P R O S P E C T U S

SCALE SALE

BUTTE FALLS FIELD OFFICE
JACKSON MASTER UNIT

Medford Sale # ORM05-TS-2027.0002
December 17th, 2026

Section 24 (6300) Jackson County, O&C

BID DEPOSIT REQUIRED: $12,100.00

All timber designated for cutting in;
Sec. 24, Lot 3, Lot 4, W1/2SE1/4, E1/2SW1/4, T.34S., R.02E., Sec. 19, Lot 3, Lot 4, T.34S., R.03E., 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
1,750	804	White Fir	971	$41.70	$40,490.70
1,238	383	Douglas-fir	467	$158.50	$74,019.50
185	130	Incense Cedar	157	$40.20	$6,311.40
7	3.5	Sugar Pine	4	$33.70	$134.80
3,180	1,320.5		1,599		$120,956.40

*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.

CRUISE INFORMATION - Douglas-fir, White fir, and Incense Cedar have been cruised using the 3-P sampling methods to select sample trees. Sugar Pine was 100% cruised. 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 19 inches DBHOB; the average gross merchantable log contains 96 bd. ft.; the total gross volume is approximately 1,731 MBF; and 92% recovery is expected (Average WF is 18.6 inches DBHOB; average gross merchantable log DF contains 95 bd. ft.). 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.

CUTTING AREA - CUTTING AREA – Three (3) units containing approximately (157) acres must be logged.

CUTTING TIME - Contract duration will twelve (12) months for cutting and removal of timber.

ACCESS – Access to the sale area is available via public roads and through the contract area using BLM Roads and, via Right-of-Way and Road Use Agreements M-2000 with Siskiyou Timberlands and M-2000 with John Hancock Life Insurance.

Among other conditions, 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 and an estimated payment of a road surface replacement fee of $696.62. 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 and an estimated payment of a road surface replacement fee of $835.47.

ROAD MAINTENANCE – The Purchaser will be required to maintain approximately 4.72 miles of existing BLM and private roads.

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.

SLASH DISPOSAL - Perform logging residue reduction and site preparation work on approximately one hundred fifty-seven (60) 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 24-1 as shown on Exhibit A, are regeneration harvest prescriptions.
2. Unit 24-2 as shown on Exhibit A, are Group Select harvest prescriptions.
4. There are roadside vegetation maintenance units
5. No extension of time beyond the normal 30 days will be granted for completing bonding and contract signing requirements.
6. This contract includes an additional special provision to ensure the Purchaser understands he/she is required to conduct all operations in compliance with Contract Section 12 (Purchaser's Contractual Responsibilities for Liability) and Contract Section 29 (Safety and Health) and the Special Provisions included in Section 44 of this Contract.
7. 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).
8. Directional falling is required.
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. Dust abatement may be required.

13. There are slash treatment and pile placement requirements in place for this sale (see SD-1 in the contract)
14. Purchaser should be aware there are logging residue reduction costs assessed under SD-5. Refer to the appraisal for total assessed costs of logging residue reduction.
15. The Purchaser may wet season haul, with the Authorized Officer's approval on the following roads: 34-2E-24.05, 34-3E-21.03 C, and 34-3E-29.01 A-G. 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-24.03, 34-2E-24.07, and 34-3E-19.02 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 structures 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.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 ≥ 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 clover on a within-stand average basis. containing known fisher den sites from March 1 to July 30. Protect fisher denning structures by retaining ≥ 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.
- 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 5.9 miles, turn left onto OR-62 and stay on it for 9.1 miles. Turn right on Butte Falls Highway and continue for 16 miles. Continue onto Fish Lake Road for 0.6miles. Turn left onto the Butte Falls -Prospect Road and continue for 4.2 miles. Turn Left onto BLM 34-3E-31.4 Road drive for 2.6 miles. Turn left onto BLM 34-3E-29.1 road and you have arrived at the sale.

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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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 343 trees marked with orange paint above and below stump height in units 24-1 and 24-2 as shown on exhibit A.

(C) IR-2 All timber except approximately One hundred and sixty seven (167) trees marked for cutting heretofore by the Government with blue paint above and below stump height in RVM units as shown on Exhibit A.

(D) 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.

(E) 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.

(F) 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.

(G) 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 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.

(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 ninety (190) 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 ninety (190) 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 ninety (190) 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).

(10) L-10 In the contract area shown on Exhibit A, all trees designated for cutting which are within one hundred ninety (190) 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	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. 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 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. During logging and forest management activities, operators shall keep all gates closed and all livestock containment systems functional to keep livestock in authorized areas. 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. 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. Silviculture breaks are flagged in yellow. Group Selections flagged in orange and tagged with partial cut tags 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.
Oversized Tree Restrictions (24-1)	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 (24-2)	Douglas-fir and pine 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 (All Units)	All trees are reserved in operational area shown on Exhibit A map. Skid trails in the operational area and trees needing to be cut for skid trails and felling operations in the group selections will need to be flagged and approved by the Authorized Officer. Mechanized felling equipment must have an arm capable of reaching at least twenty (20) feet. No front-end loaders are permitted. 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.

	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. One end suspension is required in all ground based units. No mechanized equipment shall travel up or down draw bottoms. Crossing the draw shall be permitted where approved by the authorized officer. Mechanized equipment shall not travel through plant site buffers shown on exhibit A. 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. 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. 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. 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. 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. Limit the use of specialized ground-based mechanized equipment (those machines specifically designed to operate on slopes greater than 35 percent) to slopes less than 50 percent, except when using previously constructed skid trails or accessing isolated short skid trails over steeper pitches. 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. 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. The use of specialized ground-based mechanized equipment would not be allowed in skips identified for unstable soil reasons and helicopter units. If operator requests the use of tethered equipment or other specialized equipment, units would be cleared by the soil scientist based on the specific capabilities of the operator and the units to avoid unstable soils. The location of the tractor skid roads must be clearly designated on the ground, at locations approved by the Authorized Officer 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. 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 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. Landing location must be approved by the authorized officer. Limit landings to 0.5-acre or less for tractor. 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. Minimize the area where more than half of the depth of the organically enriched upper horizon (topsoil) is removed when conducting forest management operations. 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.

Roadside Vegetation Maintenance Units	Mechanized logging equipment shall be restricted to the existing roads where clearing is to occur. Directionally fell away from all plants sites, streams, springs, wetlands, ponds and pump chances as shown on exhibit A maps.

(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-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 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.

(14) 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.

(15) 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, 34-3E-21.03 C, and 34-3E-29.01 A-G. 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-24.03, 34-2E-24.07, and 34-3E-19.02 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 structures 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.

(16) L-24 Before cutting and removing any trees necessary to facilitate logging in units 24-1 and 24-2 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 contact and shall be limited to the minimum width necessary for yarding of logs with a minimum of damage to reserve trees; however, unless otherwise approved in writing by the 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, 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.

(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.

(17) L-29 In accordance with the requirements of Sec. 8 of the contract it has been determined that it is in the best interest of the Government and within the provisions of 43 CFR 5402.0-6 to sell additional timber located in Unit 24-1 as shown on Exhibit A, which is obstructing needed cable yarding roads, ground based yarding skid roads, hazardous to workers, needed for guyline, tailhold, and/or tieback trees, or severely damaged from the normal conduct of felling or yarding operations to meet all applicable State safety laws, codes or regulations. This timber must be cut or removed so that the Purchaser can continue active falling and yarding operations. The Purchaser is, therefore, authorized to cut and remove such additional timber in accordance with the provisions of Section 8 of the contract: provided, however, that:

(a) Trees reserved for the tree improvement program and trees reserved for the wildlife habitat objectives under Sec. 41 of the contract are not included in the authorization.

(b) The Purchaser shall identify each tree sold and cut in accordance with the provision by marking the cut surface of the stump immediately after falling with a large "X". The "X" shall be cut with a chain saw. The stump shall be marked by hanging red fluorescent flagging near the stump so that the stump can be visually located from a distance of not less than one hundred (100) feet.

(c) The volume and price for such timber shall be determined by the Authorized Officer in accordance with Bureau of Land Management prescribed procedures and paid for by the Purchaser in accordance with Sec. 3(b) of the contract as required by Sec. 8 of the contract.

(d) No timber may be cut or removed under the terms of this provision if all contract payments required by Sec. 3(a) or 3(c) of the contract have been made.

(e) The permission to cut and remove additional timber contained in this provision may be withdrawn by the Contracting Officer if the Authorized Officer determines that the Purchaser:

1. Failed to properly mark any stump with the "X" cut.
2. Failed to identify the location of any stump.
3. Cut any tree that was reserved for tree improvement and/or wildlife habitat.
4. Cut any tree in or adjacent to cable yarding corridors that was not necessary to facilitate cable yarding.
5. Cut any reserve tree in or adjacent to tractor skid roads that was not necessary to facilitate ground based yarding.
6. Failed to properly segregate any pulled over tree that was yarded to the landing.
7. Cut any reserve tree that was not severely (as defined during the prework conference and documented in the approved logging plan) damaged from felling and yarding operations.
8. Cut more than the minimum number of trees necessary to properly serve as guyline anchor stumps.
9. Cut or topped more than the minimum number of trees necessary to properly serve as tailhold trees.
10. Cut more than the minimum number of trees necessary to properly serve as tie-backs for topped tailhold trees.

11. Failed to maintain accurate and current (no more than 24 hours old) documentation of cut and removed timber.

If the permission to cut and remove additional timber provision is withdrawn, the Authorized Officer shall deliver to the Purchaser a written notice that additional sale of timber under this special provision is no longer approved.

If the permission to cut and remove additional timber provision is withdrawn, the Purchaser shall inform the Authorized Officer at least two working days prior to the need for cutting and yarding any guyline tree, tailhold tree, tie-back tree, danger tree, corridor tree, pulled over tree, and severely damaged tree. All sales of additional timber shall comply with Section 8 of the contract.
The Contracting Officer may order the Purchaser, in writing, to suspend, delay, or interrupt all or any part of the work of this contract for the period of time that the Contracting Officer determines appropriate for the Government to safely measure and mark additional timber.

All cable-yarding and ground based equipment skid roads upon which timber may be cut and removed in accordance with this special provision must be needed for the removal of timber sold under this contact and shall be limited to the narrowest width necessary for the yarding of logs with minimum damage to reserved trees. The Purchaser shall be liable for damages in accordance with Sec. 13 of the contract for any reserved timber cut or removed in violation of the terms of this special provision.

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

(1) R-1: The Purchaser shall renovate all roads and decommission required 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.

(2) R-1a: Any required 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 put into long term storage roads 34-2E-24.03 and 34-2E-24.07, 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. Any road listed on Exhibit D and requiring improvement or renovation in Exhibit C of this contract, shall be maintained by the Purchaser until

receiving written acceptance of the improvement or renovation from the Contracting Officer. The Purchaser shall pay current Bureau of Land Management maintenance and rockwear fees for the sale of additional timber under modification to the contract.

(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-2d: The Purchaser shall pay a road maintenance (and rockwear) fee of one and ninety one/100 dollars ($1.91) per thousand board feet log scale for the use of said roads. The total maintenance fee due shall be based upon volumes determined pursuant to Exhibit B of this contract and mileage of roads used as determined by the Authorized Officer. Prior to the use of such roads, the Purchaser shall give written notice to the Authorized Officer of the roads intended for use in the removal of timber purchased under this contract, together with an estimate of the volume to be hauled over such roads. The Purchaser will be required to label, with a permanent ink marker, each load ticket with the corresponding unit number as directed by the Authorized Officer. The Authorized Officer shall establish an installment schedule of payment of the maintenance obligation. If it is determined by the Authorized Officer, after all merchantable timber has been cut and scaled, that the total maintenance payments made under this contract exceed the total maintenance (and rockwear) payment due, such excess shall be returned to the Purchaser after such determination is made.

(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 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-3a In the use of Road No 34-3E-21.3 C and 34-3E-29.1 F, the Purchaser shall comply with the conditions of Right-of-Way and Road Use Agreement No. M-2000 between the United States and Siskiyou Timberlands. This document is available for inspection at the Medford District Office.

These conditions include:

(a) Payment of a road rockwear obligation of zero and ninety five/100 dollars ($0.95) per mbf/mile to Siskiyou Timberlands, payable at the time indicated in the License Agreement. The above maintenance amount is for the use of 0.53 miles of road or less.

(b) Payment of a road use obligation of zero and zero/100 dollars ($0) to the 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) Provide a performance bond in the amount of ten thousand and zero/100 dollars ($10,000.00).

(e) 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 b:In the use of Road No 34-3E-29.1 B and 34-3E-29.1 D, the Purchaser shall comply with the conditions of Right-of-Way and Road Use Agreement No. M-2000 between the United States and John Hancock Life Insurance Co. This document is available for inspection at the Medford District Office.

These conditions include:

(a) Payment of a road rockwear obligation of zero and ninety five/100 dollars ($0.95) per mbf/mile to John Hancock Life Insurance Co., payable at the time indicated in the License Agreement. The above maintenance amount is for the use of 0.55 miles of road or less.

(b) Payment of a road use obligation of zero and zero/100 dollars ($0) to the John Hancock Life Insurance Co., 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) Provide a performance bond in the amount of five hundred and zero/100 dollars ($500.00).

(e) 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.

(11) 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.

(12) R-3e: The Purchaser shall pay a road use and maintenance fee of $2.00 per thousand board feet log scale per mile for the use of said roads. The totals fees due shall be based on the volumes specified in Exhibit B of this contract, and mileage of roads used, as determined by the Authorized Officer. Prior to the use of such roads, the Purchaser shall give written notice to the Contracting Officer of the roads intended for use in the removal of timber purchased under this contract, together with an estimate of the volume to be hauled over such roads. The Contracting Officer shall establish an installment schedule of payment of the road use and maintenance obligation.

(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 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.

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 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 percent. 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, water barring, 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 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 roemeri, 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 31of 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:

Test	Grasses (%)	Forbs (%)
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 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.

(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 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 Phythophthora 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

(1) M-2 The Government at its option may check scale any portion of the timber removed from the contract area. The Purchaser hereby agrees to make such contract timber available for scaling at a location designated by the Authorized Officer. In the event that BLM elects to check scale and if such check scaling causes a delay in log transportation time, an adjustment will be made to the purchase price as follows. If the entire sale is check scaled, the purchase price of this contract shall be reduced by fourteen hundred thirty-two dollars and fifty cents ($1,432.50). In the event that only a portion of the contract timber is scaled, the purchase price shall be reduced by that portion of $0.75 per net thousand board foot of timber scaled which is equal to the percentage of timber sold which was actually scaled by the Government. For purposes of computing this price reduction, the percentage of timber sold which has been scaled shall be determined by the Government. Any reduction in 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 such scaling.

(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:

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:
   - 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.

   - 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.

- 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.

- 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 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 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.

2) 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.

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

- Piling shall be accomplished by hand. Finished piles shall be tight and free of earth.

- 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.

- 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 (⅓) 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 (½) 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 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.

- 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.

4) 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:

- 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.

- 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 coniferous species in piled areas and landing areas shall be protected from damage and having landings piled next to and under where feasible.

- 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.

- Prior to the commencement of piling work, all equipment shall meet the approval of the Authorized Officer.

- Excavators are limited to designated skid roads approved by the Authorized Officer.

- 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.

- 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.

- 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

5) SD-1f LANDING PILES: In all units as shown in the Exhibit A, pile all slash located within fifty (50) feet on each side of each landing, around each landing shall be free of slash and burnable material. Slash shall be piled by a grapple loader. Finished piles shall be tight and free of earth. Larger cull logs can be placed adjacent to landing pile for firewood cutting use.

    - A ten (10) foot by ten (10) foot cover of four (4) mil black plastic shall cap each pile to maintain a dry ignition point that contains fine fuels (i.e. kindling). The cover shall be firmly fixed to each pile to hold it in place. Landings shall be piled and covered during the same season that they are logged. No portion of the landing pile will be within 50 feet of the dripline of any living conifer tree.

6) SD-5 Logging Residue and Site Preperation:
    - Perform logging residue reduction and site preparation work on approximately sixty (60) acres of harvest area as directed by the Authorized Officer.
    - In addition, site preparation includes but is not limited to machine piling of "vine maple" (both damaged and undamaged during harvest) and adding to machine piles. No pile should exist of sole "vine maple" and should be mixed with other activity fuels. Additional cost is reflected in the table to accommodate this.

    - 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.

- 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	$600.00		
Hand Pile Burn	$122.00		
Excavator Pile/Cover	$700.00	60	$42,000
Excavator Pile Burn	$65.00	60	$3,900
Total Appraised Cost	$45,900		

Price Adjustment: The total Purchase Price in Section 2 will be adjusted by the difference between the site preparation treatment costs designated by Section 41(G)(2)(a) and $45900 calculated using the estimated acres determined by the Authorized Officer and the per acre costs listed in Section 41(G)(2)(a).

Liability and Timeliness

- The Purchaser is liable for injuries to personnel or damage to equipment furnished under this section, except when caused by Government negligence.
- Time is of the essence for compliance. If the Purchaser fails to provide required personnel and equipment, they are responsible for all additional costs incurred by the Government for slash disposal, including wages and costs for substitute labor and equipment, plus overhead. If failure results in deferred burning and new conditions require additional site preparation or personnel/equipment, the Purchaser is also responsible for these additional costs.

Seasonal Restriction Matrix
1 of 1
Section 24 Timber Sale
ORM05-TS-2024.0007

Restricted Times are Shaded

Possible Waived Times

Sale Area	Activity	Restriction for	Jan 1	Jan 15	Feb 1	Feb 15	Mar 1	Mar 15	Apr 1	Apr 15	May 1	May 15	June 1	June 15	July 1	July 15	Aug 1	Aug 15	Sept 1	Sept 15	Oct 1	Oct 15	Nov 1	Nov 15	Dec 1	Dec 15
All Units	Ground Based yarding and all landing operations*	Wet Season [1]																								
	Rock/Log Hauling*	Wet Season [1,2]																								
	Road and/or landing construction, Road Reconstruction, Road Renovation, Road/skid trail barricading, waterbar construction and soil ripping*	Wet Season [1]																								
	Seeding, mulching	Seeding Season																								

Sale Area	Activity	Restriction for	Jan 1	Jan 15	Feb 1	Feb 15	Mar 1	Mar 15	Apr 1	Apr 15	May 1	May 15	June 1	June 15	July 1	July 15	Aug 1	Aug 15	Sept 1	Sept 15	Oct 1	Oct 15	Nov 1	Nov 15	Dec 1	Dec 15
Haul Routes	Road Rocking*	Wet Season [1,2]																								
	Road Grading*	Wet Season [1,2]																								
	Timber Haul*	Wet Season [1,2]																								
	Rock Haul*	Wet Season [1,2]																								
	Instream work	Instream Work Window																								

[1] Wet season restrictions may be shortened or extended depending on weather conditions (see L-19 in special provisions)

[2] Hauling restriction may be shortened or extended (see L-19 in special provisions)

*Additional restrictions will apply if a spotted owl nest site is found within 0.25 miles for most harvest related activities or 0.5 miles for blasting, if a gray wolf den is found within one mile of a treament 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 sec 42). State fire restrictions may apply.

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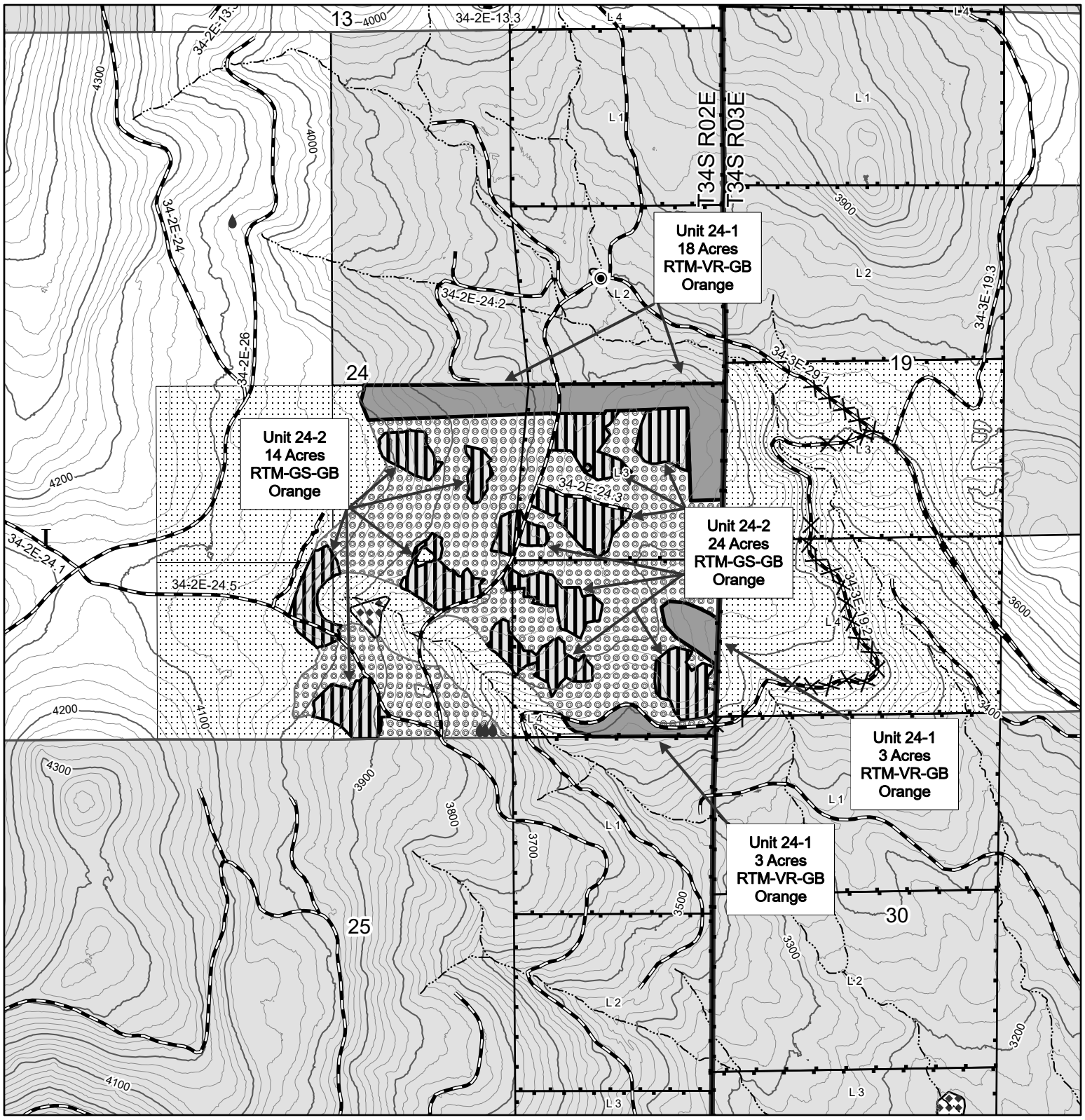
Section 24 Timber Sale
Contract Number: ORM05-TS-2027.0002
November 19, 2026
U.S.D.I. BLM Medford District

Scale: 1:12,000

0 2,000 Ft

Exhibit A Timber Sale Contract Maps

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.



- Boundary of Variable Retention
- Boundary of Group Selection
- Roadside Veg Mgmnt Unit
- Special Ops Area
- Contract Area (Timber Reserve)
- Index 100-ft contour
- Intermediate 20-ft contour
- Existing Roads
- Barricade
- Gate
- Water Source
- Spring/Seep
- Stream
- Lake/Pond
- Swamp/Marsh
- Government Lot
- Section
- Township
- BLM OC Land
- BLM PD Land
- Non-BLM Land

RTM = Reserve Tree Mark
GS = Group Selection Harvest
VR = Variable Retention Harvest
GB = Ground Based
Orange = Tree Paint Color

N W E S

*RVM Unit Numbers are the section the Unit is located in.

D. Roelofs 8/21/2026

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Information for Timber Sale Notice, Prospectus, Sec. 43 & 44
Section 24 TS Timber Sale
ORM05-TS-2027.0002

Approx # of trees	Est Volume MBF 32'	Species	Est Volume MBF 16'	Stumpage Adjustment	Appraised $/MBF		Appraised Value ($)
1,750	804.0	White Fir	971.0	$0.00	$41.70	*	$40,490.70
1,238	383.0	Douglas Fir	467.0	($57.49)	$158.50		$74,019.50
185	130.0	Incense-cedar	157.0	$0.00	$40.20	*	$6,311.40
7	3.5	Sugar Pine	4.0	$0.00	$33.70	*	$134.80
3,180	**1,320.5**		**1,599.0**				**$120,956.40**

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

CRUISED BY:	Parks, Miller
CRUISE COMPLETED:	July 2026
COMBINED SAMPLING ERROR:	13.60%

CRUISE DESIGN/METHOD Description:
3P cruise design. Strata 1 = Unit 24-1, Strata 2 = Units 24-2 and RVM 19.

TRACT FEATURES

ALL SPECIES

QM DBH	19.0	INCHES
GM LOG	100	BD FT
Total Gross Volume	1,731	MBF
Recovery	92	%
Salvage	0	MBF
Export	0	MBF

Dominant Species: **White Fir**

QM DBH	18.6	INCHES
GM Log	115	BD FT
Recovery	93	%

Salvage	0	MBF	

Admin Scale Allowance		$1.00	$/MBF
	TOTAL ADMIN. SCALE Allowance	$1,599.00	

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

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

Harvest Tree Paint Color	**Harvest Tree Count**
Blue	167

United States
Department of the Interior
Bureau of Land Management

Timber Appraisal

Sale Name:	Section 24 TS	**Sale Date:**	Thursday, December 17, 2026
BLM District:	Medford DO	**Unit of Measure:**	16' MBF
Contract #:	ORM05-TS-2027.0002	**Contract Term:**	12 months
Sale Type:	Advertised	**Contract Mechanism:**	5450-004 Scale 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: Casillas, Harley E - 10/28/2026
Approved By: Worman, Aaron S - 11/16/2026

Legal Description of Contract Area

Land Status	County	Township	Range	Section	Subdivision	Meridian
O&C	Jackson	34S	2E	24	Lot 3, Lot 4, W1/2SE1/4, E1/2SW1/4.	Willamette
O&C	Jackson	34S	3E	19	Lot 3, Lot 4.	Willamette

Species Totals

Species	Net	Gross Merch	Gross	# of Merch Logs	# of Cull Logs	# of Trees
White Fir	971.0	1,031.0	1,043.0	8,962	511	1,750
Douglas Fir	467.0	504.0	509.0	5,032	246	1,238
Incense-cedar	157.0	173.0	174.0	734	23	185
Sugar Pine	4.0	4.5	5.0	32	6	7
Totals	**1,599.0**	**1,712.5**	**1,731.0**	**14,760**	**786**	**3,180**

Cutting Area Acres

Regeneration Harvest Acres	Partial Cut Acres	Right of Way Acres	Total Acres	Net Volume per Acre
24.0	38.0	1.0	63.0	25.4

Logging Costs

Stump to Truck	$322,378.12
Transportation	$124,087.75
Road Construction	$22,057.95
Maintenance/Rockwear	$17,492.38
Road Use	$0.00
Other Allowances	$76,500.00
Total:	**$562,516.20**
Total Logging Cost per MBF:	**$351.79**

Utilization Centers

Location	Distance	% of Net Volume
White City, OR	35.0 miles	100%

Profit & Risk

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

Tract Features

Quadratic Mean DBH	19.0 in
Average GM Log	100 bf
Average Volume per Acre	25.4 mbf
Recovery	92%
Net MBF volume:	
Green	1,599.0 mbf
Salvage	0 mbf
Export	0 mbf
Ground Base Logging:	
Percent of Sale Volume	100%
Average Yarding Slope	10%
Average Yarding Distance	450 ft
Cable Logging:	
Percent of Sale Volume	0%
Average Yarding Slope	0%
Average Yarding Distance	0 ft
Aerial Logging:	
Percent of Sale Volume	0%
Average Yarding Slope	0%
Average Yarding Distance	0 ft

Cruise

Cruise Completed	July 2026
Cruised By	Parks, Miller

Cruise Method

3P cruise design. Strata 1 = Unit 24-1, Strata 2 = Units 24-2 and RVM 19.

Stumpage Computation

Species	# of Trees	Net Volume	Pond Value	(-) Profit & Risk	(-) Logging Costs	(+) Marginal Log Value	Stumpage Adjustment	Appraised Price/MBF		Appraised Value ($)
White Fir	1,750	971.0	$416.50	$49.98	$351.79	$5.87	$0.00	$41.70	*	$40,490.70
Douglas Fir	1,238	467.0	$633.03	$75.96	$351.79	$10.66	($57.49)	$158.50		$74,019.50
Incense-cedar	185	157.0	$401.58	$48.19	$351.79	$0.00	$0.00	$40.20	*	$6,311.40
Sugar Pine	7	4.0	$336.88	$40.43	$351.79	$0.00	$0.00	$33.70	*	$134.80
Totals	**3,180**	**1,599.0**								**$120,956.40**

* 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			8.0%	68.0%	21.0%	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		2.0%	20.0%	51.0%	24.0%	3.0%	

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
Sugar Pine							100.0%

Marginal Log Volume By Grade

Species	Utility Cull	Peeler Cull
White Fir	68	0
Douglas Fir	60	0

Unit: 24-1

Net Volume/Acre: 28.3 MBF

Species	Net	Gross Merch	Gross	# of Trees
White Fir	488.0	522.0	530.0	685
Douglas Fir	175.0	190.0	191.0	488
Incense-cedar	16.0	17.0	17.0	27
Sugar Pine	1.0	1.0	1.0	2
Totals:	**680.0**	**730.0**	**739.0**	**1,202**

Regeneration Harvest	24.0
Partial Cut	0.0
Right of Way	0.0
Total Acres:	**24.0**

Unit: 24-2

Net Volume/Acre: 23.1 MBF

Species	Net	Gross Merch	Gross	# of Trees
White Fir	477.0	502.0	506.0	1,036
Douglas Fir	258.0	278.0	281.0	613
Incense-cedar	140.5	155.5	156.5	157
Sugar Pine	3.0	3.5	4.0	5
Totals:	**878.5**	**939.0**	**947.5**	**1,811**

Regeneration Harvest	0.0
Partial Cut	38.0
Right of Way	0.0
Total Acres:	**38.0**

Unit: RVM 19

Net Volume/Acre: 40.5 MBF

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	34.0	36.0	37.0	137
White Fir	6.0	7.0	7.0	29
Incense-cedar	0.5	0.5	0.5	1
Totals:	**40.5**	**43.5**	**44.5**	**167**

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

Total Stump To Truck	Net Volume	$/MBF
$322,378.12	1,599.0	$201.61

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

Yarding System	Unit of Measure	# of Units of Measure	$/Unit of Measure	Total Cost	Remarks
Wheel Skidder	GM MBF	1,712.5	$188.25	$322,378.13	Hand fall= oversize 26 " +.
Subtotal				**$322,378.13**	

Additional Costs

Item	Unit of Measure	# of Units of Measure	$/Unit of Measure	Total Cost	Remarks
Subtotal				**$0.00**	

Additional Moves

Equipment	Unit of Measure	# of Units of Measure	$/Unit of Measure	Total Cost	Remarks
Subtotal				**$0.00**	

Total	Net Volume	$/MBF
$124,087.75	1,599.0	$77.60

Utilization Center	One Way Mileage	Description	Unit of Measure	# of Units	$/Unit of Measure	Total Cost	% of Sale Volume
White City, OR	35.0	All species	GM MBF	1,712.5	$72.46	$124,087.75	100%

Engineering Allowances

Total	Net Volume	$/MBF
$39,550.33	1,599.0	$24.73

Cost Item	Total Cost
Road Construction:	$22,057.95
Road Maintenance/Rockwear:	$17,492.38
Road Use Fees:	$0.00

Total	Net Volume	$/MBF
$76,500.00	1,599.0	$47.84

Environmental Protection

Cost item	Total Cost
Waterbar Skids	$10,500.00
Woody Debris 100'	$1,750.00
Barricade	$800.00
Equipment Washing	$1,750.00
Seed and Mulch	$2,400.00
Subtotal	**$17,200.00**

Logging

Cost item	Total Cost
Directional Falling	$450.00
Skid location	$1,400.00
Skid construction	$4,050.00
Landing Construction	$3,500.00
Landing Clean up	$4,000.00
Subtotal	**$13,400.00**

Slash Disposal & Site Prep

Cost item	Total Cost
Excavator Pile Burn	$3,900.00
Excavator Pile/Cover	$42,000.00
Subtotal	**$45,900.00**

Comments:
SD-1C Excavator Pile/Cover.
SD-1C Excavator Pile Burn.
E-Stip- Woody Debris

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R461

USDI - BUREAU OF LAND MANAGEMENT - OSO
SCALING AUTHORIZATION
(Scaling - Contract Information)

(1) Original Registration (X) **Amendment ( )** **Cancellation ( )**

(2) To: _____

(3) From: _____

(4) Logger: _____
Registration #
(5) Begin Haul Date: _____

(6) Purchaser: _____

(7) Sale Name:

(8) Contract #:

(9) Date Submitted: _____

(10) Scale: East-side (**X**)

(11) _____ State Bran

(12)_____
Contract Scaler Brand Code #

(14) Brand

(13) Yellow Paint Yes (X) No ( )

Scale Location and Estimated Loads Per Day

(15) Scale Location (Name)	# of Loads	Yard	Truck	Remote Check Scaling Location
1.				
2.				
3.				
4.				
5.				
6.				

(16) Minimum Product Specifications						**(17)** Use for Sample Sales Only		
Species	Length (Feet)	DIB Small End (Inches)	Net Scale % Gross Scale	Min. Net Scale Volume	Weigh t (Yes)	CONTRACT SCALER Brand Code	Sample Group Code	Frequency
All Species	8	5	33 1/3 %			#	A	(1: 1
						#	B	(1:
						#	C	(1:
						#	D	(1:
						#	E	(1:

(18) Add-Back Volume - Deductions Due to Delay Yes ( ) No (X)	**Remarks:** Always when amending
CONTRACT SCALER DATE RECEIVED STAMP	

(19) _____ _____
Purchaser Date

_____ _____
BLM Representative Date

OR 5300-18 (March 1993)

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MEMORANDUM OF AGREEMENT FOR YARD SCALING

DISTRICT: Medford_____ Field Office: _____

Scale Site Owner: _____

Scale Site Location: _____

Scale Site Authorized Representative/Phone #: _____

Purchaser: _____

Timber Sale Name:

BLM Contract No.: _ORM0_____

BLM Authorized Officer(s) and Check Scaler(s)/Phone #s:_____

_____

This Agreement covers the conditions necessary for an authorized yard scaling site. Unless otherwise agreed in writing by the Purchaser, Scale Site Owner, and the Bureau of Land Management (BLM), the following yard scaling requirements will be met and maintained. The BLM will periodically inspect the yard scaling facility for compliance. Approval of this Agreement does not automatically authorize scaling of BLM logs at this site. This Agreement, upon approval, will become part of the Approved Logging Plan as specified in Sec. 41 (___) of the contract. This Agreement will be reviewed annually.

1. **Scaler's Office**

a. Suitable office space for the scaler's exclusive use shall be provided by the Scale Site Owner immediately adjacent to the scaling site. The office shall be equipped with adequate lights, heat, and a desk.

b. Sanitary facilities, such as a chemical toilet, shall be provided by Scale Site Owner. The facility shall be readily available to the designated scaling area.

2. **Safety**

a. Sufficient yard space shall be provided to prevent crowded, unsafe working conditions in and around the scaling area. The face of cold decks, truck and machine traffic, adjacent to scaling area, shall be no closer than forty (40) feet.

b. Scaling bays shall allow a minimum safety margin of ten (10) feet between log ends of adjacent scaling bays.

c. Log stackers shall not work in scaling bays that are currently being scaled by the scaler or check scaler. Log stackers shall keep a safe distance from scaler(s) when operating in adjacent scaling bays.

d. Safe and suitable all-weather parking adjacent to the scaling area shall be provided for scalers and check scalers use.

3. **Log Accountability**

a. It is the intent, by all parties to this Agreement, that all loads will be scaled the same day as delivered. Nevertheless, at least two loads will remain in place in the designated scaling bays until replaced by other loads or until released by a BLM Authorized officer.

b. Unscaled loads of BLM logs shall only be spread for scaling within a designated scaling area as agreed upon by the BLM Authorized Officer.

c. Each load requiring scaling shall be identified by its respective Load Receipt until scaled and removed from the scaling bay. Logs arriving during off hours shall be left on the truck, in which case the truck must remain in the yard overnight. Alternatively, the logs may be off loaded to the designated area, and shall remain in place until released by the BLM scaler or contract scaler. The outermost logs of the load must be identified with painted arrows on the face of the logs pointing into the load, and a strip must be painted over the entire load from one end log to the other end log.

d. In other than single load bays, the outermost logs of the load must be identified with painted arrows on the face of the logs pointing into the load, to eliminate the possibility of logs being credited to an adjacent load.

e. There shall be no bucking of BLM logs in the log yard prior to scaling. Logs to be rebucked after scaling will be removed to a specified location away from the designated scaling area prior to bucking. The bucking area will be designated on the yard map.

f. If remanufactured pieces are transported out of the yard to other destinations, the Scale Site Owner will register and use a BLM approved catch brand or the original brand on all remanufactured log ends, and apply yellow paint in accordance with the Timber Sale Contract.

g. In the event a BLM load is unaccompanied by a Load Receipt, or unidentified by log brand, the scaler shall scale the load and retain the original and all copies of the scale ticket, and immediately notify the BLM Authorized Officer. The load shall remain in place.

4. **Operations**

a. The Scale Site Owner has designated above a Scale Site Authorized Representative to receive notices in regard to performance under this Agreement and to take related action.

b. The Scale Site Owner shall provide a diagram (yard map) that shows yard layout, traffic flows, location of cold decks, designated scaling bays, loading and unloading areas, scaler's office, bucking area, and the designated parking area for the BLM vehicle. The yard map shall be attached to this Agreement.

c. Logs shall be unloaded by a mechanical stacker, and spread in the scaling bay in a manner allowing the scaler to see defect indicators and measure individual logs safely and accurately. Logs shall not be bunched or jack-strawed in the bays.

d. There shall be no permanent decking of logs within designated scaling area so as to infringe upon required space for scaling. If logs are pushed (decked) to the rear of scaling bay(s), they shall be removed from bays before the next work day. Subsequent loads spread for scaling shall be placed a safe distance from

the temporary deck.

e. Scaling under artificial lights will not be accepted.

f. BLM Authorized Officers and check scalers, whose duties include timber accountability and log export surveillance, are to be provided access to the yard to conduct inspections of the BLM timber at any time. Any visit to the yard scaling site by additional U.S. Government employees shall first be arranged through the Scale Site Authorized Representative.

g. Attempts to alter or influence a scaler's judgment and/or decision by persons other than the scaler's immediate supervisor may result in termination of this Agreement.

5. **Maintenance**

a. Scaling area shall be surfaced and treated with oil or water for the satisfactory control of dust and drainage for the control of mud.

b. Bark shall not be allowed to accumulate in the designated scaling area to the extent that accurate diameter measurement and/or scaler safety is jeopardized.

6. **Miscellaneous Clauses**

a. The BLM reserves the right to disapprove this yard scaling site at any time the above conditions are not being met. Loads shall then be scaled at other approved sites listed on the Scaling Authorization (Form OR 5300-18).

IN WITNESS WHEREOF, the parties hereto have signed this Agreement this _____ day of _____ 20_____.

SCALE SITE OWNER:_____

BY:_____

TITLE:_____

TIMBER SALE PURCHASER:_____

BY:_____

TITLE:_____

BLM

BY:_____

TITLE:___Contracting Officer_____

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

SECTION 24 TIMBER SALE
TRACT NO. ORM05-TS-2027.0002

PROJECT LOCATION

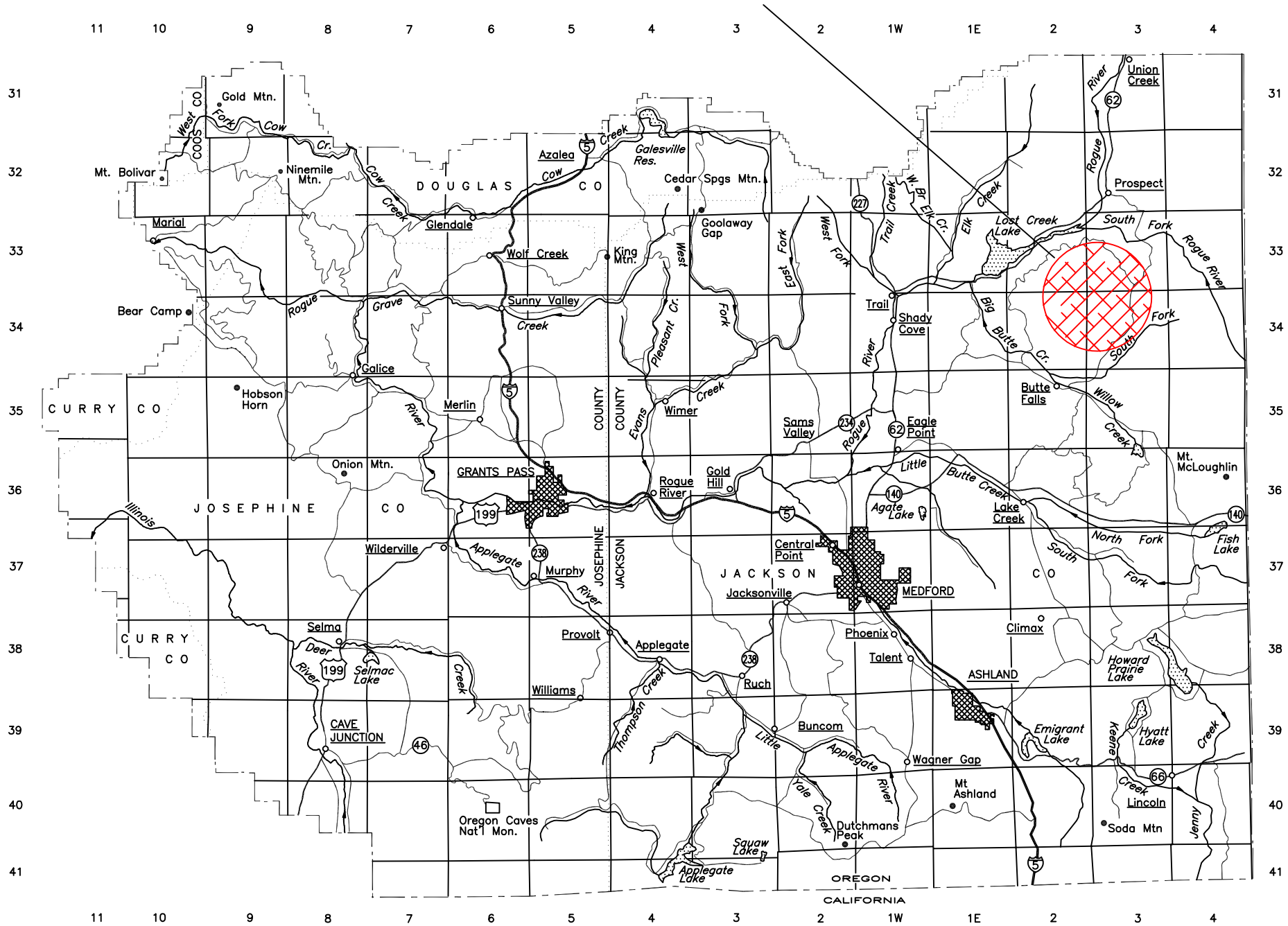


EXHIBIT C-1
SHEET 1 OF 1

Exhibit No.	Description
C-1	TITLE SHEET
C-2	MAPS
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

ALWAYS
THINK
SAFETY

REV. NO.	DESCRIPTION	DATE	APPROV.

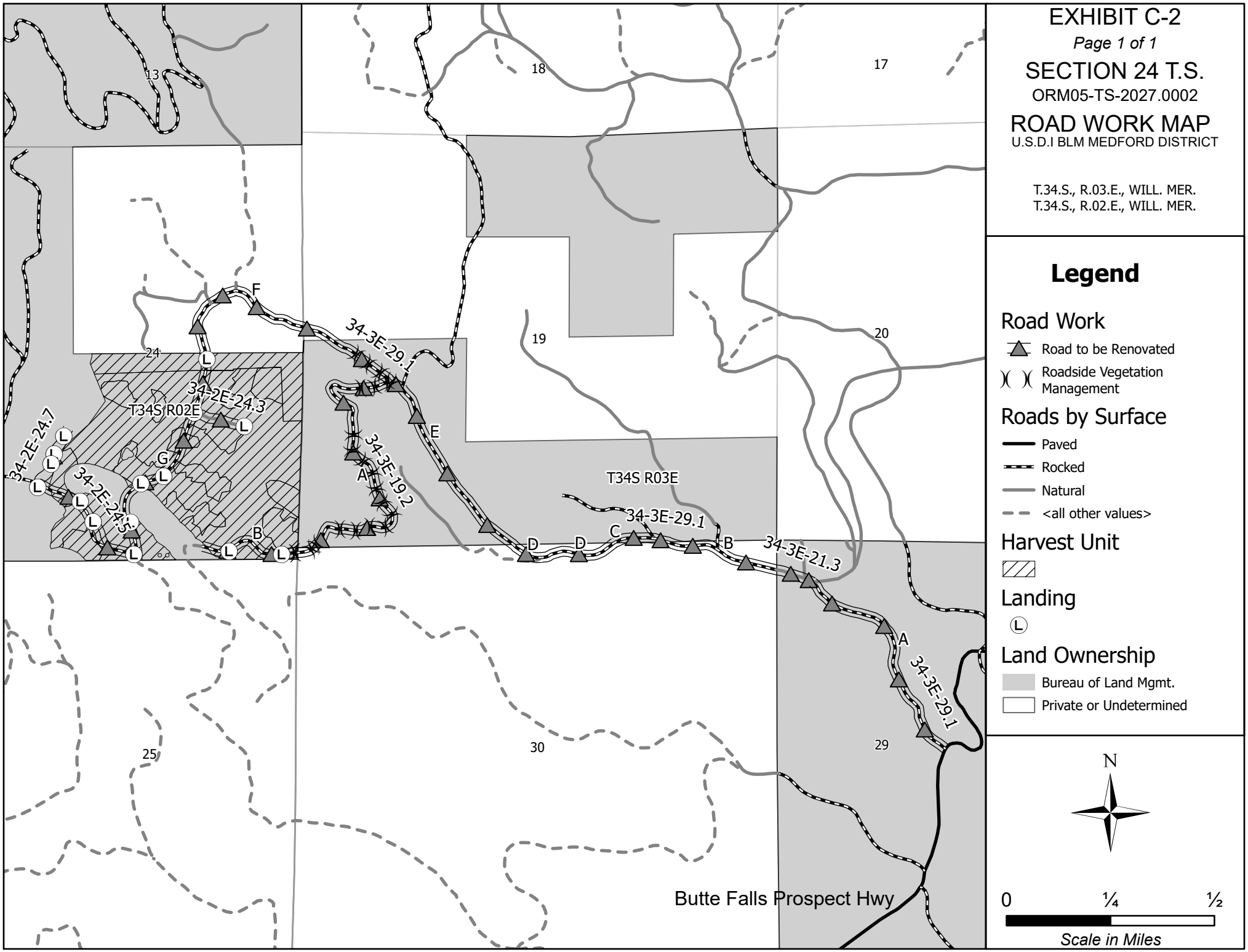
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
MEDFORD DISTRICT – MEDFORD, OREGON

SECTION 24 TITLE SHEET

DESIGNED _____
REVIEWED _____
APPROVED _____

DRAWN FEP	SCALE AS SHOWN
AUGUST 2026	SHEET 1 OF 1
DRAWING NO.	ORM05-TS-2027.0002-C1

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EXHIBIT C-2
Page 1 of 1
SECTION 24 T.S.
ORM05-TS-2027.0002
ROAD WORK MAP
U.S.D.I BLM MEDFORD DISTRICT
T.34.S., R.03.E., WILL. MER.
T.34.S., R.02.E., WILL. MER.
Legend
Road Work
Road to be Renovated
Roadside Vegetation Management
Roads by Surface
Paved
Rocked
Natural
<all other values>
Harvest Unit
Landing
Land Ownership
Bureau of Land Mgmt.
Private or Undetermined
N
0
¼
½
Scale in Miles
13
18
17
19
20
24
25
30
29
T34S R02E
T34S R03E
34-2E-24.3
34-2E-24.7
34-2E-24.5
34-3E-29.1
34-3E-19.2
34-3E-21.3
Butte Falls Prospect Hwy

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EXHIBIT C-3
SHEET 1 OF 1
SECTION 24 TIMBER SALE

ROAD NUMBER	FROM	TO	LENGTH **	CLEARING	GRUBBING	ROADSIDE VEGETATION MANAGEMENT	EXCAVATION (Includes slides)		CULVERT PIPE SEE WORK LIST FOR TYPE							ROAD RENOVATION	ROAD IMPROVEMENT	NEW CONSTRUCTION - PERMANENT	NEW CONSTRUCTION - TEMPORARY	CONSTRUCT ARMORED WATER DIPS ****	AGGREGATE***			RIP RAP	ROADSIDE BRUSHING MECHANICAL	ROADSIDE BRUSHING - CHIP	REMOVE BARRICADE	CONSTRUCT BARRICADE	CONSTRUCT WATER BARS	SOIL STABILIZATION
									SIZE																					
							ROCK	COMMON	18"	24"	30"	36"	42"	48"	18" FULL ROUND DOWNSPOUT															
																					4" MINUS SCREENED BASE GRADE A	1 1/2" MINUS CRUSHED ROCK GRADE C, C1	BLM STOCKPILE							
SPECIFICATION NO.				200	200	500	300	300	400	400	400	400	400	400	400	500	500	300	300	400	900	1200	1200	1200	2100	2100	500	500	1700	1800
ROAD NUMBER	MP/STA	MP/STA	MILE/STA	ACRE	ACRE	MILE	C.Y.	C.Y.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	MILE	MILE	STA	STA	EA	L.C.Y.	L.C.Y.	L.C.Y.	C.Y.	MILE	MILE	EA	EA	EA	ACRE
34-2E-24.03	0.00	0.14	0.14													0.14									0.14					
34-2E-24.05	0.00	0.33	0.33													0.33									0.33					
34-2E-24.07	0.00	0.16	0.16	0.39	0.39											0.16									0.16					
34-3E-19.02	0.00	1.05	1.05	0.33	0.08	0.46										1.05									1.05					0.10
34-3E-21.03	0.00	0.09	0.09													0.09									0.09					
34-3E-29.01	0.00	2.96	2.96	0.08	0.02	0.11										2.96									2.96					0.05
PAGE 1 TOTALS			4.73	0.41	0.10	0.57	###	####	###	###	##	##	##	##	##	4.73	####		####	#	##	####	###	#####	4.73	####	#	#	#	0.15

* *FOR INFORMATIONAL USE ONLY, QUANTITIES SHOWN ARE NOT PAY ITEMS.*

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***Indicates gradation

**Total length includes permanent and temporary roads to be constructed.

****Armored water dip aggregate quantities are calculated at 40 CY per AWD and are listed in aggregate column "4" minus grade A".
If road is surfaced with fine crushed rock, 20 CY of 1 1/2" minus crushed rock shall be placed on top of the 4" rock. Crushed Rock quantites are listed under aggregate column "1 1/2 minus crushed rock Grade C, C1". An AWD constructed on a natural surface road will not be surfaced with 20 CY of crushed rock surfacing.
Rock costs for splash pads are calculated under drainage.

DATE		APPROV.	

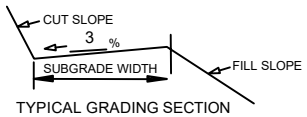
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT MEDFORD DISTRICT MEDFORD, OREGON

ESTIMATE OF QUANTITIES*

DRAWN:	FEP	SCALE: NONE
DATE:	AUGUST 2026	SHEET: 1 OF 1
DRAWING NO.		ORM05-TS-2027.0002-C3

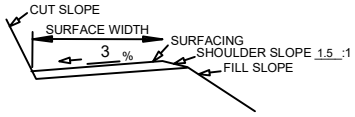
EXHIBIT C-4
Section 24 T.S.
Page 1 of 1

ROAD NUMBER	STATION OR MILE POST	TO STATION OR MILE POST	LENGTH MILE OR STATION	TYPICAL SECTION TYPE	ALLIGNMENT	ROAD WIDTH (1, 3)		GRADIENT		CLEARING WIDTH				SURFACING (4)								REMARKS
					MAXIMUM DEGREE OF CURVE	SUBGRADE	DITCH	MAXIMUM FAVORABLE	MAXIMUM ADVERSE	From C/L		EXISTING ROAD(S)		BASE COURSE				SURFACE COURSE				
										L	R	L	R	MINIMUM WIDTH	COMP. DEPTH	TYPE (2)	GRADING	MINIMUM WIDTH	COMP. DEPTH	TYPE (2)	GRADING	
34-2E-24.03	0.00	0.14	0.14	3		17	0															
34-2E-24.05	0.00	0.33	0.33	5		12	3															
34-2E-24.07	0.00	0.16	0.16	3		14	0					10	10									Overgrown road
34-3E-19.02	0.00	1.05	1.05	5		14	3															
34-3E-21.03	0.00	0.09	0.09	5		14	3															
34-3E-29.01	0.00	2.96	2.96	5		14	3															



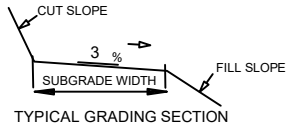
TYPICAL GRADING SECTION

TYPE 1



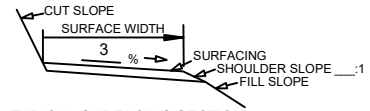
TYPICAL SURFACING SECTION

TYPE 2



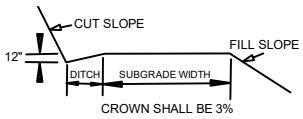
TYPICAL GRADING SECTION

TYPE 3



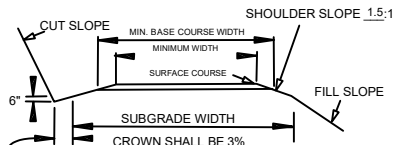
TYPICAL SURFACING SECTION

TYPE 4



TYPICAL GRADING SECTION

TYPE 5



TYPICAL SURFACING SECTION

TYPE 6

NOTES

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

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

FULL BENCH CONSTRUCTION IS REQUIRED ON SIDE SLOPES

2. SURFACING TYPE
A. PIT RUN ROCK MATERIAL.
B. GRID ROLLED ROCK MATERIAL
C. SCREENED ROCK MATERIAL.
D. CRUSHED ROCK MATERIAL.
E. BITUMINOUS SURFACE TREATMENT (BST).
F. NATURAL.

3. TURNOUTS
A. WIDTH 10FT. IN ADDITION TO SUBGRADE WIDTH,OR AS SHOWN ON THE PLANS.
B. LOCATED APPROXIMATELY AS SHOWN ON THE ROAD PLANS.

4. SURFACING
TURNOUTS, CURVE WIDENING AND ROAD APPROACH APRONS SHALL BE SURFACED.

5. CLEARING WIDTH
SEE SUBSECTION 200

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REV. NO.	DESCRIPTION	DATE	APPROV.

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

SPECIFICATION SHEET

DRAWN: FEP	SCALE NONE
DATE: AUGUST 2026	SHEET 1 OF 1
DRAWING NO.	ORM05-TS-2027.0002 C4

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
2100	Roadside Brushing
2600	Hot Mix Asphalt Concrete Paving

GENERAL – 100

101 - Prework Conference(s):

A prework conference will be held prior to the start of new construction, improvement, renovation, quarry development, surfacing, or mulching operations. The Purchaser shall request the conference at least 48 hours prior to the time it is to be held. The conference will be attended by the Purchaser and/or his representatives, subcontractors and/or his representatives and the Authorized Officer and/or his representatives.

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 subcontractors.

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

TIMBER SALE ROAD SPECIFICATIONS

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

ASTM - American Society for Testing and Materials.

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

BLM - Bureau of Land Management

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

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

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

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

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

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

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

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

TIMBER SALE ROAD SPECIFICATIONS

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

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

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

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

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

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

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

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

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

TIMBER SALE ROAD SPECIFICATIONS

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

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

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

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

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

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

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

TIMBER SALE ROAD SPECIFICATIONS

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 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:

AASHTO T 11	Quantity of rock finer than No. 200 sieve.
AASHTO T 27	Sieve analysis of fine and coarse aggregate using sieves with square openings; gradation.
AASHTO T 89	Liquid limit of material passing the No. 40 sieve. Water content at which the soil passes from a plastic to a liquid state.
AASHTO T 90	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.
AASHTO T 96	Resistance to abrasion of small size coarse aggregate by use of the Los Angeles machine.
AASHTO T 99	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.

TIMBER SALE ROAD SPECIFICATIONS

Method D - 6" mold, soil passing a 3/4 inch sieve. 56 blows/layer & 3 layers.

AASHTO T 119 Slump of hydraulic cement concrete.

AASHTO T 152 Air content of freshly mixed concrete.

AASHTO T 166 Specific Gravity of compacted Bituminous Mixtures.

AASHTO T 176 Shows relative portions of fine dust or claylike materials in soil or graded aggregate.

AASHTO T 180 (OSHD 106-71) moisture density relationship of soil same as AASHTO T 99 proctor but uses a 10-lb rammer & 18-in drop height.

AASHTO T 191 Sand Cone. 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.

AASHTO T 205 Rubber balloon. Density of soil in place. Use for compacted or firmly bonded soil.

AASHTO T 209 Maximum Specific Gravity of Bituminous Paving Mixtures.

AASHTO T 210 Durability of aggregates based on resistance to produce fines.

AASHTO T 224 Correction for coarse particles in the soil.

AASHTO T 238 Density of Soil and Soil-Aggregate in place by nuclear methods.

AASHTO T 248 Reducing field samples of aggregate to testing size by mechanical splitter, quartering, or miniature stockpile sampling.

ASTM D 4564 Determination of relative density of cohesionless soils.

DMSO (dimethyl sulfide) Determines volume of expanding clays in aggregates. Usually associated with marine basalts.

103 Compaction equipment shall meet the following requirements:

103a Padded Drum Tamping Rollers. 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 not less than 60 inches in width. The pads shall have a minimum height of 3 inches, and a face area of not less than 14 square inches. The weight at drum shall be no less than 8000 lb.

103b Sheepfoot Tamping rollers. 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 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 not 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 not 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 not 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 not less than 10 tons, or of the tandem type, 2-wheel or 3-wheel, weighing not 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 not 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 not less than 5 feet 6 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

TIMBER SALE ROAD SPECIFICATIONS

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 not less than 48 inches, the drum width not 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 not 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. Vibratory frequency shall be regulated in seeps 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.

TIMBER SALE ROAD SPECIFICATIONS

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.

201a This work shall consist of clearing, grubbing, removing and disposing of vegetation, debris, surface objects, and protruding obstructions from borrow pits, quarries, channel changes, stockpile sites, etc., in accordance with these specifications 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 top of the fill slope and 6 feet out from the toe of the fill slope.

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.

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 Subsections 202 and 202a or as shown on the plans or as staked on the ground.

203a Brush under 1 foot 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, 204b, 204c, 204d and 204e between the top of the cut slope and the toe of the fill slope. Undisturbed stumps, roots and other solid objects which will be a minimum of 3 feet below subgrades or slope surfaces or embankments are excluded.

204a Stumps including those overhanging cut banks, shall be removed within the required excavation limits.

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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. Stumps on the fill slope that would interfere with future grading and snow plowing operations shall be removed. Any holes left in the fill slope shall be filled with approved material.

204c On excavated areas, roots and embedded wood shall be removed to a depth not less than 6 inches below the subgrade.

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 not less than 1 foot below embankment subgrades or slope surfaces.

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

206 Clearing and grubbing debris shall be disposed of by burning in accordance with Subsection 207, and/or piling in accordance with Subsection 211 and at the following road locations:

Road No.	From M.P./Sta	To M.P./Sta	Total Miles	Activity Type	Disposal Method
34-3E-19.02	0.00	0.06	0.06	Rdside Veg. Mgmt	Pile and Burn
	0.26	0.64		Rdside Veg. Mgmt	Pile and Burn
34-3E-29.01	1.83	1.94	0.11	Rdside Veg. Mgmt	Pile and Burn

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206a Notwithstanding Subsections 204, 204a, and 204d 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 and complying with the requirements for burning operations as set forth under Subsections 207a and 207b of these specifications. 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 no 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 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.

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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, 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, 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 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, stumps, and cull logs resulting from road construction on non-Government property shall be loaded and hauled to

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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 accordance with 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.

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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.

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

304 Borrow shall consist of suitable material required for the construction of embankments or for other portions of the work; such material shall be obtained from sources 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.

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 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

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dimension shall be placed in successive layers not exceeding 2 feet in thickness. Individual rocks and boulders greater than 12 inches in diameter may be used to construct 12-foot embankment layers, provided they are carefully distributed, with interstices filled with fine material to form a dense and compact mass.

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.

306 - Layers of embankment, selected borrow, final subgrade and selected roadway excavation material as specified under Subsections 305a, 305b, 317 and 317a 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, 103f, 103g and 103i.

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 or fraction thereof.

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 6 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 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 not less than 1 foot and not 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.

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 Subsection 306.

313 In cut areas where solid rock is encountered at, or near subgrade, the rock shall be

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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.

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 for temporary roads and landings shall be accomplished by routing construction and hauling equipment over the full width of the roadbed. Compaction for permanent roads shall be as described in Subsection 306

319 Borrow pits shall be subject to the development, operation, and reclamation requirements set forth under Section 1600 of these specifications.

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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.

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.

323 In the construction of channel changes and 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 2 feet 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, downspouts, elbows and other erosion control devices 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. 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.

402a Where a fence needs to be opened to replace the culvert provisions shall be made to prevent cattle from passing through the opening.

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.

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, 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.

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

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

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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 sections shall be connected with "Hugger"-type, flange-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. “Hugger”-type bands shown on the Culvert Band Detail drawings.
Dimple bands shall not be accepted.

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.

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 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

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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 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 referred to as the Culvert Installation Detail Sheet.

412 Where ledge rock, boulders, soft, or spongy soils are encountered, they shall be excavated a minimum of 24 inches below the invert grade for a width of at least one pipe diameter or span on each side of the pipe and shall be backfilled with crushed rock material in accordance with Section 1200 gradation E-1.

413 Pipe culverts shall be bedded on a selected granular or crushed rock material in accordance with Section 1200 gradation E-1,or fine readily compactable soil material having a depth of not less than 6 inches as shown on plans. Foundation material shall be of uniform density throughout the length of the structure and shall be shaped to fit the pipe.

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 greater than or equal to 13 square feet 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 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 E-1, 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 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 the pipe, in layers not exceeding 6 inches in depth and 1 pipe diameter/span, or a minimum of 2 feet 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 2-foot cover of fill before heavy equipment is permitted to cross the drainage structures. Removal of the protection fill shall be as directed by the Authorized Officer.

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 grade culverts at the following locations: NOT APPLICABLE

424 Construction of splash pads conforming to lines, grades, dimensions and typical diagram shown on the plans, shall be required for culverts at the following locations: NOT APPLICABLE

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.

426 Culvert markers consisting of 2-inch by 1-inch by 2-foot treated wood posts shall be installed by the Purchaser at grade culverts 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 within three 3 working days of completion of the culvert replacement work for each road 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 in a manner that will avoid damage to adjacent property. Provide for downstream waterflow with no more that 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 and as shown on the plans.

501a This work shall include the removal and disposal of slides in accordance with these specifications.

502 The existing road surface shall be scarified to a depth of 6 inches where needed to eliminate potholes and surface irregularities then bladed and shaped to the lines, grades, dimensions, and typical cross sections shown on the plans.

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.

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.

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

504 Scarified material or existing road surfaces 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 103a, 103b, 103c, 103d, 103f, 103g and 103i.

504a Minimum compaction required shall be 1 hour of continuous rolling for each 3 stations of road 6 passes over each full-width layer, or fraction thereof, as measured along the centerline per layer of material.

504b A uniform density of not 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 not less than 95 percent of the maximum density as determined by AASHTO T 99, Method A, C, or D.

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 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 Existing and new drainage structures at the locations in the table below shall be replaced 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: NOT APPLICABLE

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 1 day prior to surfacing operations. The Purchaser shall give the Authorized Officer 3 days' notice prior to final inspection of the grading operations.

TIMBER SALE ROAD SPECIFICATIONS
WATERING - 600

601 This work shall consist of furnishing and applying water required for the 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.

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 location(s) indicated below:

Common Name	Willamette Meridian			Road No.	M.P.
	Section	T	R		
Jackass Creek	29	34S	03E	34-3E-29.03	0.01

Use of water sources are subject to applicable State water regulations. In the event that the required water is not available at the locations 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 sources specified under Subsection 604 for use of water sources 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.

TIMBER SALE ROAD SPECIFICATIONS

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 the sources 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
(AASHTOT 27)

Sieve	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 not more than 35 at 500 revolutions as determined by AASHTO T 96.

TIMBER SALE ROAD SPECIFICATIONS

904a Screened rock material shall show a durability value of not less than 35 as 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 103f, 103g and 103i. Minimum compaction shall be 6 passes over each full-width layer, or fraction thereof.

911 The Purchaser shall place in stockpile screened rock material sites as shown on the plans. Such material shall be used as shown on the plans and as directed by the Authorized Officer. Crushed sandstone material stockpiled shall be placed on the designates roads prior to termination of the timber sale contract.

TIMBER SALE ROAD SPECIFICATIONS

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 to the Purchaser.

TIMBER SALE ROAD SPECIFICATIONS
AGGREGATE SURFACE COURSE - 1200
CRUSHED ROCK MATERIAL

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

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 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 providing laboratory tests performed by BLM of furnished rock samples in accordance with Subsection 1220 indicate compliance with the specifications in this section.

1203 When crushed rock material is produced from gravel, not less than 65 percent by weight of the particles retained on the No. 4 sieve will have 2 manufactured fractured faces If necessary to meet the above requirements or to eliminate an excess of filler, the gravel shall be screened before crushing.

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

TIMBER SALE ROAD SPECIFICATIONS

TABLE 1204

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

GRADATION

	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 not more than 35 at 500 revolutions, as determined by AASHTO T 96.

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

1206a The crushed rock material shall show a loss of not more than 20 percent by

weight, when submerged in DMSO, dimethyl sulfoxide, for five days, according to Federal Highway Administration Region 10 Accelerated Weathering Test Procedure.

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

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

TABLE 1207a

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 shown on the plan 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 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 or landings and Subsection 900 for placing the screened rock on the roadbed or landing.

TIMBER SALE ROAD SPECIFICATIONS

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. 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 unless approved by the Authorized Officer.

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. Minimum compaction shall be 1 hour of continuous compacting for each 6 stations 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

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 the BLM stockpile listed below for placement on the roads in accordance with the requirements and details shown on the plans and Exhibit C-3. 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.

Stockpile No.	Sec.	T.	R.	Approx. Cu. Yds.	Grad.	Road No.
N/A	N/A	N/A	N/A	N/A	N/A	N/A

1216 The Purchaser shall place in stockpile 0 cubic yards of Gradation C-1 on table in Subsection 1204 crushed rock material at the quarry site 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

TIMBER SALE ROAD SPECIFICATIONS

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.

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, 1207a, 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.

TIMBER SALE ROAD SPECIFICATIONS

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 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 or material separation 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 silt fences shall meet the following

requirements:

TABLE 1306
Physical Requirements for 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 or 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.

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.

TIMBER SALE ROAD SPECIFICATIONS

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 < 50 percent elongation ASTM D 4632. The second values in a column apply to geotextiles that break at ≥ 50 percent elongation ASTM D 4632.
(2) Maximum average roll value.
(3) The minimum average tear strength for woven monofilament geotextile is 245 N.

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	

TIMBER SALE ROAD SPECIFICATIONS

(1) The first values in a column apply to geotextiles that break at < 50 percent elongation ASTM D 4632. The second values in a column apply to geotextiles that break at ≥ 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 1 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 < 50 percent elongation (ASTM D 4632). The second values in a column apply to geotextiles that break at ≥ 50 percent elongation (ASTM D 4632).
(2) Maximum average roll value.
(3) The minimum average tear strength for woven monofilament geotextile is 245 N.SLOPE PROTECTION - 1400

1401 This work shall consist of furnishing, hauling and placing stone materials for slope protection structures and rock blankets in accordance with these specifications and conforming to the lines, grades, dimensions, and typical cross-sections shown on the plans. Material not conforming to these specifications will be rejected and shall be removed from the slope protection structure at the purchaser's expense as directed by the Authorized Officer.

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

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specifications.

Volume/ Cubic Foot	*Average Dimension in inches*	*Approximate Weight in Pounds*
12	*27.5 x 27.5 x 27.5*	*2100*
6	*21.8 x 21.8 x 21.8*	*1050*
4	*19.1 x 19.1 x 19.1*	*700*
3	*17.3 x 17.3 x 17.3*	*525*
1	*12.0 x 12.0 x 12.0*	*175*
2/3	*10.5 x 12.0 x 12.0*	*120*
½	*9.5 x 9.5 x 9.5*	*88*
1/3	*8.3 x 8.3 x 8.3*	*60*
¼	*7.6 x 7.6 x 7.6*	*44*
1/6	*6.6 x 6.6 x 6.6*	*30*
1/8	*6.0 x 6.0 x 6.0*	*22*
1/100	*2.6 x 2.6 x 2.6*	*2*

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.

1405 Rip rap shall conform to the following gradations:

TIMBER SALE ROAD SPECIFICATIONS

TABLE 1405[1]

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

[1]Gradation includes spalls and rock fragments to provide a stable, dense mass.
[2]The 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.
[3]Rock mass is based on a specific gravity of 2.65 (165#/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 a maximum absorption of 4.2 percent as determined by AASHTO T 85.

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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 requirements of Section 1300 for material separation and geotextile material repair.

TIMBER SALE ROAD SPECIFICATIONS

QUARRY AND BORROW PIT DEVELOPMENT - 1600

1601 This work shall consist of quarry development 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 site located at:

Subdivision	Sec.	T.	R.
N/A	N/A	N/A	N/A

shall be developed and mined in strict accordance with these specifications and the mining and reclamation plan shown on the plans.

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 materials source 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 reclamation plans. Required road construction work, except surfacing, shall be

TIMBER SALE ROAD SPECIFICATIONS

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 plan. 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.

1608 Overburden or reject material which does not conform to the requirements of Subsections 900 and 1200 shall be stockpiled and used for 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 the quarry for a distance equal to one-half of the working face or a minimum of 20 feet, whichever is greater. Overburden shall be sloped no steeper than 1 to 1.

1610 Waste disposal sites shall be selected and prepared to minimize erosion and establish conditions conducive to vegetative growth. Disposal areas shall be seeded and mulched in accordance with the requirements set forth in Section 1800 of these specifications.

TIMBER SALE ROAD 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 Mining Safety and Health Administration (MSHA) 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 Floras Quarry ID No. 295. 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.

1613a The Purchaser shall submit a written blasting plan or modification of the plan to the Authorized Officer for the Floras Quarry, 7 working days prior to the start of drilling. **The plan shall include: a) cross section of the quarry removal area; b) plan view of delay pattern; c) cross section of a typical loaded hole; d) types of explosives; e) powder factor; f) burden spacing, hole diameter, depth of holes, and depth of subdrill; and g) 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.

1613c 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

TIMBER SALE ROAD SPECIFICATIONS

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.

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 or 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.

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) Construct waterbars and take other erosion control measures as directed by the Authorized Officer.
(c) Remove blockages from drainage systems, streams, and waterways, and restore streams and waterways to their original courses. Follow State of Oregon guidelines and requirements.
(d) Erect barricades on quarry access roads as directed by the Authorized Officer.
(e) Complete required site-reclamation measures within 14 days after final cessation of quarrying operations.
(f) Clear quarry benches and scale wall of loose or dislodged shot material and move to a designated location within the quarry.

TIMBER SALE ROAD SPECIFICATIONS

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 the dikes. dams, diversion channels, settling basins and other erosion control structures in accordance with the requirements and details shown on the plans or as directed by the Authorized Officer.

1703 This work shall consist of furnishing and installing sediment fences in accordance with these specifications and in reasonably close conformity with the lines and grades shown on the plans or 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 and the Geotextile requirement of Section 1300.

1705 The surface area of erodible earth material exposed at any one time by clearing 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, erosion control measures on all exposed excavation, borrow, and embankment areas.

1708 Newly constructed or graded native surface roads to be carried over the winter period, shall be blocked to vehicular traffic. They shall be winterized by installing water bars, seed and mulched and installing other drainage structures as needed and directed by the Authorized Officer.

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.

TIMBER SALE ROAD SPECIFICATIONS

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 sediment and check dams, catch basins and splash pad energy dissipators for pipe culverts 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 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.

TIMBER SALE ROAD SPECIFICATIONS
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 and as shown on the plans. This work is required for road acceptance under Section 18 of this contract.

1802 Soil stabilization work consisting of seeding and mulching shall be performed on existing native surface roads and designated locations where soil disturbance has occurred, such as culvert installations, in accordance with these specifications and as shown on the plans at the following locations:

Road No.		To Sta./M.P.	Total Acres
34-2E-24.03	0.00	0.14	0.28
34-2E-24.07	0.00	0.16	0.27

1802a Soil stabilization work consisting of seeding and mulching shall be performed on new road construction that is not rocked, landings, culvert installations, RVM stump removal, disturbed areas, waste disposal sites and specials areas 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

If soil stabilization of disturbed areas is not completed by the specified fall date, the Purchaser shall treat disturbed areas in accordance with Subsection 1708 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.

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 Subsection1808a shall be furnished by the Purchaser in the amounts specified under Subsection 1811 and applied in accordance with Subsection 18.

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 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 0.7 acres designated for treatment as shown on the plans and as specified under Subsections 1802 and 1806, a mixture of grass seed and mulch material at the following rate of application:

a. Two Stage:

Grass Seed	20-25 lbs/acre
Forb Seed	0.5-2 lbs/acre
Mulch	1,000-2,000 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 the area designated for treatment as shown on 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 and mulch materials shall be placed by the hydraulic method in accordance with the requirements set forth in Subsection 1815a or the dry method in accordance with the requirements set forth in Subsection 1815b.

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,

cultipaker 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.

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.

TIMBER SALE ROAD SPECIFICATIONS

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 seed and mulch when winds would drift the seed and mulch outside of the designated treatment area.

1823 Seed and mulch 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.

TIMBER SALE ROAD SPECIFICATIONS

CATTLE GUARDS AND BYPASS GATES - 1900

1901 This work shall consist of furnishing, hauling, installing, and 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 frame joints, and shall conform to current specifications of the American Welding Society for Welded Highway and Railroad Bridges.

TIMBER SALE ROAD SPECIFICATIONS

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.

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

2103 Vegetation cut manually or mechanically less than 8 inches in diameter when measured Diameter at 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 2 inches will be severed from the trunk.

2103a Vegetation shall be cut and removed from 6 horizontal feet beyond the outside shoulder break and 6 horizontal feet from the ditch centerline. The 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 greater than 8 inches (DBH) not removed by RVM activities shall be limbed, so that no limbs extend into the treated area or over the roadbed to a height of 14 feet above the running surface of the roadway, on cut and fill slopes, within the road prism-variable distance. Limbs shall be cut to within 1 inches of the trunk to produce a smooth vertical face. Removal of trees larger than 8 inches DBH for sight distance or safety may be directed by the Authorized Officer. Measurements are shown on the Roadside Brushing and Roadside Vegetation Management Details sheet, exhibit C 8

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, to within 1 inch to produce a smooth vertical face.

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

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.

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2109 Debris resulting from this operation shall be scattered downslope from the roadway or piled to burn. 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.

2111 Vegetation cut in the following locations shall be loaded and hauled to the designated disposal site indicated on the plans.

Road Number	From Sta./M.P.	To Sta./M.P.
N/A	N/A	N/A

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.

TIMBER SALE ROAD SPECIFICATIONS
HOT MIX ASPHALT CONCRETE PAVING – 2600

2601 This work shall consist of furnishing, applying and compacting Hot Mix Asphalt Concrete on prepared surfaces, in the depths, amounts and locations as shown on the plans.

2602 Submit 2 copies of the bituminous job mix formula to be used on this project 3 weeks prior to placement of paving. The Purchaser shall have written approval of the formula by the Authorized Officer prior to placement of pavement.

2603 Vehicular traffic, including heavy equipment, will not be permitted on the pavement until all rolling and compacting operations have been completed.

2604 Place bituminous mixture only when air temperature is above 45°F, on surfaces that do not have standing water, and when it is not raining.

2605 Asphalt paving shall conform to the Oregon Department of Transportation, Level III, ½" dense, PG 64-22 Asphalt Binder mix for use on roadways. Furnish aggregate that conform to the aggregate requirements for hot mix asphalt concrete by the Oregon Department of Transportation.

2606 Aggregate shall be tested by AASHTO T 11 and T 27. The aggregate selected for use in the work shall have a gradation within the limits designated in Table 2606.TABLE 2606

TOLERANCE GRADATION OF AGGREGATES
Total Percentage by Weight Passing Square Mesh Sieves
(AASHTO T 11 and AASHTO T 27)

Sieve Size	Percent
¾ inch	100
½ inch	90-100
No. 4	JMF +/- 5
No. 8	JMF +/- 4
No. 30	JMF +/- 4
No. 200	JMF +/- 2

JMF = Job Mix Formula

2607 Bituminous material shall meet the requirements of AASHTO M 320.

2608 Water shall be clean and free from deleterious materials.

2609 The asphalt spreader shall be capable of spreading hot bituminous mixtures without tearing, shoving, or gouging and produce a finished surface of the

specified grade and smoothness.

2610 The number, type and weight of rollers shall be sufficient to compact the mixture to the required density without detrimentally affecting the compacted material. All rollers shall be suitable for rolling hot-mix bituminous pavements and capable of being operated without turning on the mat and without loosening the surface being rolled. Rollers shall have suitable devices and apparatus to keep the rolling surfaces wet and prevent adherence of bituminous mixture.

2610a Vibratory rollers shall be especially designed for bituminous concrete compacting and may be used provided the rollers do not impair stability of the pavement structure and any underlying layers. Depressions in pavement surfaces resulting from the use of vibratory rollers are not acceptable. Rollers shall be self-propelled, single or dual vibrating drums, and steel drive wheels, as applicable; equipped with variable amplitude and separate controls for energy and propulsion.

2611 Make pavement cuts with parallel, straight lines, 1 foot wider than trench width on each side of trenches.

2612 Prior to laying the asphalt concrete pavement the Purchaser shall obtain written approval from the Authorized Officer by showing satisfactory test results of the crushed aggregate base course that has been tested and meets the requirements of the specifications.

2613 Prior to laying the asphalt concrete, remove unsuitable material from the underlying course.

2614 Place string lines to identify the edge of pavement. Establish lines parallel to the centerline of the area to be paved, and place string lines coinciding with the established lines for the spreading machine to follow. The number and location of the lines will be as approved by the Authorized Officer.

2615 Restore disturbed edges of existing bituminous pavements, matching existing edges.

2616 The thickness of the asphalt concrete pavement shall be as shown on the plans.

2617 Plants used for the preparation of bituminous mixtures shall conform to AASHTO M 156 and to Oregon Department of Transportation requirements.

2618 Transport bituminous material from the mixing plant to the paving site in trucks having tight, clean, smooth beds that have been coated with a minimum amount of concentrated solution of hydrated lime and water or other approved coating to prevent adhesion of the mixture to the truck bodies. Petroleum products will not be permitted for coating truck bodies. When the air temperature is less than 60°F

or if haul time is greater than 30 minutes, cover each load with canvas or other approved material of ample size to protect the mixture from the loss of heat.

2619 Compact each layer of Hot Mix Asphalt Concrete to a minimum density of 91 percent of the maximum specific gravity determined by AASHTO T 166 and T 209. Percent compaction will be determined from at least one production sample per day.

SECTION 24 TIMBER SALE
Road Renovation Work List

Renovation: 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 1215 (Gradation D-1). All aggregate conforming to Exhibit C-5, Section 900 (Gradation A) and 1200 (Gradation C-1) shall be from the designated rock quarry, Exhibit C-5, Section 1602. All turnout and truck turnaround widths are in addition to subgrade widths listed in Exhibit C-4.

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 206. 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, ground, cut 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

Road 34-2E-24.03 NAT

Summary of work to be completed

Brushing
Shaping
Seed/Mulch
Barricade Inst
Winterization
Final Maint

Mileposts	Remarks
0.00	Jct. 34-2E-29.01 Begin BRSH and RENO.
0.14	End BRSH and RENO.

Road 34-2E-24.05 ASC

Summary of work to be completed

Barricade removal
Brushing
Cross Drain Maint
Ditch Maint
Shaping
Final Maint

Mileposts	Remarks
0.00	Jct. 34-2E-29.01 Begin BRSH and RENO.
0.33	Jct. 34-2E-24.07 (right). End BRSH and RENO.

Road 34-2E-24.07 NAT

Summary of work to be completed

Brushing
Shaping
Seed/Mulch
Barricade Inst
Winterization
Final Maint

Mileposts	Remarks
0.00	Jct. 34-2E-24.05. Begin Clear and Grub, BRSH and RENO.
0.16	End Clear and Grub, BRSH and RENO.

Road 34-3E-19.02 ASC

Summary of work to be completed

RVM/ROW Cutting
Stump Removal
Brushing
Cross Drain Maint
Ditch Maint
Shaping
Final Maint

Mileposts	Remarks
0.00	Jct. 34-3E-29.01. Begin BRSH, RENO, and RVM.
0.06	End RVM.
0.26	Begin RVM.
0.64	End RVM.
1.05	End BRSH and RENO.

Road 34-3E-21.03 ASC

Summary of work to be completed

Brushing
Cross Drain Maint
Ditch Maint
Shaping
Final Maint

Mileposts	Remarks
0.56	Jct. 34-3E-29.01. Begin BRSH and RENO. **Mileposts are a continuation of the 34-3E-29.01 road.**
0.65	Jct. 34-3E-29.01 (straight). End BRSH, and RENO.

Road 34-3E-29.01 ASC

Summary of work to be completed

RVM/ROW Cutting
Stump Removal
Brushing
Cross Drain Maint
Ditch Maint
Shaping
Final Maint

Mileposts	Remarks
0.00	Jct. Butte Falls/Prospect Highway. Begin BRSH and RENO.
0.56	Jct. 34-3E-21.03 (right and left) main road becomes 21.03.
0.56 to 0.65	**SEE ROAD 34-3E-21.03.**
0.65	Property line. Road number returns to 34-3E-29.01.
0.89	Jct. 34-3E-30.00 (right).
0.96	Jct. 34-3E-19.01 (right).
1.25	Jct. un-numbered road (left).
1.79	Jct. 34-3E-19.03 (right).
1.83	Jct. 34-3E-19.02 (left). Begin RVM.
1.94	End RVM.
2.27	Jct. un-numbered road (right).
2.33	Jct. 34-2E-24.02 (right).
2.61	Jct. 34-2E-24.03 (left).
3.05	Jct. 34-2E-24.05 (right). End BRSH and RENO.

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.
   - The purchaser shall keep a log recording of the water taken from the listed water source. Any other water sources shall be approved by the Authorized Officer.
   - Water required under these specifications shall be obtained at the location indicated below:

Common Name	Willamette Meridian			Road No.	M.P.
	Section	T	R		
Jackass Creek	29	34S	03E	34-3E-29.03	0.01

6. PERMITS:
   - All permits required are the responsibility of the Purchaser.

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 upstream 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 of temporary spur routes 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 natural surfaced 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.

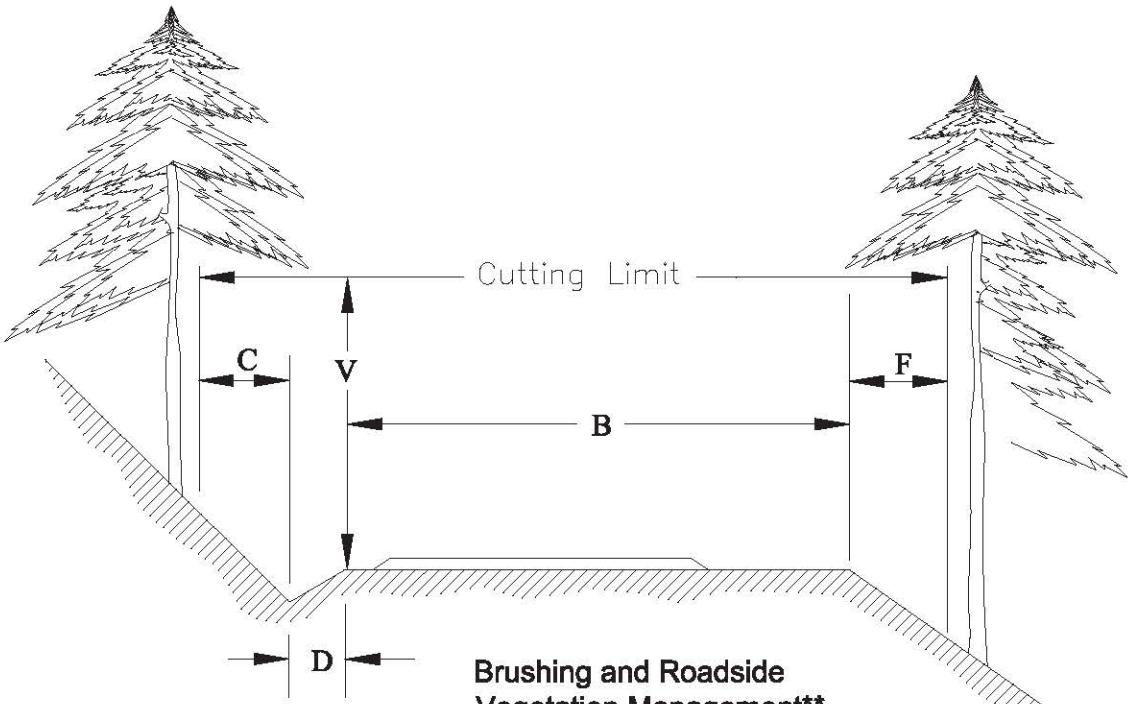
14. WET SEASON HAUL

- The Purchaser may wet season haul, with the Authorized Officer's approval on the following roads: 34-2E-24.05, 34-3E-21.03 C, and 34-3E-29.01 A-G. 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-24.03, 34-2E-24.07 and 34-3E-19.02 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 structures 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.

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EXHIBIT C8
SHEET 1 OF 1



Brushing and Roadside
Vegetation Management**

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).

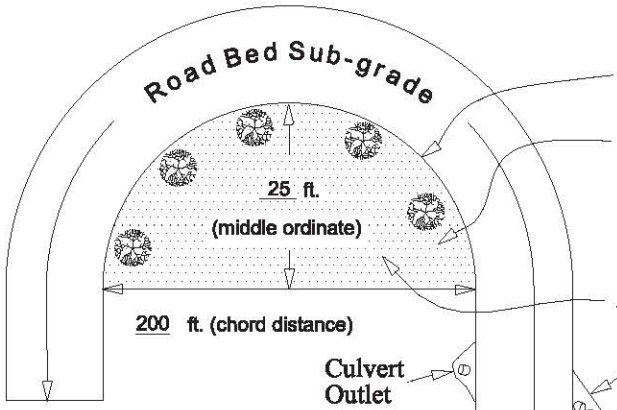
See Exhibit C-2 (Maps) and Exhibit C-6 (Road Renovation Worklist) for Roadside Vegetation Management locations.

* = 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.

Inside Corner



Inside shoulder

Thin, space and prune trees through curved sections of road for visibility as shown. Thinning and spacing of trees shall be a minimum (10) feet apart. A minimum (1/3) tree crown shall be maintained on any pruned tree.

Area to be cut

Culvert
Catchbasin

Clear 4 ft radius around all culvert inlets and outlets. Tie ribbon at outlet.

Bottom of
Ditch

Sight Distance Diagram
Road Side Brushing***

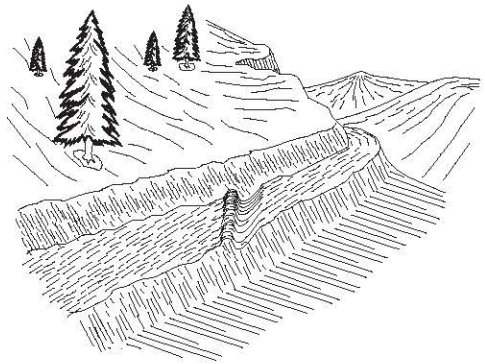
Typical Road Bed Subgrade widths

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

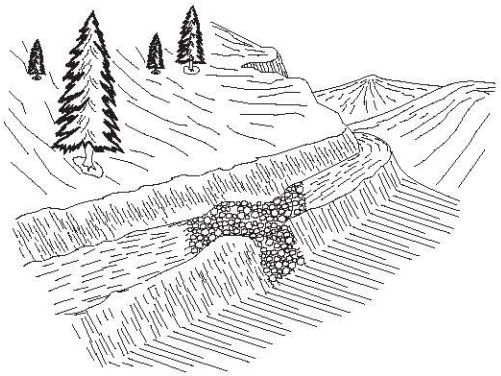
UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT MEDFORD DISTRICT – MEDFORD, OREGON	
ROADSIDE BRUSHING AND ROADSIDE VEGETATION MANAGEMENT DETAILS	
DRAWN JWR	SCALE NONE
DATE April 2022	SHEET 1 OF 1
DRAWING NO. ORM05-TS-2027.0002-C8	

EXHIBIT C–9.1
SHEET 1 OF 1

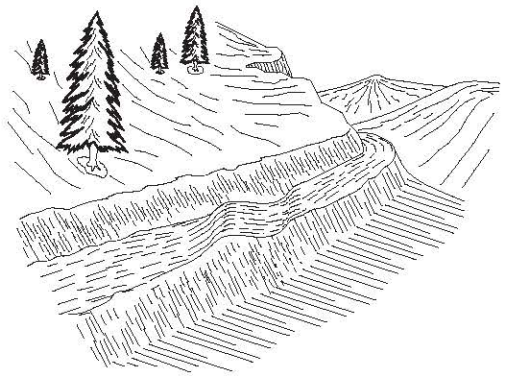
Section 24 T.S.



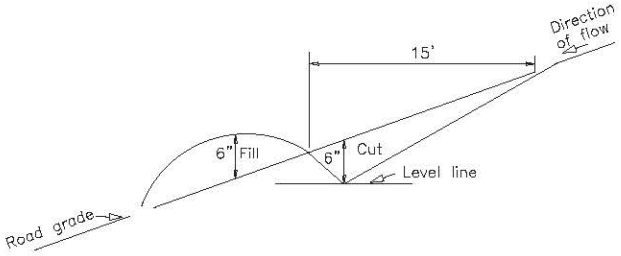
WATER_BAR



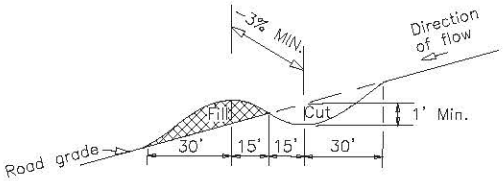
ARMORED WATER DIP



WATER DIP

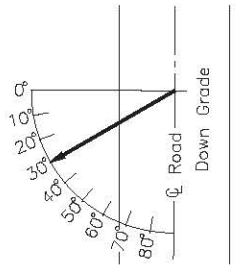


1. CROSS–DRAINS SHALL BE CONSTRUCTED AS SHOWN ABOVE.
2. EXACT LOCATION WILL BE FLAGGED BY THE AUTHORIZED OFFICER PRIOR TO CONSTRUCTION.
3. ALL CROSS DRAINS SHALL BE SKEWED 30 DEGREES.
4. THE CROSS–DRAINS INVERT SHALL BE SMOOTH AND FREE DRAINING.



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.

SKEW DIAGRAM



REV. NO.	DESCRIPTION	DATE	APPROV.

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
MEDFORD DISTRICT – MEDFORD, OREGON

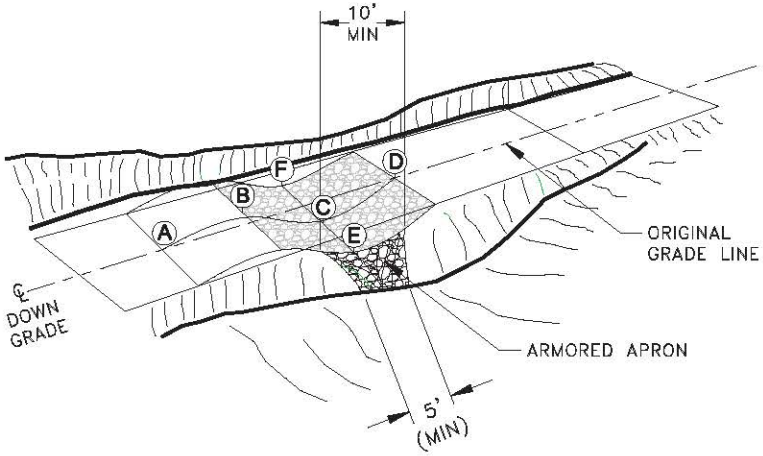
DRAINAGE & EROSION CONTROL DETAILS

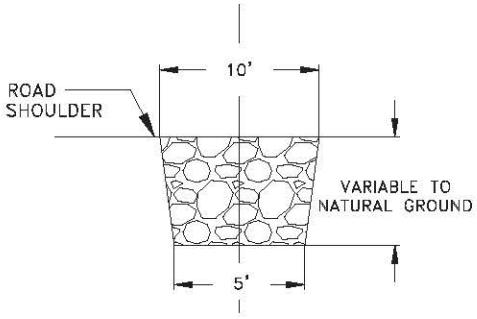
DRAWN JAB	SCALE NONE
DATE FEBRUARY 2023	SHEET 1 OF 1
DRAWING NO. ORM05–TS–2027.0002–C9.1	

EXHIBIT C–9.2

SHEET 1 OF 1

Section 24 T.S.



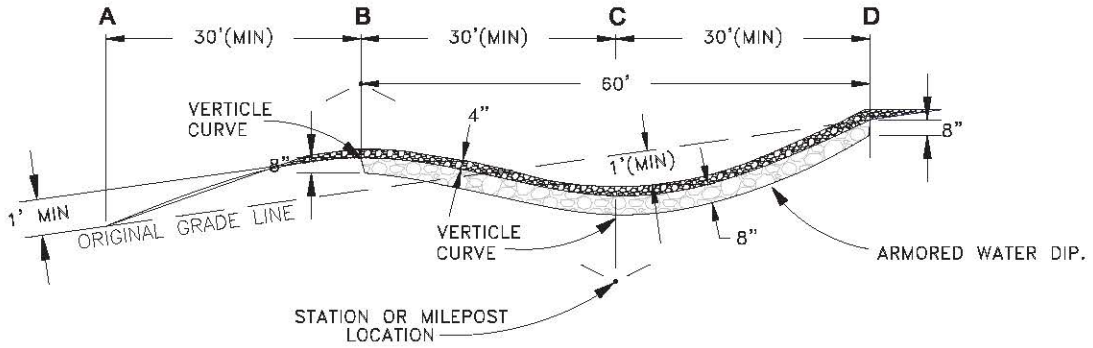


ARMORED APRON DIMENSIONS

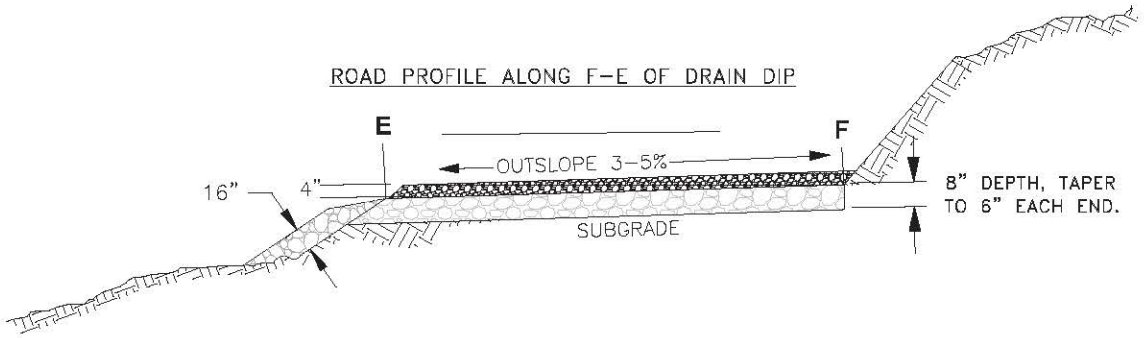
NOTES

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 SHOULDER IS 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.

ROAD PROFILE ALONG A–B–C–D OF DRAIN DIP



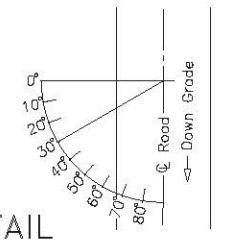
ROAD PROFILE ALONG F–E OF DRAIN DIP



LEGEND

- CUT/FILL SLOPES
- SUBGRADE ARMOR MATERIAL (4 INCH MINUS)
- FILL SLOPE ARMOR MATERIAL PIT RUN OR OTHER APPROVED MATERIAL.
- SURFACE COURSE AGGREGATE (1–1/2" minus)

SKEW DIAGRAM



DRAWINGS NOT TO SCALE

TYPICAL ARMORED WATER DIP CONSTRUCTION DETAIL

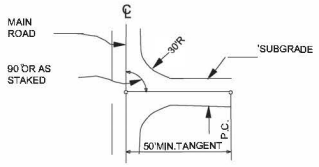
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
MEDFORD DISTRICT – MEDFORD, OREGON

TYPICAL ARMORED WATER DIP CONSTRUCTION

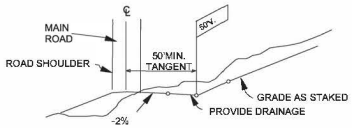
DRAWN BY JAB	SCALE NONE
DATE FEBRUARY 2023	SHEET 1 OF 1
DRAWING NO.	ORM05–TS–2027.0002–C9.2

EXHIBIT C-10
SHEET 1 OF 1
Section 24 T.S.

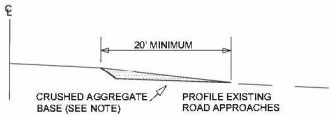
TYPICAL ROAD APPROACHES



PLAN

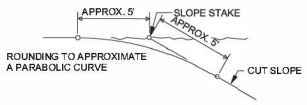


PROFILE

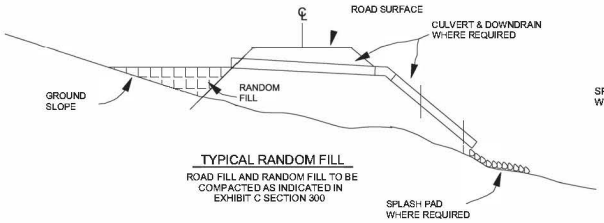


TYPICAL URFACING SECTION

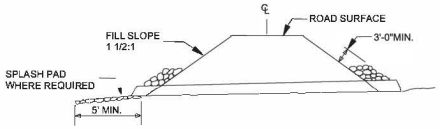
NOTES:
1. THE PROFILE OF EXISTING APPROACH ROADS SHALL BE TAPERED TO MEET THE SHOULDER LINE OF THE MAIN ROADWAY AND SHALL RECEIVE THE SAME WEARING SURFACE.
2. THE CRUSHED AGGREGATE BASE SHALL BE OF THE SAME GRADATION AS USED IN THE ADJACENT ROADBED.
3. APPROACHES SHALL BE FINISHED WITH THE SAME TREATMENT AS SHOWN FOR THE ADJACENT ROADBED.



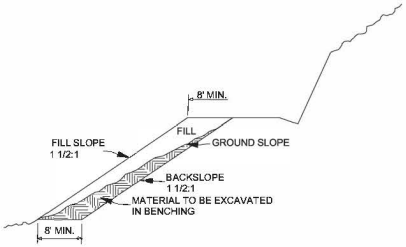
CUT SLOPE ROUNDING



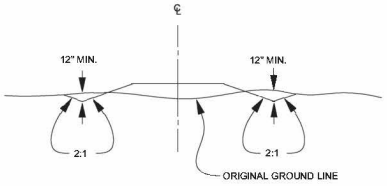
TYPICAL RANDOM FILL
ROAD FILL AND RANDOM FILL TO BE COMPACTED AS INDICATED IN EXHIBIT C SECTION 300



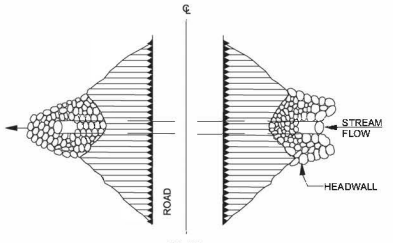
CROSS SECTION



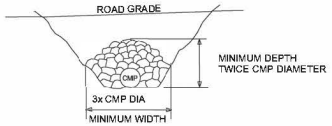
SPECIAL COMPACTION
TYPICAL BENCHING SECTION



TYPICAL ROAD SECTION
FOR TURNPIKE CONSTRUCTION



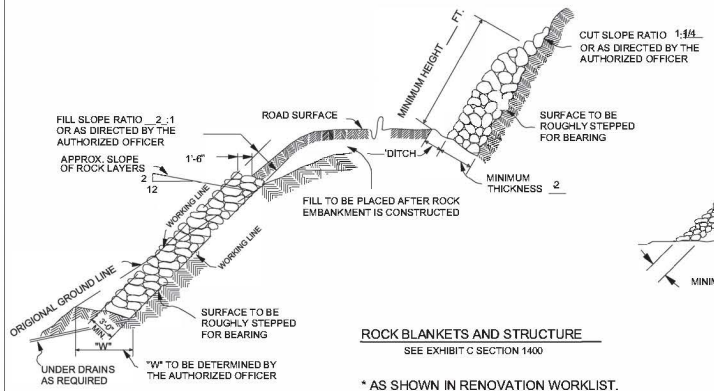
PLAN



ELEVATION

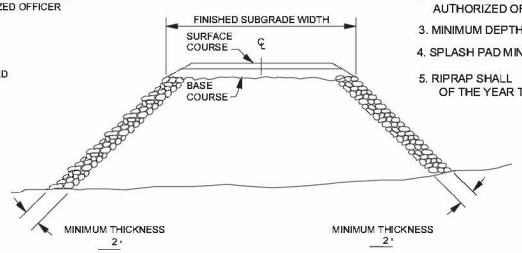
NOTES: RIPRAP AT ULVERTS

1. RIPRAP SHALL E PLACED IN SUCH A MANNER THAT IT WILL NOT DAMAGE THE CULVERT.
2. TRENCHING WILL E DONE AS REQUIRED BY THE AUTHORIZED OFFICER.
3. MINIMUM DEPTH OF SPLASH PADS SHALL E 1 FT
4. SPLASH PAD MINIMUM QUANTITY DESIGNATED IN WORK LIST.
5. RIPRAP SHALL E PLACED BEFORE OCTOBER 15TH OF THE YEAR THE CMP IS INSTALLED.



ROCK BLANKETS AND STRUCTURE
SEE EXHIBIT C SECTION 1400

* AS SHOWN IN RENOVATION WORKLIST.



SLOPE PROTECTION ROCK
SEE EXHIBIT C SECTION 1400

ALWAYS THINK SAFETY

REV.NO.	DESCRIPTION	DATE	APPROVED

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

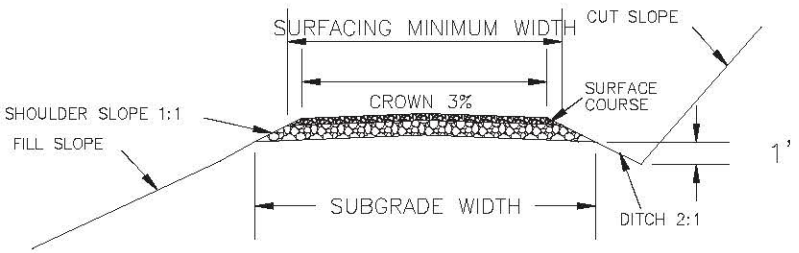
TYPICAL ROAD DATA

DRAWN JAB	SCALE NONE
ATE FEBRUARY 2023	SHEET 1 OF 1

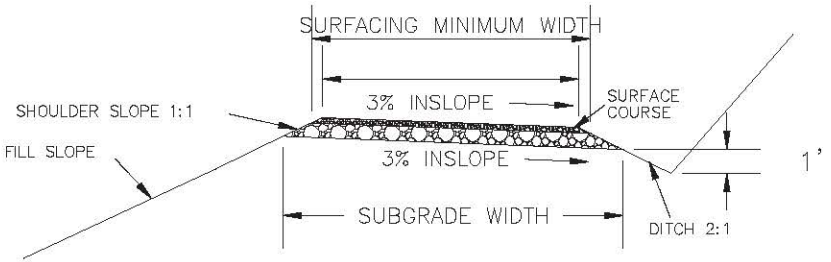
DRAWING NO. ORM05-TS-2027.0002 C10

EXHIBIT C-11
SHEET 1 OF 1
Section 24 T.S.

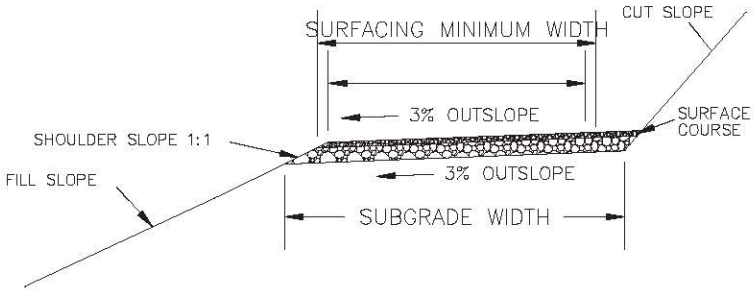
TYPICAL CROWNED SURFACE
EXISTING MIN. BASE COURSE WIDTH

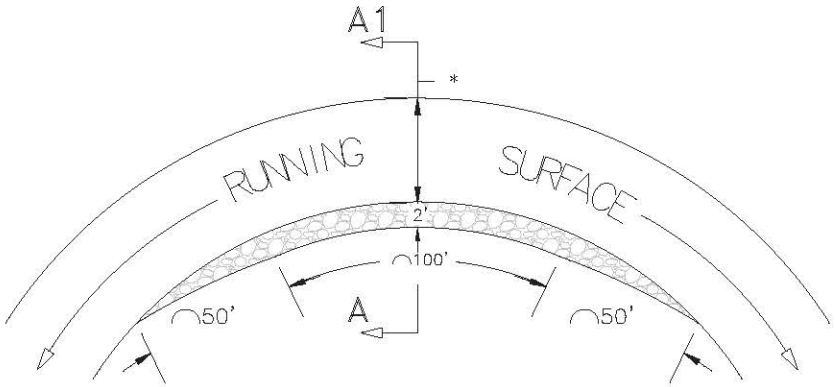


TYPICAL INSLOPED SURFACE
EXISTING MIN. BASE COURSE WIDTH

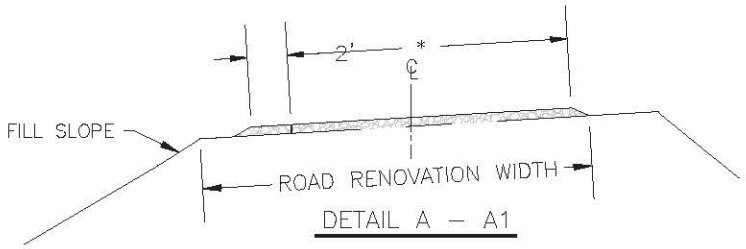


TYPICAL OUTSLOPED SURFACE
EXISTING MIN. BASE COURSE WIDTH





TYPICAL CURVE WIDENING DETAIL



DETAIL A – A1

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-2027.0002-C11

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UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Version: 8.0.0.34

Summary of All Roads and Projects Updated: 11/4/2022

T.S. Contract Name: Section 24 Tract No: ORM05-TS-2027.0002 Sale Date: 12/17/2027
Prepared by: Pardini Ph: 2471 Print Date: 9/23/2026 3:22:05 PM
Construction: 0.00 sta
Improve: 0.00 sta Renov: 249.74 sta Decom: 0.00 sta Temp: 0.00 sta

200 Clearing and Grubbing: 0.39 acres	$3,147.28
300 Excavation:	$0.00
Haul < 500 ft: 0 sta-yds	
Haul > 500 ft: 0 yd-mi	
400 Drainage:	$0.00
Culvert: 0.00 lf DownSpout: 0.00 lf	
PolyPipe: 0.00 lf	
500 Renovation:	$8,618.87
Blading 4.73 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:	$3,527.21
Mechanical Brushing: 7.36 acres	
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $6,764.60 Surf. $0.00	$6,764.60
Quarry Development:	$0.00
Total: 1,599 mbf @ $13.795/mbf =	$22,057.95

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

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Section 24 Sale Date: 11/19/2027
Road Number: 34-2E-24.03 Road Name:
Road Renovation: 0.14 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:	$139.02
Blading 0.14 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):0.20 acres	$95.85
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $103.89 Surf. $0.00	$103.89
Quarry Development:	$0.00
Total:	$338.76

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

Road Construction Worksheet

Road Number: 34-2E-24.03 Road Name:

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:

Subtotal: $0.00

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:
  Blading w/o Ditches: $568.71/mi x 0.14 mi = $79.62
  Compaction: $424.32/mi x 0.14 mi = $59.40

Subtotal: $139.02

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
  RoadSide Brushing Medium: $479.24/acre x 0.20 acres = $95.85

Subtotal: $95.85

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
  Construction - 1.54% of total Costs = $103.89
  surfacing = 0% $0.00

Subtotal: $103.89

Quarry Development:

Subtotal: $0.00

Total: $338.76

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Section 24 Sale Date: 11/19/2027
Road Number: 34-2E-24.05 Road Name:
Road Renovation: 0.33 mi 12 ft Subgrade 3 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:	$619.85
Blading 0.33 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):0.48 acres	$230.04
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $375.92 Surf. $0.00	$375.92
Quarry Development:	$0.00
Total:	$1,225.80

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:

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:

Subtotal: $0.00

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:
  Blading: $939.38/mi x 0.33 mi = $310.00
  Compaction: $424.32/mi x 0.33 mi = $140.03
  Clean Culverts: $514.62/mi x 0.33 mi = $169.82

Subtotal: $619.85

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
  RoadSide Brushing Medium: $479.24/acre x 0.48 acres = $230.04

Subtotal: $230.04

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 - 5.56% of total Costs = $375.92
  surfacing = 0% $0.00

Subtotal: $375.92

Quarry Development:

Subtotal: $0.00

Total: $1,225.80

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Section 24 Sale Date: 11/19/2027
Road Number: 34-2E-24.07 Road Name:
Road Renovation: 0.16 mi 14 ft Subgrade 0 ft ditch

200 Clearing and Grubbing: 0.39 acres	$1,176.76
300 Excavation:	$0.00
400 Drainage:	$0.00
Culvert: 0.00 lf	
DownSpout: 0.00 lf	
PolyPipe: 0.00 lf	
500 Renovation:	$158.88
Blading 0.16 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):0.23 acres	$110.23
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $639.54 Surf. $0.00	$639.54
Quarry Development:	$0.00
Total:	$2,085.41

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

Road Construction Worksheet

Road Number: 34-2E-24.07 Road Name:

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)
less than 20' (Avg Clearing Widths): Adjustment Factor (0.25)
Total Adjustment Factor:0.93 + 0 + 1.28 + 0.25 = 2.46
Base Cost/Acre: $1,226.56 x Adjustment Factor: 2.46 x Total Acres: 0.39 = $1,176.76

Subtotal: $1,176.76

Section 300 Excavation:

Subtotal: $0.00

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:
Blading w/o Ditches: $568.71/mi x 0.16 mi = $90.99
Compaction: $424.32/mi x 0.16 mi = $67.89

Subtotal: $158.88

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
RoadSide Brushing Medium: $479.24/acre x 0.23 acres = $110.23

Subtotal: $110.23

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 - 9.45% of total Costs = $639.54
surfacing = 0% $0.00

Subtotal: $639.54

Quarry Development:

Subtotal:	$0.00
Total:	$2,085.41

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Section 24 Sale Date: 11/19/2027
Road Number: 34-3E-19.02 Road Name:
Road Renovation: 1.05 mi 14 ft Subgrade 3 ft ditch

200 Clearing and Grubbing: 0.00 acres	$1,579.06
300 Excavation:	$0.00
400 Drainage:	$0.00
Culvert: 0.00 lf	
DownSpout: 0.00 lf	
PolyPipe: 0.00 lf	
500 Renovation:	$1,972.24
Blading 1.05 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):1.53 acres	$733.24
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $1,895.15 Surf. $0.00	$1,895.15
Quarry Development:	$0.00
Total:	$6,179.68

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

Road Construction Worksheet

Road Number: 34-3E-19.02 Road Name:

Section 200 Clearing and Grubbing:
  RVM
   RVM Clearing 6' Mile 0.46 Mile x $2,191.20/Mile = $1,007.95
   RVM Grubbing 3' Mile 0.23 Mile x $2,078.85/Mile = $478.14
   Seed and Mulch 0.1 Acre x $929.70/Acre = $92.97

Subtotal: $1,579.06

Section 300 Excavation:

Subtotal: $0.00

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:
  Blading: $939.38/mi x 1.05 mi = $986.35
  Compaction: $424.32/mi x 1.05 mi = $445.54
  Clean Culverts: $514.62/mi x 1.05 mi = $540.35

Subtotal: $1,972.24

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
  RoadSide Brushing Medium: $479.24/acre x 1.53 acres = $733.24

Subtotal: $733.24

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 - 28.02% of total Costs = $1,895.15
  surfacing = 0% $0.00

Subtotal: $1,895.15

Road Number: 34-3E-19.02 Continued

Quarry Development:

Subtotal:	$0.00
Total:	$6,179.68

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Section 24 Sale Date: 11/19/2027
Road Number: 34-3E-21.03 Road Name:
Road Renovation: 0.09 mi 14 ft Subgrade 3 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:	$169.05
Blading 0.09 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):0.13 acres	$62.30
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $102.33 Surf. $0.00	$102.33
Quarry Development:	$0.00
Total:	$333.68

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

Road Construction Worksheet

Road Number: 34-3E-21.03 Road Name:

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:

Subtotal: $0.00

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:
  Blading: $939.38/mi x 0.09 mi = $84.54
  Compaction: $424.32/mi x 0.09 mi = $38.19
  Clean Culverts: $514.62/mi x 0.09 mi = $46.32

Subtotal: $169.05

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
  RoadSide Brushing Medium: $479.24/acre x 0.13 acres = $62.30

Subtotal: $62.30

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
  Construction - 1.51% of total Costs = $102.33
  surfacing = 0% $0.00

Subtotal: $102.33

Quarry Development:

Subtotal: $0.00

Total: $333.68

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Section 24 Sale Date: 11/19/2027
Road Number: 34-3E-29.01 Road Name:
Road Renovation: 2.96 mi 14 ft Subgrade 3 ft ditch

200 Clearing and Grubbing: 0.00 acres	$391.46
300 Excavation:	$0.00
400 Drainage:	$0.00
Culvert: 0.00 lf	
DownSpout: 0.00 lf	
PolyPipe: 0.00 lf	
500 Renovation:	$5,559.83
Blading 2.96 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):4.79 acres	$2,295.56
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $3,647.77 Surf. $0.00	$3,647.77
Quarry Development:	$0.00
Total:	$11,894.62

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

Road Construction Worksheet

Road Number: 34-3E-29.01 Road Name:

Section 200 Clearing and Grubbing:
  RVM
   RVM Clearing 6' Mile 0.11 Mile x $2,191.20/Mile = $241.03
   RVM Grubbing 3' Mile 0.05 Mile x $2,078.85/Mile = $103.94
   Seed and Mulch 0.05 Acre x $929.70/Acre = $46.49

Subtotal: $391.46

Section 300 Excavation:

Subtotal: $0.00

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:
  Blading: $939.38/mi x 2.96 mi = $2,780.56
  Compaction: $424.32/mi x 2.96 mi = $1,255.99
  Clean Culverts: $514.62/mi x 2.96 mi = $1,523.28

Subtotal: $5,559.83

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
  RoadSide Brushing Medium: $479.24/acre x 4.79 acres = $2,295.56

Subtotal: $2,295.56

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 - 53.92% of total Costs = $3,647.77
  surfacing = 0% $0.00

Subtotal: $3,647.77

Road Number: 34-3E-29.01 Continued

Quarry Development:

Subtotal:	$0.00
Total:	$11,894.62

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Mobilization Costs - Construction and Surfacing

T.S. Contract Name: Section 24 Sale Date: 11/19/2027

Average Mobilization distance = 25 miles Factor = 0.63

Mobilization: Construction

Graders-all:	1 ea x (0.63 x $558.00/ea +	25 mi x $18.75/mi)	= $820.29
Rollers & Comp:	1 ea x (0.63 x $558.00/ea +	25 mi x $28.29/mi)	= $1,058.79
Excavators (Lg):	1 ea x (0.63 x $1208.00/ea +	25 mi x $33.94/mi)	= $1,609.54
Tractors <= D7:	1 ea x (0.63 x $883.00/ea +	25 mi x $49.56/mi)	= $1,795.29
Water Truck:	1 ea x (0.63 x $138.00/ea +	25 mi x $5.75/mi)	= $230.69
Equipment Washing:	5 ea x ($250.00) /ea		= $1,250.00

Subtotal: $6,764.60

Mobilization: Surfacing

Subtotal: $0.00

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Summary of Construction Quantities

T.S. Contract Name: Section 24 Sale Date: 11/19/2027

Road Number	Const	Improv	Renov	Decomm	Temp
34-2E-24.03			7.39		
34-2E-24.05			17.42		
34-2E-24.07			8.45		
34-3E-19.02			55.44		
34-3E-21.03			4.75		
34-3E-29.01			156.29		
Total Sta:			249.74		

200 Clearing and Grubbing	Clearing acres
34-2E-24.03	0.0
34-2E-24.05	0.0
34-2E-24.07	0.4
34-3E-19.02	0.0
34-3E-21.03	0.0
34-3E-29.01	0.0
Totals:	0.39

RVM 34-3E-19.02
- RVM Clearing 6' Mile . . . . . 0.46 Mile
- RVM Grubbing 3' Mile . . . . . 0.23 Mile
- Seed and Mulch . . . . . 0.1 Acre

RVM 34-3E-29.01
- RVM Clearing 6' Mile . . . . . 0.11 Mile
- RVM Grubbing 3' Mile . . . . . 0.05 Mile
- Seed and Mulch . . . . . 0.05 Acre

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

400 Drainage

Road Number	CMP Culvert	Polypipes	Downspouts
Total Drainage:			

Culvert Qty	Totals: Aluminized	Galvanized	No Quantities Poly Pipe
12 inch	0 lf	0 lf	
18 inch	0 lf	0 lf	0 lf
24 inch	0 lf	0 lf	0 lf
30 inch	0 lf	0 lf	0 lf
36 inch	0 lf	0 lf	0 lf
42 inch	0 lf	0 lf	
48 inch	0 lf	0 lf	

Downspout Qty	Half Round	Full (poly)	Full (galv)

Continuation of Construction Quantities

18 inch	0 lf	0 lf	0 lf
21 inch	0 lf		
24 inch	0 lf	0 lf	0 lf
30 inch			0 lf

500 Renovation	Blade Miles	Slide cy
34-2E-24.03	0.14	0
34-2E-24.05	0.33	0
34-2E-24.07	0.16	0
34-3E-19.02	1.05	0
34-3E-21.03	0.09	0
34-3E-29.01	2.96	0
Totals:	4.73	0

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: SPOT ROCK

Commercial	Roadway	Turnouts	Other	
Totals:	0	0	0	0

1300 Geotextiles

Totals: No Quantities

1400 Slope Protection

Totals:	0 cy

Totals:	0

1800 Soil stabilization - acres	Dry W/O Mulch	Dry/with Mulch	Hydro Mulch
Totals:	0.00	0.00	0.00

1900 Cattleguards

Totals: No Quantities

2100 RoadSide Brushing	acres
34-2E-24.03 - Mechanical Brushing	0.2
34-2E-24.05 - Mechanical Brushing	0.5
34-2E-24.07 - Mechanical Brushing	0.2
34-3E-19.02 - Mechanical Brushing	1.5
34-3E-21.03 - Mechanical Brushing	0.1
34-3E-29.01 - Mechanical Brushing	4.8
Totals:	7.36

Continuation of Construction Quantities

2300 Engineering		stations
	Totals:	0.00
2400 Minor Concrete		
	Totals:	No Quantities
2500 Gabions		
	Totals:	No Quantities
8000 Miscellaneous		
	Totals:	No Quantities

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

SECTION 24 TIMBER SALE
TRACT NO. ORM05-TS-2027.0002

PROJECT LOCATION

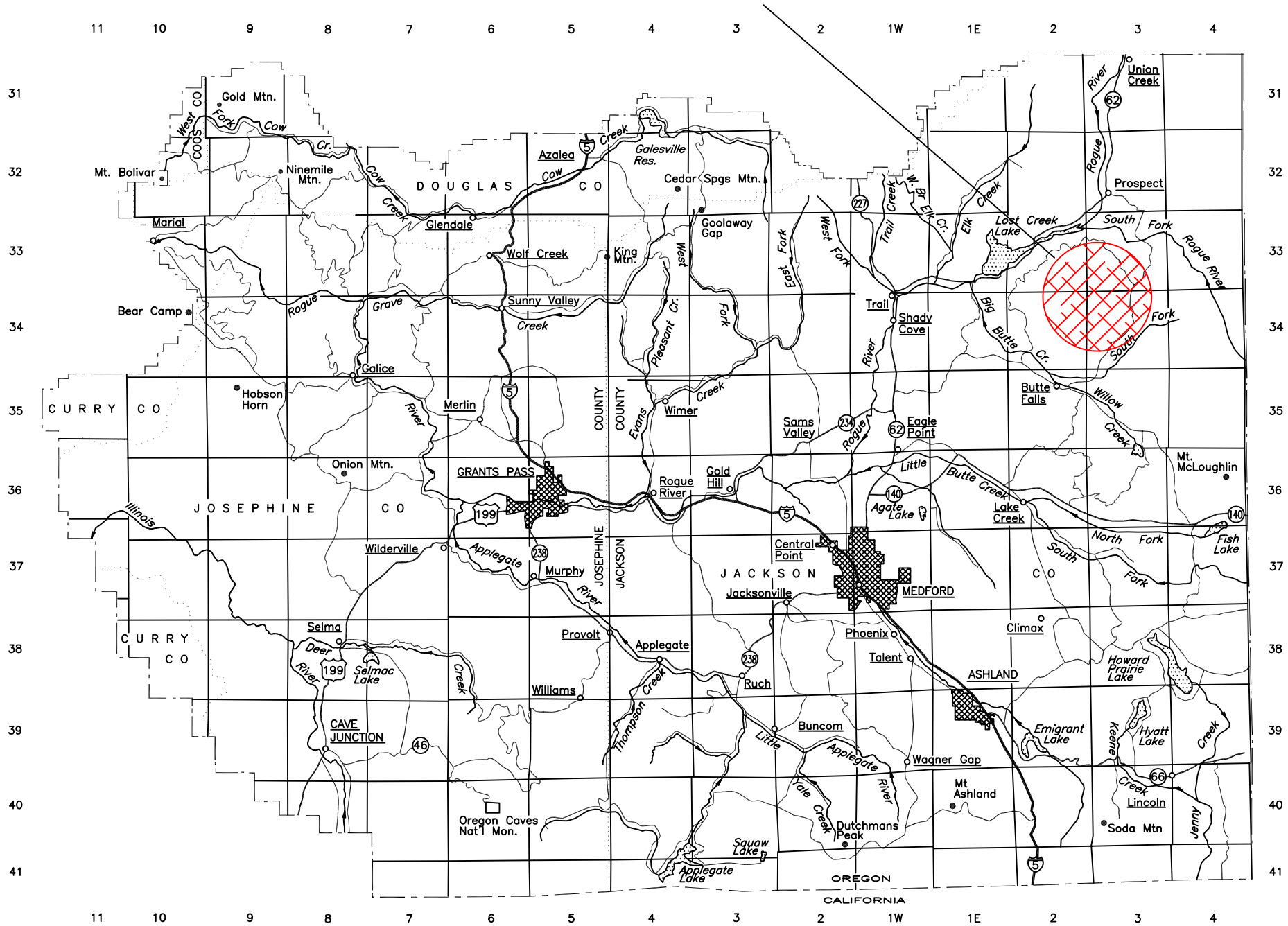


EXHIBIT C-1
SHEET 1 OF 1

Exhibit No.	Description
C-1	TITLE SHEET
C-2	MAPS
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

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REV. NO.	DESCRIPTION	DATE	APPROV.

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
MEDFORD DISTRICT – MEDFORD, OREGON

SECTION 24 TITLE SHEET

DESIGNED _____
REVIEWED _____
APPROVED _____

DRAWN FEP	SCALE AS SHOWN
AUGUST 2026	SHEET 1 OF 1
DRAWING NO.	ORM05-TS-2027.0002-C1

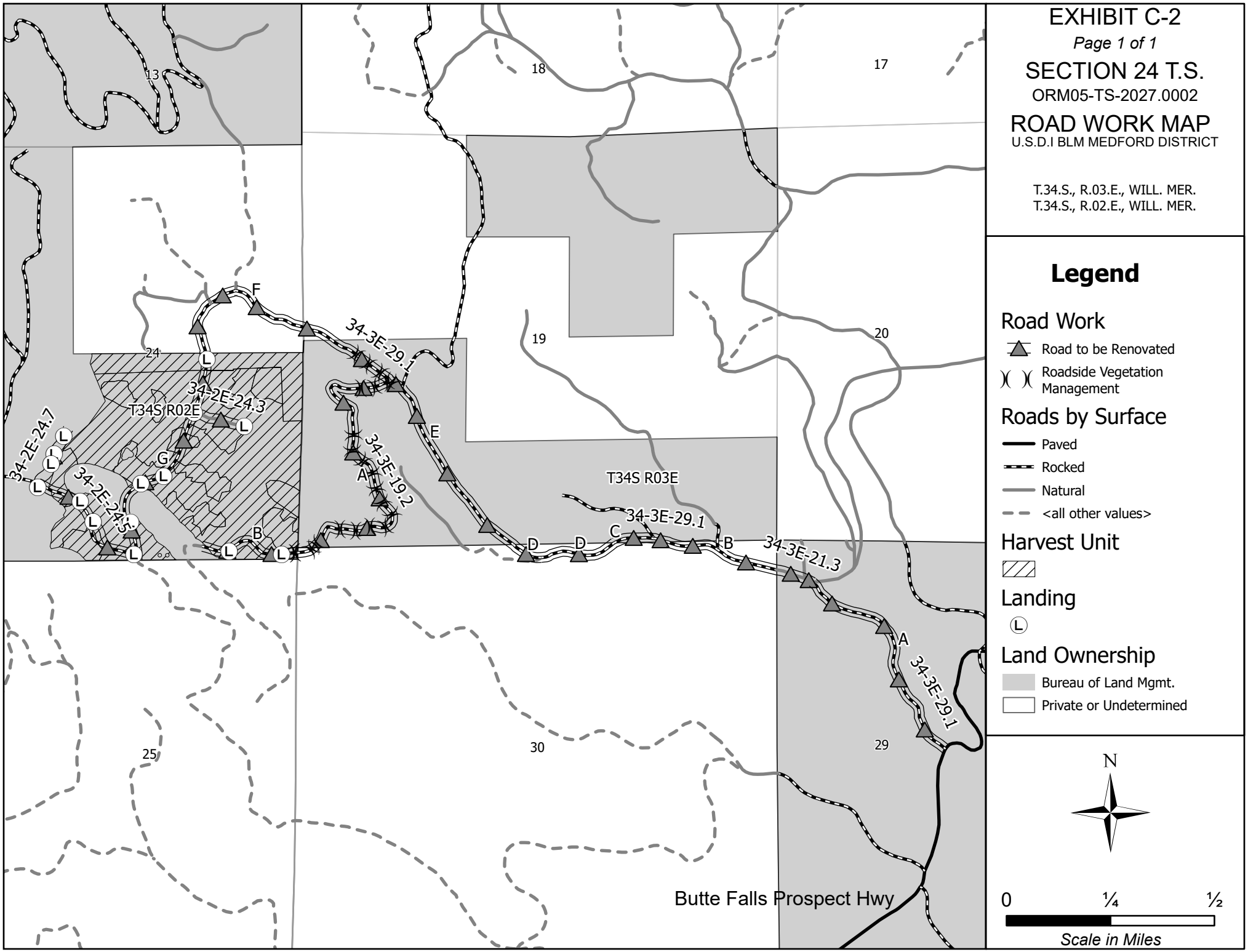

EXHIBIT C-2
Page 1 of 1
SECTION 24 T.S.
ORM05-TS-2027.0002
ROAD WORK MAP
U.S.D.I BLM MEDFORD DISTRICT
T.34.S., R.03.E., WILL. MER.
T.34.S., R.02.E., WILL. MER.
Legend
Road Work
Road to be Renovated
Roadside Vegetation Management
Roads by Surface
Paved
Rocked
Natural
<all other values>
Harvest Unit
Landing
Land Ownership
Bureau of Land Mgmt.
Private or Undetermined
N
0
¼
½
Scale in Miles
13
18
17
19
20
24
25
30
29
T34S R02E
T34S R03E
34-2E-24.3
34-2E-24.7
34-2E-24.5
34-3E-29.1
34-3E-19.2
34-3E-21.3
Butte Falls Prospect Hwy

EXHIBIT C-3
SHEET 1 OF 1
SECTION 24 TIMBER SALE

ROAD NUMBER	FROM	TO	LENGTH **	CLEARING	GRUBBING	ROADSIDE VEGETATION MANAGEMENT	EXCAVATION (Includes slides)		CULVERT PIPE SEE WORK LIST FOR TYPE							ROAD RENOVATION	ROAD IMPROVEMENT	NEW CONSTRUCTION - PERMANENT	NEW CONSTRUCTION - TEMPORARY	CONSTRUCT ARMORED WATER DIPS ****	AGGREGATE***			RIP RAP	ROADSIDE BRUSHING MECHANICAL	ROADSIDE BRUSHING - CHIP	REMOVE BARRICADE	CONSTRUCT BARRICADE	CONSTRUCT WATER BARS	SOIL STABILIZATION
									SIZE																					
							ROCK	COMMON	18"	24"	30"	36"	42"	48"	18" FULL ROUND DOWNSPOUT															
																					4" MINUS SCREENED BASE GRADE A	1 1/2" MINUS CRUSHED ROCK GRADE C, C1	BLM STOCKPILE							
SPECIFICATION NO.				200	200	500	300	300	400	400	400	400	400	400	400	500	500	300	300	400	900	1200	1200	1200	2100	2100	500	500	1700	1800
ROAD NUMBER	MP/STA	MP/STA	MILE/STA	ACRE	ACRE	MILE	C.Y.	C.Y.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	MILE	MILE	STA	STA	EA	L.C.Y.	L.C.Y.	L.C.Y.	C.Y.	MILE	MILE	EA	EA	EA	ACRE
34-2E-24.03	0.00	0.14	0.14													0.14									0.14					
34-2E-24.05	0.00	0.33	0.33													0.33									0.33					
34-2E-24.07	0.00	0.16	0.16	0.39	0.39											0.16									0.16					
34-3E-19.02	0.00	1.05	1.05	0.33	0.08	0.46										1.05									1.05					0.10
34-3E-21.03	0.00	0.09	0.09													0.09									0.09					
34-3E-29.01	0.00	2.96	2.96	0.08	0.02	0.11										2.96									2.96					0.05
PAGE 1 TOTALS			4.73	0.41	0.10	0.57	###	####	###	###	##	##	##	##	##	4.73	####		####	#	##	####	###	#####	4.73	####	#	#	#	0.15

* *FOR INFORMATIONAL USE ONLY, QUANTITIES SHOWN ARE NOT PAY ITEMS.*

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***Indicates gradation

**Total length includes permanent and temporary roads to be constructed.

****Armored water dip aggregate quantities are calculated at 40 CY per AWD and are listed in aggregate column "4" minus grade A".
If road is surfaced with fine crushed rock, 20 CY of 1 1/2" minus crushed rock shall be placed on top of the 4" rock. Crushed Rock quantites are listed under aggregate column "1 1/2 minus crushed rock Grade C, C1". An AWD constructed on a natural surface road will not be surfaced with 20 CY of crushed rock surfacing.
Rock costs for splash pads are calculated under drainage.

DATE		APPROV.	

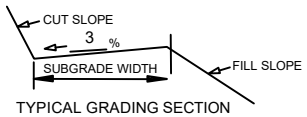
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT MEDFORD DISTRICT MEDFORD, OREGON

ESTIMATE OF QUANTITIES*

DRAWN:	FEP	SCALE: NONE
DATE:	AUGUST 2026	SHEET: 1 OF 1
DRAWING NO.		ORM05-TS-2027.0002-C3

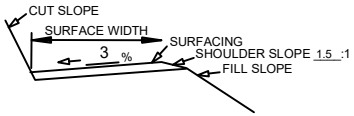
EXHIBIT C-4
Section 24 T.S.
Page 1 of 1

ROAD NUMBER	STATION OR MILE POST	TO STATION OR MILE POST	LENGTH MILE OR STATION	TYPICAL SECTION TYPE	ALLIGNMENT	ROAD WIDTH (1, 3)		GRADIENT		CLEARING WIDTH				SURFACING (4)								REMARKS
					MAXIMUM DEGREE OF CURVE	SUBGRADE	DITCH	MAXIMUM FAVORABLE	MAXIMUM ADVERSE	From C/L		EXISTING ROAD(S)		BASE COURSE				SURFACE COURSE				
										L	R	L	R	MINIMUM WIDTH	COMP. DEPTH	TYPE (2)	GRADING	MINIMUM WIDTH	COMP. DEPTH	TYPE (2)	GRADING	
34-2E-24.03	0.00	0.14	0.14	3		17	0															
34-2E-24.05	0.00	0.33	0.33	5		12	3															
34-2E-24.07	0.00	0.16	0.16	3		14	0					10	10									Overgrown road
34-3E-19.02	0.00	1.05	1.05	5		14	3															
34-3E-21.03	0.00	0.09	0.09	5		14	3															
34-3E-29.01	0.00	2.96	2.96	5		14	3															



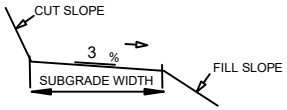
TYPICAL GRADING SECTION

TYPE 1



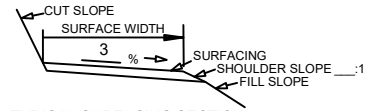
TYPICAL SURFACING SECTION

TYPE 2



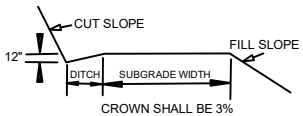
TYPICAL GRADING SECTION

TYPE 3



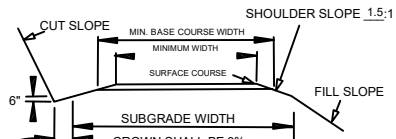
TYPICAL SURFACING SECTION

TYPE 4



TYPICAL GRADING SECTION

TYPE 5



TYPICAL SURFACING SECTION

TYPE 6

NOTES

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

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

FULL BENCH CONSTRUCTION IS REQUIRED ON SIDE SLOPES

2. SURFACING TYPE
A. PIT RUN ROCK MATERIAL.
B. GRID ROLLED ROCK MATERIAL
C. SCREENED ROCK MATERIAL.
D. CRUSHED ROCK MATERIAL.
E. BITUMINOUS SURFACE TREATMENT (BST).
F. NATURAL.

3. TURNOUTS
A. WIDTH 10FT. IN ADDITION TO SUBGRADE WIDTH,OR AS SHOWN ON THE PLANS.
B. LOCATED APPROXIMATELY AS SHOWN ON THE ROAD PLANS.

4. SURFACING
TURNOUTS, CURVE WIDENING AND ROAD APPROACH APRONS SHALL BE SURFACED.

5. CLEARING WIDTH
SEE SUBSECTION 200

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REV. NO.	DESCRIPTION	DATE	APPROV.

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

SPECIFICATION SHEET

DRAWN: FEP	SCALE NONE
DATE: AUGUST 2026	SHEET 1 OF 1
DRAWING NO.	ORM05-TS-2027.0002 C4

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
2100	Roadside Brushing
2600	Hot Mix Asphalt Concrete Paving

GENERAL – 100

101 - Prework Conference(s):

A prework conference will be held prior to the start of new construction, improvement, renovation, quarry development, surfacing, or mulching operations. The Purchaser shall request the conference at least 48 hours prior to the time it is to be held. The conference will be attended by the Purchaser and/or his representatives, subcontractors and/or his representatives and the Authorized Officer and/or his representatives.

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 subcontractors.

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

TIMBER SALE ROAD SPECIFICATIONS

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

ASTM - American Society for Testing and Materials.

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

BLM - Bureau of Land Management

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

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

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

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

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

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

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

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

TIMBER SALE ROAD SPECIFICATIONS

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

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

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

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

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

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

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

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

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

TIMBER SALE ROAD SPECIFICATIONS

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

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

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

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

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

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

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

TIMBER SALE ROAD SPECIFICATIONS

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 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:

AASHTO T 11	Quantity of rock finer than No. 200 sieve.
AASHTO T 27	Sieve analysis of fine and coarse aggregate using sieves with square openings; gradation.
AASHTO T 89	Liquid limit of material passing the No. 40 sieve. Water content at which the soil passes from a plastic to a liquid state.
AASHTO T 90	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.
AASHTO T 96	Resistance to abrasion of small size coarse aggregate by use of the Los Angeles machine.
AASHTO T 99	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.

TIMBER SALE ROAD SPECIFICATIONS

Method D - 6" mold, soil passing a 3/4 inch sieve. 56 blows/layer & 3 layers.

AASHTO T 119 Slump of hydraulic cement concrete.

AASHTO T 152 Air content of freshly mixed concrete.

AASHTO T 166 Specific Gravity of compacted Bituminous Mixtures.

AASHTO T 176 Shows relative portions of fine dust or claylike materials in soil or graded aggregate.

AASHTO T 180 (OSHD 106-71) moisture density relationship of soil same as AASHTO T 99 proctor but uses a 10-lb rammer & 18-in drop height.

AASHTO T 191 Sand Cone. 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.

AASHTO T 205 Rubber balloon. Density of soil in place. Use for compacted or firmly bonded soil.

AASHTO T 209 Maximum Specific Gravity of Bituminous Paving Mixtures.

AASHTO T 210 Durability of aggregates based on resistance to produce fines.

AASHTO T 224 Correction for coarse particles in the soil.

AASHTO T 238 Density of Soil and Soil-Aggregate in place by nuclear methods.

AASHTO T 248 Reducing field samples of aggregate to testing size by mechanical splitter, quartering, or miniature stockpile sampling.

ASTM D 4564 Determination of relative density of cohesionless soils.

DMSO (dimethyl sulfide) Determines volume of expanding clays in aggregates. Usually associated with marine basalts.

103 Compaction equipment shall meet the following requirements:

103a Padded Drum Tamping Rollers. 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 not less than 60 inches in width. The pads shall have a minimum height of 3 inches, and a face area of not less than 14 square inches. The weight at drum shall be no less than 8000 lb.

103b Sheepfoot Tamping rollers. 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 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 not 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 not 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 not 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 not less than 10 tons, or of the tandem type, 2-wheel or 3-wheel, weighing not 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 not 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 not less than 5 feet 6 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

TIMBER SALE ROAD SPECIFICATIONS

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 not less than 48 inches, the drum width not 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 not 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. Vibratory frequency shall be regulated in seeps 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.

201a This work shall consist of clearing, grubbing, removing and disposing of vegetation, debris, surface objects, and protruding obstructions from borrow pits, quarries, channel changes, stockpile sites, etc., in accordance with these specifications 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 top of the fill slope and 6 feet out from the toe of the fill slope.

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.

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 Subsections 202 and 202a or as shown on the plans or as staked on the ground.

203a Brush under 1 foot 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, 204b, 204c, 204d and 204e between the top of the cut slope and the toe of the fill slope. Undisturbed stumps, roots and other solid objects which will be a minimum of 3 feet below subgrades or slope surfaces or embankments are excluded.

204a Stumps including those overhanging cut banks, shall be removed within the required excavation limits.

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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. Stumps on the fill slope that would interfere with future grading and snow plowing operations shall be removed. Any holes left in the fill slope shall be filled with approved material.

204c On excavated areas, roots and embedded wood shall be removed to a depth not less than 6 inches below the subgrade.

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 not less than 1 foot below embankment subgrades or slope surfaces.

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

206 Clearing and grubbing debris shall be disposed of by burning in accordance with Subsection 207, and/or piling in accordance with Subsection 211 and at the following road locations:

Road No.	From M.P./Sta	To M.P./Sta	Total Miles	Activity Type	Disposal Method
34-3E-19.02	0.00	0.06	0.06	Rdside Veg. Mgmt	Pile and Burn
	0.26	0.64		Rdside Veg. Mgmt	Pile and Burn
34-3E-29.01	1.83	1.94	0.11	Rdside Veg. Mgmt	Pile and Burn

TIMBER SALE ROAD SPECIFICATIONS

206a Notwithstanding Subsections 204, 204a, and 204d 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 and complying with the requirements for burning operations as set forth under Subsections 207a and 207b of these specifications. 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 no 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 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.

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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, 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, 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 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, stumps, and cull logs resulting from road construction on non-Government property shall be loaded and hauled to

TIMBER SALE ROAD SPECIFICATIONS

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 accordance with 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.

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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.

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

304 Borrow shall consist of suitable material required for the construction of embankments or for other portions of the work; such material shall be obtained from sources 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.

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 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

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dimension shall be placed in successive layers not exceeding 2 feet in thickness. Individual rocks and boulders greater than 12 inches in diameter may be used to construct 12-foot embankment layers, provided they are carefully distributed, with interstices filled with fine material to form a dense and compact mass.

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.

306 - Layers of embankment, selected borrow, final subgrade and selected roadway excavation material as specified under Subsections 305a, 305b, 317 and 317a 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, 103f, 103g and 103i.

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 or fraction thereof.

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 6 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 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 not less than 1 foot and not 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.

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 Subsection 306.

313 In cut areas where solid rock is encountered at, or near subgrade, the rock shall be

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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.

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 for temporary roads and landings shall be accomplished by routing construction and hauling equipment over the full width of the roadbed. Compaction for permanent roads shall be as described in Subsection 306

319 Borrow pits shall be subject to the development, operation, and reclamation requirements set forth under Section 1600 of these specifications.

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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.

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.

323 In the construction of channel changes and 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 2 feet 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, downspouts, elbows and other erosion control devices 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. 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.

402a Where a fence needs to be opened to replace the culvert provisions shall be made to prevent cattle from passing through the opening.

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.

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, 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.

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

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

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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 sections shall be connected with "Hugger"-type, flange-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. “Hugger”-type bands shown on the Culvert Band Detail drawings.
Dimple bands shall not be accepted.

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.

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 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

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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 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 referred to as the Culvert Installation Detail Sheet.

412 Where ledge rock, boulders, soft, or spongy soils are encountered, they shall be excavated a minimum of 24 inches below the invert grade for a width of at least one pipe diameter or span on each side of the pipe and shall be backfilled with crushed rock material in accordance with Section 1200 gradation E-1.

413 Pipe culverts shall be bedded on a selected granular or crushed rock material in accordance with Section 1200 gradation E-1,or fine readily compactable soil material having a depth of not less than 6 inches as shown on plans. Foundation material shall be of uniform density throughout the length of the structure and shall be shaped to fit the pipe.

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 greater than or equal to 13 square feet 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 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 E-1, 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 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 the pipe, in layers not exceeding 6 inches in depth and 1 pipe diameter/span, or a minimum of 2 feet 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 2-foot cover of fill before heavy equipment is permitted to cross the drainage structures. Removal of the protection fill shall be as directed by the Authorized Officer.

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 grade culverts at the following locations: NOT APPLICABLE

424 Construction of splash pads conforming to lines, grades, dimensions and typical diagram shown on the plans, shall be required for culverts at the following locations: NOT APPLICABLE

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.

426 Culvert markers consisting of 2-inch by 1-inch by 2-foot treated wood posts shall be installed by the Purchaser at grade culverts 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 within three 3 working days of completion of the culvert replacement work for each road 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 in a manner that will avoid damage to adjacent property. Provide for downstream waterflow with no more that 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 and as shown on the plans.

501a This work shall include the removal and disposal of slides in accordance with these specifications.

502 The existing road surface shall be scarified to a depth of 6 inches where needed to eliminate potholes and surface irregularities then bladed and shaped to the lines, grades, dimensions, and typical cross sections shown on the plans.

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.

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.

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

504 Scarified material or existing road surfaces 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 103a, 103b, 103c, 103d, 103f, 103g and 103i.

504a Minimum compaction required shall be 1 hour of continuous rolling for each 3 stations of road 6 passes over each full-width layer, or fraction thereof, as measured along the centerline per layer of material.

504b A uniform density of not 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 not less than 95 percent of the maximum density as determined by AASHTO T 99, Method A, C, or D.

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 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 Existing and new drainage structures at the locations in the table below shall be replaced 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: NOT APPLICABLE

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 1 day prior to surfacing operations. The Purchaser shall give the Authorized Officer 3 days' notice prior to final inspection of the grading operations.

TIMBER SALE ROAD SPECIFICATIONS
WATERING - 600

601 This work shall consist of furnishing and applying water required for the 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.

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 location(s) indicated below:

Common Name	Willamette Meridian			Road No.	M.P.
	Section	T	R		
Jackass Creek	29	34S	03E	34-3E-29.03	0.01

Use of water sources are subject to applicable State water regulations. In the event that the required water is not available at the locations 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 sources specified under Subsection 604 for use of water sources 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.

TIMBER SALE ROAD SPECIFICATIONS

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 the sources 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
(AASHTOT 27)

Sieve	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 not more than 35 at 500 revolutions as determined by AASHTO T 96.

TIMBER SALE ROAD SPECIFICATIONS

904a Screened rock material shall show a durability value of not less than 35 as 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 103f, 103g and 103i. Minimum compaction shall be 6 passes over each full-width layer, or fraction thereof.

911 The Purchaser shall place in stockpile screened rock material sites as shown on the plans. Such material shall be used as shown on the plans and as directed by the Authorized Officer. Crushed sandstone material stockpiled shall be placed on the designates roads prior to termination of the timber sale contract.

TIMBER SALE ROAD SPECIFICATIONS

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 to the Purchaser.

TIMBER SALE ROAD SPECIFICATIONS
AGGREGATE SURFACE COURSE - 1200
CRUSHED ROCK MATERIAL

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

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 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 providing laboratory tests performed by BLM of furnished rock samples in accordance with Subsection 1220 indicate compliance with the specifications in this section.

1203 When crushed rock material is produced from gravel, not less than 65 percent by weight of the particles retained on the No. 4 sieve will have 2 manufactured fractured faces If necessary to meet the above requirements or to eliminate an excess of filler, the gravel shall be screened before crushing.

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

TIMBER SALE ROAD SPECIFICATIONS

TABLE 1204

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

GRADATION

	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 not more than 35 at 500 revolutions, as determined by AASHTO T 96.

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

1206a The crushed rock material shall show a loss of not more than 20 percent by

weight, when submerged in DMSO, dimethyl sulfoxide, for five days, according to Federal Highway Administration Region 10 Accelerated Weathering Test Procedure.

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

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

TABLE 1207a

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 shown on the plan 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 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 or landings and Subsection 900 for placing the screened rock on the roadbed or landing.

TIMBER SALE ROAD SPECIFICATIONS

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. 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 unless approved by the Authorized Officer.

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. Minimum compaction shall be 1 hour of continuous compacting for each 6 stations 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

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 the BLM stockpile listed below for placement on the roads in accordance with the requirements and details shown on the plans and Exhibit C-3. 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.

Stockpile No.	Sec.	T.	R.	Approx. Cu. Yds.	Grad.	Road No.
N/A	N/A	N/A	N/A	N/A	N/A	N/A

1216 The Purchaser shall place in stockpile 0 cubic yards of Gradation C-1 on table in Subsection 1204 crushed rock material at the quarry site 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

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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.

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, 1207a, 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.

TIMBER SALE ROAD SPECIFICATIONS

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 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 or material separation 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 silt fences shall meet the following

requirements:

TABLE 1306
Physical Requirements for 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 or 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.

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.

TIMBER SALE ROAD SPECIFICATIONS

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 < 50 percent elongation ASTM D 4632. The second values in a column apply to geotextiles that break at ≥ 50 percent elongation ASTM D 4632.
(2) Maximum average roll value.
(3) The minimum average tear strength for woven monofilament geotextile is 245 N.

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	

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(1) The first values in a column apply to geotextiles that break at < 50 percent elongation ASTM D 4632. The second values in a column apply to geotextiles that break at ≥ 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 1 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 < 50 percent elongation (ASTM D 4632). The second values in a column apply to geotextiles that break at ≥ 50 percent elongation (ASTM D 4632).
(2) Maximum average roll value.
(3) The minimum average tear strength for woven monofilament geotextile is 245 N.SLOPE PROTECTION - 1400

1401 This work shall consist of furnishing, hauling and placing stone materials for slope protection structures and rock blankets in accordance with these specifications and conforming to the lines, grades, dimensions, and typical cross-sections shown on the plans. Material not conforming to these specifications will be rejected and shall be removed from the slope protection structure at the purchaser's expense as directed by the Authorized Officer.

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

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specifications.

Volume/ Cubic Foot	*Average Dimension in inches*	*Approximate Weight in Pounds*
12	*27.5 x 27.5 x 27.5*	*2100*
6	*21.8 x 21.8 x 21.8*	*1050*
4	*19.1 x 19.1 x 19.1*	*700*
3	*17.3 x 17.3 x 17.3*	*525*
1	*12.0 x 12.0 x 12.0*	*175*
2/3	*10.5 x 12.0 x 12.0*	*120*
½	*9.5 x 9.5 x 9.5*	*88*
1/3	*8.3 x 8.3 x 8.3*	*60*
¼	*7.6 x 7.6 x 7.6*	*44*
1/6	*6.6 x 6.6 x 6.6*	*30*
1/8	*6.0 x 6.0 x 6.0*	*22*
1/100	*2.6 x 2.6 x 2.6*	*2*

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.

1405 Rip rap shall conform to the following gradations:

TIMBER SALE ROAD SPECIFICATIONS

TABLE 1405[1]

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

[1]Gradation includes spalls and rock fragments to provide a stable, dense mass.
[2]The 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.
[3]Rock mass is based on a specific gravity of 2.65 (165#/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 a maximum absorption of 4.2 percent as determined by AASHTO T 85.

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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 requirements of Section 1300 for material separation and geotextile material repair.

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QUARRY AND BORROW PIT DEVELOPMENT - 1600

1601 This work shall consist of quarry development 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 site located at:

Subdivision	Sec.	T.	R.
N/A	N/A	N/A	N/A

shall be developed and mined in strict accordance with these specifications and the mining and reclamation plan shown on the plans.

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 materials source 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 reclamation plans. Required road construction work, except surfacing, shall be

TIMBER SALE ROAD SPECIFICATIONS

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 plan. 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.

1608 Overburden or reject material which does not conform to the requirements of Subsections 900 and 1200 shall be stockpiled and used for 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 the quarry for a distance equal to one-half of the working face or a minimum of 20 feet, whichever is greater. Overburden shall be sloped no steeper than 1 to 1.

1610 Waste disposal sites shall be selected and prepared to minimize erosion and establish conditions conducive to vegetative growth. Disposal areas shall be seeded and mulched in accordance with the requirements set forth in Section 1800 of these specifications.

TIMBER SALE ROAD 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 Mining Safety and Health Administration (MSHA) 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 Floras Quarry ID No. 295. 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.

1613a The Purchaser shall submit a written blasting plan or modification of the plan to the Authorized Officer for the Floras Quarry, 7 working days prior to the start of drilling. **The plan shall include: a) cross section of the quarry removal area; b) plan view of delay pattern; c) cross section of a typical loaded hole; d) types of explosives; e) powder factor; f) burden spacing, hole diameter, depth of holes, and depth of subdrill; and g) 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.

1613c 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

TIMBER SALE ROAD SPECIFICATIONS

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.

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 or 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.

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) Construct waterbars and take other erosion control measures as directed by the Authorized Officer.
(c) Remove blockages from drainage systems, streams, and waterways, and restore streams and waterways to their original courses. Follow State of Oregon guidelines and requirements.
(d) Erect barricades on quarry access roads as directed by the Authorized Officer.
(e) Complete required site-reclamation measures within 14 days after final cessation of quarrying operations.
(f) Clear quarry benches and scale wall of loose or dislodged shot material and move to a designated location within the quarry.

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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 the dikes. dams, diversion channels, settling basins and other erosion control structures in accordance with the requirements and details shown on the plans or as directed by the Authorized Officer.

1703 This work shall consist of furnishing and installing sediment fences in accordance with these specifications and in reasonably close conformity with the lines and grades shown on the plans or 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 and the Geotextile requirement of Section 1300.

1705 The surface area of erodible earth material exposed at any one time by clearing 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, erosion control measures on all exposed excavation, borrow, and embankment areas.

1708 Newly constructed or graded native surface roads to be carried over the winter period, shall be blocked to vehicular traffic. They shall be winterized by installing water bars, seed and mulched and installing other drainage structures as needed and directed by the Authorized Officer.

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.

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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 sediment and check dams, catch basins and splash pad energy dissipators for pipe culverts 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 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.

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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 and as shown on the plans. This work is required for road acceptance under Section 18 of this contract.

1802 Soil stabilization work consisting of seeding and mulching shall be performed on existing native surface roads and designated locations where soil disturbance has occurred, such as culvert installations, in accordance with these specifications and as shown on the plans at the following locations:

Road No.		To Sta./M.P.	Total Acres
34-2E-24.03	0.00	0.14	0.28
34-2E-24.07	0.00	0.16	0.27

1802a Soil stabilization work consisting of seeding and mulching shall be performed on new road construction that is not rocked, landings, culvert installations, RVM stump removal, disturbed areas, waste disposal sites and specials areas 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

If soil stabilization of disturbed areas is not completed by the specified fall date, the Purchaser shall treat disturbed areas in accordance with Subsection 1708 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.

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 Subsection1808a shall be furnished by the Purchaser in the amounts specified under Subsection 1811 and applied in accordance with Subsection 18.

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 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

TIMBER SALE ROAD SPECIFICATIONS

be permitted.

1811 The Purchaser shall furnish and apply to approximately 0.7 acres designated for treatment as shown on the plans and as specified under Subsections 1802 and 1806, 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 the area designated for treatment as shown on 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 and mulch materials shall be placed by the hydraulic method in accordance with the requirements set forth in Subsection 1815a or the dry method in accordance with the requirements set forth in Subsection 1815b.

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,

cultipaker 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.

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.

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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 seed and mulch when winds would drift the seed and mulch outside of the designated treatment area.

1823 Seed and mulch 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.

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CATTLE GUARDS AND BYPASS GATES - 1900

1901 This work shall consist of furnishing, hauling, installing, and 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 frame joints, and shall conform to current specifications of the American Welding Society for Welded Highway and Railroad Bridges.

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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.

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

2103 Vegetation cut manually or mechanically less than 8 inches in diameter when measured Diameter at 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 2 inches will be severed from the trunk.

2103a Vegetation shall be cut and removed from 6 horizontal feet beyond the outside shoulder break and 6 horizontal feet from the ditch centerline. The 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 greater than 8 inches (DBH) not removed by RVM activities shall be limbed, so that no limbs extend into the treated area or over the roadbed to a height of 14 feet above the running surface of the roadway, on cut and fill slopes, within the road prism-variable distance. Limbs shall be cut to within 1 inches of the trunk to produce a smooth vertical face. Removal of trees larger than 8 inches DBH for sight distance or safety may be directed by the Authorized Officer. Measurements are shown on the Roadside Brushing and Roadside Vegetation Management Details sheet, exhibit C 8

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, to within 1 inch to produce a smooth vertical face.

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

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.

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2109 Debris resulting from this operation shall be scattered downslope from the roadway or piled to burn. 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.

2111 Vegetation cut in the following locations shall be loaded and hauled to the designated disposal site indicated on the plans.

Road Number	From Sta./M.P.	To Sta./M.P.
N/A	N/A	N/A

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.

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HOT MIX ASPHALT CONCRETE PAVING – 2600

2601 This work shall consist of furnishing, applying and compacting Hot Mix Asphalt Concrete on prepared surfaces, in the depths, amounts and locations as shown on the plans.

2602 Submit 2 copies of the bituminous job mix formula to be used on this project 3 weeks prior to placement of paving. The Purchaser shall have written approval of the formula by the Authorized Officer prior to placement of pavement.

2603 Vehicular traffic, including heavy equipment, will not be permitted on the pavement until all rolling and compacting operations have been completed.

2604 Place bituminous mixture only when air temperature is above 45°F, on surfaces that do not have standing water, and when it is not raining.

2605 Asphalt paving shall conform to the Oregon Department of Transportation, Level III, ½" dense, PG 64-22 Asphalt Binder mix for use on roadways. Furnish aggregate that conform to the aggregate requirements for hot mix asphalt concrete by the Oregon Department of Transportation.

2606 Aggregate shall be tested by AASHTO T 11 and T 27. The aggregate selected for use in the work shall have a gradation within the limits designated in Table 2606.TABLE 2606

TOLERANCE GRADATION OF AGGREGATES
Total Percentage by Weight Passing Square Mesh Sieves
(AASHTO T 11 and AASHTO T 27)

Sieve Size	Percent
¾ inch	100
½ inch	90-100
No. 4	JMF +/- 5
No. 8	JMF +/- 4
No. 30	JMF +/- 4
No. 200	JMF +/- 2

JMF = Job Mix Formula

2607 Bituminous material shall meet the requirements of AASHTO M 320.

2608 Water shall be clean and free from deleterious materials.

2609 The asphalt spreader shall be capable of spreading hot bituminous mixtures without tearing, shoving, or gouging and produce a finished surface of the

specified grade and smoothness.

2610 The number, type and weight of rollers shall be sufficient to compact the mixture to the required density without detrimentally affecting the compacted material. All rollers shall be suitable for rolling hot-mix bituminous pavements and capable of being operated without turning on the mat and without loosening the surface being rolled. Rollers shall have suitable devices and apparatus to keep the rolling surfaces wet and prevent adherence of bituminous mixture.

2610a Vibratory rollers shall be especially designed for bituminous concrete compacting and may be used provided the rollers do not impair stability of the pavement structure and any underlying layers. Depressions in pavement surfaces resulting from the use of vibratory rollers are not acceptable. Rollers shall be self-propelled, single or dual vibrating drums, and steel drive wheels, as applicable; equipped with variable amplitude and separate controls for energy and propulsion.

2611 Make pavement cuts with parallel, straight lines, 1 foot wider than trench width on each side of trenches.

2612 Prior to laying the asphalt concrete pavement the Purchaser shall obtain written approval from the Authorized Officer by showing satisfactory test results of the crushed aggregate base course that has been tested and meets the requirements of the specifications.

2613 Prior to laying the asphalt concrete, remove unsuitable material from the underlying course.

2614 Place string lines to identify the edge of pavement. Establish lines parallel to the centerline of the area to be paved, and place string lines coinciding with the established lines for the spreading machine to follow. The number and location of the lines will be as approved by the Authorized Officer.

2615 Restore disturbed edges of existing bituminous pavements, matching existing edges.

2616 The thickness of the asphalt concrete pavement shall be as shown on the plans.

2617 Plants used for the preparation of bituminous mixtures shall conform to AASHTO M 156 and to Oregon Department of Transportation requirements.

2618 Transport bituminous material from the mixing plant to the paving site in trucks having tight, clean, smooth beds that have been coated with a minimum amount of concentrated solution of hydrated lime and water or other approved coating to prevent adhesion of the mixture to the truck bodies. Petroleum products will not be permitted for coating truck bodies. When the air temperature is less than 60°F

or if haul time is greater than 30 minutes, cover each load with canvas or other approved material of ample size to protect the mixture from the loss of heat.

2619 Compact each layer of Hot Mix Asphalt Concrete to a minimum density of 91 percent of the maximum specific gravity determined by AASHTO T 166 and T 209. Percent compaction will be determined from at least one production sample per day.

SECTION 24 TIMBER SALE
Road Renovation Work List

Renovation: 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 1215 (Gradation D-1). All aggregate conforming to Exhibit C-5, Section 900 (Gradation A) and 1200 (Gradation C-1) shall be from the designated rock quarry, Exhibit C-5, Section 1602. All turnout and truck turnaround widths are in addition to subgrade widths listed in Exhibit C-4.

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 206. 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, ground, cut 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

Road 34-2E-24.03 NAT

Summary of work to be completed

Brushing
Shaping
Seed/Mulch
Barricade Inst
Winterization
Final Maint

Mileposts	Remarks
0.00	Jct. 34-2E-29.01 Begin BRSH and RENO.
0.14	End BRSH and RENO.

Road 34-2E-24.05 ASC

Summary of work to be completed

Barricade removal
Brushing
Cross Drain Maint
Ditch Maint
Shaping
Final Maint

Mileposts	Remarks
0.00	Jct. 34-2E-29.01 Begin BRSH and RENO.
0.33	Jct. 34-2E-24.07 (right). End BRSH and RENO.

Road 34-2E-24.07 NAT

Summary of work to be completed

Brushing
Shaping
Seed/Mulch
Barricade Inst
Winterization
Final Maint

Mileposts	Remarks
0.00	Jct. 34-2E-24.05. Begin Clear and Grub, BRSH and RENO.
0.16	End Clear and Grub, BRSH and RENO.

Road 34-3E-19.02 ASC

Summary of work to be completed

RVM/ROW Cutting
Stump Removal
Brushing
Cross Drain Maint
Ditch Maint
Shaping
Final Maint

Mileposts	Remarks
0.00	Jct. 34-3E-29.01. Begin BRSH, RENO, and RVM.
0.06	End RVM.
0.26	Begin RVM.
0.64	End RVM.
1.05	End BRSH and RENO.

Road 34-3E-21.03 ASC

Summary of work to be completed

Brushing
Cross Drain Maint
Ditch Maint
Shaping
Final Maint

Mileposts	Remarks
0.56	Jct. 34-3E-29.01. Begin BRSH and RENO. **Mileposts are a continuation of the 34-3E-29.01 road.**
0.65	Jct. 34-3E-29.01 (straight). End BRSH, and RENO.

Road 34-3E-29.01 ASC

Summary of work to be completed

RVM/ROW Cutting
Stump Removal
Brushing
Cross Drain Maint
Ditch Maint
Shaping
Final Maint

Mileposts	Remarks
0.00	Jct. Butte Falls/Prospect Highway. Begin BRSH and RENO.
0.56	Jct. 34-3E-21.03 (right and left) main road becomes 21.03.
0.56 to 0.65	**SEE ROAD 34-3E-21.03.**
0.65	Property line. Road number returns to 34-3E-29.01.
0.89	Jct. 34-3E-30.00 (right).
0.96	Jct. 34-3E-19.01 (right).
1.25	Jct. un-numbered road (left).
1.79	Jct. 34-3E-19.03 (right).
1.83	Jct. 34-3E-19.02 (left). Begin RVM.
1.94	End RVM.
2.27	Jct. un-numbered road (right).
2.33	Jct. 34-2E-24.02 (right).
2.61	Jct. 34-2E-24.03 (left).
3.05	Jct. 34-2E-24.05 (right). End BRSH and RENO.

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.
   - The purchaser shall keep a log recording of the water taken from the listed water source. Any other water sources shall be approved by the Authorized Officer.
   - Water required under these specifications shall be obtained at the location indicated below:

Common Name	Willamette Meridian			Road No.	M.P.
	Section	T	R		
Jackass Creek	29	34S	03E	34-3E-29.03	0.01

6. PERMITS:
   - All permits required are the responsibility of the Purchaser.

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 upstream 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 of temporary spur routes 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 natural surfaced 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.

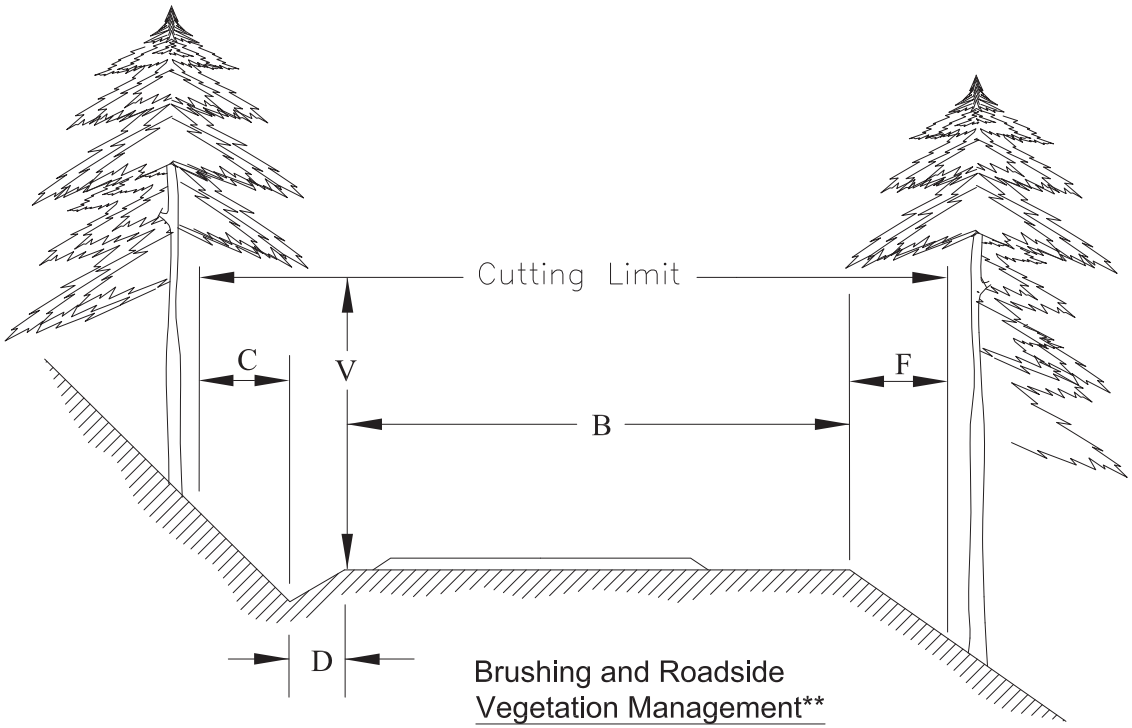
14. WET SEASON HAUL

- The Purchaser may wet season haul, with the Authorized Officer's approval on the following roads: 34-2E-24.05, 34-3E-21.03 C, and 34-3E-29.01 A-G. 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-24.03, 34-2E-24.07 and 34-3E-19.02 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 structures 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.

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EXHIBIT C8
SHEET 1 OF 1



Brushing and Roadside Vegetation Management**

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).

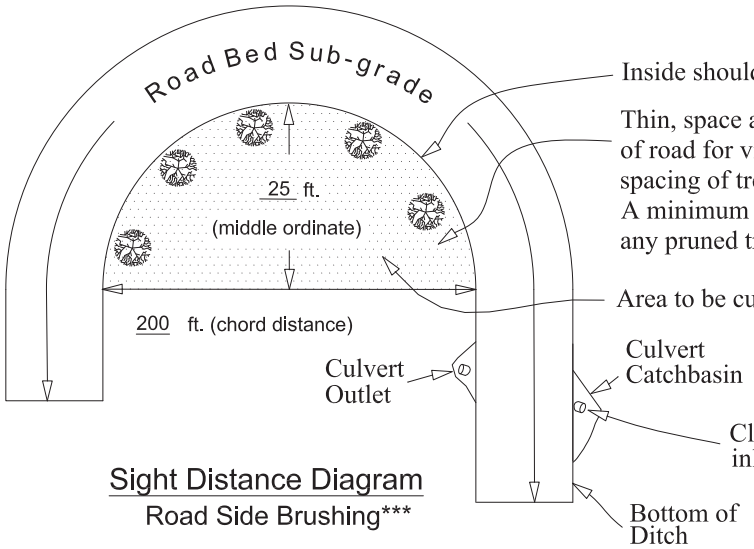
See Exhibit C-2 (Maps) and Exhibit C-6 (Road Renovation Worklist) for Roadside Vegetation Management locations.

* = 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.

Inside Corner



Sight Distance Diagram
Road Side Brushing***

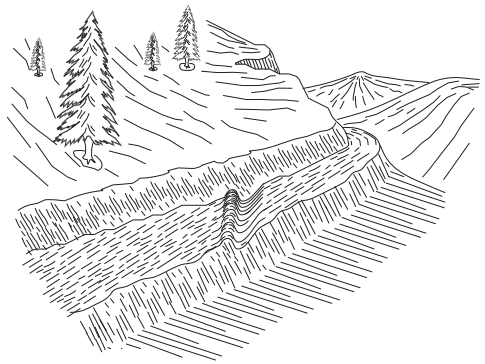
Typical Road Bed Subgrade widths

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

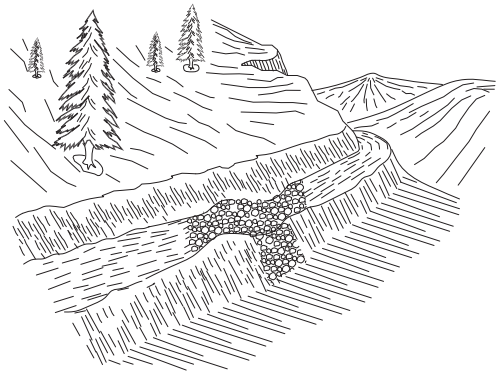
UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT MEDFORD DISTRICT – MEDFORD, OREGON	
ROADSIDE BRUSHING AND ROADSIDE VEGETATION MANAGEMENT DETAILS	
DRAWN JWR	SCALE NONE
DATE April 2022	SHEET 1 OF 1
DRAWING NO. ORM05–TS–2027.0002–C8	

EXHIBIT C–9.1
SHEET 1 OF 1

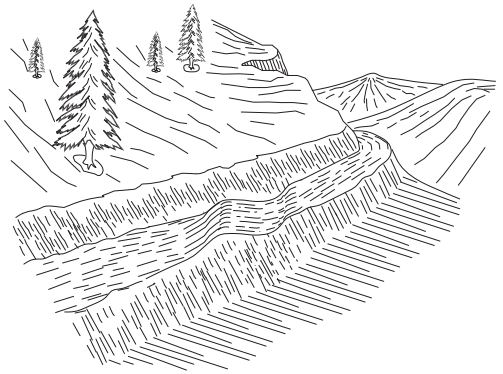
Section 24 T.S.



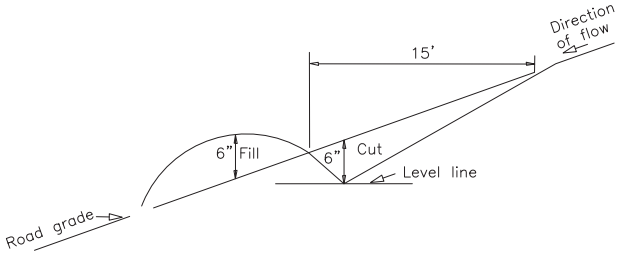
WATER_BAR



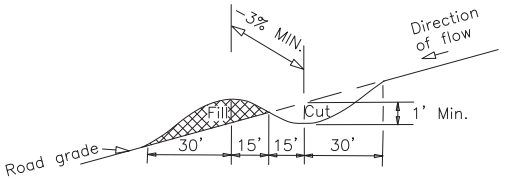
ARMORED WATER DIP



WATER DIP

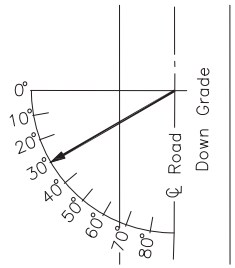


1. CROSS–DRAINS SHALL BE CONSTRUCTED AS SHOWN ABOVE.
2. EXACT LOCATION WILL BE FLAGGED BY THE AUTHORIZED OFFICER PRIOR TO CONSTRUCTION.
3. ALL CROSS DRAINS SHALL BE SKEWED 30 DEGREES.
4. THE CROSS–DRAINS INVERT SHALL BE SMOOTH AND FREE DRAINING.



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.

SKEW DIAGRAM



REV. NO.	DESCRIPTION	DATE	APPROV.

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
MEDFORD DISTRICT – MEDFORD, OREGON

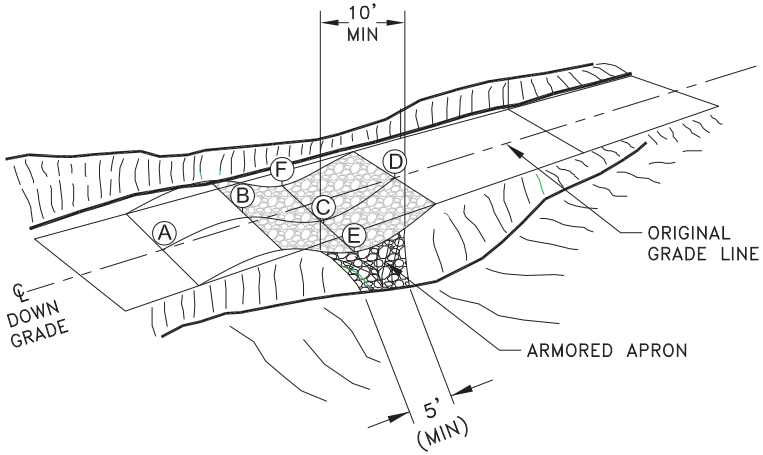
DRAINAGE & EROSION CONTROL DETAILS

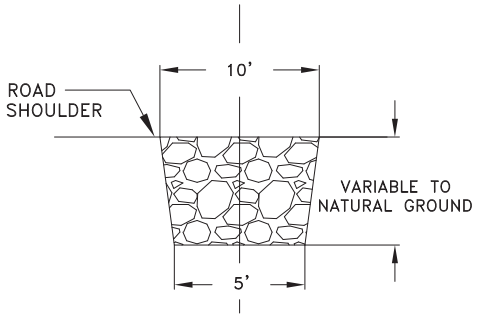
DRAWN JAB	SCALE NONE
DATE FEBRUARY 2023	SHEET 1 OF 1
DRAWING NO. ORM05–TS–2027.0002–C9.1	

EXHIBIT C–9.2

SHEET 1 OF 1

Section 24 T.S.



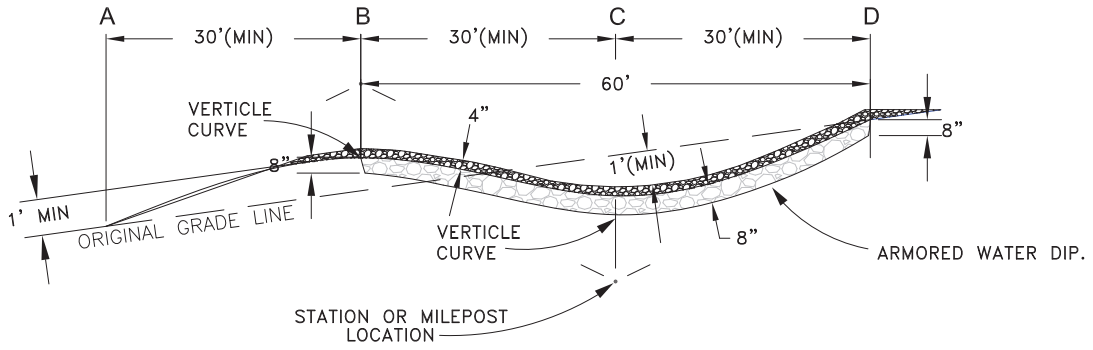


ARMORED APRON
DIMENSIONS

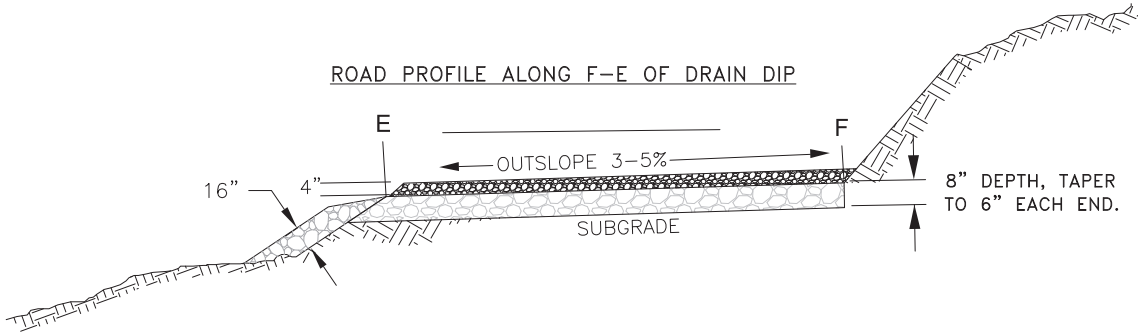
NOTES

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 SHOULDER IS 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.

ROAD PROFILE ALONG A–B–C–D OF DRAIN DIP



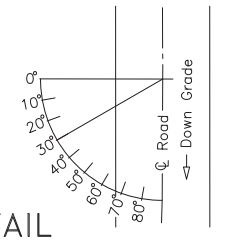
ROAD PROFILE ALONG F–E OF DRAIN DIP



LEGEND

- CUT/FILL SLOPES
- SUBGRADE ARMOR MATERIAL (4 INCH MINUS)
- FILL SLOPE ARMOR MATERIAL PIT RUN OR OTHER APPROVED MATERIAL.
- SURFACE COURSE AGGREGATE (1–1/2" minus)

SKEW DIAGRAM



DRAWINGS NOT TO SCALE

TYPICAL ARMORED WATER DIP CONSTRUCTION DETAIL

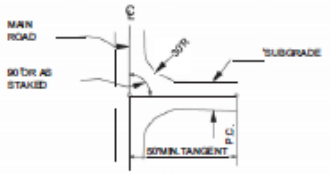
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
MEDFORD DISTRICT – MEDFORD, OREGON

TYPICAL ARMORED WATER DIP CONSTRUCTION

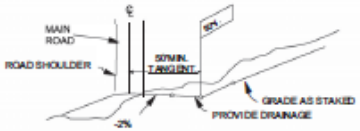
DRAWN BY JAB	SCALE NONE
DATE FEBRUARY 2023	SHEET 1 OF 1
DRAWING NO.	ORM05–TS–2027.0002–C9.2

EXHIBIT C-10
SHEET 1 OF 1
Section 24 T.S.

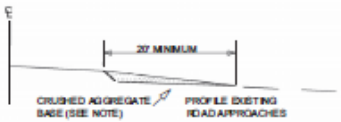
TYPICAL ROAD APPROACHES



PLAN



PROFILE

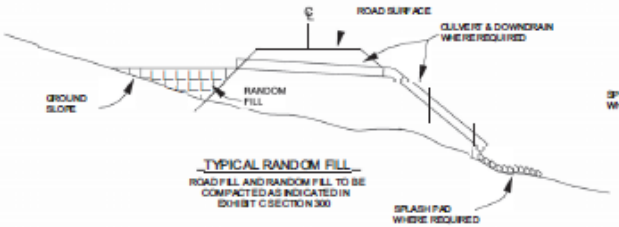


TYPICAL UNREACING SECTION

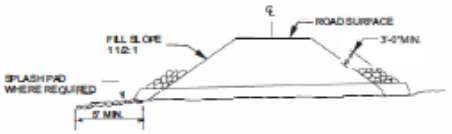
NOTES:
1. THE PROFILE OF EXISTING APPROACH ROADS SHALL BE TAPERED TO MEET THE SHOULDER LINE OF THE MAIN ROADWAY AND SHALL RECEIVE THE SAME WEARING SURFACE.
2. THE CRUSHED AGGREGATE BASE SHALL BE OF THE SAME GRADATION AS USED IN THE ADJACENT ROADBED.
3. APPROACHES SHALL BE FINISHED WITH THE SAME TREATMENT AS SHOWN FOR THE ADJACENT ROADBED.



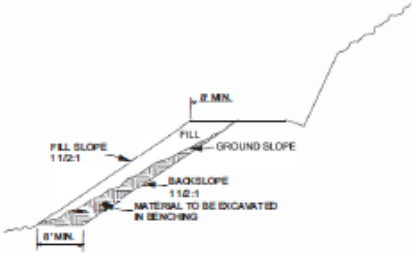
CUT SLOPE ROUNDING



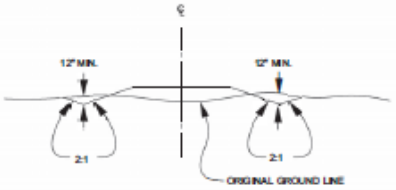
TYPICAL RANDOM FILL
ROAD FILL AND RANDOM FILL TO BE COMPACTED AS INDICATED IN EXHIBIT C SECTION 300



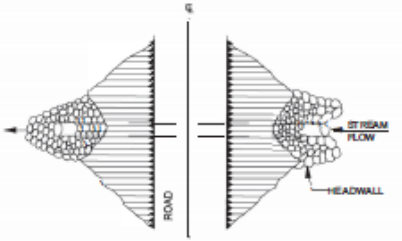
CROSS SECTION



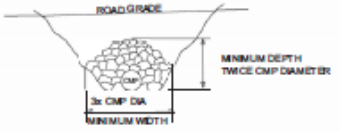
SPECIAL COMPACTION
TYPICAL BENCHING SECTION



TYPICAL ROAD SECTION
FOR TURNPIKE CONSTRUCTION



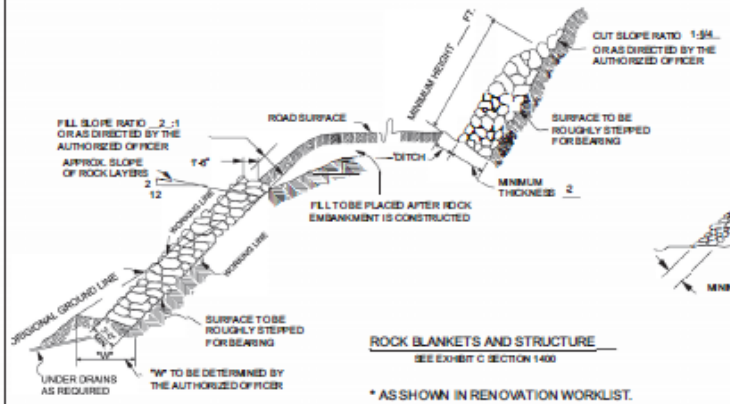
PLAN



ELEVATION

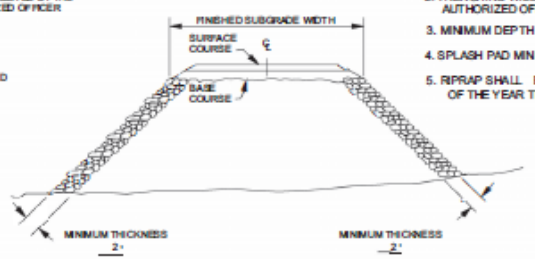
NOTES: RIPRAP AT CULVERTS

1. RIPRAP SHALL BE PLACED IN SUCH A MANNER THAT IT WILL NOT DAMAGE THE CULVERT.
2. TRENCHING WILL BE DONE AS REQUIRED BY THE AUTHORIZED OFFICER.
3. MINIMUM DEPTH OF SPLASH PADS SHALL BE ___1___FT
4. SPLASH PAD MINIMUM QUANTITY DESIGNATED IN WORK LIST.
5. RIPRAP SHALL BE PLACED BEFORE OCTOBER 15TH OF THE YEAR THE CMP IS INSTALLED.



ROCK BLANKETS AND STRUCTURE
SEE EXHIBIT C SECTION 1400

* AS SHOWN IN RENOVATION WORKLIST.



SLOPE PROTECTION ROCK
SEE EXHIBIT C SECTION 1400

ALWAYS THINK SAFETY

REV.NO.	DESCRIPTION	DATE	APPROVED

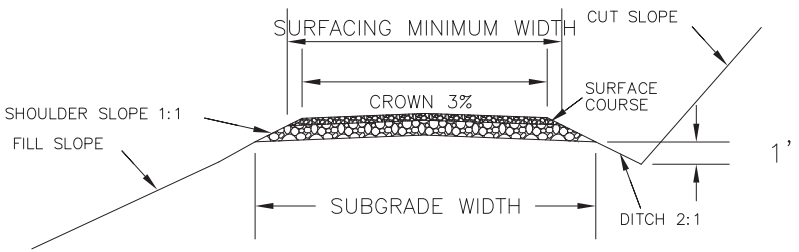
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
MEDFORD DISTRICT MEDFORD,OREGON

TYPICAL ROAD DATA

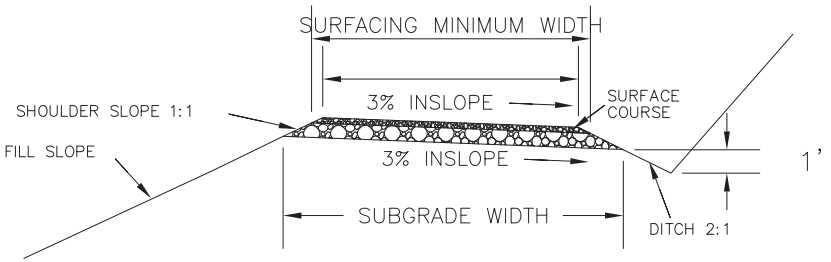
DRAWN JAB	SCALE NONE
ATE FEBRUARY 2023	SHEET 1 OF 1
DRAWING NO. ORM05-TS-2027.0002 C10	

EXHIBIT C–11
SHEET 1 OF 1
Section 24 T.S.

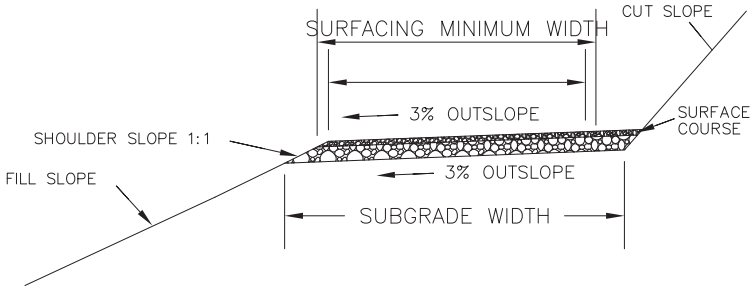
TYPICAL CROWNED SURFACE
EXISTING MIN. BASE COURSE WIDTH

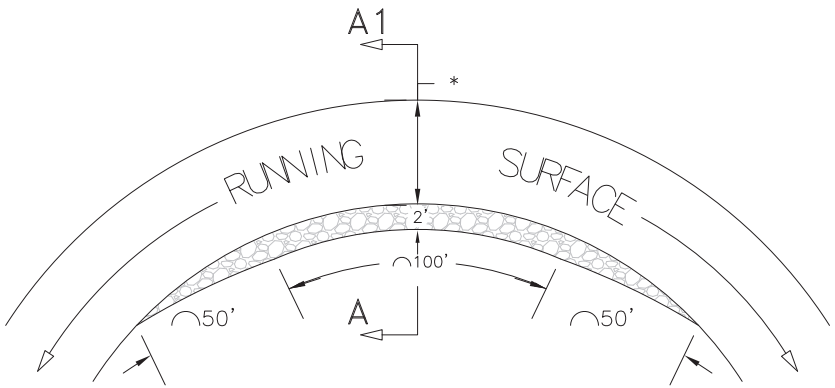


TYPICAL INSLOPED SURFACE
EXISTING MIN. BASE COURSE WIDTH

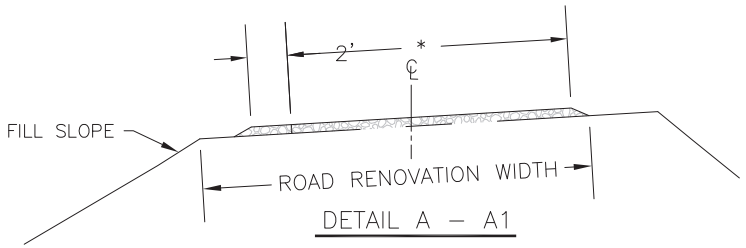


TYPICAL OUTSLOPED SURFACE
EXISTING MIN. BASE COURSE WIDTH





TYPICAL CURVE WIDENING DETAIL



DETAIL A – A1

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-2027.0002-C11

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Sale: Section 24
Sale Date: 12/17/2027
Prep. By : Pardini
Tract No: ORM05-TS-2027.0002

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

ROAD MAINTENANCE AND ROAD USE APPRAISAL WORK SHEET

Summary of Costs

1.1) Road Use - Amortization: $0.00/1599 MBF = $0/MBF

Road Maintenance Obligation:

(2.1) BLM Maintenance		$0.00
(2.2) BLM Rockwear	$0.00	
(5.1) Purchaser Maintenance Rockwear	$4,324.46	
Total Rockwear Payable to BLM		$4,324.46
(3.1) 3rd Party Maintenance		$0.00
(3.2) 3rd Party Rockwear		$1,532.10
(4.1) Other Maintenance Payments		$0.00
Total Maintenance Fee Obligation (2.1-5.1)		$5,856.56

Purchaser Maintenance Allowances:

(5.2A) Move In	$433.44
(5.2B) Culverts, Catch Basins, Downspouts	$0.00
(5.2C) Grading, Ditching	$4,152.06
(5.2D) Slide Removal and Slump Repair	$0.00
(5.2E) Dust Palliative (Water)	$0.00
(5.2F) Surface Repair (Aggregate)	$5,555.00
(5.2G) Other	$0.00
Total Purchaser Maintenance Allowances (5.2A-5.2G)	$10,140.50

(2.1-5.2G) Cost ($5,856.56 + $10,140.50) = $15,997.06
Cost/MBF 15997.06 / 1599 MBF = $10.00/MBF

(5.2H) Decommissioning $1,495.32

(5.2H) Cost/MBF $1,495.32/1599 MBF = $0.94/MBF

(2.1-5.2H) Cost ($5,856.56 + $10,140.50 + $1,495.32) = $17,492.38

Total Cost/MBF (Excluding Road Use) $$17,492.38/1599 MBF = $10.94/MBF

1) Road Use Fees - Amortization

Details

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

Subtotal by agreement number

(1.1) Subtotal $0.00

2) BLM Maintenance - Timber Haul

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

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

3) Third Party Maintenance and Rockwear

		MAINTENANCE (3.1)					ROCKWEAR (3.2)			
Agrmnt Number	Surface Type	Road Number	Mi	x	Fee	x MBF =	Maint Fee x	MBF	=	Rkwear
JHLIC	AGG	34-3E-29.01 D	0.27				$0.95 x	1599	=	$410.14
JHLIC	AGG	34-3E-29.01 B	0.28				$0.95 x	1599	=	$425.33
Siskiyou	AGG	34-3E-29.01 F	0.44				$0.95 x	1339.5	=	$559.91
Siskiyou	AGG	34-3E-21.03 C	0.09				$0.95 x	1599	=	$136.71

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

JHLIC	$835.47
Siskiyou	$696.62

(3.1) Subtotal $0.00
(3.2) Subtotal $1,532.09

4) Other Maintenance Payments - USFS or Others Perform Maintenance

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

(4.1) Subtotal $0.00

5) Purchaser Maintenance - Rock Wear

TIMBER HAUL (5.1)

Road No and Segment	A N	Mi	RkWear x Fee x	Vol MBF =	Total RkWear
34-3E-21.03 C	N	0.09	x $0.95 x	1599 =	$136.71
34-3E-29.01 A-E	N	1.91	x $0.95 x	1599 =	$2,901.39
34-3E-29.01 F	N	0.47	x $0.95 x	1339.5 =	$598.09
34-3E-29.01 G	N	0.58	x $0.95 x	685.5 =	$377.71
34-3E-19.02 A	N	0.80	x $0.95 x	249.5 =	$189.62
34-3E-19.02 B	N	0.25	x $0.95 x	219.5 =	$52.13
34-2E-24.07	N	0.16	x $0.00 x	87.8 =	$0.00
34-2E-24.03	N	0.14	x $0.00 x	219.5 =	$0.00
34-2E-24.05	N	0.33	x $0.95 x	219.5 =	$68.81

(5.1) Subtotal $4,324.46

Purchaser Operational Maintenance

Move In

Equipment	No Units	Move Cost/ x in	Dist x 50 Mi	Sub-Factor =	total
Motor Grader:	1	1	558	0.63	$351.54
Back Hoe:			415	0.63	$0.00
Loader:			558	0.63	$0.00
Water Truck:			138	0.63	$0.00
Dump Truck:	1	1	130	0.63	$81.90
Excavator:			558	0.63	$0.00
Roller:			558	0.63	$0.00

(5.2A) Total $433.44

Culvert Maintenance - Including Catch basins and Downpipes

Miles	x Cost/Mi	= Subtotal
	$514.62	$0.00

(5.2B) Total $0.00

Grading (Includes Ditches and Shoulders)

Miles	x Cost/Mi	x Freq	= Subtotal	
Blade w/ Ditch:	4.42	939.38	1	$4,152.06
Blade w/o Ditch:	0.00	568.71	0	$0.00

(5.2C) Total $4,152.06

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

Type Equipment	No Slides /Slumps	x Hours Each	x Equip Cost	= Subtotal
Grader:	0	0	$187.45	$0.00
Loader:	0	0	$117.39	$0.00
Backhoe:	0	0	$111.88	$0.00

(5.2D) Total $0.00

Dust Palliative (Water)

Spreading Hours

No Miles	/ Freq MPH	= Truck Hours	x Days	x /Day	= Hours
0.00	0		0	0	0

Load & Haul =	0.0	0	0	0
Total Hours =	0			

Truck Cost: $114.98/Hr. x 0.0 Hours = $0.00

(5.2E) Total $0.00

Surface Repair (Aggregate)

Quarry / Source Name: Maintenance Rock

Production Cost:	100.0 CY x $0.00/CY	=	$0.00
Haul to Stockpile:			
Grades > 15%	100.0 CY x (($2.56/CY x 5.00 Mi) + $0.85)	=	$1,365.00
Grades <= 15%	100.0 CY x (($1.28/CY x 5.00 Mi) + $0.85)	=	$725.00
State / Co Roads	100.0 CY x (($0.57/CY x 10.00 Mi) + $0.85)	=	$655.00
Stockpile:	100.0 CY x $1.34/CY	=	$134.00
Load from Stockpile:	100.0 CY x $1.39/CY	=	$139.00
Haul from Stockpile:			
Grades > 15%	100.0 CY x (($2.56/CY x 3.00 Mi)	=	$768.00
Grades <= 15%	100.0 CY x (($1.28/CY x 3.00 Mi)	=	$384.00
State / Co Roads	100.0 CY x (($0.57/CY x 0.00 Mi)	=	$0.00
Process with Grader:	100.0 CY x $1.22/CY	=	$122.00
	SubTotal		$4,292.00

Quarry / Source Name: SPOT ROCK

Production Cost:	100.0 CY x $10.00/CY	=	$1,000.00
Haul to Stockpile:			
Grades > 15%	100.0 CY x (($2.56/CY x 0.00 Mi) + $0.85)	=	$0.00
Grades <= 15%	100.0 CY x (($1.28/CY x 0.00 Mi) + $0.85)	=	$0.00
State / Co Roads	100.0 CY x (($0.57/CY x 0.00 Mi) + $0.85)	=	$0.00
Process with Grader:	100.0 CY x $1.22/CY	=	$122.00
Compaction:	100.0 CY x $1.41/CY	=	$141.00
	SubTotal		$1,263.00

(5.2F) Total $5,555.00

Other

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

(5.2G) Total $0.00

Decommissioning

Other Costs

Road Number	Cubic Yds Pullback Material		Qty Waterbars		Qty Earthen Barriers	= Total
34-2E-24.07	(0x2.23)	+	(4x87.3)	+	(0x261.9)	= $349.20
34-2E-24.03	(0x2.23)	+	(4x87.3)	+	(0x261.9)	= $349.20

(Other Cost) Total $698.40

Time & Equipment

34-2E-24.07 Camoflauge Entrance: 1 EA @ $142.79/EA	=$142.79
34-2E-24.07 Seed and Mulch: 0.27 Acre @ $929.70/Acre	=$251.02
34-2E-24.03 Camoflauge Entrance: 1 EA @ $142.79/EA	=$142.79
34-2E-24.03 Seed and Mulch: 0.28 Acre @ $929.70/Acre	=$260.32

(5.2H) Decommissioning Total $1,495.32