION

- NOTES:
- THE PROFILE OF EXISTING APPROACH ROADS SHALL BE TAPERED TO MEET THE SHOULDER LINE OF THE MAIN ROADWAY AND SHALL BE FINISHED WITH THE SAME GRADATION AS THE MAIN ROADWAY.
 - THE CRUSHED AGGREGATE BASE SHALL BE OF THE SAME GRADATION AS USED IN THE ADJACENT ROADBED.
 - FINISHES SHALL BE FINISHED WITH THE SAME TREATMENT AS SHOWN FOR THE ADJACENT ROADBED.

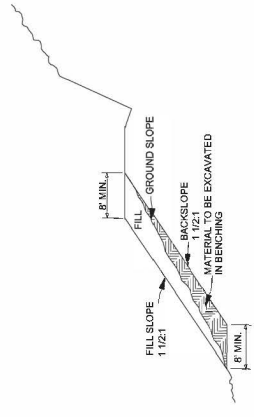


CUT SLOPE ROUNDING

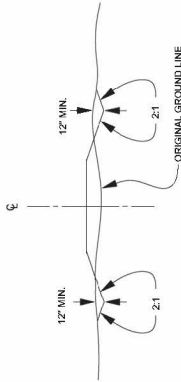


TYPICAL RANDOM FILL

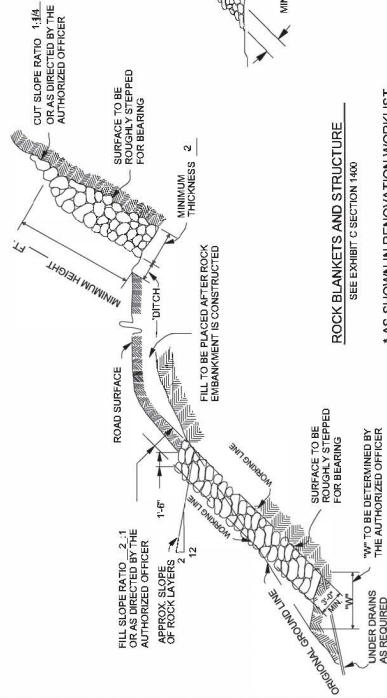
ROAD FILL AND RANDOM FILL TO BE COMPACTED IN ACCORDANCE WITH EXHIBIT C SECTION 300



SPECIAL COMPACTION TYPICAL BENCHING SECTION



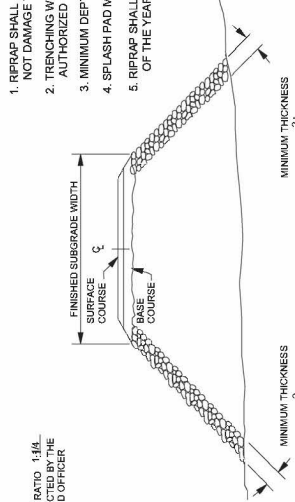
TYPICAL ROAD SECTION FOR TURNPIKE CONSTRUCTION



ROCK BLANKETS AND STRUCTURE

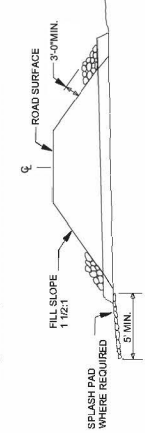
SEE EXHIBIT C SECTION 1400

* AS SHOWN IN RENOVATION WORKLIST.

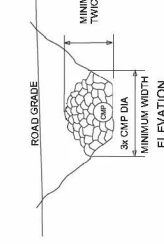
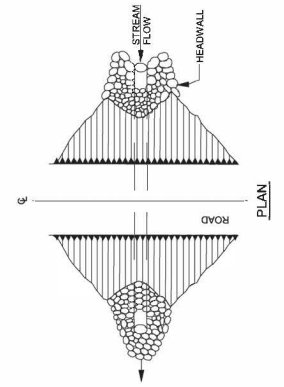


SLOPE PROTECTION ROCK

SEE EXHIBIT C SECTION 1400



CROSS SECTION



NOTES:

RIPRAP AT CULVERTS

- RIPRAP SHALL BE PLACED IN SUCH A MANNER THAT IT WILL NOT DAMAGE THE CULVERT.
- TRENCHING WILL BE DONE AS REQUIRED BY THE AUTHORIZED OFFICER.
- MINIMUM DEPTH OF SPLASH PADS SHALL BE 1 FT.
- SPLASH PAD MINIMUM QUANTITY DESIGNATED IN WORK LIST.
- RIPRAP SHALL BE PLACED BEFORE OCTOBER 15TH OF THE YEAR THE CMP IS INSTALLED.

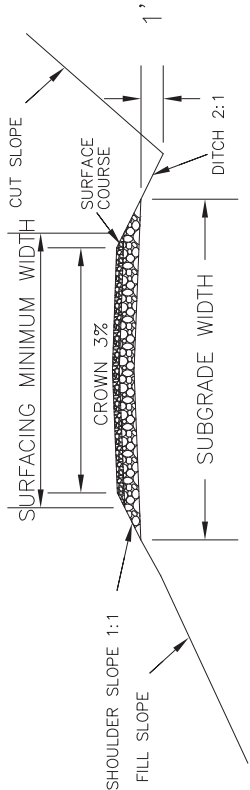
ALWAYS
THINK
SAFETY

**TYPICAL
ROAD DATA**

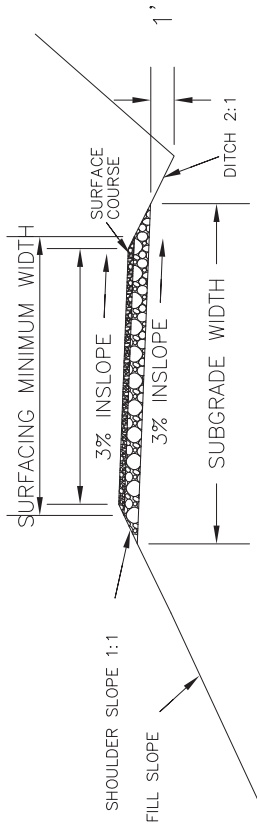
REV. NO.	DESCRIPTION	DATE	APPROVED
	UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT MEDFORD DISTRICT MEDFORD, OREGON		
DRAWN JAB	SCALE	NONE	
DATE FEBRUARY 2023	SHEET 1 OF 1		
DRAWING NO. ORM05-TS-2025.0001-C10			

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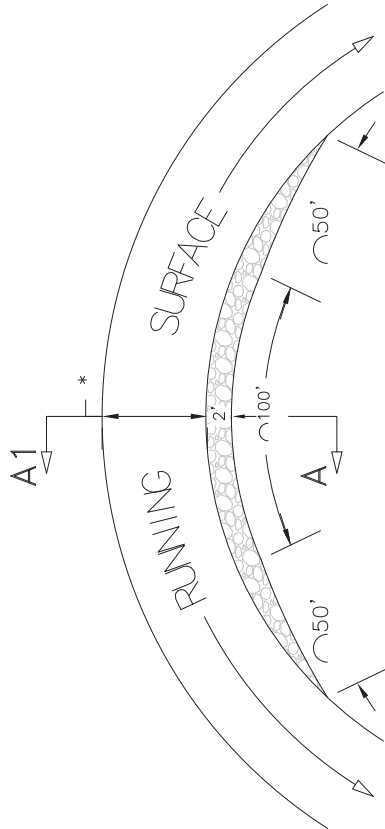
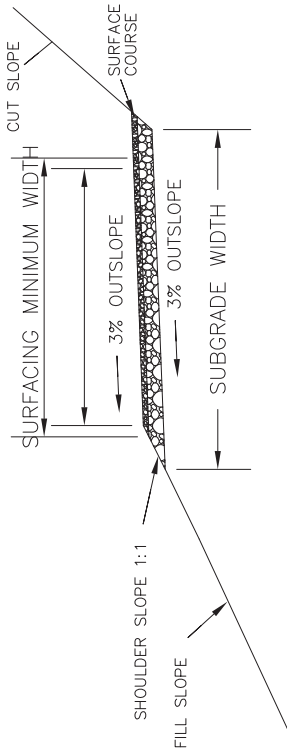
TYPICAL CROWNED SURFACE
EXISTING MIN. BASE COURSE WIDTH



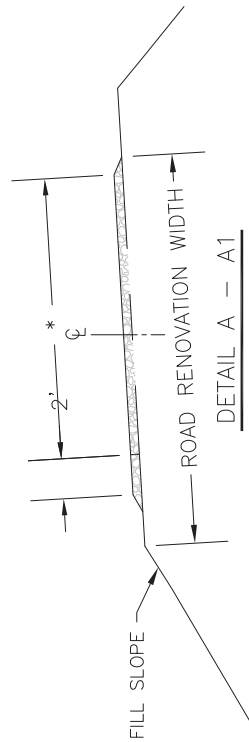
TYPICAL INSLOPED SURFACE
EXISTING MIN. BASE COURSE WIDTH



TYPICAL OUTSLOPED SURFACE
EXISTING MIN. BASE COURSE WIDTH



TYPICAL CURVE WIDENING DETAIL



NOTES:

- SURFACING SHALL BE THE COMPACTED DEPTH AS SPECIFIED IN THE WORKLIST.
- CURVE WIDENING SHALL BE SURFACED TO A LENGTH OF 100' WITH 50' TAPERS.
- APPLY THE WIDENING ON THE INSIDE OF THE CURVES THROUGHOUT THE RADIUS OF THE CORNER TO MATCH THE EXISTING ROAD TEMPLATE.
- MAINTAIN EXISTING CROSS SLOPE AT CURVES

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
MEDFORD DISTRICT - MEDFORD, OREGON

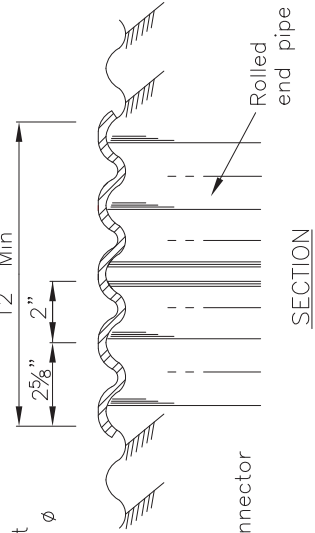
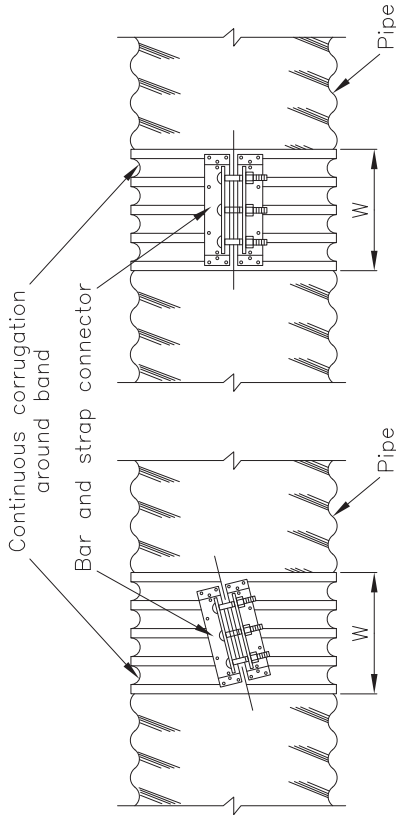
ROAD SURFACING and
CURVE WIDENING SECTIONS

DRAWN: JCM	SCALE: AS SHOWN
DATE: FEBRUARY 2023	SHEET 1 OF 1
DRAWING NO.	ORM05-TS-2025.0001-C11

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FULL CORRUGATED BAND



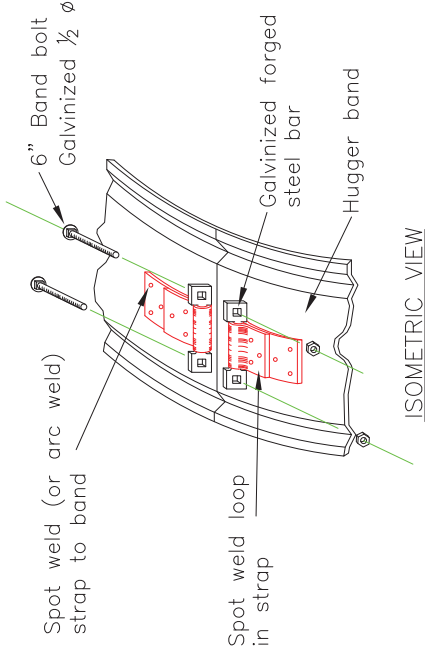
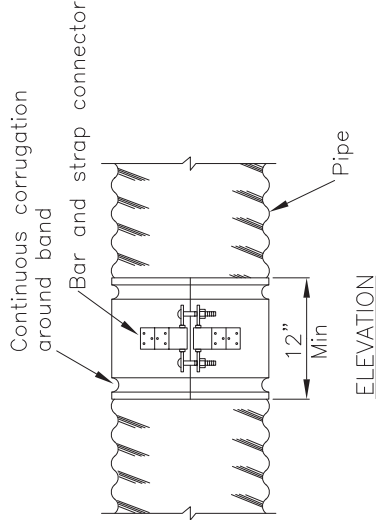
ANNULAR COUPLING

HELICAL COUPLING

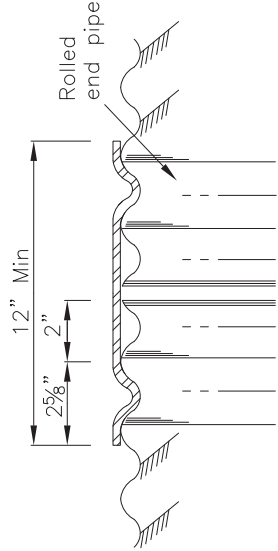
ISOMETRIC VIEW

2 3/4" x 1/2" CORRUGATIONS			3" x 1" CORRUGATIONS		
PIPE DIAMETER (in)	W (in)		PIPE DIAMETER (in)	W (in)	
	ANN.	HEL.		ANN.	HEL.
6-10	7	7	2	36-84	14
12-15	7	12	2-3	36-120	26
18-84	12	12	3		5
24-84	24	24	5		

"HUGGER" BAND



ISOMETRIC VIEW



SECTION

Standard construction is 1 piece 12" thru 48" and 2 piece 54" and above.

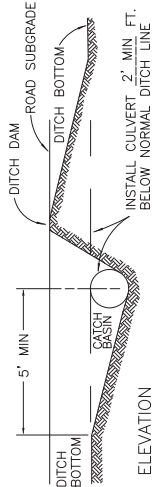
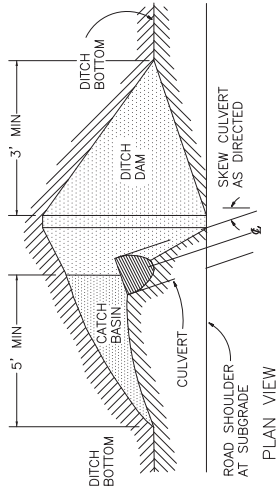
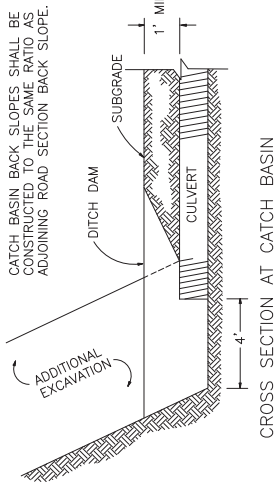
The hugger coupler band or an approved equivalent coupler band shall be made of the same material and finish as the pipes joined. The coupler bands shall have a minimum width of 12 inches and may be two numerical thicknesses lighter than the gage or thickness designated for the conduit joined. The band shall be designed to be drawn together with two 1/2 inch bolts through use of a bar and strap suitably welded to the band. The band shall engage and mesh with the second annular corrugation inward from the end of each of the conduit sections joined.

Annular corrugated couplers for pipe shall cover at least two outside crest corrugations on each recorrugated end.

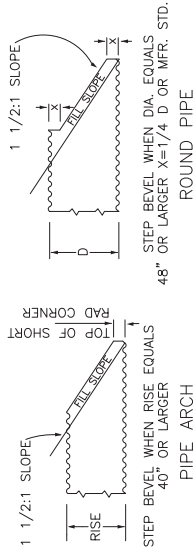
REV. NO.	DESCRIPTION	DATE	APPROV.
UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT MEDFORD DISTRICT - MEDFORD, OREGON			
CULVERT BAND DETAIL			
DRAWN	JWR	SCALE	NONE
DATE	April 2022	SHEET	1 OF 1
DRAWING NO. ORM05-TS-2025.0001-C12.2			

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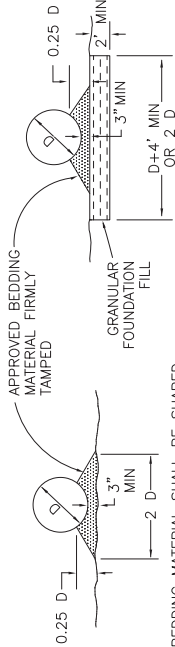
EXHIBIT C-12.3
SHEET 1 OF 1
Big Dog T.S.



CATCH BASIN



BEVELED END DETAIL

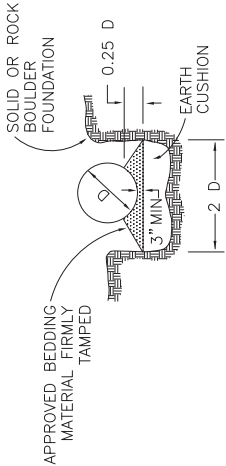


BEDDING OF CULVERTS ON STABLE
NATURAL GROUND FOUNDATION OR
COMPACTED EMBANKMENT

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

BEDDING OF CULVERTS ON UNSTABLE
SOFT SPONGY OR UNSTABLE
SOIL FOUNDATION

BEDDING OF CULVERTS



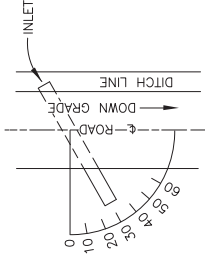
BEDDING OF CULVERTS IN SOLID ROCK
OR BOULDER FOUNDATION

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. MAIN-
TAIN 8" MIN. DEPTH BETWEEN HIGH POINTS OF ROCKS
AND/OR BOULDERS AND THE BOTTOM OF THE CULVERT.

NOTES:

- 1) DOWNSPOUTS SHALL BE CONNECTED TO CULVERT OUTLETS
VIA TURNER STYLE CONNECTION (SEE DRAWING C-12.4).

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

SKUEW DIAGRAM

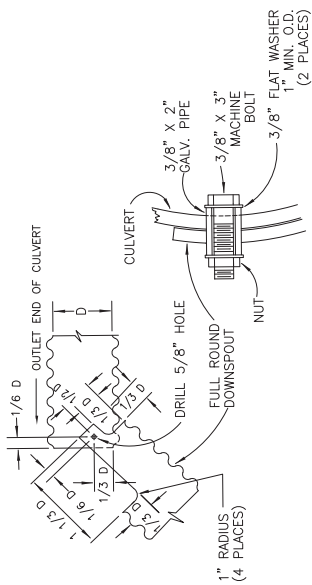
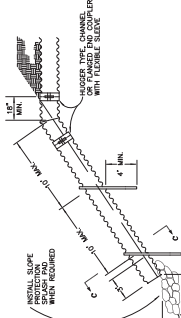
REV. NO.	DESCRIPTION	DATE	APPROV.
1	UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT MEDFORD DISTRICT - MEDFORD, OREGON		
CULVERT INSTALLATION DETAILS			
DRAWN	DKL	SCALE	NONE
DATE	FEBRUARY 2023	SHEET	1 OF 1
DRAWING NO.	ORMD5-TS-2025.0001-C12.3		

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CONVENTIONAL TYPE ELBOW

SECTION C-C



TURNER TYPE ELBOW
(ALTERNATE ELBOW)

FULL ROUND DOWNSPOUT

- NOTE:
1. THE ELBOW AND SPILLWAY SECTION SHALL BE OF THE SAME DIAMETER. MATERIAL AND COATING AS THE CULVERT IT IS ATTACHED TO.
 2. THE SPILLWAY SECTION SHALL BE FABRICATED FROM 16 GAUGE METAL WITH 2 2/3" X 1/2" CORRUGATIONS.
 3. SUPPORTS MAY BE COMMERCIAL STEEL FENCE POSTS, STEEL BAR, ANGLE IRON OR EQUIVALENT METAL POSTS.
 4. CONNECTION BETWEEN HELICALLY CORRUGATED AND ANNUAL PIPE SHALL REQUIRE A SPECIAL ADAPTER COUPLING BAND.

GENERAL NOTES

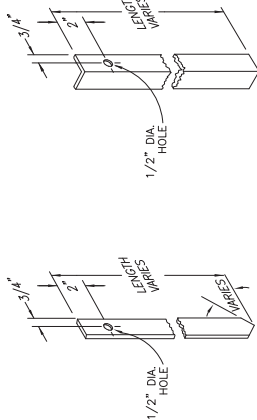
1. THE LENGTH OF THE DOWNSPOUT SHALL BE DETERMINED AT THE TIME OF INSTALLATION.
2. FABRICATION AND INSTALLATION OF ALL GALVANIZED STEEL DOWNSPOUTS SHALL CONFORM TO AASHTO M36, M218; ALUMINUM ALLOY TO AASHTO M196; ALUMINIZED TYPE II TO AASHTO M36, M196.
3. ALL STEEL NUTS, BOLTS AND WASHERS SHALL BE GALVANIZED. (ASTM A307, A153)
4. SLOPE PROTECTION SPLASH PADS, WHEN REQUIRED, SHALL BE A MIN. 2' WIDE X 5' LONG X 2" DEEP.
5. INDIVIDUAL ROCKS SHALL BE 10" - 14" IN SIZE.
6. SLOPE PROTECTION SPLASH PADS SHALL EXTEND TO UNDISTURBED GROUND.

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SAFETY

STEEL BAR SUPPORT

1 1/2" X 1 1/2" X 1/4" ANGLE IRON SUPPORT

METAL SUPPORT DETAIL



HALF ROUND DOWNSPOUT

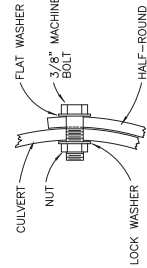
- NOTE:
1. THE HALF ROUND SHALL BE ONE DIAMETER SIZE LARGER AND OF THE SAME MATERIAL AND COATING AS THE CULVERT IT IS ATTACHED TO.
 2. THE HALF ROUND SHALL BE FABRICATED FROM 16 GAUGE METAL WITH 2 2/3" X 1/2" CORRUGATIONS.
 3. SUPPORTS MAY BE STEEL BAR, ANGLE IRON OR APPROVED EQUIVALENT METAL POSTS.

RECTANGULAR FLUME

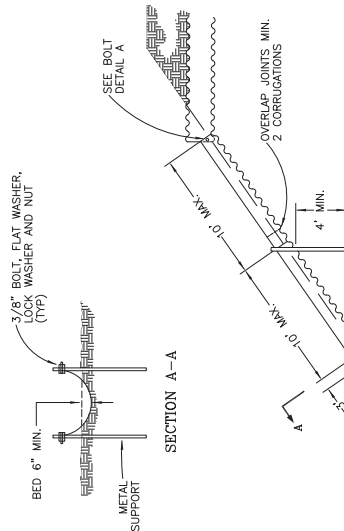
- NOTE:
1. THE FLUME SHALL BE FABRICATED FROM 16 GAUGE CULVERT STOCK WITH 2 2/3" X 1/2" CORRUGATIONS.
 2. THE STARTER SECTION SHALL BE FABRICATED FROM 16 GAUGE NON-CORRUGATE CULVERT STOCK
 3. ADJUSTABLE WIDTH FLUMES ARE AVAILABLE FOR APPLICATIONS OVER 24" WIDE. INSTALL ACCORDING TO MANUFACTURER.
 4. SUPPORTS MAY BE STEEL BAR, ANGLE IRON OR APPROVED EQUIVALENT POSTS.

BOLT DETAIL A

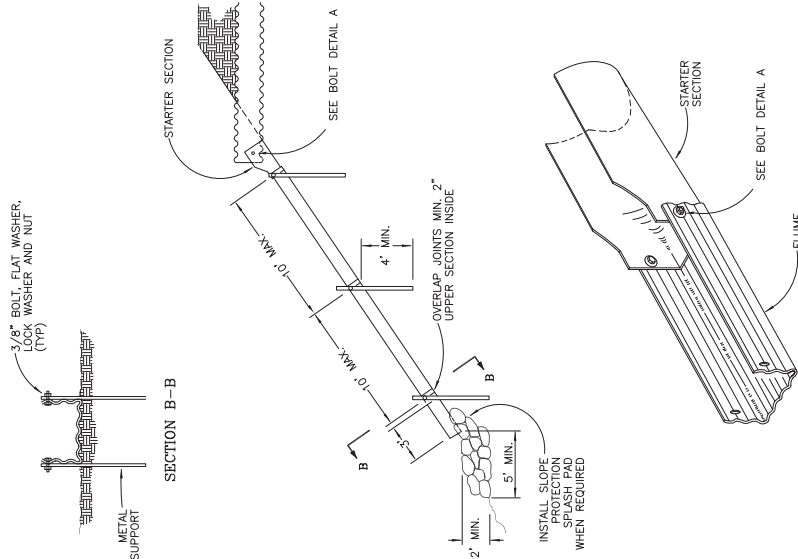
JOIN PIPE CULVERT TO STARTER SECTION AS SHOWN. FIELD DRILL 5/8" DIA. HOLE IN STARTER SECTION AND CULVERT AND INSTALL 3/8" X 2" BOLTS, FLAT WASHERS, NUTS.



SECTION A-A



SECTION B-B



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Sale: Big Dog
Sale Date: 24/07/2025
Prep. By : MBonsi
Tract No: ORM05-TS-2025.0001

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: \$7,165.30/5288 MBF = \$1.36/MBF

Road Maintenance Obligation:

(2.1) BLM Maintenance	\$11,746.57
(2.2) BLM Rockwear	\$9,984.59
(5.1) Purchaser Maintenance Rockwear	<u>\$3,241.83</u>
Total Rockwear Payable to BLM	\$13,226.42
(3.1) 3rd Party Maintenance	\$0.00
(3.2) 3rd Party Rockwear	\$2,444.05
(4.1) Other Maintenance Payments	\$0.00
Total Maintenance Fee Obligation (2.1-5.1)	<u>\$27,417.04</u>

Purchaser Maintenance Allowances:

(5.2A) Move In	\$4,262.00
(5.2B) Culverts, Catch Basins, Downspouts	\$2,508.15
(5.2C) Grading, Ditching	\$7,388.88
(5.2D) Slide Removal and Slump Repair	\$652.74
(5.2E) Dust Palliative (Water)	\$0.00
(5.2F) Surface Repair (Aggregate)	\$9,250.00
(5.2G) Other	\$1,000.00
Total Purchaser Maintenance Allowances (5.2A-5.2G)	<u>\$25,061.77</u>

(2.1-5.2G) Cost (\$27,417.04 + \$25,061.77) = \$52,478.81	
Cost/MBF 52478.81 / 5288 MBF =	<u>\$9.92/MBF</u>

(5.2H) Decommissioning	\$4,322.54
----------------------------------	------------

(5.2H) Cost/MBF \$4,322.54/5288 MBF =	<u>\$0.82/MBF</u>
---------------------------------------	-------------------

(2.1-5.2H) Cost (\$27,417.04 + \$25,061.77 + \$4,322.54) = \$56,801.35

Total Cost/MBF (Excluding Road Use) \$56,801.35/5288 MBF =	<u>\$10.74/MBF</u>
--	--------------------

1) Road Use Fees - Amortization

Details

R/W		Rd Use	Vol	Road Use
Number	Road Number	Fee x	MBF =	Obligation
JHLIC	35-2E-2.02	0.01	0	\$0.00
JHLIC	35-2E-11.00 A	0.01	0	\$0.00
Siskiyou	35-2E-2.01 C1	2.00	1099	\$2,197.30
Siskiyou	35-2E-2.01 C2	2.00	1242	\$2,484.00
JHLIC	35-2E-3.02 A	0.01	0	\$0.00
Siskiyou	35-2E-2.01 D	2.00	1242	\$2,484.00
JHLIC	35-2E-2.03A1	0.01	0	\$0.00
JHLIC	35-2E-2.03A2	0.01	0	\$0.00
JSmith	34-2E-29.00	0.01	0	\$0.00
Siskiyou	34-2E-22.00	0.01	0	\$0.00
Siskiyou	34-2E-24.01	0.01	0	\$0.00
Siskiyou	34-2E-29.00	0.01	0	\$0.00
Siskiyou	35-3E-6.00	0.01	0	\$0.00

Subtotal by agreement number

JHLIC	\$0.00
Siskiyou	\$7,165.30
JSmith	\$0.00

(1.1) Subtotal \$7,165.30

2) BLM Maintenance - Timber Haul

MAINTENANCE (2.1)					ROCKWEAR (2.2)			
Road Number	A Surf	Maint	Vol		Maint	Fee x	MBF =	Rkwear
and Segment	N Type	Mi x	Fee x	MBF				
34-2E-26.00	A-CN AGG	0.87	1.00	2301	\$2,001.52	0.85	2301	\$1,701.29
35-2E-2.00	A-DN AGG	4.06	1.00	2369	\$9,618.14	0.85	2369	\$8,175.42
34-2E-24.05	N AGG	0.32	1.00	397	\$126.91	0.85	397	\$107.88

(2.1) Subtotal \$11,746.57

(2.2) Subtotal \$9,984.59

3) Third Party Maintenance and Rockwear

MAINTENANCE (3.1)					ROCKWEAR (3.2)			
Agrmnt	Surface	Road			Maint	Fee x	MBF	Rkwear
Number	Type	Number	Mi	x Fee x MBF =				
JHLIC	AGG	35-2E-2.03A2	0.27		\$0.85 x	500.1	=	\$114.77
JHLIC	AGG	35-2E-2.02	0.45		\$0.85 x	0.0001	=	\$0.00
JHLIC	AGG	35-2E-2.03 A1	0.66		\$0.85 x	580.4	=	\$325.60
JSmith	AGG	34-2E-29.00 A1	0.48		\$0.85 x	0.0001	=	\$0.00
Siskiyou	AGG	35-2E-2.01D	0.20		\$0.85 x	1242	=	\$211.14
Siskiyou	AGG	35-2E-2.01C2	0.29		\$0.85 x	1242	=	\$306.15
Siskiyou	AGG	34-2E-22.00 B	0.90		\$0.85 x	468	=	\$358.02
Siskiyou	AGG	34-2E-24.01 A	0.17		\$0.85 x	584.67	=	\$84.48
Siskiyou	AGG	34-2E-29.00 A3	2.11		\$0.85 x	468	=	\$839.36
Siskiyou	AGG	35-2E-2.01 C1	0.22		\$0.85 x	1093.65	=	
\$204.51								
Siskiyou	NAT	35-3E-6.00 A	0.18					

\$0.00 x 145.65 = \$0.00

Subtotal of maintenance fees by agreement number:

Subtotal of rockwear fees by agreement number:

JHLIC	\$440.37
JSmith	\$0.00
Siskiyou	2,003.66

(3.1) Subtotal \$0.00

(3.2) Subtotal \$2,444.03

4) Other Maintenance Payments - USFS or Others Perform Maintenance

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

(4.1) Subtotal \$0.00

5) Purchaser Maintenance - Rock Wear

TIMBER HAUL (5.1)

Road No and Segment	A N	Mi	x	RkWear Fee	x	Vol MBF	=	Total RkWear
34-2E-20.00 A	N	0.47	x	\$0.85	x	186.3	=	\$74.43
34-2E-20.00 B,C	N	0.78	x	\$0.85	x	186.3	=	\$123.52
34-2E-22.00 A-C	N	1.51	x	\$0.85	x	468	=	\$600.68
34-2E-24.00	N	0.31	x	\$0.85	x	305.17	=	\$80.41
34-2E-24.06	N	0.52	x	\$0.85	x	584.67	=	\$258.42
34-2E-29.00 A1	N	0.48	x	\$0.00	x	573	=	\$0.00
35-2E-1.00 A,B	N	0.64	x	\$0.00	x	511.45	=	\$0.00
35-2E-1.01	N	0.44	x	\$0.00	x	145.65	=	\$0.00
35-2E-1.02	A	0.06	x	\$0.00	x	91	=	\$0.00
35-2E-1.03	N	0.13	x	\$0.00	x	145.65	=	\$0.00
35-2E-1.04	A	0.09	x	\$0.00	x	91	=	\$0.00
35-2E-2.01 B	N	1.05	x	\$0.85	x	948	=	\$846.09
35-2E-2.03 B	N	0.41	x	\$0.85	x	252.55	=	\$88.01
35-2E-3.02 A,B	N	0.15	x	\$0.00	x	0.0001	=	\$0.00
35-3E-6.00 A	N	0.18	x	\$0.00	x	145.65	=	\$0.00
34-2E-20.00 A	A	0.73	x	\$0.85	x	192.7	=	\$119.57
35-2E-2.01 C-D	N	0.70	x	\$0.85	x	1242	=	\$738.99
35-2E-11.00 A	N	0.66	x	\$0.00	x	0.0001	=	\$0.00
35-2E-2.02	N	0.45	x	\$0.85	x	0.0001	=	\$0.00
35-2E-2.03 A	N	0.93	x	\$0.00	x	581	=	\$0.00
35-3E-6.00 B	N	0.28	x	\$0.00	x	145.65	=	\$0.00
34-2E-29.00 A3	N	2.11	x	\$0.00	x	468	=	\$0.00
34-2E-29.00 A2	N	0.64	x	\$0.85	x	573	=	\$311.71

(5.1) Subtotal \$3,241.83

Purchaser Operational Maintenance

Move In

Equipment	No Move	Cost/ Units	x in	Dist x 50 Mi	Sub- Factor	= total
Motor Grader:	1	2		536	1.00	\$1,072.00
Back Hoe:	1	2		399	1.00	\$798.00
Loader:				536	0.63	\$0.00
Water Truck:				131	0.63	\$0.00
Dump Truck:	1	2		124	1.00	\$248.00
Excavator:	1	2		536	1.00	\$1,072.00

Roller: 1 2 536 1.00 \$1,072.00

(5.2A) Total \$4,262.00

Culvert Maintenance - Including Catch basins and Downpipes

Miles	x	Cost/Mi	=	Subtotal
5		\$501.63		\$2,508.15

(5.2B) Total \$2,508.15

Grading (Includes Ditches and Shoulders)

Miles	x	Cost/Mi	x	Freq	=	Subtotal
Blade w/ Ditch:	8.00		923.61	1		\$7,388.88
Blade w/o Ditch:	0.00		559.44	0		\$0.00

(5.2C) Total \$7,388.88

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

Type	No Slides	Hours	Equip	
Equipment	/Slumps	x Each	x Cost	= Subtotal
Grader:	0	0	\$184.36	\$0.00
Loader:	0	0	\$114.30	\$0.00
Backhoe:	3	2	\$108.79	\$652.74

(5.2D) Total \$652.74

Dust Palliative (Water)

Spreading Hours

	No	Freq	Truck	
	Miles	/ MPH	= Hours	x Days x /Day = Hours
	0.00	0		0 0 0
Load & Haul =			0.0	0 0 0
Total Hours =			0	

Truck Cost: \$109.35/Hr. x 0.0 Hours = \$0.00

(5.2E) Total \$0.00

Surface Repair (Aggregate)

Quarry / Source Name: Hailicka 1 1/2"

Production Cost: 500.0 CY x \$18.50/CY = \$9,250.00

Haul to Stockpile:

Grades > 15%	500.0 CY x ((\$2.43/CY x 0.00 Mi) + \$1.62) =	\$0.00
Grades <= 15%	500.0 CY x ((\$1.21/CY x 0.00 Mi) + \$1.62) =	\$0.00
State / Co Roads	500.0 CY x ((\$0.54/CY x 0.00 Mi) + \$1.62) =	\$0.00
	SubTotal	<u>\$9,250.00</u>

(5.2F) Total \$9,250.00

Other

Fallen Timber Cutting:	10.0 Hours x \$100.00/Hour	=\$1,000.00
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
	Lump Sum	=\$0.00

Lump Sum	= \$0.00
Lump Sum	= \$0.00
Lump Sum	= \$0.00
Lump Sum	= \$0.00

(5.2G) Total \$1,000.00

Decommissioning

Other Costs

	Road Number	Cubic Yds Pullback Material	Qty Waterbars	Qty Earthen Barriers	=	Total
\$862.70	35-3E-6.00 A-B	(0x2.19)	+	(7x86.27)	+	(1x258.81) =
\$1,121.51	35-2E-2.03 A-B	(0x2.19)	+	(10x86.27)	+	(1x258.81) =
	35-2E-1.02	(0x2.19) +	(1x86.27)	+	(1x258.81)	= \$345.08
	35-2E-1.04	(0x2.19) +	(2x86.27)	+	(0x258.81)	= \$172.54
\$258.81	35-2E-2.01 B1-3	(0x2.19)	+	(0x86.27)	+	(1x258.81) =

(Other Cost) Total \$2,760.64

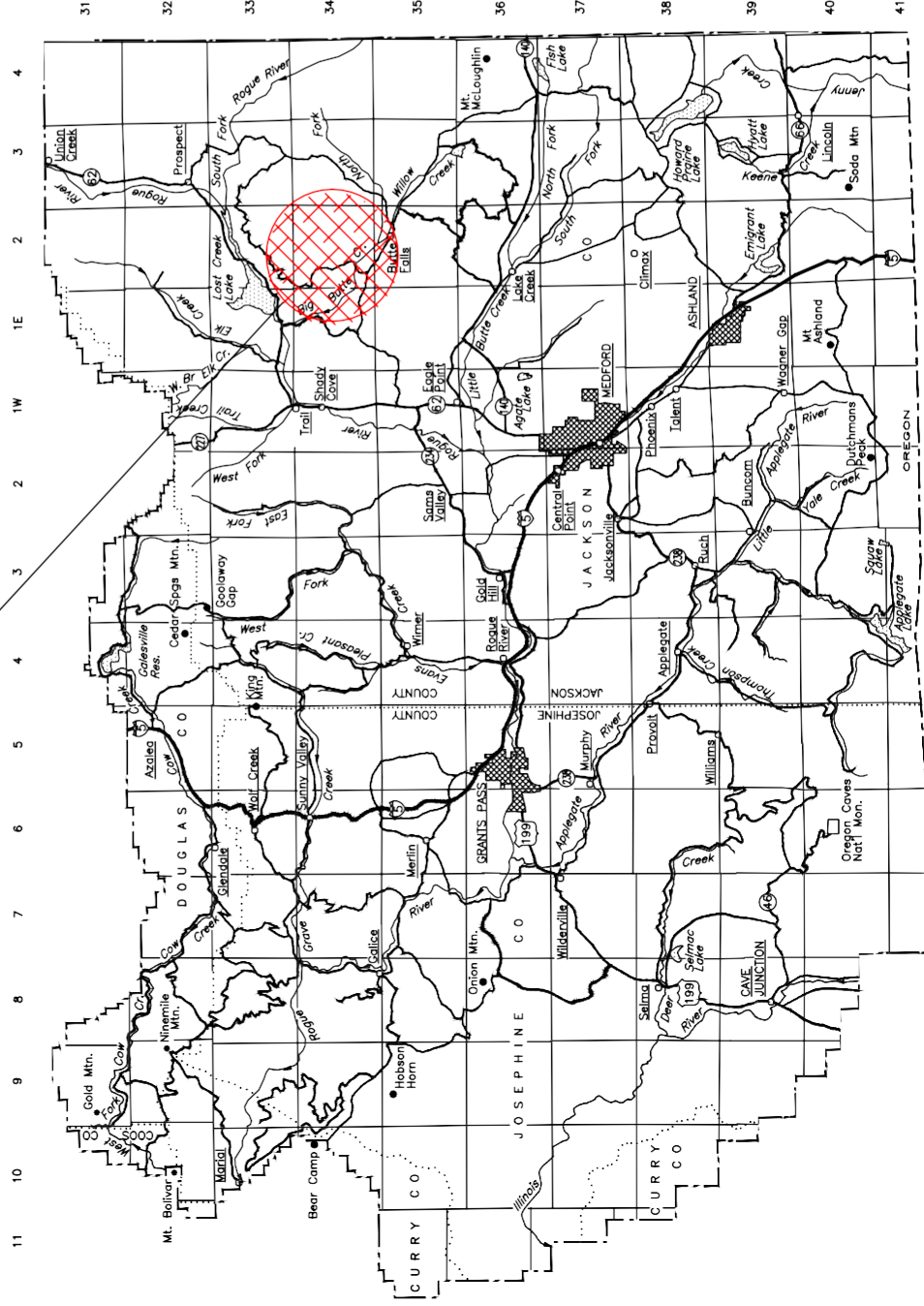
Time & Equipment

35-3E-6.00 A-B Seed and Mulch: 0.54 Acre @ \$929.70/Acre	= \$502.04
35-2E-1.02 Seed and Mulch: 0.15 Acre @ \$929.70/Acre	= \$139.46
35-2E-1.04 Seed and Mulch: 0.22 Acre @ \$929.70/Acre	= \$204.53
35-2E-2.03 A-B Seed and mulch: 0.45 acre @ \$929.70/acre	= \$418.37
35-2E-1.03 Seed and Mulch: 0.32 Acre @ \$929.70/Acre	= \$297.50
(5.2H) Decommissioning Total <u>\$4,322.54</u>	

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UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
MEDFORD DISTRICT

Exhibit No.	Description
D-1	TITLE SHEET
D-2	ROAD MAINTENANCE MAP
D-3	ROAD MAINTENANCE SPECIFICATIONS
D-4	ESTIMATE OF QUANTITIES
D-5	DRAINAGE & EROSION CONTROL DETAILS
D-6	ROAD DECOMMISSIONING MAP
D-7	ROAD DECOMMISSIONING WORKLIST
D-8	TYPICAL FULL DECOMMISSION
D-9	TYPICAL ROAD CAMOUFLAGE
D-10	TYPICAL BARRICADE



0 6 12
SCALE IN MILES

BIG DOG
TITLE SH

DRAWN DKL	SCALE AS SHOWN
DATE FEBRUARY 2024	SHEET 1 OF 1

DRAWING NO. ORM05-TS-2025.0001-1

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ORM05-TS-2024.0015
ROAD MAINTENANCE MAP
U.S.D.I. BLM MEDFORD DISTRICT
T34S, R.2E., WILL. MER.
T35S, R.2E., WILL. MER.

Legend

- ★ BLM Maintenance
- Purchaser Maintenance
- ┌ Purchaser Maintenance to be Closed Long Term
- ┐ Purchaser Maintenance to be Fully Decommissioned

Roads by Surface

- ⋯ Rocked
- Paved
- Natural
- - - Unknown

Designated Skid

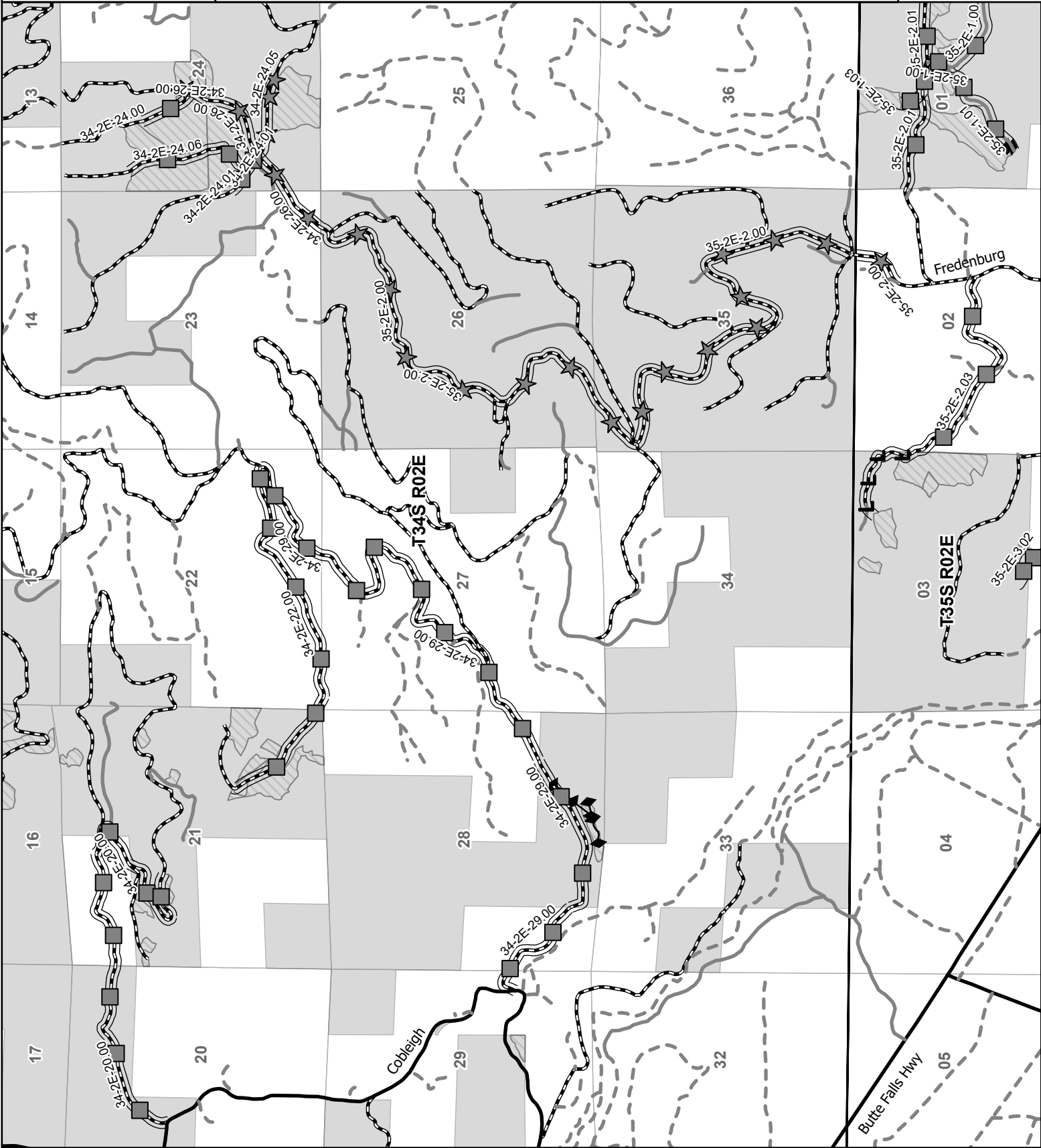
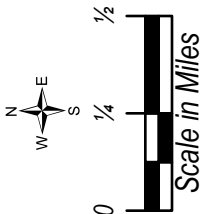
- ◆ Designated Skid

HarvestUnits

- ▨ HarvestUnits

Ownership

- Bureau of Land Management
- Private Individual or Company



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ROAD MAINTENANCE MAP
U.S.D.I. BLM MEDFORD DISTRICT

T.34S₇, R.2E., WILL. MER.
T.34S₇, R.3E., WILL. MER.
T.35S₇, R.2E., WILL. MER.
T.35S₇, R.3E., WILL. MER.

Legend

- | | |
|---|--|
| ★ | BLM Maintenance |
| ■ | Purchaser Maintenance |
| ┌ | Purchaser Maintenance
to be Closed Long Term |
| D | Purchaser Maintenance
to be Fully
Decommissioned |

Roads by Surface

-  Rocked
 Paved
 Natural
 Unknown

Designated Skid

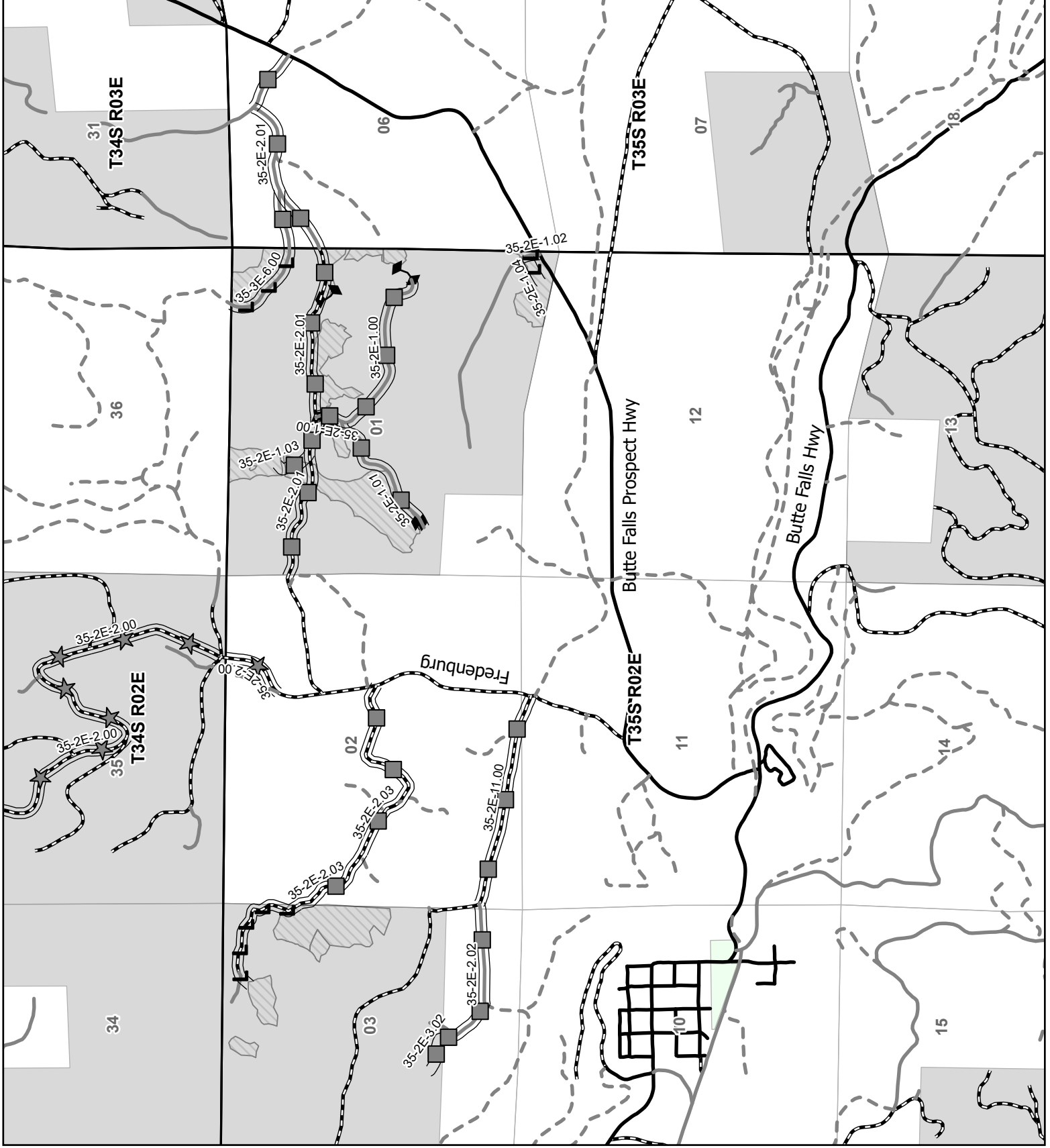
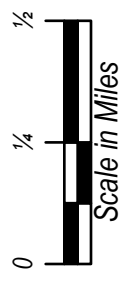
- ◆◆ Designated Skid

HarvestUnits

- HarvestUnits

Ownership

- ☐ Bureau of Land Management
☐ U.S. Forest Service
☐ Private Individual or Company



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ROAD MAINTENANCE SPECIFICATIONS

ROAD MAINTENANCE SPECIFICATIONS TABLE OF CONTENTS

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 all roads listed and/or as shown on the Exhibit D2 map of this contract in accordance with Sections 3000, 3100, 3200, 3300, and 3400 of this exhibit.

Road No. and Segment	Length Miles Used	Ownership	Road Surface Type	Maintenance Responsibility
34-2E-20.00A	1.20	BLM	Aggregate	Purchaser
34-2E-20.00C-B	0.78	BLM	Aggregate	Purchaser
34-2E-22.00 A, C	0.61	BLM	Aggregate	Purchaser
34-2E-22.00 B	0.90	Private	Aggregate	Purchaser
34-2E-24.00	0.31	BLM	Aggregate	Purchaser
34-2E-24.01A	0.05	Private	Aggregate	Purchaser
34-2E-24.01B	0.12	Private	Aggregate	Purchaser
34-2E-24.05	0.32	BLM	Aggregate	BLM
34-2E-24.06	0.52	BLM	Aggregate	Purchaser
34-2E-26.00A	0.42	BLM	Aggregate	BLM
34-2E-26.00 B-C	0.45	BLM	Aggregate	BLM
34-2E-29.00 A1, A3	2.60	Private	Aggregate	Purchaser
34-2E-29.00 A2	0.64	BLM	Aggregate	Purchaser
35-2E-1.00	0.64	BLM	Native	Purchaser
35-2E-1.01	0.44	BLM	Native	Purchaser
35-2E-1.02	0.06	BLM	Native	Purchaser
35-2E-1.03	0.13	BLM	Native	Purchaser
35-2E-1.04	0.09	BLM	Native	Purchaser
35-2E-11.00	0.66	Private	Aggregate	Purchaser
35-2E-2.00A-D	4.06	BLM	Aggregate	BLM
35-2E-2.01 B	1.05	BLM	Native	Purchaser

ROAD MAINTENANCE SPECIFICATIONS

Road No. and Segment	Length Miles Used	Ownership	Road Surface Type	Maintenance Responsibility
35-2E-2.01D-C	0.70	Private	Aggregate	Purchaser
35-2E-2.02	0.45	Private	Aggregate	Purchaser
35-2E-2.03A	0.93	Private	Aggregate	Purchaser
35-2E-2.03B	0.41	BLM	Aggregate	Purchaser
35-2E-3.02A	0.03	Private	Natural	Purchaser
35-2E-3.02B	0.12	BLM	Natural	Purchaser
35-3E-6.00A	0.18	Private	Natural	Purchaser
35-3E-6.00B	0.28	BLM	Natural	Purchaser

- 3001a The Purchaser shall be required to provide maintenance on roads in accordance with Subsections 3403, 3403a, 3404, 3405, 3406.
- 3002 The Purchaser shall maintain the cross section of existing dirt or graveled roads to the existing geometric standards.
- 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.
- 3102 The Purchaser may place stockpiled aggregate (3/4" minus) conforming to the requirements in section 1200 of exhibit C of this contract on the roadway and at locations and in the amounts designated by the Authorized Officer.

This aggregate shall be used to repair surface failures and areas of depleted surface depth

ROAD MAINTENANCE SPECIFICATIONS

excluding damages covered by Section 12 of this contract. The aggregate shall be hauled, placed, spread, and compacted by use of dump trucks, water trucks, and motor grader or similar equipment.

- 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.
- 3104a Removal of bank slough and slide material includes placement of material at the nearest designated, suitable disposal site where material cannot erode into streams, lakes, or reservoirs or cause undue damage to road fill slopes which have been planted or mulched to control soil erosion as directed by the Authorized Officer.
- 3104b The Purchaser shall be responsible for removal of all slides or slough, up to fifteen station yards in quantity, at any one site. This work includes unlimited multiple sites on all roads required to be maintained by the purchaser.
- Prior to removal of any slough or slide material exceeding fifteen station yards at any one site, the Purchaser and the Authorized Officer or their Authorized Representatives shall agree in writing, in the field, to the quantity of material, method of disposal, and the disposal site. Work may commence immediately after agreement.
- Upon completion of agreed upon work, a reduction in timber sale purchase price will be made to offset the cost of the work, based on current BLM Road Cost Guide. Adjustments in purchase price for completed work shall be made as necessary and no less than once per year when actual work is ongoing.
- 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.
- 3106 The Purchaser shall be responsible for repair and replacement of all materials eroded from road shoulders and fill slopes, up to fifteen station yards in quantity, at any one site. This work includes unlimited multiple sites on all roads required to be maintained by the Purchaser. Prior to repair and replacement of eroded material exceeding fifteen station yards at any one site, the Purchaser and the Authorized Officer or their Authorized Representatives shall agree in writing, in the field, to the quantity of material, borrow source and method of repair. Work may commence immediately after agreement.

ROAD MAINTENANCE SPECIFICATIONS

Upon completion of agreed upon work, a reduction in timber sale purchase price will be made to offset the cost of the work based upon current BLM Road Cost Guide. Adjustments in purchase price for completed work shall be made as necessary and no less than once per year when actual work is ongoing.

3107 The Purchaser shall cut or trim trees and brush which obstructs vision or prevents the safe 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 by scattering below the road 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.

3108a The Purchaser shall perform logging operations on gravel and/or bituminous roadways only where the locations have been marked on the ground and/or approved by the Authorized Officer. (Repair of the roads 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 1 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.

ROAD MAINTENANCE SPECIFICATIONS

- 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 completion of hauling and in accordance with Sec. 16(b) 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.

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. 16(b), 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 and 3108a. 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.

ROAD MAINTENANCE SPECIFICATIONS

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.

- 3403 The Purchaser shall be required to furnish and apply non-saline water during dry hauling periods, when directed by the Authorized Officer, for the purpose of laying dust and to prevent loss of surface material. The first application of water shall be made at the rate of one-half gallon per yd² of road surfacetraveled. Subsequent applications shall be made for each 40 MBF of timber or 120 yds³ of rock hauled. Subsequent watering may be done at a rate less than one-half gallon per yd² when a specified lesser rate is approved by the Authorized Officer.

The Purchaser shall secure any necessary water permits and pay all required water fees for use of the water source indicated below and approved by the Authorized Officer.

Water required under these specifications shall be obtained at the time and at the location indicated below:

Willamette Meridian				Dates Available	
Common Name	Section	T	R	From	To
Fredenburg	26	34	2E	June 15	September 15

During drought periods when the transportation of water from the source to the roads noted above exceeds 15 miles, a reduction shall be made in the total purchase price to reflect the additional haul or the substitution of other acceptable dust palliatives in lieu of watering based on equipment rental rates from the current BLM Road Cost Guide.

- 3403a During dry hauling conditions when watering is not required, the Purchaser shall reduce hauling speeds and/or restrict the number of loads hauled to reduce dust as directed by the Authorized Officer.

Adjustments to the above schedules may be made by the Authorized Officer at his option as hauling conditions improve. The Purchaser, at his option and expense, may elect to substitute watering or other dust palliatives in lieu of the above hauling requirements provided that written approval is received from the Authorized Officer. Such authorization shall include the approval of product specifications for the application and the product to be used.

- 3404 The Purchaser may at his option and expense substitute lignin sulfonate, magnesium chloride, or calcium chloride for water on any or all road segments listed in Subsection 3403 or 3403a

ROAD MAINTENANCE SPECIFICATIONS

provided that written approval is received from the Authorized Officer. Such authorization shall include the approval of product specifications for the application of the product to be used. Multiple applications may be required to maintain the conditions specified in Subsection 3403.

- 3405 The Purchaser shall be required to furnish and apply lignin sulfonate, magnesium chloride, or 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. Turnouts and extra widening shall not be included in addition to the spread width.
- 3405a Additional lignin sulfonate, magnesium chloride, or 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, or calcium chloride dust palliatives, the roadbed shall be bladed and shaped to remove surface irregularities and excess loose material. The prepared surface must have ½ to 1 inch of relatively loose material and be visibly moist and drying.

ROAD MAINTENANCE SPECIFICATIONS

- 3406b A light application of water to promote penetration shall be made in advance of the application of the specified dust palliative to allow the drying process to begin and to eliminate any saturated surface conditions.
- 3406c The prepared roadbed shall be approved by the Authorized Officer prior to application of the specified dust palliative.
- 3407 The Purchaser shall furnish in duplicate, commercial certification signed by vendor of compliance with the lignin sulfonate, magnesium chloride, or calcium chloride dust palliatives material requirements specified under Subsections 3412b and 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.
- 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, or calcium chloride dust palliative conforming to the material requirements of Subsection 3412b and 3412c. The rate of application shall be 0.5 gallons per yd² surface. A second application at the rate of 0.3 gallons per yd² 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.

ROAD MAINTENANCE SPECIFICATIONS

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, or 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 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 and 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:

ROAD MAINTENANCE SPECIFICATIONS

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, or 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

- 3501 Decommissioning shall consist of removing cross drain and draw culverts, removing draw crossings by excavating fill material and placing in locations to form partially recontoured roadway sections. Work includes ripping, subsoiling, installing water bars, drain dips, placement of slash and soil stabilization material, and blocking road from access by vehicles. This work is required for road acceptance under Section 18 of this contract.

ROAD MAINTENANCE SPECIFICATIONS

3502 Obliteration shall consist of complete road removal and full recontouring by recovering all available fill slope material from the outside road shoulder and burying cutbanks until the surrounding terrain is matched. Work includes removing cross drain culverts, draw culverts, restoring draw channels by removing fill material, and placing at designated locations. Work also includes ripping, subsoiling, water barring, placement of slash, and placement of soil stabilization material. This work is required under Section 18 of this contract.

3503 Decommissioning shall be performed on existing roads in accordance with these specifications, and as shown on the plans at the following locations:

Road No or Site	From MP	To MP	Full Decommission (DF) or Long Term Storage (DR)
35-2E-1.02	0.0	0.05	DR
35-2E-1.04	0.0	0.09	DR
35-2E-2.03	0.0	0.44	DR
35-3E-6.00 B	0.0	0.28	DR

3504 Decommissioning and obliteration work shall be completed at the end of timber hauling. All decommissioning and obliteration work shall be performed during the following seasonal periods to address soil moisture and in stream work periods:

From: September 15	To: October 15 of the same year
--------------------	---------------------------------

3505 Where draw crossing fill material is to be excavated and removed, the finished bottom of draw profile shall be re-established to its original channel grade and resulting banks shall be re-established to their original backslope ratios or constructed to a 2:1 backslope ratio.

3506 Stockpiled slash shall be used to protect exposed areas created by the Purchaser's operations described in these sections. Slash shall be uniformly spread and placed without bunching. The operation shall produce a dense, uniform mat. All slash stockpiles created by the purchaser shall be utilized for Camouflaging and Full Decommission.

3507 Culverts not designated as salvage by the Authorized Officer for the Government shall become the property of the Purchaser. The Purchaser shall be responsible for disposal of materials in a legal manner and for payment of any fees required. Sale of material on site is not allowed unless authorized in writing by the Authorized Officer.

ROAD MAINTENANCE SPECIFICATIONS

- 3508 Protect areas with camouflaging and soil stabilization from damage by Purchaser traffic or construction equipment. Damaged areas shall be repaired by the Purchaser.
- 3509 Barricades shall be installed across full width of roadway at locations designated in the specifications. Barricades shall be constructed conforming to the lines, grades, dimensions and typical details as shown on Exhibit D-10.
- 3511 Ripping, subsoiling, and water barring shall be done on designated roadways travelled ways, turnouts, disturbed areas, landings, and special areas. Ripping shall be done in accordance with Exhibit D8. Subsoiling shall be performed with wing-toothed rippers or excavator modified for tillage as shown in Exhibit D8.
- 3512 Draw crossing fill material shall be excavated and placed in designated locations for use in accomplishing partial recontouring. Placement of materials shall produce well-drained, uniform recontoured terrain as shown on the plans. The finished draw excavation shall meet requirements of Subsection 3505.
- 3513 Water bars shall be installed across full width of roadway at spacing shown in the specifications. Water bars shall be constructed conforming to the lines, grades, dimensions and typical details as shown on Exhibit D-5. No water bar will be installed closer than 50 feet to a draw crossing.
- 3514 Protection of exposed surfaces shall be accomplished by placement of soil stabilization material in accordance with C-5 Section 1800 and placement of slash described in Subsection 3506 on designated roadways, disturbed areas, landings, and other areas disturbed by the purchaser's operations in accordance with these specifications and as shown in the plans.
- 3515 For obliteration, all vegetation and slash shall be removed from the immediate area designated for full recontouring, which includes roadway fill slopes to be recovered, roadbed and cut bank sections to be buried, waste areas, and other special areas. The resultant slash shall be stockpiled in a manner that will allow retrieval and uniform spreading onto full recontoured slopes as shown in Subsection 3506. No vegetation or slash shall be mixed with excavated material to be placed. Vegetation outside of the work limits shall be protected from damage.
- 3516 Prior to full recontouring, ripping, subsoiling, and water barring shall be performed on designated roadways, turnouts, disturbed areas, landings, and special areas in accordance with these plans and specifications. Ripping shall be done in accordance with Exhibit D8. Subsoiling shall be performed with wing-toothed rippers or excavator modified for tillage as shown on Exhibit D8.
- 3517 Full recontouring shall be completed by retrieving and utilizing roadway fill slope material to bury the adjacent road prism and cut slopes as shown on the plans. Draw crossing fill material shall be excavated and placed in designated locations for use in accomplishing full recontouring. The finished draw excavation shall meet requirements of Subsection 3505. Placement if

ROAD MAINTENANCE SPECIFICATIONS

materials shall produce a well-drained, uniform recontoured terrain as shown in the plans.

- 3518 Protection of exposed recontoured surfaces shall be accomplished by placement of previously stockpiled slash as shown in Subsection 3506, placement of soil stabilization material in accordance with Section 1800 on designated finished recontoured terrain areas, landings, and special areas and other areas disturbed by the purchaser's obliteration operations in accordance with these specifications and as shown in the plans.
- 3520 Long Term Closure of roads shall consist of all or part of the following treatments:
- a. Construct water bars along entire length of road at 200' spacing, or as staked or directed by the Authorized Officer's Representative.
 - b. The Purchaser shall Camouflage the road entrance for a minimum of 100 feet or to the first curve or hillcrest. Camouflaged roads shall consist of using boulders, brush, dead material, stumps, and other debris to disguise the entire length of the road prism to the extent possible. No live trees should be used without approval by the Authorized Officer.
 - c. An earth berm or equivalent barricade may need to be constructed near the beginning of road. The final number and locations will be staked by the Authorized Officer's Rep.
- 3521 Long Term Closure shall be performed on existing roads in accordance with these specifications, and as shown in Exhibit D at the following locations:

Road No or Site	Treatment
35-2E-1.02	Waterbar, Barricade, Seed and Mulch
35-2E-1.04	Waterbar, Seed and Mulch
35-2E-2.03	Waterbar, Barricade, Seed and Mulch
35-3E-6.00 B	Waterbar, Barricade, Seed and Mulch

- 3522 Long Term Closure work shall be completed at the end of timber hauling. All work shall be performed during the dry season before October 15th.
- 3523 Protect areas mulched and treated with slash placement from damage by Purchaser traffic or construction equipment. Damaged areas shall be repaired by the Purchaser.
- 3524 Access shall be blocked with barricades and/or camouflaging as shown at locations on Exhibit D-7 Road Decommissioning Worklist.

Existing barricades removed during timber operations shall be replaced immediately after use. For activities that are not finished in one dry season, barricades shall be re-installed before the wet season, October 15th.

ROAD NUMBER	FROM	TO	LENGTH	MAINTENANCE RESPONSIBILITY			WATERING (PURCHASER)	SPOT ROCKING**	ROAD CLOSURE AND DECOMMISSIONING							
				BLM MAINTENANCE	PURCHASER MAINTENANCE	THIRD PARTY MAINTENANCE			INSTALL			CAMOU-FLAGE ROAD	INSTALL WATER BARS	REMOVE CULVERTS	RIPPING	SOIL STABILIZATION (SEED & MULCH)
									EARTH, BOULDER OR STUMP BARRICADE	MEGA GATE	EACH					
ROAD NUMBER	MP/STA	MP/STA	MILE/STA	MILE	MILE	MILE	MILE	C.Y.	EACH	EACH	FEET	EACH	EACH	EACH	STATION	ACRE
34-2E-20.00 A	0.00	1.20	1.20													
34-2E-20.00 C-B	1.20	1.98	0.78													
34-2E-22.00 A-C	0.00	1.51	1.51													
34-2E-24.00	0.00	0.31	0.31													
34-2E-24.01 A-B	0.00	0.17	0.17													
34-2E-24.05	0.00	0.32	0.32													
34-2E-24.06	0.00	0.52	0.52													
34-2E-26.00 A-C	0.00	0.87	0.87													
34-2E-29.00 A 1-4	0.00	3.24	3.24													
35-2E-1.00 A-B	0.00	0.64	0.64													
35-2E-1.01	0.00	0.44	0.44													
35-2E-1.02	0.00	0.06	0.06						1			1				0.15
35-2E-1.03	0.00	0.13	0.13													0.32
35-2E-1.04	0.00	0.09	0.09									2				0.22
35-2E-11.00 A	0.00	0.66	0.66													
35-2E-2.00 A-D	0.00	4.06	4.06													
35-2E-2.01 B1-2	0.00	1.05	1.05							1						
35-2E-2.01 C1-D	0.00	0.70	0.70													
35-2E-2.02	0.00	0.45	0.45													
PAGE 1 TOTALS			17.20	5.25	11.95	##	####	#	1	1	##	3	##	###	####	0.69

ALWAYS
THINK
SAFETY

* FOR INFORMATIONAL USE ONLY,
QUANTITIES SHOWN ARE NOT PAY ITEMS.

** 500 CY of spot rock shall be placed on roads after use. Rock shall be obtained from a commercial source.

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT MEDFORD DISTRICT
MEDFORD, OREGON

ESTIMATE OF QUANTITIES*

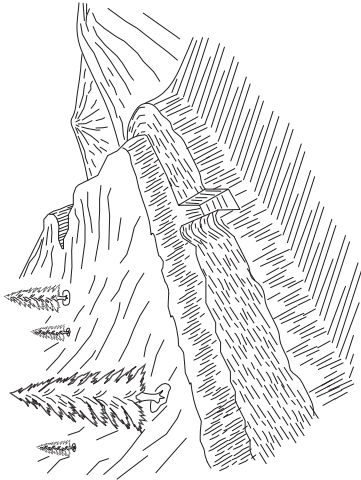
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SCALE: NONE

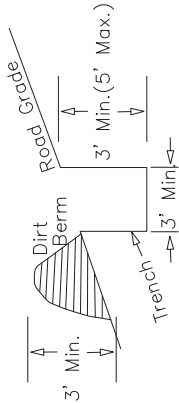
DATE: FEBRUARY 2024

SHEET: 1 OF 2

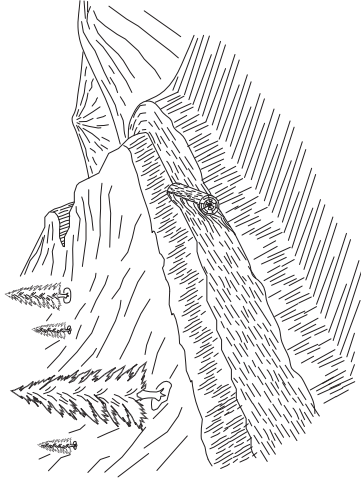
DRAWING NO. ORM05-TS-2025.0001-D4



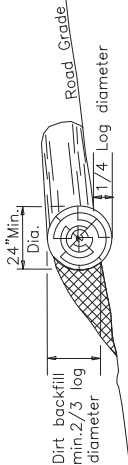
TRENCH BARRICADE



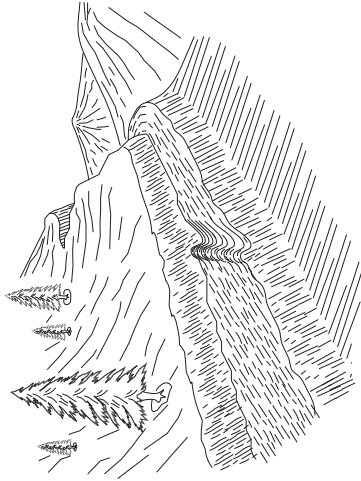
1. BARRICADE LENGTH SHALL EXTEND ACROSS THE ENTIRE ROAD SURFACE TO A POINT SUFFICIENT TO PROHIBIT MOTOR VEHICLE TRAFFIC.
2. THE EXACT LOCATION SHALL BE AS STAKED IN THE FIELD.
3. THE BARRICADE SHALL BE SKEWED AS NEEDED TO DRAIN OR AS DIRECTED BY THE AUTHORIZED OFFICERS REPRESENTATIVE.



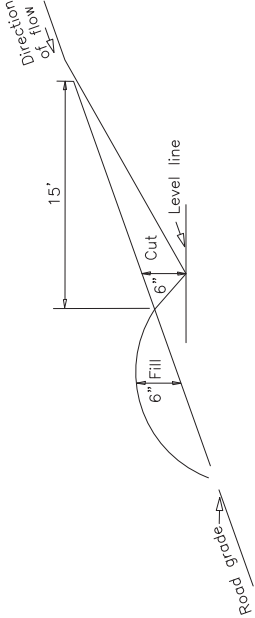
LOG BARRICADE



1. LOG BARRICADE SHALL BE CONSTRUCTED AS SHOWN ABOVE.
2. EXACT LOCATION WILL BE FLAGGED BY THE AUTHORIZED OFFICER PRIOR TO CONSTRUCTION.
3. ALL BARRICADES SHALL BE SKEWED 30 DEGREES.
4. THE LENGTH SHALL BE SUFFICIENT TO EXTEND FROM THE CUT BANK TO THE FILL SLOPE.
5. THE MINIMUM SMALL END DIAMETER OF THE LOG BARRICADE SHALL BE 24" .

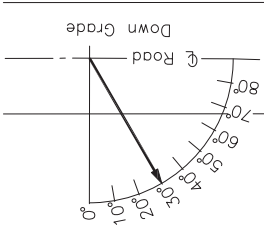


WATER BAR



1. CROSS-DRAINS SHALL BE CONSTRUCTED AS SHOWN ABOVE.
2. EXACT LOCATION WILL BE FLAGGED BY THE AUTHORIZED OFFICER PRIOR TO CONSTRUCTION.
3. ALL CROSS DRAINS SHALL BE SKEWED 30 DEGREES.
4. THE CROSS-DRAINS INVERT SHALL BE SMOOTH AND FREE DRAINING.

SKEW DIAGRAM



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Road Decommissioning Work List

GENERAL DEFINITIONS:

Long Term Closure = Work shall include, unless specified otherwise below, installing Waterbars every 200', and camouflaging or barricading the road entrance as per Exhibit D-9 or D-10. Seeding with approved native seed species and mulching with weed-free straw or approved native materials on all disturbed areas.

Decommission (Full) = Full Decommissioning shall include, unless specified otherwise below, decompacting the surface to a depth of 12 to 18 inches, installing Waterbars every 200', camouflaging the road entrance. Seeding with approved native seed species and mulching with weed-free straw or approved native materials on all disturbed areas. Camouflage road entrance with debris for 100' as per Exhibit D-9.

Long Term Closures

Road 35-2E-1.02

(BLM) NAT

M.P. Remarks

- 0.00 Jct. w/Butte Falls Prospect Highway. Begin long term closure. Construct earth/trench barricade. Waterbar, Seed and Mulch.
- 0.06 End Long Term Closure.

Road 35-2E-1.04

(BLM) NAT

M.P. Remarks

- 0.00 Jct. w/35-2E-1.02. Begin long term closure. Waterbar, Seed and Mulch.
- 0.09 End Long Term Closure.

Road 35-2E-2.03

(BLM) NAT

M.P. Remarks

- 0.93 35-2E-2.03 starts into BLM lands. Begin long term closure. Construct boulder barricade
Install water bars. Seed and Mulch
- 1.34 End Long Term Closure

Road 35-3E-6.00 B

(BLM) NAT

M.P. Remarks

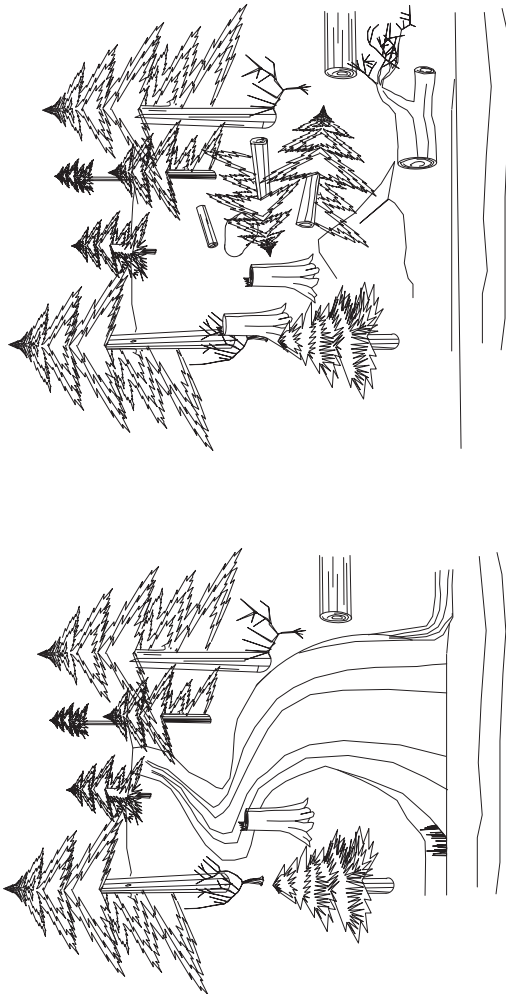
- 0.00 Jct w/35-2E-2.01

- 0.18 Property line from Industry to BLM lands. Begin long term closure. Construct earth/trench barricade. Install water bars. Seed and Mulch
- 0.47 Property line from BLM to Industry lands. End long term closure at existing earth barricade.

EXHIBIT D8
SHEET 1 OF 1
Big Dog T.S.

Notes:

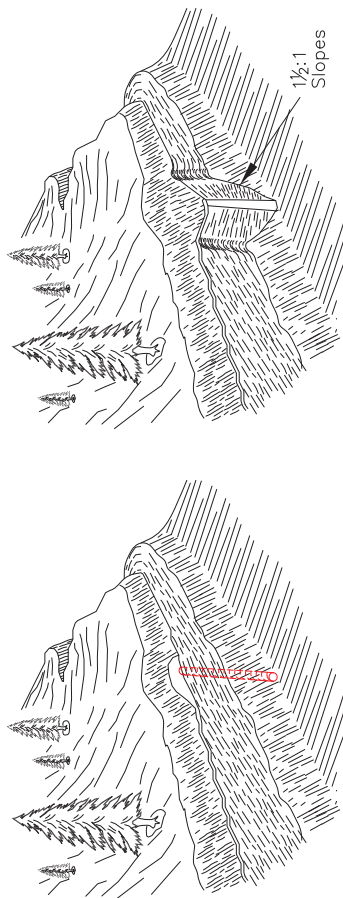
1. The Purchaser shall barricade, decompact the road prism and camouflage the roadbed so that the road entrance and roadway are indiscernible from the intersecting road. Camouflaged entrances shall consist of logs, slash, boulders and others debris placed along road entrances for a minimum of 100 feet or to the first curve or hillcrest to discourage vehicle use. Barricades shall be constructed as shown for each road.
- Where multiple entrances exist, the work shall include obscuring all road entrances. Ditchlines at intersecting roads will be restored as indicated on plan view. The Purchaser shall use soil, boulders, brush, dead material, stumps, and other debris to disguise the road prism to the extent possible. No live trees shall be used without approval of the Authorized Officer.
3. Road surface shall be decompacted for its entire length using mechanical equipment. Decompact road surface to a depth of 12 to 18 inches or to a point where 10 inch diameter stones are the dominant substrate (whichever is shallower). Where it is determined by the Authorized Officer that decompaction may cause unacceptable damage to the root systems of residual trees along a majority of the road, decompaction may be intermittent, or scarification may be used instead. Woody debris, brush, stumps, boulders, and other debris shall be placed along the roads entire length as determined by availability of materials to provide ground cover and discourage use. No live trees shall be cut or used without approval of the Authorized Officer.
4. All culverts shall be removed from road for its entire length. Excavated culverts shall be left open to drain and have slopes of 1½:1. Where draw culverts are removed the grade of the channel shall be restored to match existing stream. Culverts not designated as salvage for the Government shall become the property of the Contractor. The Contractor shall be responsible for legally disposing of material.
5. See Section 1800 for Seeding Specifications.



Typical Entrance - Before

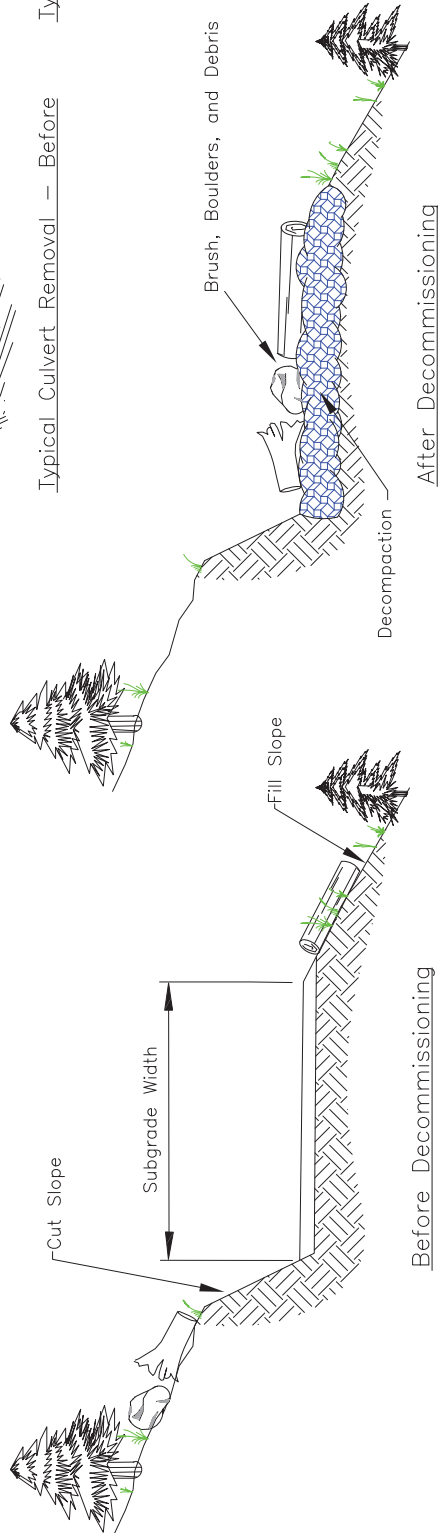
Typical Entrance - After

Typical Road Camouflaged Entrance
(See Exhibit D-9)



Typical Culvert Removal - Before

Typical Culvert Removal - After



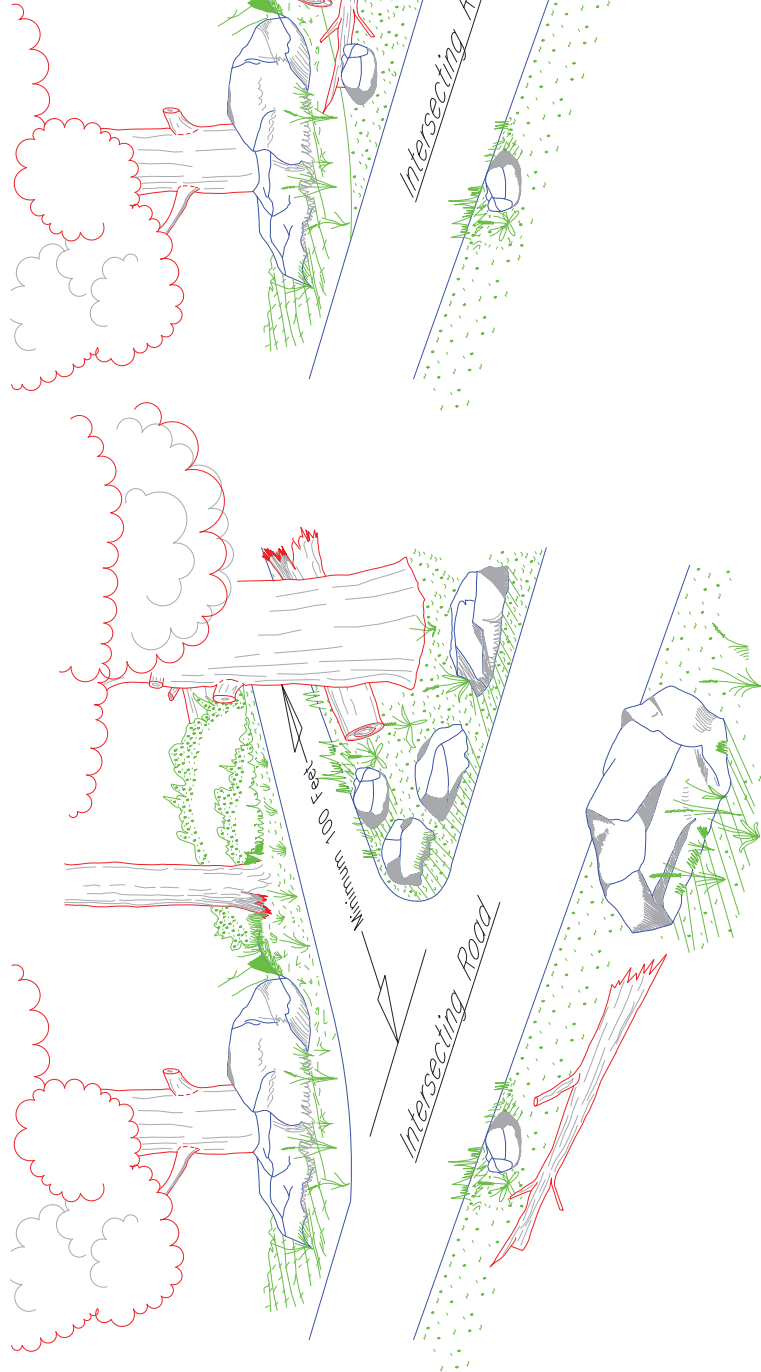
Before Decommissioning

After Decommissioning

Typical Full Decommission

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT MEDFORD DISTRICT - MEDFORD, OREGON			
Typical Full Decommission			
DRAWN	JWR	SCALE	NONE
DATE	April 2022	SHEET	1 OF 1
DRAWING NO.	ORM05-TS-2025.0001-D8		

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Typical Entrance – Before

Typical Entrance – After

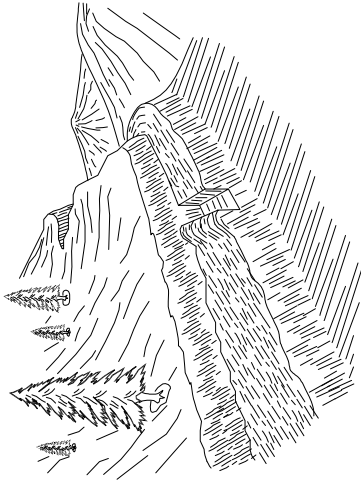
Notes:

1. The Purchaser shall Camouflage the road prism and disguise the roadbed so that the road entrance and roadway are indiscernible from the intersecting road. Camouflaged entrances shall consist of logs, slash, boulders and others debris placed along road entrances for a minimum of 100 feet or to the first curve or hillcrest to discourage vehicle use.
2. Where multiple entrances exist, the work shall include obscuring all road entrances. Ditchlines at intersecting roads will be restored as indicated on plan view. The Purchaser shall use soil, boulders, brush, dead material, stumps, and other debris to disguise the road prism to the extent possible. No live trees should be used without approval of the Authorized Officer.

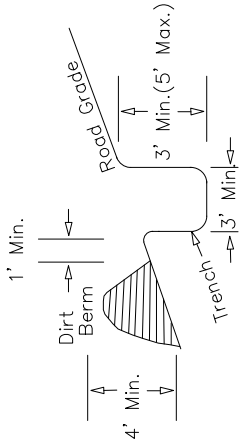
UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT MEDFORD DISTRICT – MEDFORD, OREGON			
Typical Road Camouflage			
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DATE	April 2022	SHEET	1 OF 1
DRAWING NO. ORM05-TS-2025.0001-D9			

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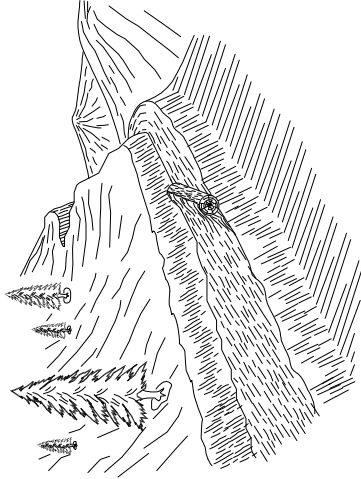
EXHIBIT D-10
SHEET 1 OF 1
Big Dog T.S.



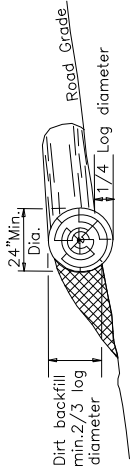
TRENCH BARRICADE



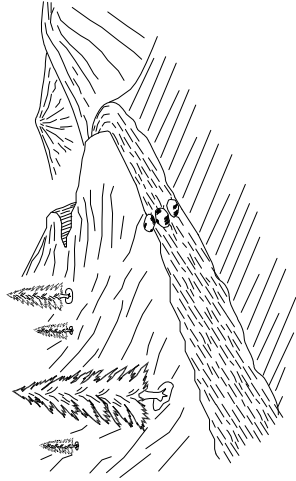
1. BARRICADE LENGTH SHALL EXTEND ACROSS THE ENTIRE ROAD SURFACE TO A POINT SUFFICIENT TO PROHIBIT MOTOR VEHICLE TRAFFIC.
2. THE EXACT LOCATION SHALL BE AS STAKED IN THE FIELD.
3. THE BARRICADE SHALL BE SKEWED AS NEEDED TO DRAIN OR AS DIRECTED BY THE AUTHORIZED OFFICERS REPRESENTATIVE.
4. A MINIMUM OF 1' OF LEVEL GROUND IS NEEDED BETWEEN TOE OF THE DIRT BERM AND THE EDGE OF THE TRENCH.



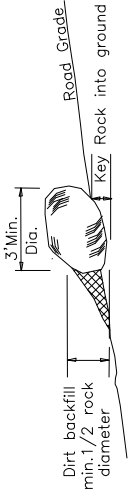
LOG BARRICADE



1. LOG BARRICADE SHALL BE CONSTRUCTED AS SHOWN ABOVE.
2. EXACT LOCATION WILL BE FLAGGED BY THE AUTHORIZED OFFICER PRIOR TO CONSTRUCTION.
3. ALL BARRICADES SHALL BE SKEWED 30 DEGREES.
4. THE LENGTH SHALL BE SUFFICIENT TO EXTEND FROM THE CUT BANK TO THE FILL SLOPE.
5. THE MINIMUM SMALL END DIAMETER OF THE LOG BARRICADE SHALL BE 24".

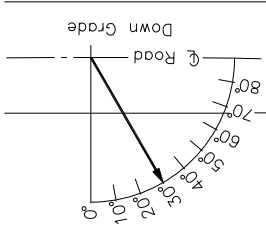


ROCK BARRICADE



1. ROCK BARRICADE SHALL BE CONSTRUCTED AS SHOWN ABOVE.
2. EXACT LOCATION WILL BE FLAGGED BY THE AUTHORIZED OFFICER PRIOR TO CONSTRUCTION.
3. THE LENGTH SHALL BE SUFFICIENT TO BLOCK ROAD FROM VEHICLE USE.
4. THE MINIMUM DIAMETER OF ROCK SHALL BE 3 FEET.
5. THE MAXIMUM SPACE BETWEEN ROCKS SHALL BE 36" OR AS APPROVED BY THE AUTHORIZED OFFICER.

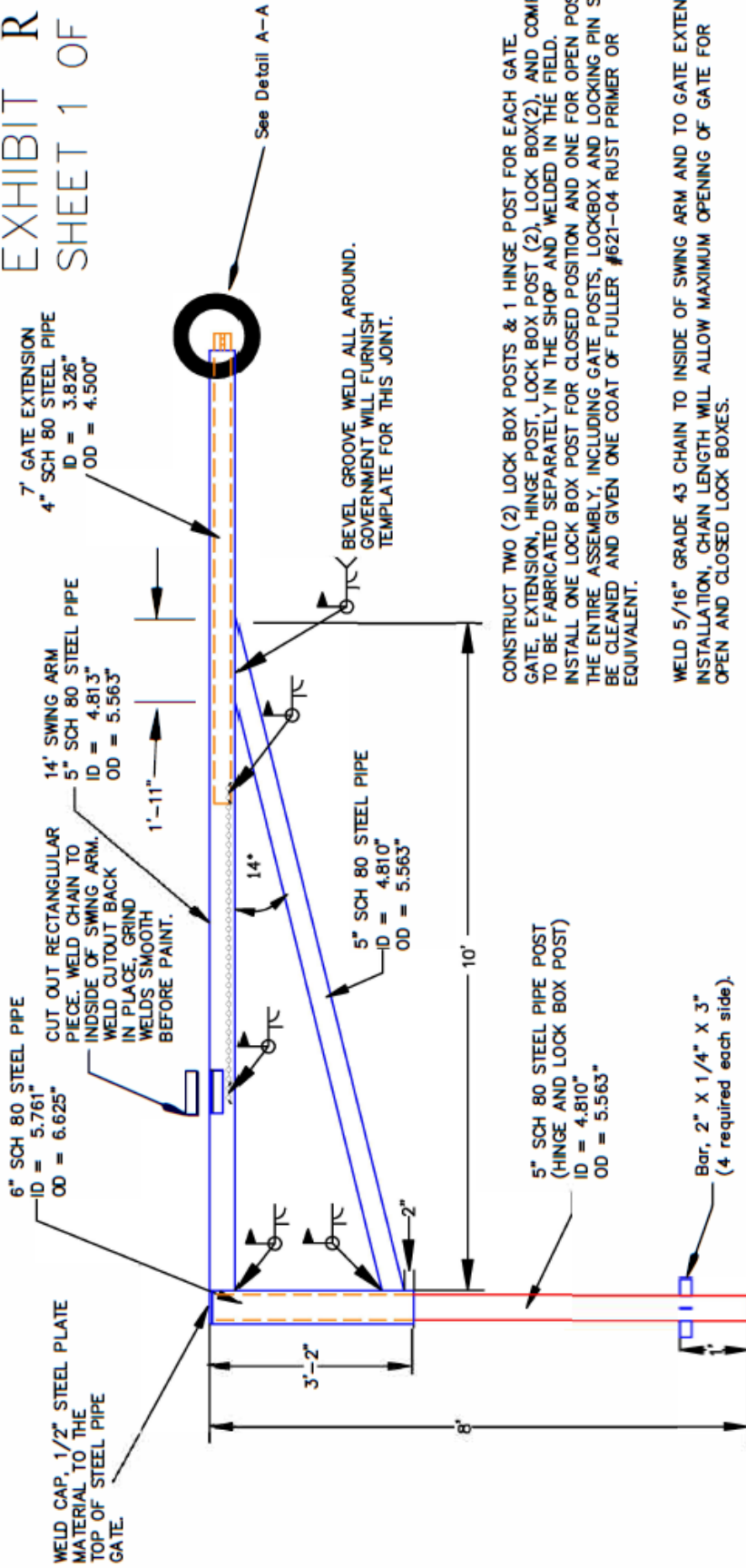
SKEW DIAGRAM



REV. NO.	DESCRIPTION	DATE	APPROV.
	UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT MEDFORD DISTRICT - MEDFORD, OREGON		
BARRICADE DETAILS			
DRAWN	JAB	SCALE	NONE
DATE	FEBRUARY 2023	SHEET	1 OF 1
DRAWING NO.	ORM05-TS-2023-0001-D10		

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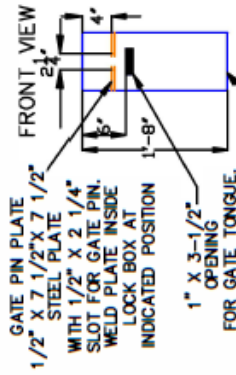
EXHIBIT R -
SHEET 1 OF 2



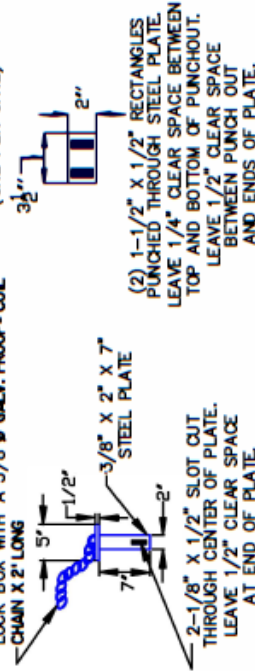
CONSTRUCT TWO (2) LOCK BOX POSTS & 1 HINGE POST FOR EACH GATE.
GATE, EXTENSION, HINGE POST, LOCK BOX POST (2), LOCK BOX(2), AND COMPONENTS
TO BE FABRICATED SEPARATELY IN THE SHOP AND WELDED IN THE FIELD.
INSTALL ONE LOCK BOX POST FOR CLOSED POSITION AND ONE FOR OPEN POSITION
THE ENTIRE ASSEMBLY, INCLUDING GATE POSTS, LOCKBOX AND LOCKING PIN SHALL
BE CLEANED AND GIVEN ONE COAT OF FULLER #621-04 RUST PRIMER OR
EQUIVALENT.

WELD 5/16" GRADE 43 CHAIN TO INSIDE OF SWING ARM AND TO GATE EXTENSION IN FIELD, /
INSTALLATION, CHAIN LENGTH WILL ALLOW MAXIMUM OPENING OF GATE FOR
OPEN AND CLOSED LOCK BOXES.

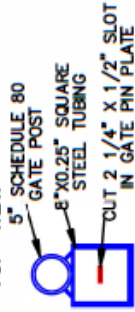
GATE PIN DETAIL



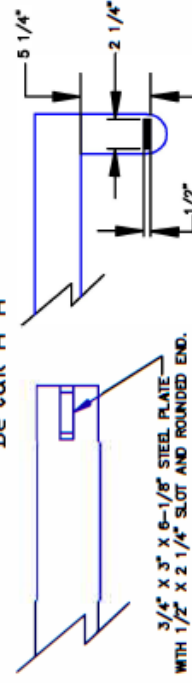
THE LOCKING PIN SHALL BE WELDED TO THE
LOCK BOX WITH A 3/8" GALV. PROOF-COIL
CHAIN X 2" LONG



TOP VIEW



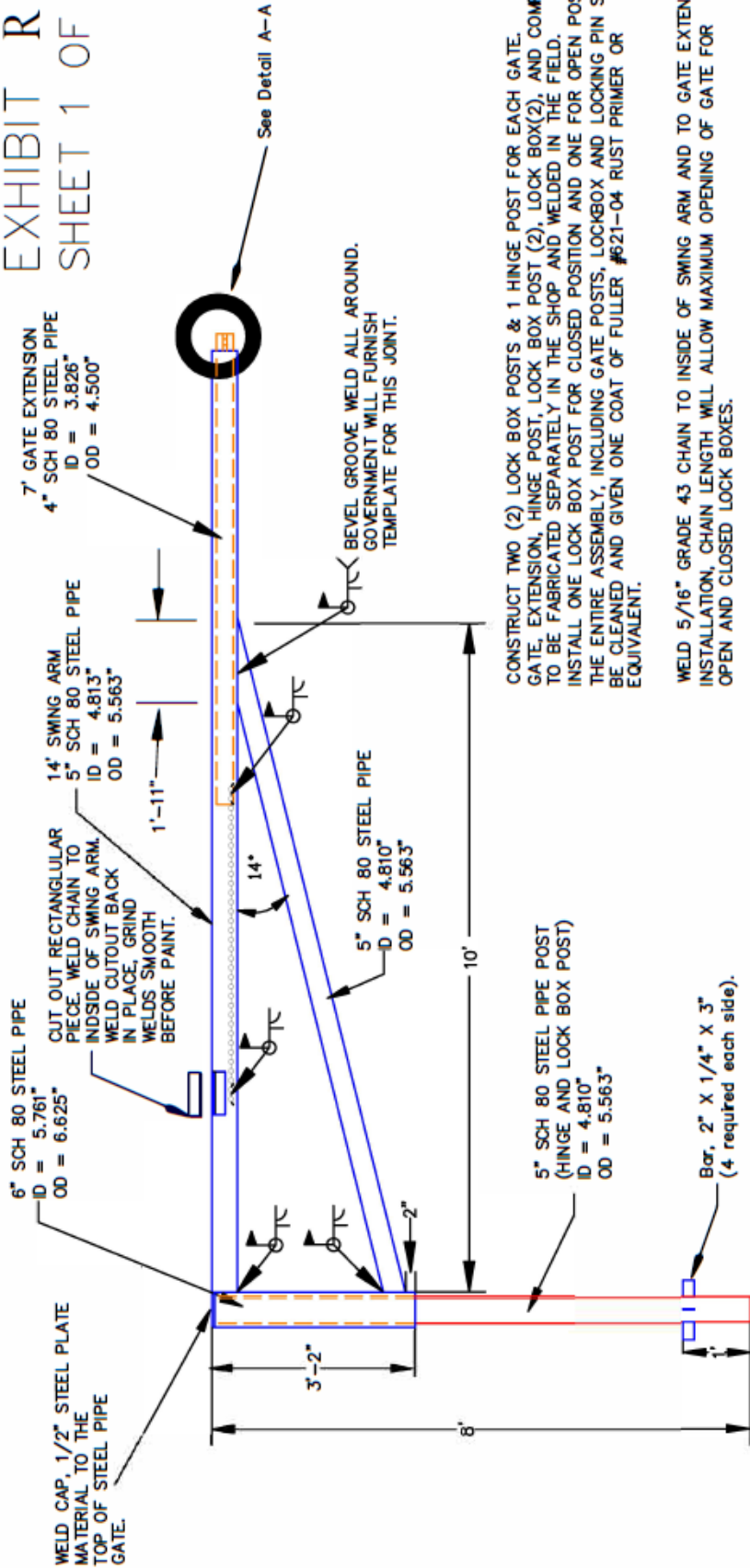
Detail A-A



UNITED STATES DEPARTMENT OF THE INTERIOR	
BUREAU OF LAND MANAGEMENT	
MIDFORD DISTRICT	
STEEL PIPE GATE	
FABRICATION	
DESIGNED	
REVIEWED	
APPROVED	
DRAWN BY: 4/01	EDITED BY JT
DATE: 4/01	SCALE: NONE
DRAWING NO. ORMO5 TS 2025.0001 R	SHEET 1 OF 2

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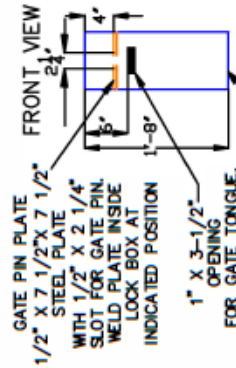
EXHIBIT R - SHEET 1 OF 2



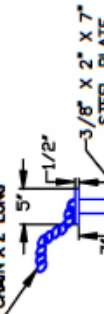
CONSTRUCT TWO (2) LOCK BOX POSTS & 1 HINGE POST FOR EACH GATE. GATE, EXTENSION, HINGE POST, LOCK BOX POST (2), LOCK BOX(2), AND COMPONENTS TO BE FABRICATED SEPARATELY IN THE SHOP AND WELDED IN THE FIELD. INSTALL ONE LOCK BOX POST FOR CLOSED POSITION AND ONE FOR OPEN POSITION THE ENTIRE ASSEMBLY, INCLUDING GATE POSTS, LOCKBOX AND LOCKING PIN SHALL BE CLEANED AND GIVEN ONE COAT OF FULLER #821-04 RUST PRIMER OR EQUIVALENT.

WELD 5/16" GRADE 43 CHAIN TO INSIDE OF SWING ARM AND TO GATE EXTENSION IN FIELD. INSTALLATION, CHAIN LENGTH WILL ALLOW MAXIMUM OPENING OF GATE FOR OPEN AND CLOSED LOCK BOXES.

GATE PIN DETAIL



THE LOCKING PIN SHALL BE WELDED TO THE LOCK BOX WITH A 3/8" GALV. PROOF-COIL CHAIN X 2" LONG



2-1/8" X 1/2" SLOT CUT THROUGH CENTER OF PLATE LEAVE 1/2" CLEAR SPACE AT END OF PLATE.

PRIMARY LOCK SLIDER (ONE PER GATE)



(2) 1-1/2" X 1/2" RECTANGLES PUNCHED THROUGH STEEL PLATE. LEAVE 1/4" CLEAR SPACE BETWEEN TOP AND BOTTOM OF PUNCHOUT. LEAVE 1/2" CLEAR SPACE BETWEEN PUNCH OUT AND ENDS OF PLATE.

SECONDARY LOCK SLIDER (TWO PER GATE)

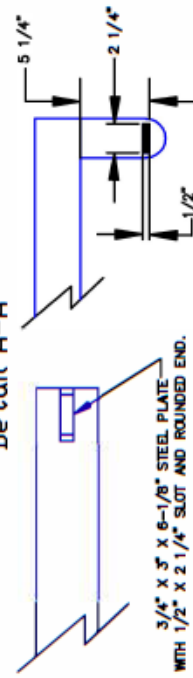


1-3/8" X 3-1/2" X 3/8" STEEL BAR WITH (2) HOLES PUNCHED.

TOP VIEW



Detail A-A



UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT MEDFORD DISTRICT	
STEEL PIPE GATE FABRICATION	
DESIGNED	
REVIEWED	
APPROVED	
DRAWN BY: JT	SCALE: NONE
DATE: 4/01	SHEET 1 OF 2
DRAWING NO. ORM05 TS 2025.0001 R	