UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Tillamook Field Office
4000 Blimp Blvd., Ste. #380
Tillamook, Oregon 97141

Cardinal Direction Timber Sale
ORN004-TS-2024.0403
Date: July 29, 2024

TIMBER SALE PROSPECTUS

THIS IS A PROSPECTUS ONLY. ATTACHMENTS MAY NOT INCLUDE ALL EXHIBITS REFERRED TO IN THE CONTRACT. THE COMPLETE CONTRACT, INCLUDING ALL EXHIBITS, IS AVAILABLE FOR INSPECTION AT THE NORTHWEST OREGON DISTRICT OFFICE.

NOTICE IS HEREBY GIVEN that the Bureau of Land Management will offer for sale timber as described herein for oral auction, pursuant to Instructions to Bidders, as stated on Form No. 5440-9. Written and oral bids will be received by the District Manager, or designated representative, in the timber sale room at the District Office, 1717 Fabry Road, S.E., Salem, Oregon. Written bids and deposits will be accepted beginning at 8:30 a.m. and the timber sale oral auction will commence at 9:00 a.m., on Wednesday, August 28, 2024. Before bids are submitted, full information concerning the timber, the conditions of sale and submission of bids, including appraised prices per species, should be obtained from the above District Manager, or designated representative. The right is hereby reserved to waive technical defects in this advertisement and to reject any or all bids. The United States reserves the right to waive any informality in bids received whenever such waiver is in the interest of the United States.

THIS PROSPECTUS does not constitute the decision document for purposes of appeal of a forest management decision. Consistent with 43 CFR Subpart 5003.2(b), the date the BLM posts the forest management decision on the BLM's ePlanning website establishes the effective date of the decision for purposes of an administrative appeal. The decision was posted to the BLM's ePlanning website on July 15, 2024, referring to the Upper Willamina Forest Management Project, DOI-BLM-ORWA-N040-2021-00010-EA. IN YAMHILL & TILLAMOOK COUNTY: OREGON. For the purposes of 43 CFR 5401.0-6 and 5430.0-6, this advertisement is being published on July 29, 2024, on the BLM Timber Sale Notice Website.

AN ENVIRONMENTAL ASSESSMENT was prepared for this timber sale tract, and a Finding of No Significant Impact has been documented. These documents are available for inspection as background for each timber sale tract at the Northwest Oregon District Office.

A WRITTEN BID on Form 5440-9 at not less than the advertised appraised price on a unit basis per species and the required minimum bid deposit shall be required to participate in oral bidding.

THE SUCCESSFUL BIDDER, as a condition of award, will be required to sign Form 5430-11, a certification that the bid was arrived at by the bidder or offeror independently, and was tendered without collusion with any other bidder or offeror. Also, Form 5450-17, Export Determination must be completed by the successful bidder. To expedite procedure, this form should be completed and submitted with the written bid.

THE VOLUMES LISTED herein are estimates only. The sale volumes listed are based on 16-foot taper breaks which must be taken into consideration if comparisons are made with volume predictions based on other standards. The volumes based on 32-foot taper breaks are shown for comparison purposes. No sale shall be made for less than the advertised appraised price. The Purchaser shall be liable for the total purchase price, without regard to the amount bid per unit, even though the quantity of timber actually cut or removed or designated for taking is more or less than the estimated volume or quantity so listed.

THIS TIMBER SALE has been cruised based upon Eastside Scribner board foot measure. The minimum bid figures shown by species are dollars per thousand board feet (MBF). The minimum bid increment will be $0.10 per MBF.

A PERFORMANCE BOND in an amount not less than 20 percent of the total purchase price will be required for all contracts of $2,500 or more. A minimum performance bond of not less than $500 will be required for all installment contracts less than $2,500.

QUALIFIED SMALL BUSINESS concerns may apply to SBA for a loan to provide financing for access road construction required under the terms of qualifying timber sale contracts, and necessary contract changes will be made. Approval of loan applications rests with SBA and may be contingent on availability of funds. Applicants for such loans shall notify BLM of their intention to apply for a loan.

PRE-AWARD QUALIFICATIONS. The high bidder may be required to furnish information to determine the ability to perform the obligations of the contract. If the high bidder is determined not qualified, responsible or refuses to respond within fifteen (15) days of a request for information pertaining to qualifications, the contract may be offered and awarded for the amount of the high bid to the highest of the bidders who is qualified, responsible, and willing to accept the contract.

LOG EXPORT AND SUBSTITUTION: All timber sales, including timber from Federal rights-of-ways, shall be subject to the restrictions relating to the export and substitution of unprocessed timber from the United States in accordance with P.L. 94-165 and 43 CFR 5400 and 5420, as amended.

LOG EXPORT AND SUBSTITUTION RESTRICTIONS: Excepting Port-Orford-cedar, all timber offered for sale hereunder is restricted from export from the United States in the form of unprocessed timber and is prohibited from being used as a substitute for exported private timber. 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.

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

ADDITIONAL INFORMATION concerning this timber sale tract is available at the above District Office. A copy of the timber sale contract is also available for inspection at the District Office. The prospectus for this/these sale(s) is also available online at: https://www.blm.gov/programs/natural-resources/forests-and-woodlands/timber-sales. The prospectus includes maps and tables that cannot be made Section 508 compliant. For help with its data or information, please contact the Tillamook Field Office at 503-815-1100.

TIMBER SALE NOTICE

NORTHWEST OREGON DISTRICT
TILLAMOOK FIELD OFFICE
COLUMBIA MASTER UNIT

Sale Date: August 28, 2024

CONTRACT NO.: ORN04-TS-2024.0403, Cardinal Direction Timber Sale, Lump Sum
YAMHILL AND TILLAMOOK COUNTY, OREGON: O&C: **Oral Bid**
BID DEPOSIT REQUIRED: **$109,900.00**

All timber designated for cutting on: S½ NE¼, SE¼ SW¼, SE¼ **Sec. 07;** SE¼ NE¼, S½ NW¼, W½ SW¼, SE¼ **Sec. 19;** T. 04 S., R. 06 W., WM., Oregon.

THIS TIMBER SALE HAS BEEN CRUISED BASED UPON EASTSIDE SCRIBNER MEASURE.
Minimum bid figures shown by species are dollars per thousand board feet (MBF). The minimum bid increment will be $0.10 per MBF. Oral bids will be restricted to Douglas-fir.

Approx. No. Merchantable Trees	Est. Vol. MBF 32' Log	Species	Est. Vol. MBF 16' Log	Appraised Price Per MBF	Estimated Volume Times Appraised Price
19,323	4,389	Douglas Fir	5,412	$202.90	$1,098,094.80
421	14	Bigleaf Maple	21	*$21.70	$455.70
79	3	Grand Fir	5	*$33.30	$166.50
19,823	**4,406**		**5,438**		**$1,098,717.00**

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

LOG EXPORT AND SUBSTITUTION RESTRICTIONS: All timber offered for sale hereunder is restricted from export from the United States in the form of unprocessed timber and prohibited from substitution of exported private timber.

CRUISE INFORMATION: The timber volumes for the harvest units were based on a variable plot cruise for estimating the board foot volume of trees. Plots were measured using a 40 or 20 BAF. None of the total sale volume is salvage material. For merchantable Douglas- fir trees the average DBHOB is 15.6 inches; the average gross merchantable log contains 65 bf (board feet); the total gross volume is approximately 5,672 MBF; and 96% recovery is expected.

CUTTING AREA: Ten (10) units totaling approximately two hundred twenty-one (221) acres, of which one hundred eighty-seven (187) acres shall be partial cut harvest, and thirty-four (34) acres shall be regeneration harvest. These acres are inclusive of Patch Cut and Clump Areas as shown on Exhibit A. In addition, approximately two (2) acres of right-of-way shall be cut. Acres shown on Exhibit A have been calculated based on Global Positioning System traverse procedures including differential correction.

DURATION OF CONTRACT: Contract length will be 36 months for cutting and removal of timber.

LOCATION: The contract area is located approximately 9 air miles north of Willamina, Oregon. Starting in Willamina head north on Willamina Creek Road for 6 miles. Take a slight right to stay on Willamina Creek Road and continue for .7 miles. Take a right on SW East Creek Road and continue for 4.7 miles where you will arrive at Unit 6. Consult a project location map.

SPECIAL PROVISIONS TO NOTE

BUYOUT SECURITIES (Sec. 44(jj)): The Purchaser shall create coarse woody debris in accordance with Sec. 44(ii). The Purchaser shall have the option of completing this work, or in lieu thereof, may make a buyout security deposit to the Bureau of Land Management in the amount of one hundred forty-four thousand, nine hundred ninety-five and 88/100 dollars ($144,995.88), and upon making such deposit, the Purchaser shall be relieved of the obligations set out in this subsection. The Purchaser shall notify the Authorized Officer of their intention to make this deposit prior to the date of execution of this contract and the Authorized Officer shall establish a required schedule of payments.

Seasonal Restrictions (Sec. 44(k) & (l)): No cutting or yarding shall be conducted in Units 7, 8, and 9 from April 1 to August 5 of the same calendar year both days inclusive. No cutting or yarding shall be conducted in Units 7, 8, and 9 from August 6 to September 15 of the same calendar year from 2 hours before sunset to 2 hours after sunrise. No road renovation activities may be conducted on road 4-6-19.0 M.P. 0.298 to 0.702 for the same dates and times listed above.

Logging (Sec. 44(f)): The Purchaser shall provide flaggers to control traffic on SW East Creek Road whenever hazardous conditions are present from operations in accordance with Sec.29. The Purchaser shall not block or close this road without concurrence from Yamhill County.

ACCESS AND ROAD MAINTENANCE:
Access is provided by John Hancock Life Insurance Company, and the Bureau of Land Management (BLM) owned roads. All roads used in conjunction with this sale, except 4-6-18.0 and 4-7-36.0, will be maintained by the Purchaser. The Purchaser will be required to pay a rockwear obligation of eight thousand three hundred ninety-seven and 20/100 (**$8,397.20)** dollars to the Government, pay a maintenance fee of seven thousand two hundred ninety-seven and 36/100 **($7,297.36)** dollars to the Government, and spread **200 CY** crushed rock on BLM roads for maintenance requirements.

In the use of John Hancock Life Insurance Company owned roads, under Right-of-Way Agreement No. S-682 (OR045816) and as listed in section 44, the Purchaser will be required to enter into a license agreement which requires: (a) Purchaser maintenance of all John Hancock Life Insurance Company owned roads, (b) Purchaser pay a road use fee of one thousand nine hundred and 00/100 ($1,900.00) dollars, (d) The Purchaser will be required to carry liability insurance with the limits of $1,000,000/$1,000,000/$1,000,000 and a performance bond of $500.

The designated haul route for Unit 1 through 5 is out Willamina Creek Road (4-7-36.0) towards Willamina. The designated haul route for Unit 6 through 10 is out the East Creek County Road towards Willamina.

Road use obligations and rockwear fees have been calculated using timber volumes based on the actual BLM timber sale cruise volume. Additional fees for road use obligations and rockwear will be calculated at the agreed upon rates (in the license agreement) for additional timber volume for non-BLM controlled roads. Additional fees for rockwear will be calculated at the current rate for additional timber volume for BLM controlled roads and be charged to the Purchaser. Purchaser maintenance shall include frequent blading and shaping of road surface; ditch, culvert and catch basin cleaning; removal of minor slides and other debris. Roads shall be left in a condition to withstand adverse weather at the end of the seasonal operations.

ROAD CONSTRUCTION, IMPROVEMENT, AND RENOVATION: The Purchaser will be required to do all work set forth below. The Purchaser shall supply all materials unless otherwise indicated.

1. New Road Construction:
   Total Length: 47+14 Stations.
   Road construction work to be performed is described in detail in Exhibit C and as shown on Exhibit A and C maps.

2. Renovation:

Total Length: 350+97 Stations

Road renovation work to be performed is described in detail in Exhibit C and as shown on Exhibit A and C maps.

3. Estimated Quantities:

a. Clearing, Grubbing, and Brushing:

11.85 acres of Clearing and Grubbing
2.866 miles of Brushing

b. Culverts: Reference Exhibit C for details

536 feet of 18-inch Corrugated Plastic Pipe (CPP) – Type S (14 Pipes)
10 feet of 18-inch Corrugated Plastic Pipe (CPP) – Type C (1 Pipe)
450 feet of 24-inch Corrugated Plastic Pipe (CPP) – Type S (8 Pipes)
10 feet of 24-inch Corrugated Plastic Pipe (CPP) – Type C (1 Pipe)
40 feet of 24-inch Perforated Aluminized Steel Pipe (CMP) (1 Pipe)
45 feet of 30-inch Aluminized Steel Pipe (CMP) (1 Pipes)
195 feet of 36-inch Aluminized Steel Pipe (CMP) (4 Pipes)
39 Metal "T" Post Inlet Markers
4 Metal "T" Posts for Downspouts Installations
20 Straw Bales for Sediment Catch Basin w/ Bale Installations

c. Aggregate Material & Rock Source: Reference Exhibit C and D for details

Commercial Source:

1,200 CY 6" Jaw Run Base Rock
2,195 CY 1 ½"-0" Crushed Rock
200 CY 1 ½ -0" Crushed Rock (Maintenance Rock)
300 CY 1 ½ - ¾" Drain Rock
545 CY Class 5 Rip-Rap

All rock required for project work shall be obtained from a commercial source.

Other:

- Compaction of all final grades will be required.
- Right of way debris will be disposed of by scattering adjacent to all roads, outside of clearing limits.
- All roads shall be decommissioned as follows:
- The Purchaser shall decommission 9,175 feet of road by subsoiling, installing non-drivable waterbars, scattering slash, removing culverts, and blocking. The Purchaser shall decommission 1,531 feet of road by installing non-drivable waterbars, removing culverts, spreading grass seed, and blocking. The Purchaser shall decommission 2,205 feet of road by installing non-drivable waterbars and blocking.
- Grass seeding will be required on all newly disturbed areas. Grass seed will be furnished by the Government.
- Straw mulch will be required on all disturbed/seeded soils that are wet and/or within 50 feet each side of "Live stream" locations and all disposal sites. Grass straw for mulch will be furnished by the Government.
- All waste from re-establishing ditchlines on rock surfaced roads shall be bunched and end-hauled to designated waste area.
- All slide removal material shall be end-hauled to designated waste areas.
- All culverts removed upon road renovation shall be disposed of in a legal fashion off BLM Land.

- All culverts removed upon road decommissioning shall be salvaged and delivered to the BLM Maintenance Facility at the SW ¼ of Section 5, T. 3 S., R. 6 W., W.M.

SEASONAL RESTRICTION MATRIX:

Restricted Times are Shaded

Activity	JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG			SEP		OCT		NOV		DEC	
	1	16	1	16	1	16	1	16	1	16	1	16	1	16	6	7	16	1	16	1	16	1	16	1	16
Mechanized falling and **Ground-Based yarding**																									
Log haul, rock haul, and water haul on (all roads except road #4-6-19.0 and East Creek County Road) Restriction may be waived if Purchaser elects to upgrade roads, at their expense, to all-season haul requirements as approved by authorized officer (Sec. 44.n.)																									
Cutting and Yarding in Units 7, 8, 9.																Daily Restrictions*									
Road work associated with road #4-6-19.0 M.P. 0.298 to 0.702.																									
Maintenance Activities and Roadside brushing																									
Road renovation, construction, and decommissioning																									
In-Stream Activities in the Yamhill River watershed																									

* Operation Activities have daily restrictions from August 6 to September 15 of the same calendar year from 2 hours before sunset to 2 hours after sunrise.

***Sec. 43**. Wood Products Reserved from Cutting*

RESERVED

a. All timber in the Reserve and Clump Areas shown on Exhibit A and all trees that are painted orange, and/or posted, which mark the boundaries of the Reserve Area.

b. All trees marked with orange paint above and below stump height within the boundaries of the Cutting Areas shown on Exhibit A.

c. All conifer trees less than seven (7) inches diameter at breast height (dbh), and all hardwoods not listed on Exhibit B in the Contract Area shown on Exhibit A which do not present a safety hazard. If any are felled, they shall be retained on site.

d. Existing down logs and snags in the Contract Area shown on Exhibit A, which do not present a safety hazard. All down logs and felled snags shall be retained on site.

e. Trees felled within road rights-of-way, which are marked with yellow paint above and below stump height shall remain on site and be placed outside of the road prism as directed by the Authorized Officer.

***Sec. 44**. Special Provisions*

LOGGING

a. Before beginning operations on the Contract Area for the first time or after a shutdown of seven (7) or more days, the Purchaser shall notify the Authorized Officer in writing of the date they plan to begin operations. This written notification must be received by the Authorized Officer no less than seven (7) days prior to the date the Purchaser plans to begin or resume 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.

b. Prior to the commencement of operations, the Purchaser shall obtain from the Authorized Officer 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 must be held before the logging plan will be approved. All logging shall be done in accordance with the approved logging plan. The Purchaser shall provide a minimum of seven (7) days' notice when requesting the scheduling of a pre-work conference.

c. Excessive damage to reserve timber, as determined by the Authorized Officer, will result in suspension of yarding and felling operations until corrective measures to prevent further damages have been approved by the Authorized Officer.

d. No falling, yarding, or loading is permitted in or through the Reserve Areas, shown on Exhibit A, unless otherwise approved by the Authorized Officer.

e. Prior to attaching any logging equipment to a reserve tree, the Purchaser shall obtain approval from the Authorized Officer, and shall take precautions to protect the tree from damage as directed by the Authorized Officer.

f. The Purchaser shall provide flaggers to control traffic on SW East Creek Road whenever hazardous conditions are present from operations in accordance with Sec. 29. The Purchaser shall not block or close this road without concurrence from Yamhill County.

g. At all landings, all non-merchantable logs more than eight (8) inches in diameter at the large end and exceeding eight (8) feet in length shall be scattered or decked at a location designated by the Authorized Officer.

h. In skyline harvest areas all yarding shall be done with a skyline or similar cable system equipped with a carriage capable of transporting the leading end of the logs clear of the ground. The carriage shall be capable of being held in position on the skyline during all lateral yarding and shall be able to pass intermediate support jacks as required. Full suspension is required within fifty (50) feet of streams. The rigging of tail or lift trees, intermediate supports and use of tail holds outside the Cutting Areas shall be required where necessary to meet this requirement. Space designated skyline corridors at a minimum of one hundred fifty (150) feet apart unless otherwise agreed to in writing by the Authorized Officer.

i. Ground-based operations are limited to slopes of thirty-five (35) percent or less. The Authorized Officer may approve the use of specialized, ground-based, mechanized equipment (machines specifically designed to operate on slopes greater than thirty-five (35) percent) on slopes of fifty (50) percent or less, except within two hundred ten (210) feet of streams. All skidding shall be done by equipment operated entirely on skid trails that have been approved by the Authorized Officer and use existing skid trails where available. Where ground-based operations are approved by the Authorized Officer, skid trails shall not exceed fifteen (15) percent of the total ground-based yarding area. Excavation on designated skid trails shall be limited to a maximum cut of one (1) foot unless otherwise approved by the Authorized Officer. The Purchaser shall directionally fall trees into the lead with the skidding direction and winch or carry the logs to the skid trails. Temporary logging roads, skid trails, and harvester/forwarder trails shall be water barred and blocked as directed by the Authorized Officer, after each operating season before the fall wet season begins. Temporary logging roads, skid trails, and harvester/forwarder trails will be de-compacted/tilled and covered with slash as directed by the Authorized Officer.

j. Before cutting and removing any trees necessary to facilitate logging in the Cutting Areas shown on Exhibit A, the Purchaser shall identify the location of skid trails, cable yarding roads, and tail hold, tieback, guy line, 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:

1. All skid roads and/or cable yarding roads upon which timber is identified by the Purchaser to be cut and removed in accordance with this special provision must be necessary for the safe and expeditious removal of timber sold under this contact and shall be limited to the

minimum width necessary for yarding of logs with a minimum of damage to reserve trees. The width of each skid road and/or cable yarding road shall be limited to twelve (12) feet unless otherwise approved by the Authorized Officer.

2. The Purchaser may immediately cut and remove additional timber to clear skid trails and cable yarding roads; and provide tail hold, tieback, guy line, lift and intermediate support trees when the trees have been marked with blue or green paint above and below stump height by the Authorized Officer and thereby approved for cutting and removal by the Authorized Officer. When trees are marked with yellow paint above and below stump height, they may be cut but must remain on site. 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(d) of the contract.

3. 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, the Authorized Officer determines that the tree species are not listed in Exhibit B of this contract and otherwise reserved in Sec. 43. of the contract or any tree that exceeds forty (40) inches dbh shall be appraised and sold by bilateral modification of the contract at current fair market value in accordance with Sec. 8. of the contract.

4. 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 Sec. 10. of the contract constitutes a violation of the contract and under Sec. 13. of the contract may constitute a trespass rendering the Purchaser liable for damages under applicable law.

5. 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 deemed necessary and appropriate for the Government to safely measure and mark additional timber.

SEASONAL RESTRICTIONS

k. No cutting or yarding shall be conducted in Units 7, 8, and 9 from April 1 to August 5 of the same calendar year both days inclusive. No cutting or yarding shall be conducted in Units 7, 8, and 9

from August 6 to September 15 of the same calendar year from two (2) hours before sunset to two (2) hours after sunrise.

l. No road renovation activities may be conducted on road 4-6-19.0 M.P. 0.298 to 0.702 from April 1 to August 5 of the same calendar year, both days inclusive. No road renovation activities from August 6 to September 15 of the same calendar year from two (2) hours before sunset to two (2) hours after sunrise.

m. No road renovation (except roadside brushing, which is permitted year-round), road construction, road improvement, or road decommissioning, shown on Exhibit C, shall be conducted during the wet season (generally between October 16 of one calendar year to May 31 of the following calendar year), and during other periods of wet soil conditions, as determined by the Authorized Officer.

n. No mechanized falling or ground-based equipment operation within harvest units shown on Exhibit A during the wet season and during other periods of wet soil conditions as determined by the Authorized Officer. Based on site specific considerations, as determined by the Authorized Officer, some of these activities may be allowed during the seasonal restriction.

o. No log hauling, water hauling, or rock hauling during the wet season on roads 4-6-7.0 west, 4-6-7.0 east, 4-6-7.1, 4-6-7.3, 4-6-18.0, 4-6-19.1, 4-6-19.2, 4-6-19.3, 4-6-19.4, 4-6-19.5, 4-6-19.6, 4-6-19.7, 4-6-19.8, 4-6-19.9, 4-7-36.0 and during other periods of wet soil conditions as determined by Authorized Officer. Hauling may be allowed if the Purchaser, at their expense, elects to complete road work necessary to allow for wet season cable yarding and hauling, as determined by the Authorized Officer. Necessary road work will be determined on a road-by-road basis and may include, but is not limited to, rock surfacing, improving drainage features, and more frequent road maintenance.

p. No road maintenance, as shown on Exhibit E, and described in Exhibit D, shall be conducted during periods of wet soil conditions or when there is a potential for sediment delivery to streams as determined by the Authorized Officer.

q. No work in live streams shall be conducted between October 1 of one calendar year and July 14 of the following calendar year in the Yamhill River watershed, both days inclusive, unless BLM receives a waiver from the Oregon Department of Fish and Wildlife and is approved by the Authorized Officer.

ROAD CONSTRUCTION, RENOVATION, IMPROVEMENT, MAINTENANCE AND USE

r. The Purchaser shall haul only on the designated haul route, shown in the tables below and in Exhibit E, unless an alternative route is approved by the Authorized Officer. The designated haul route for Unit 1 through 5 is out Willamina Creek Road (4-7-36.0) towards Willamina. The designated haul route for Unit 6 through 10 is out the East Creek County Road towards Willamina.

s. The Purchaser shall construct natural surfaced roads: 4-6-19.3 (Sta. 0+00 - 3+90), 4-6-19.4 (Sta. 0+00 – 5+50), 4-6-19.5 (Sta. 0+00 – 27+16), 4-6-19.6 (Sta. 0+00 – 3+95), 4-6-19.7 (Sta. 2+72 – 4+25), 4-6-19.9 (Sta. 0+00 – 5+10). The Purchaser shall renovate natural surfaced roads: 4-6-7 West (Sta. 0+00 – 5+54), 4-6-7.0 East (0+00 – 22+05), 4-6-7.1 (M.P. 0.000 – 0.185), 4-6-7.3 (Sta. 0+00 – 5+03), 4-6-19.7 (Sta. 0+00 – 2+72) and (Sta. 4+25 – 20+06), 4-6-19.8 (Sta. 0+00 – 21+05). The Purchaser

shall renovate rocked surfaced roads: 4-6-18.0 (M.P. 0.000 – 1.847), 4-6-19.0 (M.P. 0.000 – 0.702), 4-6-19.1 (M.P. 0.000 – 0.217), 4-6-19.2 (M.P. 0.000 – 0.098), 4-7-36.0, culvert replacements at (M.P. 2.218 and 2.704), East Creek County Road (sediment control work 0.000 – 2.231). Construction and renovation shall be done in strict accordance with the plans and specifications shown on Exhibit C, which is attached hereto and made a part hereof.

t. Any required construction, renovation, and improvement shall be completed and accepted prior to the removal of any timber, except right-of-way timber, over the road.

u. Any required construction, renovation, and improvement shall be completed and accepted prior to rock haul outside of the dry season (generally June 1 – October 15).

v. The Purchaser shall decommission 4-6-7.3 (Sta. 0+00 – 5+03), 4-6-19.3 (Sta. 0+00 - 3+90), 4-6-19.4 (Sta. 0+00 – 5+50), 4-6-19.5 (Sta. 0+00 – 27+16), 4-6-19.6 (Sta. 0+00 – 3+95), 4-6-19.7 (Sta. 0+00 – 20+06), 4-6-19.8 (Sta. 0+00 – 21+05), 4-6-4-6-19.9 (Sta. 0+00 – 5+10) as shown on Exhibit C, by subsoiling, installing non-drivable waterbars, scattering slash, removing culverts, and blocking. The Purchaser shall decommission 4-6-7.0 West (Sta. 0+00 – 5+54), 4-6-7.1 (M.P. 0.000 – 0.185), as shown on Exhibit C, by installing non-drivable waterbars, removing culverts, spreading grass seed, and blocking. The Purchaser shall decommission 4-6-7.0 East (Sta. 0+00 – 22+05), as shown on Exhibit C, by installing non-drivable waterbars, and blocking. Subsoiling shall consist of loosening the soil to a depth of eighteen (18) inches utilizing excavator attachments, log loader tongs, or other approved equipment acceptable to the Authorized Officer. No subsoiling shall be required where the road traverses rock outcroppings. All natural water courses shall be opened to prevent erosion of the road. Barriers shall be constructed, and clearing debris shall be placed on and around the barriers to prevent further use of the road by vehicles as shown on Exhibit C. Decommissioning and stabilization shall be completed within thirty (30) days of completion of yarding and hauling operations on that road.

w. The Purchaser is authorized to use the roads listed below and shown on Exhibit E which are under the jurisdiction of the Bureau of Land Management for the removal of Government timber sold under the terms of this contract and/or the hauling of rock and water as required in Exhibit C, Exhibit D, and Exhibit E provided the Purchaser complies with the condition set forth in Sec. 44(x).

Road No. and Segment	Length Used	Road Control	Road Surface Type	Maintenance Responsibility
4-6-7.0 West	554’	BLM	Natural	Purchaser
4-6-7.0 East	2,205’	BLM	Natural	Purchaser
4-6-7.1	0.185 mi.	BLM	Natural	Purchaser
4-6-7.3	503’	BLM	Natural	Purchaser
4-6-18.0	1.847 mi.	BLM	Rocked	Purchaser
4-6-19.0	0.702 mi.	BLM	Rocked	Purchaser
4-6-19.1	0.217 mi.	BLM	Rocked	Purchaser
4-6-19.2	515’	BLM	Rocked	Purchaser
4-6-19.3	390’	BLM	Natural	Purchaser
4-6-19.4	550’	BLM	Natural	Purchaser
4-6-19.5	2,716’	BLM	Natural	Purchaser
4-6-19.6	395’	BLM	Natural	Purchaser

4-6-19.7	2,006’	BLM	Natural	Purchaser
4-6-19.8	2,105’	BLM	Natural	Purchaser
4-6-19.9	510’	BLM	Natural	Purchaser
4-7-36.0	4.675 mi.	BLM	Rocked	BLM

x. The Purchaser shall perform any road repair and maintenance work on roads used and designated above, under the terms of Exhibit D, “Road Maintenance Specifications” of this contract which is attached hereto and made a part hereof. Purchaser shall spread **200** cubic yards of crushed rock on BLM controlled roads as directed by the Authorized Officer and as part of maintenance requirements. Purchaser shall also pay a rockwear fee of eight thousand three hundred ninety-seven and 20/100 (**$8,397.20)** dollars to the Government. Additional fees for rockwear will be calculated at the current rate for additional timber volume for BLM controlled roads and be charged to the Purchaser and be paid prior to contract termination. Purchaser shall also pay a maintenance fee of seven thousand two hundred ninety-seven and 36/100 **($7,297.36)** dollars to the Government. Additional fees for maintenance will be calculated at the current rate for additional timber volume for BLM controlled roads and be charged to the Purchaser and be paid prior to contract termination. Final maintenance shall be completed no later than one (1) year after contract expiration unless otherwise approved by the Authorized Officer.

y. In the use of the roads listed below and shown on Exhibit E, the Purchaser shall comply with the conditions of Right-of-Way and Road Use Agreement S-682 (OR045816) between the United States of America and John Hancock Life Insurance Company. The Purchaser will be required to enter into a license agreement with John Hancock Life Insurance Company prior to commencement of operations. The Purchaser shall furnish to the Authorized Officer a copy of the required executed license agreement. The license agreement conditions include: 1) The Purchaser shall perform any road repair and maintenance work on John Hancock Life Insurance Company controlled roads listed below under the terms of Exhibit D, “Road Maintenance Specifications”, of this contract which is attached hereto and made a part hereof. 2) Purchaser pay a road use fee of one thousand nine hundred and 00/100 **($1,900.00)** dollars. 3) Default by the Purchaser of said Right-of-Way and Road Use Agreement or any license agreement executed pursuant thereto, 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. The Purchaser will be required to carry liability insurance with the limits of $1,000,000/$1,000,000/$1,000,000 and a performance bond of $500.

Road No. and Segment	Length Used	Road Control	Road Surface Type	Maintenance Responsibility
4-7-19.7 (segment A1)	0.058	John Hancock	Natural	Purchaser

z. The Purchaser agrees that if they request to use any other private road, subject of a right-of-way agreement with the Government for the removal of Government timber sold under the terms of this contract, and is approved by the Authorized Officer, 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 shares of the capital investment of any such road.

aa. With the prior written approval of the Authorized Officer, the Purchaser may arrange for cooperative maintenance with other users of roads included in Exhibit E; 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 with other users of these roads.

bb. The Purchaser shall be responsible for repair of any damage to roads or structures caused using 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.

cc. The Purchaser shall perform any road repair and maintenance work on roads used (and designated as Purchaser Maintenance), under the terms of Exhibit D, "Road Maintenance Specifications", of this contract which is attached hereto and made a part hereof.

dd. 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. No loading or yarding from asphalt surfaces is permitted.

ENVIRONMENTAL PROTECTION

ee. To prevent the spread of noxious weeds, the Purchaser shall pressure wash all road construction equipment (except dump trucks), ground-based logging equipment that will be used off existing roads, and loaders and mechanically propelled brush cutters, prior to each entry onto the BLM Land shown on Exhibit A, 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.

FIRE PREVENTION

ff. Primarily for purposes of fire prevention and control, the Purchaser shall, prior to the operation of power-driven equipment in construction or logging operations under this contract during the fire season or periods of fire danger, prepare a fire prevention and control plan to the satisfaction of the Authorized Officer. Purchaser shall take such measures for prevention and suppression of fire on the contract area and other adjacent Government lands used or traversed by Purchaser in connection with operations as are required by applicable laws and regulations. However, when in the opinion of the Authorized Officer, weather and other conditions affecting fire incidence and control make special precautions necessary to protect the contract area and said Government lands, Purchaser shall take such additional or other fire prevention and control measures as may be required by the Authorized Officer. The Purchaser shall comply with Oregon Department of Forestry Industrial Fire Precaution Level (IFPL) I Fire Season requirements. At IFPL II and III, additional fire prevention and control provisions may be added as determined by the Authorized Officer and specified in written instructions to the Purchaser to mitigate dry fuel and weather conditions.

LOGGING RESIDUE REDUCTION

gg. In addition to the requirements of Sec. 15 of this contract, and notwithstanding the Purchasers satisfactory compliance with State laws and regulations regarding offsetting or abating the additional fire hazard created by this operation and the States willingness to release the Purchaser from liability for such hazard, the Purchaser shall remain responsible to the Government for performance of the following hazard reduction measure(s) required by this contract: Perform logging residue reduction and site preparation work on approximately ninety-six (96) acres of harvest area located within Cutting Areas. The required work shall consist of any treatment or combination of treatments, 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. Prior to commencement of any operation under this Section of the contract, a slash disposal and pre-work conference between the purchaser's representative and the Authorized Officer must be held at a location designated by the Authorized Officer. The number of acres of each treatment shall be determined by the Authorized Officer. All slash disposal 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 because of Purchaser's operations under the terms of this contract.

1. Excavator pile and burn slash up to thirty-two (32) acres within ground-based portion and along roads as directed by the Authorized Officer. Slash shall be piled by an excavator equipped with a hydraulic thumb.

a. Unmerchantable logs greater than six (6) inches in diameter on the small end shall be left in place or positioned so that they will not be burned.

b. Slash less than six (6) inches in diameter would be less than one (1) foot in height.

c. Machine piles shall be located as far as possible from retention trees, snags, or unit boundaries to minimize damage.

d. Machine piles shall be kept free of dirt and other non-wood debris and constructed as compactly as possible. There should be an adequate supply of finer fuels located within and under the covered area of the pile to ensure ignition of the larger fuels.

e. A minimum ten (10) foot by ten (10) foot cover of four (4) mil (0.004) inch thick polyethylene shall be placed on top each machine pile to maintain a dry ignition point. The cover shall be firmly fixed to each pile to hold it in place. Plastic shall be held in place with woody debris or tied with rope or twine. The plastic must be secured so that it is held in place during strong wind conditions. The Purchaser is required to furnish the covering materials. Covering shall be completed as directed by the Authorized Officer.

f. Avoid creating piles greater than sixteen (16) feet in height or diameter.

g. Cutting Areas shall be piled during the same season that they are logged.

2. Slashing of approximately twenty-four (24) acres shall be completed as directed by the Authorized Officer.

a. All standing woody vegetation (brush), whips, and designated trees over one (1) foot in height shall be felled (slashed) and lopped into four (4) foot or smaller lengths in harvest units as directed by the Authorized Officer. Designated trees to be slashed include red alder and big leaf maple which are not otherwise reserved in Sec. 43 of this contract.

b. All logging slash and slashed woody vegetation that is greater than four (4) feet in length and between one (1) inch and six (6) inches in diameter shall be lopped if not being machine piled. Larger material which has a portion meeting this specification must be bucked at the six (6) inch diameter.

c. All woody vegetation, whips, and designated trees shall be completely severed from the stump(s). Stump height shall not exceed six (6) inches measured on the uphill side.

d. All conifers, Pacific madrone, Pacific dogwood, Oregon ash, and Oregon white oak, and Pacific yew trees shall be reserved and undamaged.

3. Pile and burn approximately sixteen (16) acres of slash within thirty (30) feet of the edge of each landing. All tops, broken pieces, limbs and debris more than one (1) inch in diameter at the large end and longer than three (3) feet in length shall be piled within fifteen (15) days of completion of hauling logs from that landing. Landing piles shall be kept free of dirt and located adjacent to roads at least twenty (20) feet from any Reserve Tree and/or as directed by the Authorized Officer. Upon completion of landing piling, the Purchaser shall prepare the landing piles for burning by securely covering each landing pile with four (4) mil (0.004) inch thick polyethylene plastic film at least ten (10) feet wide. Landing piles shall be covered sufficiently to allow for ignition in wet conditions as approved by the Authorized Officer. The plastic shall be oriented southwest to northeast. Pieces of burnable material shall be placed on top of the plastic to secure it from moving and to prevent it from blowing off during strong wind episodes. The Purchaser is required to furnish the covering materials. The timing of this covering work shall be in accordance with instructions from the Authorized Officer. No landing debris shall be dozed off the landing and covered with dirt. Debris which has been buried and is determined to be the source of holdover fire shall be excavated by the Purchaser, at the Purchaser's expense, with a tractor and/or hydraulic excavator as directed by the Authorized Officer. If the structure of the landing piles will not permit adequate consumption of piled debris by burning, the Purchaser shall re-pile them at the direction of the Authorized Officer.

4. Hand pile and cover up to twenty-four (24) acres of slash concentrations of Cutting Areas as directed by the Authorized Officer. Slash shall be piled by hand. Finished piles shall be tight and free of dirt.

a. Hand piles shall be located as far as possible from reserve trees or unit boundaries to minimize damage. Slash shall not be piled on down logs, stumps, drainage ditches, turnouts, shoulders, cut banks, or within ten (10) feet of any other pile.

b. Slash between two (2) inches and six (6) inches in diameter on the large end, having a minimum length of two (2) feet shall be piled as directed by Authorized Officer. 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. Pile size shall be a maximum of eight (8) feet in diameter by eight (8) feet in height, and minimum pile size shall be six (6) feet in diameter by five (5) feet in height at the time of final inspection by the Government. Slash left on the ground shall not exceed six (6) inches in depth.

c. All piles shall be covered with black four (4) Mil polyethylene plastic to cover at least ninety (90) percent of the surface of each pile, minimum plastic size of five (5) feet x five (5) feet. There should be an adequate supply of finer fuels located within and under the covered area of the pile to ensure ignition of the larger fuels. Plastic shall be held in place with woody debris or tied with combustible cord. The plastic must be secured so that it is held in place during strong wind conditions and maintains coverage for at least one year. The Purchaser is required to furnish the covering materials. Covering shall be done at time of piling.

d. Harvest Areas shall be piled within thirty (30) days upon receiving notification from Authorized Officer.

hh. Notwithstanding the provisions of Sec. 15 of this contract, the Government shall assume all obligations for disposal or reduction of fire hazards created by Purchaser's operations on Government lands, except for burning and mop-up assistance as required herein, and measures required in Sec. 44(gg). The Purchaser shall, under supervision of the Authorized Officer or designated representative, assist in preparing units for burning, burning, mop-up, and patrol by furnishing, at the Purchaser's own expense, the services of personnel and equipment on each unit as shown below:

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

a. One work leader(s) Firefighter Type 1 (FFT1) qualified according to National Wildfire Coordinating Group (NWCG) Wildland Fire Qualifications System guide, PMS 310-1) to supervise crew and equipment operations, and to serve as Purchaser's representative.

b. Five-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, six (6) drip torches, one (1) power saw, and one (1) backpack pump, one (1) tool for each crew member.

c. The crew shall arrive on the project area with radios capable of inter-crew communications and communication with a BLM representative at a ratio of one (1) radio per every five (5) crewmembers.

d. All ignition and mop-up personnel will be directly supervised by a BLM representative.

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

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

Time is of the essence in complying with this provision. In the event the Purchaser fails to provide the personnel and equipment required herein, the Purchaser shall be responsible for all additional cost incurred by the Government in disposing of slash including but not limited to the wages and other costs

of providing federal employees and others as substitute labor force, the cost of providing substitute equipment and appropriate additional overhead expenses. If the Purchaser's failure results in a deferral of burning and new conditions necessitate additional personnel and equipment to accomplish the planned burn, the Purchaser also shall be responsible for such additional costs.

CREATION OF COARSE WOODY DEBRIS

ii. In the Coarse Woody Debris Creation Units shown on Exhibit F, the Purchaser shall, upon completion of yarding, select and fall, top, high-girdle, cavity create, or basal-girdle one thousand eight hundred and seventy-five (1,875) live trees in accordance with Exhibit F. No adjustments of volume or value shall be made to meet these requirements. Coarse wood creation will be completed within one year of contract expiration.

BUYOUT SECURITIES

jj. The Purchaser shall create coarse woody debris in accordance with Sec. 44(ii). The Purchaser shall have the option of completing this work, or in lieu thereof, may make a buyout security deposit to the Bureau of Land Management in the amount of one hundred forty-four thousand, nine hundred ninety-five and 88/100 dollars ($144,995.88), and upon making such deposit, the Purchaser shall be relieved of the obligations set out in this subsection. The Purchaser shall notify the Authorized Officer of their intention to make this deposit prior to the date of execution of this contract and the Authorized Officer shall establish a required schedule of payments.

LOG EXPORT RESTRICTION

kk. 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.

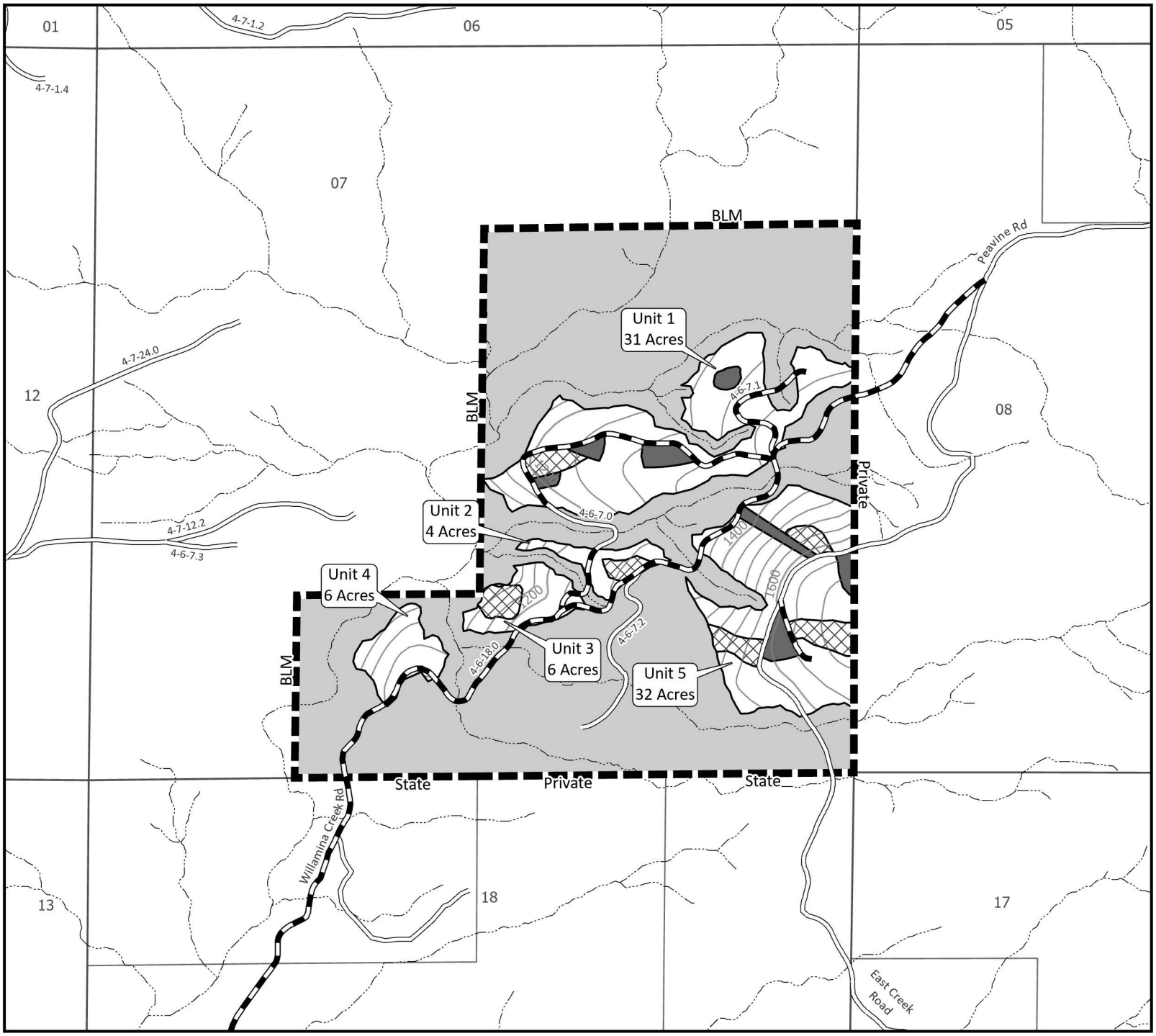
At the discretion of the Contracting Officer, the Purchaser may be required to brand and paint all logs. Any increased costs for log branding and painting shall be the responsibility of the Purchaser.

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
TIMBER SALE CONTRACT MAP

Contract No. ORN04-TS-2024.0403
Cardinal Direction Timber Sale
Exhibit A

7/1/2024

T. 4S. R. 6W, Section 7 W. M.



Partial Cut Area	187 acres
Regen Cut Area	34 acres
Right-of-Way	2 acres
Reserve Area	427 acres
Clump Area	6 acres
Patch Cut Area	21 acres
Total Contract Area	650 acres

0 500 1,000 2,000 3,000 Feet

- Contract Area
- Reserve Area
- Partial Cut Area
- Regen Cut Area
- Patch Cut Area
- Clump Area
- Road Construct
- Road Improve
- Road Renovate
- Existing Road
- Streams

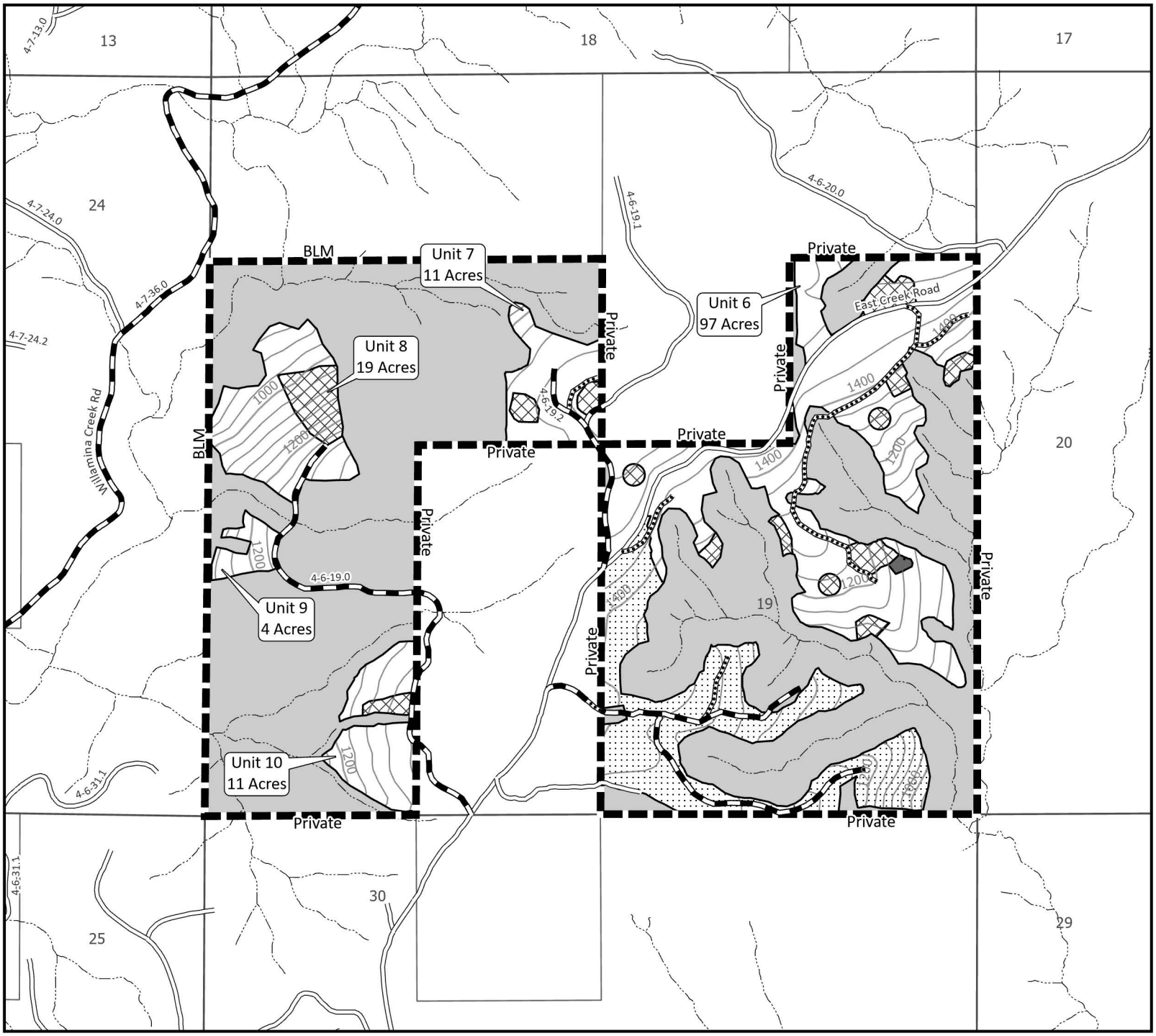
Contour Interval: 40 feet

 Note: Boundaries of harvest areas are painted/flagged in orange and posted. Right-of-ways (ROW) are posted. Harvest area acres do not include existing roads.
Prepared By: dtyler

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
TIMBER SALE CONTRACT MAP

7/1/2024

T. 4S. R. 6W, Section 19 W. M.



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- Road Construct
- Road Improve
- Road Renovate
- Existing Road
- Streams

Contour Interval: 40 feet

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification. Note: Boundaries of harvest areas are painted/flagged in orange and posted. Right-of-ways (ROW) are posted. Harvest area acres do not include existing roads.
Prepared By: dtyler

Form 5450-003a

(February 1986)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

EXHIBIT B / PRE-SALE

5450-003

Contract No.

ORN04-TS-2024.0403

Cardinal Direction

The following estimates and calculations of value of timber sold are made solely as an administrative aid for determining: (1) adjustments made or credits given in accordance with Secs. 6, 9, or 11; (2) when payments are due; and (3) value of timber subject to any special bonding provisions. The value of timber will be determined by multiplying the value per acre as shown below, times the amount of acreage as determined by the Authorized Officer, which has been cut or removed or designated for taking. Except as provided in Sec. 2, Purchaser shall be liable for total purchase price even though quantity of timber actually cut or removed or designated for taking is less than the estimated volume or quantity shown. Cutting areas are shown on **Exhibit A.**

SPECIES	ESTIMATED VOLUME OR QUANTITY *(Units Specified)*		PRICE PER UNIT	ESTIMATED VOLUME OR QUANTITY X UNIT PRICE
Douglas Fir	5,412.0	MBF	$202.90	$1,098,094.80
Bigleaf Maple	21.0	MBF	$21.70	$455.70
Grandfir	5.0	MBF	$33.30	$166.50
TOTALS	5,438.0	MBF		$1,098,717.00

The apportionment of the total purchase price is as follows:

Unit 1

Douglas Fir	586.0	MBF	X	$202.90	=	$118,899.40
Total	586.0 Mbf					$118,899.40 ÷ 31.0 acres = $3,835.46/Acre

Unit 2

Douglas Fir	84.0	MBF	X	$202.90	=	$17,043.60
Total	84.0 Mbf					$17,043.60 ÷ 4.0 acres = $4,260.90/Acre

Unit 3

Douglas Fir	126.0	MBF	X	$202.90	=	$25,565.40
Total	126.0 Mbf					$25,565.40 ÷ 6.0 acres = $4,260.90/Acre

Unit 4

Douglas Fir	126.0	MBF	X	$202.90	=	$25,565.40
Total	126.0 Mbf					$25,565.40 ÷ 6.0 acres = $4,260.90/Acre

Unit 5

Douglas Fir	607.0	MBF	X	$202.90	=	$123,160.30
Total	607.0 Mbf					$123,160.30 ÷ 32.0 acres = $3,848.76/Acre

Unit 6

Bigleaf Maple	21.0	MBF	X	$21.70	=	$455.70
Douglas Fir	2,744.0	MBF	X	$202.90	=	$556,757.60
Grandfir	5.0	MBF	X	$33.30	=	$166.50
Total	2770.0 Mbf					$557,379.80 ÷ 97.0 acres = $5,746.18/Acre

Unit 7

Douglas Fir	230.0	MBF	X	$202.90	=	$46,667.00
Total	230.0 Mbf					$46,667.00 ÷ 11.0 acres = $4,242.45/Acre

Form 5450-003a

(February 1986)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

EXHIBIT B / PRE-SALE

5450-003

Contract No.

ORN04-TS-2024.0403

Cardinal Direction

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Unit 8

Douglas Fir	398.0 MBF	X	$202.90	=	$80,754.20	
Total	398.0 Mbf				$80,754.20	÷ 19.0 acres = $4,250.22/Acre

Unit 9

Douglas Fir	84.0 MBF	X	$202.90	=	$17,043.60	
Total	84.0 Mbf				$17,043.60	÷ 4.0 acres = $4,260.90/Acre

Unit 10

Douglas Fir	230.0 MBF	X	$202.90	=	$46,667.00	
Total	230.0 Mbf				$46,667.00	÷ 11.0 acres = $4,242.45/Acre

Unit R/W

Douglas Fir	197.0 MBF	X	$202.90	=	$39,971.30	
Total	197.0 Mbf				$39,971.30	÷ 2.0 acres = $19,985.65/Acre

TABLE OF CONTENTS

U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management
SALEM DISTRICT – OREGON
TIMBER SALE CONTRACT
ROAD SPECIFICATIONS

Road Number	New Construction (Stations and Miles)	Improvement (Stations and Miles)	Renovation (Stations and Miles)
4-6-7.0 West			5+54 Sta. = 0.105 Miles
4-6-7.0 East			22+05 Sta. = 0.418 Miles
4-6-7.1			9+77 Sta. = 0.185 Miles
4-6-7.3			5+03 Sta. = 0.095 Miles
4-6-18.0			97+52 Sta. = 1.847 Miles
4-6-19.0			37+07 Sta. = 0.702 Miles
4-6-19.1			11+46 Sta. = 0.217Miles
4-6-19.2			5+15 Sta. = 0.098 Miles
4-6-19.3	3+90 Sta. = 0.074 Miles		
4-6-19.4	5+50 Sta. = 0.104 Miles		
4-6-19.5	27+16 Sta. = 0.514 Miles		
4-6-19.6	3+95 Sta. = 0.075 Miles		
4-6-19.7	1+53 Sta. = 0.027 Miles		18+53 Sta. = 0.353 Miles
4-6-19.8			21+05 Sta. = 0.399 Miles
4-6-19.9	5+10 Sta. = 0.097 Miles		
4-7-36.0 Willamina Creek Road			(2 culvert replacements only at MP 2.218 and 2.704)
East Creek County Road			117+80 Sta. = 2.231 Miles (Sediment control work)

GENERAL – 100

101 - Pre-work Conference(s):

A pre-work conference will be held prior to the start of new construction, renovation, improvement, quarry development, and decommissioning operations. The Purchaser shall request the conference at least forty-eight (48) hours prior to the time it is to be held. The conference will be attended by the Purchaser and/or their representatives, subcontractors or their representatives and the Authorized Officer and/or their 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.

ACI - American Concrete Institute

Apparent Opening Size (AOS) - Number of the U.S. Bureau of Standard sieve (or its opening size in millimeters or inches) having openings closest in size to the diameter of uniform particles which will allow five (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, pit-run 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 side casting material outside of the road prism.

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

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.

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

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.

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.

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

Road Centerline - The longitudinal center of a roadbed.

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

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

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

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

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

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.

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

Spalls - Flakes or chips of stone.

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

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

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

Sub-base - Reinforcement of the subgrade with large particles of pit-run 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.

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.

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

103 - Compaction equipment shall meet the following requirements:

103b - Sheepsfoot/Tamping rollers. A tamping roller unit shall consist of two (2) 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 two and a half (2.5) miles per hour. The drums shall be no less than sixty (60) inches in diameter and no less than fifty-four (54) inches in length, measured at the drum's surface, and shall be studded with tamping feet projecting not less than seven (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 twelve (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 eight (8) square inches.

The weight of the tamping-roller unit shall be such as to exert a minimum pressure of two hundred fifty (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 five hundred (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 (1) row of tamping feet parallel to the axis of the roller.

103f - Vibratory roller. The drum diameter shall be not less than forty-eight (48) inches, the drum width not less than fifty-eight (58) inches and have a turning radius of fifteen (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 seven (7) tons at 1600 RPM. It shall be activated by a power unit of not less than twenty-five (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.

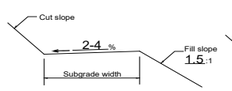
103g - Vibratory compactor. Vibratory compactors shall consist of multiple or gang-type compacting units or pads with a minimum variable width of two (2) feet. It shall be self-contained and capable of compacting material as required.

103h - Drum drive self-propelled vibratory grid roller. The unit shall consist of one cylindrical drum with a drum diameter of not less than fifty-six (56) inches, nor shall be more than sixty-six (66) inches and the drum width be eighty-four (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 not 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 one (1) inch in height and spaced not more than eight and one half (8-1/2) inches apart.

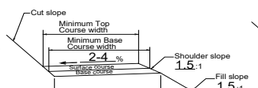
103i - Other. Compaction equipment approved by the Authorized Officer.

150: ROAD PLAN AND DETAIL SHEET

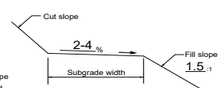
Road Number	Start Station or Milepost	End Station or Milepost	Total Length	Typical Cross Section	Min. Curve Radius	ROAD WIDTH		GRADIANT		SURFACING (*5)										Remarks
										BASE COURSE					SURFACE COURSE					
						Subgrade	Ditch	Max. Favorable	Max. Adverse	Min. Width	Comp. Depth	Surface Type (*3)	Grading Size (*3)	Number of Lifts	Min. Width	Comp. Depth	Surface Type (*3)	Grading Size (*3)	Number of Lifts	
4-6-7.0 West	0+00	5+54	5+54	6		14'	2'	--	--	--	--	ABC	D	--	--	--	ASC	C	--	Renovation. Re-establish ditchline and haul material to designated waste area. Construct ditchouts as needed and directed. Remove existing barricade and waterbars as marked and directed. Construct a truck turnaround at Sta. 4+51 as marked and directed. Construct a 60' diameter landing at Sta. 5+54 as marked and directed. Spread 40 CY of 6" Jaws Run Base Rock as marked. Spread 25 CY of 1 1/2"-0" Crushed Spot Rock as marked. Place 25 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Install 1 culvert (stream) as marked. Install 1 inlet marker.
4-6-7.0 East	0+00	22+05	22+05	6		14'	2	--	--	--	--	ABC	D	--	--	--	ASC	C	--	Renovation. Re-establish ditchline and haul material to designated waste area. Construct ditchouts as marked, needed, and directed. Remove existing barricade and waterbars as marked and directed. Construct turnouts @ Sta. 7+45 & 13+78 as marked and directed. Construct a turnaround @ Sta. 19+50 as marked and directed. Construct a truck turnaround/waste area at Sta. 5+45 as marked and directed. Construct a 80' diameter landing at Sta. 22+05 as marked and directed. Spread 90 CY of 6" Jaws Run Base Rock as marked. Spread 70 CY of 1 1/2"-0" Crushed Spot Rock as marked. Place 70 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Place 10 CY Class 5 RipRap @ culvert outlet as fill armor/energy dissipater as marked and directed. Install 5 culverts (cross-drains) as marked. Install 5 inlet marker.
4-6-7.1	0.000	0.185	0.185	6		14'	2'	--	--	--	--	ABC	D	--	--	--	ASC	C	--	Renovation. Re-establish ditchline and haul material to designated waste area. Construct ditchouts as needed and directed. Construct turnouts as needed and directed. Construct a turnout/turnaround @ MP 0.084 as marked and directed. Renovated existing landing @ MP 0.185 as marked and directed. Construct 1 sediment Catch Basin with Straw Bale @ MP 0.147 as marked and directed. Spread 55 CY of 6" Jaws Run Base Rock as marked. Spread 35 CY of 1 1/2"-0" Crushed Spot Rock as marked. Place 35 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Replace 2 culverts (1 cross-drain, 1 stream) as marked. Install 2 inlet marker.
4-6-7.3	0+00	5+03	5+03	3		14'	0'	15%	15%	--	--	ABC	D	--	--	--	ASC	C	--	Renovation. Construct a ditch on lower road edge in through-cuts as needed and directed. Construct ditchouts as marked, needed, and directed. Construct a turnaround/roadside landing at Sta. 1+72 as marked and directed. Construct a waste area @ Sta. 3+04 as marked and directed. Construct a 50' diameter landing at Sta. 5+03 as marked and directed. Spread 40 CY of 6" Jaws Run Base Rock as marked. Spread 25 CY of 1 1/2"-0" Crushed Spot Rock as marked. Place 20 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Install 1 culvert and downspout (cross-drain) as marked. Install 1 inlet marker.
4-6-18.0 East Creek Tie Road	0.000	1.847	1.847	6		14'	2'	--	--	--	--	ABC	D	--	--	--	ASC	C	--	Renovation. Re-establish ditchline and haul material to designated waste area. Construct ditchouts as marked, needed, and directed. Construct turnouts as marked, needed, and directed. Construct a roadside landing/turnaround @ MP 0.839 & 1.231 as marked and directed. Construct a waste area @ MP 1.594 as marked and directed. Widen road to the left to create junction and curve widening between MP 1.818 - 1.847 as marked and directed. Construct 10 sediment Catch Basins with Straw Bales @ MP 0.217, 0.492, 0.608, 0.909, 1.009, 1.157, 1.297, 1.475, 1.663, & 1.777 as marked and directed. Clean inlet and outlet of existing culverts @ MP 0.372 & 1.151 as directed. Re-attach existing downspout to outlet of existing culvert @ MP 1.151 as marked and directed. Excavate ditchline through undesignated trail to the right and place RipRap to block @ MP 0.024 - 0.082 & 0.297 as marked and directed. Spread 535 CY of 6" Jaws Run Base Rock as marked. Spread 450 CY of 1 1/2"-0" Crushed Spot Rock as marked and needed (350 CY marked, 100 CY needed). Place 200 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Place 100 CY Class 5 RipRap in ditchline to deter OHV usage as marked and directed. Place 80 CY Class 5 RipRap @ culvert outlets as fill armor as marked. Place 25 CY Class 5 RipRap @ culvert outlets as energy dissipater as marked. Install 1 culvert (cross-drain). Replace 8 culverts (3 cross-drains, 5 stream) as marked. Install 16 inlet marker.
4-6-19.0	0.000	0.702	0.702	6		14'	2'	--	--	--	--	ABC	D	--	12'	4"	ASC	C	1	Renovation. Re-establish ditchline and haul material to designated waste area. Construct ditchouts as marked, needed, and directed. Construct turnouts as marked, needed, and directed. Construct/Renovate a roadside landing/turnout @ MP 0.069, 0.130, & 0.572 as marked and directed. Construct a waste area @ MP 0.622 as marked and directed. Construct turnaround @ MP 0.402 & 0.632 as marked. Construct 2 sediment Catch Basins with Straw Bales @ MP 0.326 & 0.605 as marked and directed. Clean inlet and outlet of existing culverts @ MP 0.506 as directed. Construct a French Drain @ MP 0.316 as marked and directed. Authorized officer must be onsite. Spread a 4" Lift of 1 1/2"-0" Crushed Rock (approx. 884 CY) on whole road length as marked. Spread 240 CY of 6" Jaws Run Base Rock as marked. Spread 90 CY of 1 1/2"-0" Crushed Spot Rock as marked. Place 80 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Place 300 CY 1 1/2"- 3/4" Crushed Drain Rock as marked. Place 10 CY Class 5 RipRap @ inlet as fill armor as marked. Place 50 CY Class 5 RipRap @ culvert outlets as fill armor as marked. as marked. Place 400 SY non-woven geo-synthetic fabric around darin rock @ MP 0.316 as marked and directed. Install 3 culverts (2 cross-drains and 1 perforated free drain pipe). Replace 3 culverts (stream) as marked. Install 7 inlet marker. Renovate existing landing @ MP 0.702. **Road renovation from MP 0.298 - 0.702 is seasonally restricted.**
4-6-19.1	0.000	0.217	0.217	6		14'	2'	--	--	--	--	ABC	D	--	--	--	ASC	C	--	Renovation. Re-establish ditchline and haul material to designated waste area. Construct ditchouts as marked, needed, and directed. Construct a turnout as marked. Construct a 75' diameter roadside landing right @ MP 0.105 as marked. Spread 20 CY of 6" Jaws Run Base Rock as marked. Spread 10 CY of 1 1/2"-0" Crushed Spot Rock as marked.
4-6-19.2	0+00	5+15	5+15	6		14'	2'	--	--	--	--	--	--	--	--	--	ASC	C	--	Renovation. Re-establish ditchline and haul material to designated waste area. Construct ditchouts as needed. Renovate turnout/road side landing @ 2+85. Construct a landing @ Sta. 5+15 by removing blued trees and expanding existing as marked. Spread 20 CY of 1 1/2"-0" Crushed Spot Rock as marked. Install 1 inlet marker.
4-6-19.3	0+00	3+90	3+90	3		14'	0'	10%	10%	--	--	ABC	D	--	--	--	ASC	C	--	New Construct. Construct ditchouts on lower edge of road in through-cuts as needed. Construct a 50' diameter landing right @ Sta. 3+90 as marked. Spread 20 CY of 6" Jaws Run Base Rock as marked. Spread 10 CY of 1 1/2"-0" Crushed Spot Rock as marked. Place 20 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Install 1 culvert (cross-drain). Install 1 inlet marker. Cut and fill as marked and directed.
4-6-19.4	0+00	5+50	5+50	3		14'	0'	12%	12%	--	--	ABC	D	--	--	--	ASC	C	--	New Construct. Construct ditchouts on lower edge of road in through-cuts as needed. Construct a roadside landing to the right @ Sta. 0+30 as marked. Construct a turnaround @ Sta. 4+42 as marked. Construct a 50' diameter landing right @ Sta. 5+50 as marked. Spread 20 CY of 6" Jaws Run Base Rock as marked. Spread 10 CY of 1 1/2"-0" Crushed Spot Rock as marked. Cut and fill as marked and directed.



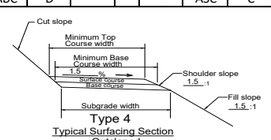
Type 1
Typical Grading Section
Insloped



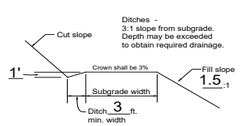
Type 2
Typical Surfacing Section
Insloped



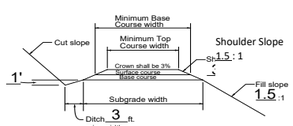
Type 3
Typical Grading Section
Outsloped



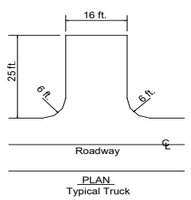
Type 4
Typical Surfacing Section
Outsloped



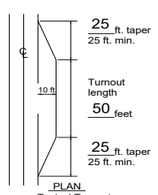
Type 5
Typical Grading Section
w / Ditch



Type 6
Typical Surfacing Section



PLAN
Typical Truck



PLAN
Typical Turnout

*NOTES

1. Extra subgrade widths
   Add to each shoulder: 1 ft. for fills of 1-6 ft. and 2 ft. for fills over 6 ft. Widen the inside shoulder of curves as follow:
   (See Road Plan Map, Exhibit C)

2. Backslopes

Materials	Cut slopes	Fill slopes
Solid rock	1/4:1	Angle of repose
Soft rock and shale	1/2:1	____
Common		
Slopes under 55%	1:1	1-1/2:1
Slopes over 55%	3/4:1	1-1/2:1

   Note:
   Full bench construction is required on side slopes exceeding 60%.

3. Surface type

PRR - Pit run rock	Grading	
GRR - Grid rolled rock	A - 3"	
SRN - Screened rock	B - 2"	(base course)
JRR - Jaw run rock	C - 3" jaw run	
ABC - Aggr. base course	D - 6" jaw run	
ASC - Aggr. surface course	C - 1 1/2" - 0"	
WC - Wood chips	D - 1"	(surface course)
	E - 3/4"	

4. Turnouts
   Width - 10 ft. in addition to subgrade width, or as shown on the plans.
   Located approximately as shown on the plans. Intervisible and not more than 750ft. apart.

5. Surfacing
   Turnouts, curve widening and road approach aprons shall be surfaced.

6. Clearing width
   See Section 200.

7. As posted and painted for Right-of-Way:

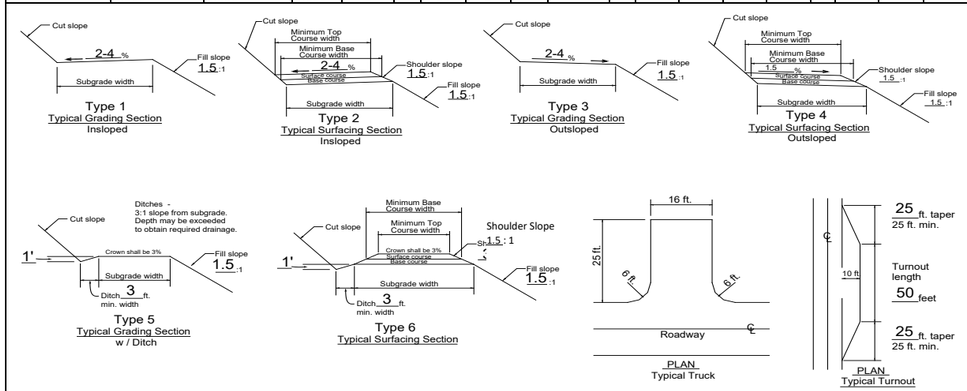
8. Drainage
   See Culvert List

10. Compaction
    See Sections 300 and 400

*Clearing Limits as posted on ground

150: ROAD PLAN AND DETAIL SHEET

Road Number	Start Station or Milepost	End Station or Milepost	Total Length	Typical Cross Section	Min. Curve Radius	ROAD WIDTH		GRADIANT		SURFACING (*5)										Remarks
										BASE COURSE					SURFACE COURSE					
						Subgrade	Ditch	Max. Favorable	Max. Adverse	Min. Width	Comp. Depth	Surface Type (*3)	Grading Size (*3)	Number of Lifts	Min. Width	Comp. Depth	Surface Type (*3)	Grading Size (*3)	Number of Lifts	
4-6-19.5	0+00	27+16	27+16	3		14'	0'	16%	16%	--	--	ABC	D	--	--	--	ASC	C	--	New Construct. Re-establish ditchline and haul material to designated waste area on lower road edges in through-cuts as needed. Construct a roadside landing/turnaround @ Sta. 5+12, 8+60, & 10+12 as marked. Construct a turnaround @ Sta. 24+20 as marked. Construct a truck turnout/roadside landing @ Sta. 26+40 as marked. Construct a waste area @ 20+57 as marked. Construct a 50' diameter landing @ Sta. 27+16 as marked. Daylight material left to remove through-cut and haul to waste area between Sta. 10+66 - 11+70 as marked. Excavate cutbank and haul material to waste area between Sta. 11+70 - 17+70 as marked and directed. Excavate channel above inlet of installed culvert to create artificial channel and direct water into newly installed culvert @ Sta. 18+32 as marked and directed. Excavate a lead-off ditch from newly installed culvert outlet @ Sta. 18+32 as marked and directed. Spread 60 CY of 6" Jaws Run Base Rock as marked. Spread 40 CY of 1 1/2"-0" Crushed Spot Rock as marked. Place 40 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Place 60 CY Class 5 RipRap @ culvert outlet as fill armor as marked. Install 2 culverts (stream). Install 1 downspout. Install 2 inlet markers. Cut and fill as marked and directed.
4-6-19.6	0+00	3+95	3+95	3		14'	0'	10%	10%	--	--	ABC	D	--	--	--	ASC	C	--	New Construct. Construct ditchouts on lower edge of road in through-cuts as needed. Construct a turnaround @ Sta. 0+80 as marked. Construct a 50' diameter landing @ Sta. 3+95 as marked. Cut and fill as marked and directed.
4-6-19.7	0+00	2+72	2+72	3		14'	0'	10%	10%	--	--	ABC	D	--	--	--	ASC	C	--	Renovation. Re-establish ditchline and ditchouts on lower edge of road in through-cuts as needed. Spread 20 CY of 6" Jaws Run Base Rock as marked. Spread 10 CY of 1 1/2"-0" Crushed Spot Rock as marked.
	2+72	4+25	1+53	3		14'	0'	14%	14%	--	--	--	--	--	--	--	--	--	--	New Construct. Construct ditchouts on lower edge of road in through-cuts as needed. Cut and fill as marked and directed.
	4+25	20+06	15+81	3		14'	0'	22%	22%	--	--	--	--	--	--	--	--	--	--	Renovation. Re-establish ditchline and haul material to designated waste area on lower road edges in through-cuts as needed. Construct truck turnouts as marked and directed. Construct turnout/turnaround at Sta. 15+58 as marked and directed. Construct a waste area at Sta. 7+10 as marked and directed. Construct a 50' diameter landing @ Sta. 20+06 as marked and directed. Start cutting and drifting material between Sta. 14+05 - 15+06 & 17+70-20+06 and drifting it as fill between Sta. 15+06 - 17+70 to slacken grade as marked and directed.
4-6-19.8	0+00	15+75	15+75	3		14'	0'	--	--	--	--	--	--	--	--	--	--	--	--	Renovation. Re-establish ditchline and haul material to designated waste areas on lower road edges in through-cuts as needed. Construct ditchouts as needed and directed. Construct turnouts as marked, needed, and directed. Construct a roadside landing @ Sta. 2+52 as marked and directed. Construct a turnaround/roadside landing @ Sta. 5+55 as marked. Construct a waste area @ Sta. 5+55 as marked. Excavate material left between Sta. 10+30 - 10+75 to daylight road and haul material to designated waste area as marked and directed.
	15+75	17+50	1+75	5		14'	2'	--	--	--	--	--	--	--	--	--	--	--	--	Renovation. Re-establish ditchline and haul material to designated waste areas as needed. Construct ditchouts as needed and directed.
	17+50	21+05	3+55	3		14'	0'	--	--	--	--	--	--	--	--	--	--	--	--	Renovation. Re-establish ditchline and haul material to designated waste areas on lower road edges in through-cuts as needed. Construct ditchouts as needed and directed. Construct a turnaround @ Sta. 17+84 as marked and directed. Construct a 120' diameterlanding @ Sta. 21+05 as marked.
4-6-19.9	0+00	5+10	5+10	3		14'	0'	10%	10%	--	--	--	--	--	--	--	--	--	--	New Construct. Construct ditchouts on lower edge of road in through-cuts as needed. Construct turnouts as marked. Construct a turnaround @ Sta. 4+30 as marked. Construct a 50' diameter landing @ Sta. 5+10 as marked. Cut and fill as marked and directed.
4-7-36.0 Willamina Creek Rd.	2.218	2.218	0.000	6		16'	2'	--	--	--	--	ABC	D	--	--	--	ASC	C	--	Renovation. Spread 25 CY 6" Jaw Run Base Rock as marked. Spread 20 CY 1 1/2"-0" Crushed Spot Rock as marked. Place 30 CY 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Place 40 CY Class 5 RipRap as inlet fill armor as marked. Place 60 CY Class 5 RipRap as outlet fill armor as marked. Replace 1 Stream Culvert as marked and directed. Install 1 inlet marker.
	2.704	2.704	0.000	6		16'	2'	--	--	--	--	ABC	D	--	--	--	ASC	C	--	Renovation. Spread 25 CY 6" Jaw Run Base Rock as marked. Spread 20 CY 1 1/2"-0" Crushed Spot Rock as marked. Place 30 CY 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Place 20 CY Class 5 RipRap as inlet fill armor as marked. Place 90 CY Class 5 RipRap as outlet fill armor as marked. Replace 1 Stream Culvert as marked and directed. Install 1 inlet marker.
East Creek County Road	0.000	5.612	5.612	6		16'	2'	--	--	--	--	ABC	D	--	--	--	ASC	C	--	Renovation. Re-establish ditchline and haul material to designated waste area as directed. Construct ditchouts as marked and directed. Construct 7 sediment Catch Basins with Straw Bales @ MP 0.639, 0.701, 0.778 (series of 2 at this location), 0.899, 1.285, & 2.089 as marked and directed. Spread 10 CY of 6" Jaw Run Base Rock as marked. Spread 10 CY of 1 1/2"-0" Crushed Spot Rock as marked. Place 10 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Install 1 culvert (cross-drain) as marked. Install 1 inlet marker. Obtain authorization from Yamhill County.
Peavine County Road	0.000	0.830	0.830	6		16'	2'	--	--	--	--	--	--	--	--	--	--	--	--	Renovation. Re-establish ditchline and haul material to designated waste area as directed. Construct ditchouts as marked and directed. Construct 1 roadside landing @ MP 0.753 as marked and directed.



*NOTES

1. Extra subgrade widths
   Add to each shoulder: 1 ft. for fills of 1-6 ft. and 2 ft. for fills over 6 ft. Widen the inside shoulder of curves as follow:
   (See Road Plan Map, Exhibit C)

2. Backslopes

Materials	Cut slopes	Fill slopes
Solid rock	1/4:1	Angle of repose
Soft rock and shale	1/2:1	———
Common		
Slopes under 55%	1:1	1-1/2:1
Slopes over 55%	3/4:1	1-1/2:1

   Note:
   Full bench construction is required on side slopes exceeding 60%.

3. Surface type
   PRR - Pit run rock
   GRR - Grid rolled rock
   SRN - Screened rock
   JRR - Jaw run rock
   ABC - Aggr. base course
   ASC - Aggr. surface course
   WC - Wood chips

   Grading
   A - 3"
   B - 2" (base course)
   C - 3" jaw run
   D - 6" jaw run
   C - 1 1/2" - 0"
   D - 1" (surface course)
   E - 3/4"

4. Turnouts
   Width - 10 ft. in addition to subgrade width, or as shown on the plans.
   Located approximately as shown on the plans.
   Intervisible and not more than 750ft. apart.

5. Surfacing
   Turnouts, curve widening and road approach aprons shall be surfaced.

6. Clearing width
   See Section 200.

7. As posted and painted for Right-of-Way:

8. Drainage
   See Culvert List

10. Compaction
    See Sections 300 and 400

*Clearing Limits as posted on ground

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 marked 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 ten (10) feet back of the top of the cut slope and five (5) feet out from the toe of the fill slope.

202b - Where clearing limits for channel changes and waste areas have not been staked or shown on the plans, the limits shall extend ten (10) feet back of the top of the cut slope and five (5) feet outside of the outside slope lines.

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

203b - Standing trees and snags to be cleared shall be felled within the limits established for clearing, unless otherwise authorized. Felled snags shall be left as down woody debris outside of the clearing limits.

203c - Disposal of logs from private timber cleared within the limits established 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. Undisturbed stumps, roots and other solid objects which will be a minimum of four (4) 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.

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

206a - Notwithstanding Subsections 204 and 205, clearing and grubbing debris resulting from landing construction, waste area construction, turnaround construction, or

log fill replacement 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.

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 shall be by scattering over non-government owned lands outside of established clearing limits in a manner acceptable to the Authorized Officer.

212 - No grading will be permitted prior to completion and approval by the Authorized Officer of the required clearing and grubbing work, except that stump grubbing may proceed with the excavation of the road prism.

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

EXCAVATION AND EMBANKMENT - 300

301 - This work shall consist of excavating, overhaul, placement of embankments, backfilling, borrowing, leveling, ditching, grading, outsloping, crowning and scarification of the subgrade, compaction, disposal of excess and unsuitable and slide 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.

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.

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

305b - Embankment materials shall be placed in successive parallel layers on areas cleared of stumps, cull logs, brush, sod, and other vegetative and deleterious materials, except as provided under Subsection 204. Roadway embankments of earth material shall be placed in horizontal layers not exceeding eight (8) inches in depth.

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 and selected borrow, as specified under Subsections 305a, 305b, and 317 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 103b, 103g, or 103i. Final Subgrades 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 103f or 103i and approved by the Authorized Officer.

306a - Minimum compaction for each layer of embankment, selected borrow, and selected roadway excavation material placed at optimum moisture shall have a minimum compaction of six (6) passes over each full-width layer, or fraction thereof.

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.

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.

313 - In cut areas where solid rock is encountered at, or near subgrade, the rock shall be excavated to a minimum depth of six (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 two (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 adjacent to the roadway.

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.

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. Such materials shall be disposed of in accordance with Subsection 321c. Materials not disposed of in this manner shall be retrieved and disposed of at the Purchaser’s expense and at the direction of the Authorized Officer.

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

322 - When so indicated on the plans, selected coarse rock encountered in the excavation shall be conserved for slope protection or special rock embankment purposes and placed in accordance with the requirements and details of Section 1400 of these specifications and as shown on the plans.

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 a half (1/2) feet on the uphill side.

327 - The finished grading shall be approved by the Authorized Officer in segments or for the total project. The Purchaser shall give the Authorized Officer three (3) days' notice prior to final inspection of the grading 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.

PIPE CULVERTS - 400

401 - This work shall consist of furnishing and installing pipe culverts, downspouts, 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 upon completion of the roadbed and upon installation of the appurtenance structures. Additional pipe and erosion control devices may be required at the option of the Authorized Officer, in which case a reduction in the total purchase price shall be made to offset the cost of furnishing and installing such items. Costs will be based upon the unit prices set forth in the current BLM Timber Appraisal Production Cost Schedule.

403 - Grade culverts shall have a gradient from two (2) percent to four (4) percent greater than the adjacent road grade. Grade culverts shall be skewed down grade thirty (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 three-eighths (3/8) inch, shall be wire brushed and painted with two coats of zinc-rich paint on zinc-coated steel pipe.

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.

405e - Corrugated-polyethylene pipe for culverts 18-inch through 24-inch diameter shall meet the requirements of AASHTO M 294, Type S.

Corrugated-polyethylene pipe for culverts to be used for downspouts 18-inch through 24-inch diameter shall meet the requirements of AASHTO M 294, Type C.

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

406 - Coupling bands shall conform to the requirements of AASHTO M 36 and AASHTO M 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.

406e - Neoprene gaskets shall be used to join aluminum pipe culverts.

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 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 and the Culvert Installation Detail Sheet.

412 - Where ledge rock, boulders, soft, or spongy soils are encountered, they shall be excavated a minimum of twenty-four (24) inches below the invert grade for a width of at least one (1) pipe diameter or span on each side of the pipe and shall be backfilled with selected granular or fine readily compactable soil material or crushed rock material.

413 - All pipe culverts shall be bedded on a 1-1/2”-0” crushed rock material in accordance with Section 1200 gradation. Bedding shall have a depth of not less than six (6) inches as shown on plans. Foundation material shall be of uniform density throughout the length of the structure and shall be shaped to fit the pipe.

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

415 - Inspection of pipe culverts having a diameter of (30) inches and pipe-arch culverts having a height of (40) inches or a cross sectional area of (13) or larger shall be made before backfill is placed. Culverts found to be out of alignment or damaged shall be replaced, reinstalled or repaired as directed by the Authorized Officer at the Purchaser's expense.

416 - Side-fill material for pipe culverts shall be placed within one (1) pipe diameter, or a minimum of one (1) foot, of the sides of the pipe barrel, and to a half (1/2) pipe diameter on round pipes with granular material (or 1-1/2”-0” crushed rock material in accordance with Section 1200 gradation if crushed bedding/backfill is required in the rock sheets and Section 413).

The remaining fill material shall be of fine, readily compactable soil and be free of excess moisture, muck, frozen material, roots, sod, or other deleterious or caustic material and devoid of rocks or stones of sizes which may impinge upon and damage the pipe or otherwise interfere with proper compaction.

419 - The pipe culverts, after being bedded and backfilled as required by these specifications, shall be protected by an 18” cover of fill before heavy equipment is permitted to cross the drainage structures.

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.

423 - Construction of catch basins conforming to lines, grades, dimensions and typical diagrams shown on the plans, shall be required for grade culverts.

424 - Construction of splash pads and energy dissipaters conforming to lines, grades, dimensions and typical diagram shown on the plans, shall be required for grade culverts and culverts as listed on the culvert sheet.

426 - Culvert markers consisting of six (6) foot steel fence posts painted blue shall be furnished, fabricated, and installed by the Purchaser at the inlet of all culverts (installed and existing) as marked. Marker shall be installed within six (6) inches of upslope side of culvert inlet.

427 - The Purchaser shall 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 - The Purchaser shall remove and dispose of old culverts (removed in the construction phase) in a legal manner, off of Government property, and pay any fees required. The Purchaser shall remove the old culverts from the work site prior to road acceptance.

429 - Keep the excavation site dewatered so that the installation of culverts is completed under dry conditions. Dispose of excess water by using pumping or natural drainage ways near the site in a manner that will avoid damage to adjacent property. Provide for downstream waterflow with no more than ten (10) percent 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.

430 - During culvert installations or replacement activities, all stream flow shall be diverted around the culvert work occurring in live streams, as to maintain downstream flows and minimize turbidity. Woody material removed from stream channels during culvert work shall be placed in the stream channel downstream of the culvert.

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, as shown on the plans, and as marked on the ground.

501a - This work shall include the removal and disposal of slides in accordance with these specifications and as marked on the ground.

502 - The existing road surface shall be bladed and shaped to the lines, grades, dimensions, and typical cross sections shown on the plans.

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

503a - Material from the ditchline reestablishment excavation shall be hauled to designated disposal sites or at locations directed by the Authorized Officer.

504 - Existing road surface shall be uniformly moistened or dried to the optimum moisture content suitable for maximum density and compacted to full width with equipment conforming to requirements of Subsections 103f and 103i.

504a - Minimum compaction required shall be six (6) passes over each full-width layer, or fraction thereof, as measured along the centerline per layer of material.

506 - The inlet end of all existing drainage structures shall be cleared of vegetative debris and boulders that are of sufficient size to obstruct normal 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.

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 and compacting shall be approved by the Authorized Officer. The Purchaser shall give the Authorized Officer three (3) days' notice prior to final inspection of the grading operations.

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.

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 roadbed.

604 - Water required under these specifications shall be obtained at the times and at the locations indicated below:

	Willamette Meridian			Dates Available	
Common Name	Section	T	R	From	To
1400 RD Pump Chance	21	4S	7W	TBD	TBD

Use of water sources are subject to applicable State water regulations. If the required water is not available at the locations specified, water shall be obtained from a source approved by the Authorized Officer as permitted by Oregon Water

Resources. 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. It is estimated that approximately four hundred thousand (60,000) gallons will be required for processing rock.

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 approved by the Authorized Officer. Purchaser shall notify the Bureau of Land Management when an agreement has been met and shall provide a copy of the documentation.

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 approved for placing screened rock material in accordance with these specifications and conforming to the dimensions and typical cross sections shown on the plans

902a - Screened rock materials to be used in this work may be obtained from a source selected by the Purchaser, at his option, providing the rock materials furnished comply with these specifications and the sources are approved in writing by the Authorized Officer prior to use.

903 - Screened rock material shall conform to the following gradation requirements:

Table 903

SCREENED ROCK MATERIAL GRADATION REQUIREMENTS
Percentage by Weight Passing Square Mesh Sieves
(AASHTO T 27)

Sieve Designation	Gradation D
2 inch	100
1-1/2 inch	99
1-1/4 inch	99
1 inch	71
3/4 inch	31
5/8 inch	12
1/2 inch	3
1/4 inch	2
No. 4	2

No. 10	1
No. 20	1
No. 50	0.8
No. 100	0.5
No. 200	0.3

904 - Screened rock material shall not exceed (35) percent loss as determined by AASHTO T 96.

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 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.

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.

911 - The Purchaser shall place in stockpile 280 cubic yards truck measure of Gradation D at a site shown on the plans. Such material shall be used as shown on the plans and as directed by the Authorized Officer.

AGGREGATE BASE COURSE - 1000
CRUSHED ROCK MATERIAL

1001 - This work shall consist of furnishing, hauling, and placing one or more layers of crushed rock material on roadbeds and culvert bedding 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 or stockpile at the purchaser's expense.

1002 - Crushed rock materials used in this work shall consist of quarry rock, stone, gravel, or other approved materials obtained from the source shown on the plans. Development and mining of such source shall be in accordance with section 1600 of these specifications.

1002b - All rock required for project work in T. 04S., R. 06W., Sections 7 & 19 shall be obtained from a commercial source.

1003 - Crushed rock material produced from gravel shall have two (2) manufactured fractured faces on sixty-five (65) percent, by weight, of the material retained on the No. 4 sieve. If necessary to meet the above requirements or to eliminate an excess of filler, the gravel shall be screened before crushing.

1004 - Crushed rock material shall consist of hard durable rock fragments conforming to the following gradation requirements:

TABLE 1004
AGGREGATE BASE COURSE
CRUSHED ROCK MATERIAL
Percentage by weight passing square mesh sieves
AASHTO T 11 & T 27

GRADATION

Sieve Designation	D	A
6-inch	95	-
3-inch	45-65	95-100
1-1/2-inch	-	70-90
1-inch	-	-
¾-inch	-	50-70
No. 4	10 Max	-
No. 10	-	0-30
No. 40	-	0-10

1004a - 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. The Purchaser shall provide test results upon request to the Authorized Officer.

1005 - Crushed rock material shall not exceed thirty-five (35) percent loss as determined by AASHTO T 96.

1006 - Crushed rock material shall show a durability value of not less than thirty-five (35) as determined by AASHTO T210.

1007 - That portion of crushed rock material passing the No. 40 sieve, including blending filler, shall have a liquid limit of not more than thirty (35) and a plasticity index of not less than four (4) and not more than twelve (12) as determined by AASHTO T 89 and AASHTO T 90.

1008 - If additional binder or filler material is necessary to meet the grading or plasticity requirements or for satisfactory bonding of the material, it shall be uniformly blended with the crushed rock material at the crushing and screening plant prior to placing on the road, unless otherwise agreed. The material for such purposes shall be obtained from sources approved by the Authorized Officer and shall be free from stones, vegetative matter, and other deleterious materials.

1009 - Shaping and compacting of roadbed shall be completed and approved prior to placing crushed rock material, in accordance to the requirements of Subsections 300, 400, and 500. Notification for final inspection of base rock shall be three (3) days prior to the spreading of crushed cap rock.

1010 - Crushed rock material conforming to the requirements of these specifications shall be placed on the approved roadbed, turnarounds, and landings in accordance with these specifications and conforming to the lines, grades, dimensions, and typical cross sections shown on the plans and marked on the ground. Compacted layers shall not exceed nine (9) inches in depth. 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.

1010a - 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 in advance.

1012 - 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, determined by Authorized Officer, and compacted to full width by compacting equipment conforming to the requirements of Subsections 103f and 103i . Minimum compaction shall be six (6) passes over each full-width layer, or fraction thereof.

AGGREGATE SURFACE COURSE – 1200
CRUSHED ROCK MATERIAL

1201 - This work shall consist of furnishing, hauling, and placing one (1) or more layers of crushed rock material on roadbeds, base courses, and culvert bedding 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 or stockpile 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 source shown on the plans. Development and mining of such source shall be in accordance with section 1600 of these specifications.

1202b - All rock required for project work in T. 04S., R. 06W., Sections 7 & 19 shall be obtained from a commercial source.

1203 - When crushed rock material is produced from gravel, not less than seventy-five (75) percent by weight of the particles retained on the No. 4 sieve will have 4 manufactured fractured faces. If necessary to meet the above requirements or to eliminate an excess of filler, the gravel shall be screened before crushing.

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

TABLE 1204
AGGREGATE SURFACE COURSE
CRUSHED ROCK MATERIAL
Percentage by weight passing square mesh sieves
AASHTO T 11 & T 27
GRADATION

Sieve Designation	C	E
1-1/2-inch	95	-
1-inch	-	-
3/4-inch	60-90	100
1/2-inch	-	-

No. 4	30-55	40-75
No. 8	22-43	-
No. 30	11-27	-
No. 40	-	5-35
No. 200	3-15	2-15

1204a - 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. The Purchaser shall provide test results upon request to the Authorized Officer.

1205 - Crushed rock material retained on the No. 4 sieve shall have a percentage of loss of not more than thirty-five (35) at five hundred (500) revolutions, as determined by AASHTO T 96.

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

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

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

1209 - Shaping and compacting of roadbed, base course, or culvert trench shall be completed and approved prior to placing crushed rock material, in accordance to the requirements of Subsections 300, 400, 500, and 700. Notification for final inspection of base rock shall be three (3) days prior to the spreading of crushed cap rock.

1210 - Crushed rock material conforming to the requirements of these specifications shall be placed on the approved roadbed, landings, base course and culvert trench in accordance with these specifications and conforming to the lines, grades, dimensions, and typical cross sections shown on the plans and marked on the ground. Compacted layers shall not exceed 4 inches in depth. When more than one (1) layer is required, each shall be shaped, processed, compacted, and approved 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 in advance.

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, as determined by Authorized Officer, and compacted to full width by compacting equipment conforming to the requirements of Subsections 103f, 103g, and 103i . Minimum compaction shall be six (6) passes over each full-width layer, or fraction thereof.

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 (provided upon request).

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.

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.

1307 - Where subgrade reinforcement 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.

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 1311b
Physical Requirements for Stabilization Geotextile

Property	Test Method ASTM	Units	Specifications[1]	
			Type III-A	Type III-B
Grab strength	D 4632	N	1400/900	1100/700
Sewn seam strength	D 4632	N	1260/810	990/630
Tear strength	D 4533	N	500/350	400[3]/250
Puncture strength	D 4833	N	500/350	400/250
Burst strength	D 3786	kPa	3500/1700	2700/1300
Permittivity	D 4491	s^{-1}	0.43	0.43
Apparent opening size	D 4751	mm	0.60[2]	0.60[2]
Ultraviolet stability	D 4355	%	50% after 500 hours of exposure	

(1) The first values in a column apply to geotextiles that break at < 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 marked in field. Smooth the trench surfaces by removing all projections that may damage the geotextile. Minimum slope of trenches shall be one percent. The Authorized Officer shall have a minimum of 3 days notice in which to approve trenches prior to installation of the geotextile material, pipe, drain rock, or other backfill.

1314 - Geotextile material used as a filter shall be placed in a manner and at the locations shown on the plans. Place the long dimension of the geotextile parallel to the centerline of the trench. Position the geotextile, without stretching, in contact with the trench surface. Overlap the joints a minimum of 24 inches with the upstream geotextile placed over the downstream geotextile. Replace geotextile damaged during installation.

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, splash pads, and road blockages 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 and as directed by the Authorized Officer.

1402 - Stone material shall consist of hard angular quarry rock of such quality that it will not disintegrate on exposure to water or weathering, and shall be graded in accordance with these 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
1/2	9.5 x 9.5 x 9.5	88
1/3	8.3 x 8.3 x 8.3	60
1/4	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 ten (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:

TABLE 1405

Class	% of Rock Equal of	Range of Intermediate	Range of Rock Mass, pounds

	Smaller by Count, Dx	Dimensions, inches	
5	100	33-39	2900-4850
	85	23-28	990-1800
	50	17-20	400-650
	15	11-15	110-270

Rocks smaller than six inches in diameter are not counted.

1405a - Stone materials shall show a durability value of not less than fifty (50) as determined by AASHTO T 210.

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

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.

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.

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.

1708 - Newly constructed and renovated roads to be carried over the winter period, shall be blocked to vehicular traffic and waterbars installed prior to the wet season.

1708a - Road segments not completed during dry weather periods shall be winterized, by providing a well-drained roadway using waterbars, 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. A winterization plan shall be submitted to the Authorized Officer no later than September 15th of each harvest season.

1711 - The Purchaser shall construct sediment catch basins with straw bales at the following locations: 4-6-7.1 (MP. 0.147), 4-6-18.0 (MP. 0.217, 0.492, 0.608, 0.909, 1.009, 1.157, 1.297, 1.475, 1.663, 1.777), 4-6-19.0 (MP. 0.326 & 0.605), East Creek County Road (MP. 0.639, 0.701, 2 at 0.778, 0.899, 1.285, 2.089. Construct sediment catch basins to the dimensions of the sediment catch basin detail on Pg. 39 of Exhibit C.

1711a - Straw bales required for sediment catch basins shall be furnished by the Purchaser. Straw bales shall be certified weed free from commercial grain fields and native grass fields. Straw bales shall be from oats, wheat, rye, or other approved grain crops and shall be free from, mold, or other objectionable material. Straw bales shall be in an air-dry condition and suitable for placement. The Purchaser shall provide the weed free certification to the Authorized Officer upon request.

SOIL STABILIZATION – 1800

1801 - This work shall consist of seeding on designated cut, fill, borrow, disposal, and special areas in accordance with these specifications and as shown on the plans. This work is not required for road acceptance under Section 18 of this contract. Grass seed will be furnished by the Government. Straw Mulch shall be furnished by the Government.

1802a - Soil stabilization work consisting of seeding and mulching shall be performed on new road construction, road renovation and improvement, landings, borrow sites, and disposal sites in accordance with these specifications and as shown on the plans. The seed shall be spread at a rate of sixty 60 pounds/acre.

1803 - Soil stabilization work as specified under Subsection 1802a shall be performed during the following seasonal periods:

From	To
August 1	October 15

The Authorized Officer may modify the above seasonal dates to conform to existing weather conditions and changes in the construction schedule.

1809 - Mulch material conforming to the requirements of Subsections 1809a and 1809b shall be furnished by the Government and shall be delivered to the work area in a dry state. 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.

1809a - Straw mulch shall be from oats, wheat, rye, or other approved grain crops which are free from noxious weeds, mold, or other objectionable materials. Straw mulch shall be in an air-dry condition and suitable for placing with power spray equipment.

1809b - Grass straw mulch shall be from perennial grass or, if specified, an annual rye grass, from which the seed has been removed. The straw shall be free from Bentgrass, Canada Thistle, Tansy Ragwort, Skeleton weed, and other noxious weed seed. The grass straw shall be from fields which have passed the current year's field inspection of the Oregon Grass Seed Certification program, or from fields certified by the County Agent, or by seed companies purchasing the seed.

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 apply to the disturbed soils that are wet and/or within fifty (50) feet each side of "live stream" locations and all disposal sites a mixture of grass seed and straw mulch material at the application rate of six (6) pounds seed/acre and three thousand (3000) pounds straw mulch/acre (to be determined by Authorized Officer based on visual observation of trial applications).

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.

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.

1819 - The Purchaser shall notify the Authorized Officer at least three (3) days in advance of date he intends to commence the specified soil stabilization work.

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.

ROADSIDE BRUSHING - 2100

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

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

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

2104 - Trees in excess of six (6) inches in diameter shall be limbed, so that no limbs extend into the treated area or over the roadbed to a height of fourteen (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 four (4) inches of the trunk to produce a smooth vertical face. Removal of trees larger than six (6) inches in diameter for sight distance or safety may be directed by the Authorized Officer.

2105 - Vegetation that is outside of the road prism-variable distance that protrudes into the road prism and within fourteen (14) feet in elevation above the running surface shall be cut, to within four (4) inches of the trunk to produce a smooth vertical face.

2106 - Vegetative growth capable of growing one (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 two hundred (200) feet chord distance and/or a middle ordinate distance of twenty-five (25) feet, whichever is achieved first. Overhanging limbs and vegetation in excess of one (1) foot in height, shall be cut within these areas.

2109 - Debris resulting from this operation shall be scattered downslope from the roadway. Debris shall not be allowed to accumulate in concentrations. Debris in excess of one (1) foot in length and two (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.

2112 - Roadside brushing shall be performed during the following seasonal periods:

*From	To
June 1	October 15

*Brushing may occur during the "wet season" given the following guidelines are followed:

1) Activity would be suspended when conditions exist that could generate sediment inputs into streams, such as times of intense or prolonged rainfall where water in ditches is flowing, or streamflow, as measured above and below the effects of the road, becomes discolored.

2) Activity would be suspended when road surface shows signs of serious deterioration such as excessive rutting or pumping of fines from the sub-grade.

3) Activity would be suspended upon decision of Authorized Officer.

2113 - Roadside brushing shall be accomplished on the following road segments: 4-6-18.0, 4-6-19.0, 4-6-19.1 and 4-6-19.2.

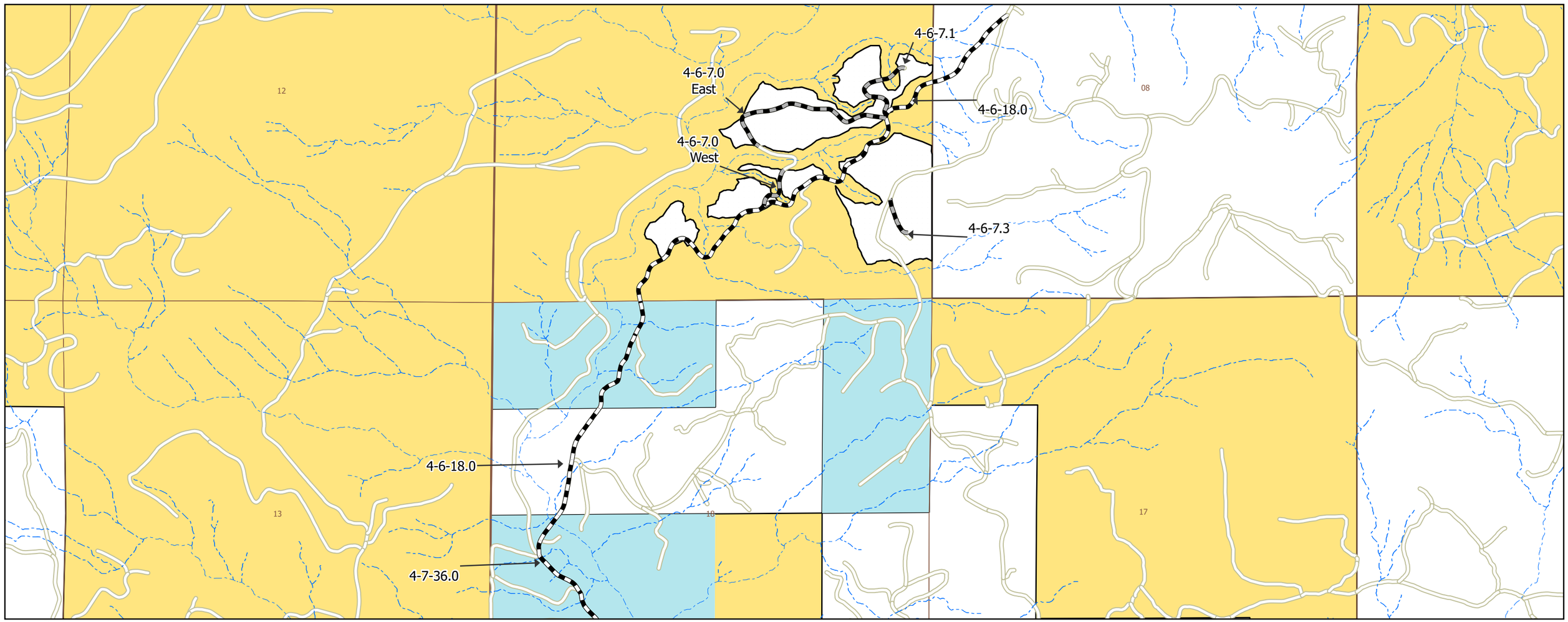
2116 - Traffic warning signs shall be required at each end of the work area. Signs shall meet the requirements of the Manual on Uniform Traffic Devices.

BARRICADES AND CONTROL DEVICES - 2700

2701 - This work will consist of furnishing and placement of barricades, warning signs, and other protection required to prevent injury to people and damage to property due to culvert installations, brushing, and other construction work. Purchaser shall submit a site plan showing how the specifications in this section and of Sec. 44 will be accomplished.

2702 - Maintain condition, operation, and effectiveness of traffic control devices throughout period of use. Materials used for the temporary structures and controls are property of Contractor and shall be removed from Government land when need for their service has ended.

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
NORTHWEST OREGON DISTRICT - OREGON
Road Plan Map
T. 04S. R. 06W. Sections 7 & 19 W.M. - NORTHWEST OREGON DISTRICT - OREGON



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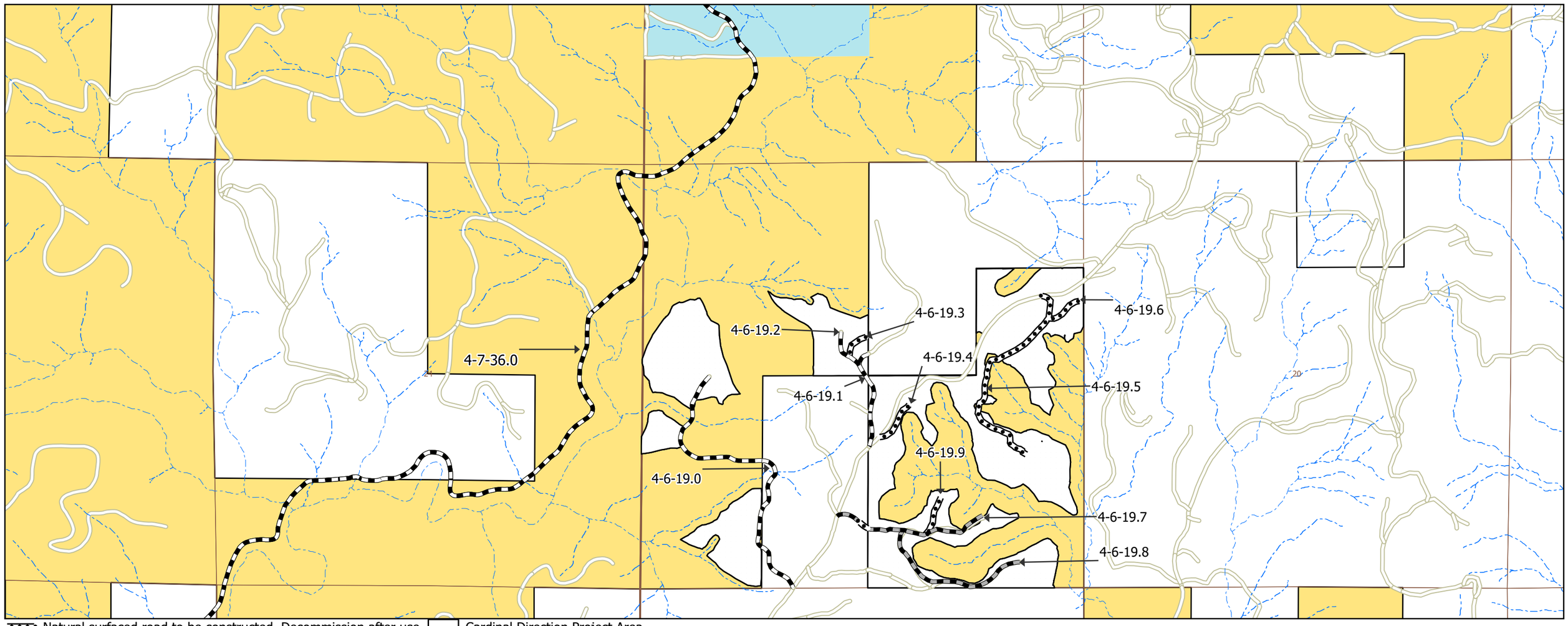
Prepared By: Austin Bettis

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
NORTHWEST OREGON DISTRICT - OREGON
Road Plan Map

T. 04S. R. 06W. Sections 7 & 19 W.M. - NORTHWEST OREGON DISTRICT - OREGON



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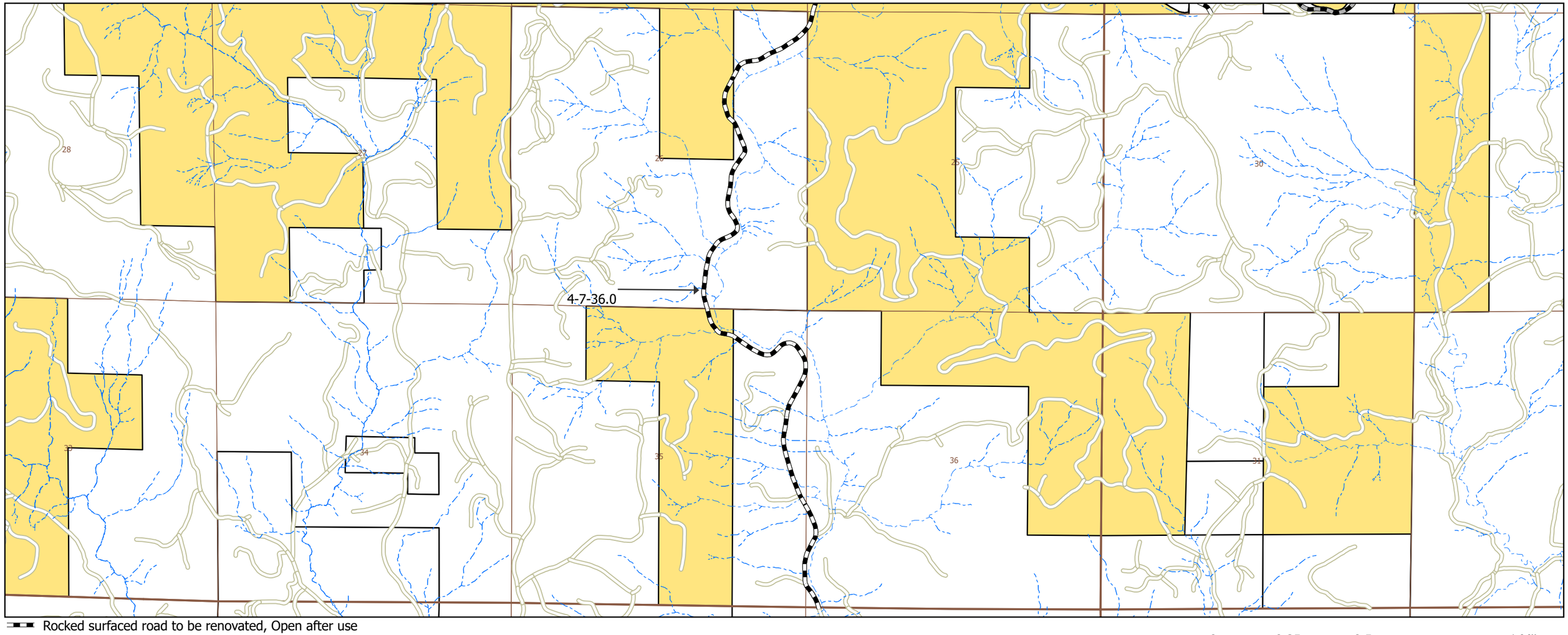

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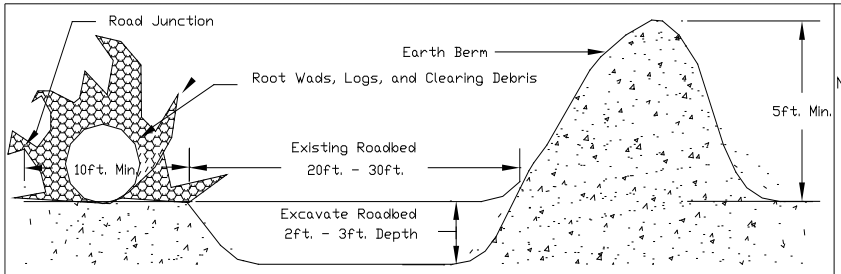
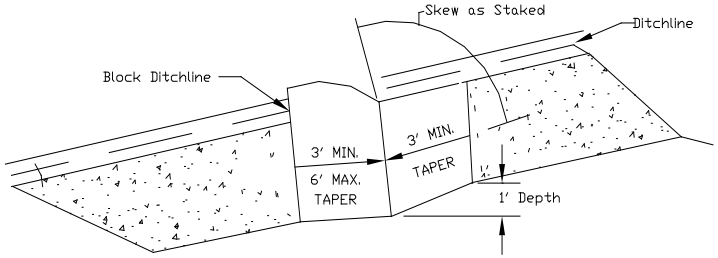
U.S. DEPT. OF THE INTERIOR
Bureau of Land Management
NORTHWEST OREGON DISTRICT OFFICE - OREGON

Earth Barricade, Waterdip, Drivable and Non-Drivable Waterbar Details



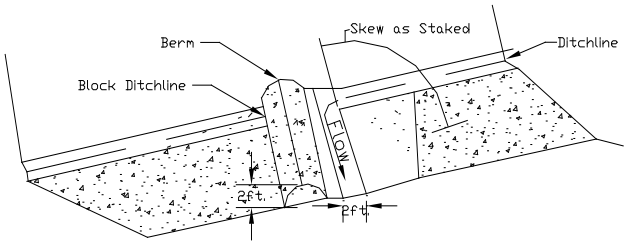
EARTH BARRICADE CONSTRUCTION



DRIVABLE WATERBAR CONSTRUCTION

NOTE:

1. DITCHLINE IS TO BE BLOCKED WITH EXCAVATED MATERIAL TO PREVENT DITCH WATER FROM BYPASSING WATERBAR.
2. EXCESS MATERIAL SHALL BE UNIFORMLY SPREAD ALONG ROADWAY. NO MATERICAL WILL BE ALLOWED BEYOND THE OUTER ROAD EDGE.

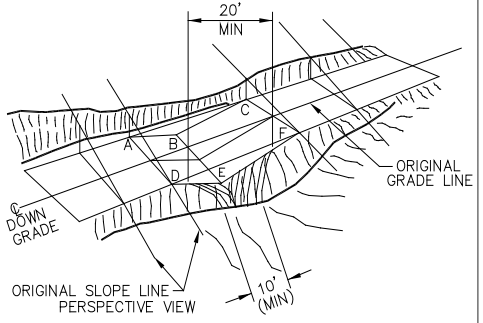


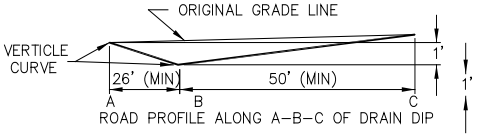
NON-DRIVABLE WATERBAR CONSTRUCTION

WATER DIP DETAIL

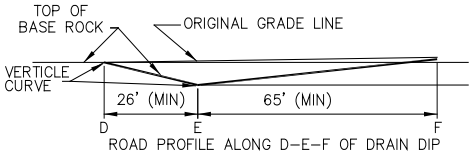
Not to Scale

NOTE: PLAN OF DIP SHOWN IS FOR OUTSLOPED ROLLING DIP, DIPS MAY BE EITHER INSLOPED OR OUTSLOPED. WHEN INSLOPED, DIPS SHALL DISCHARGE INTO A CULVERT, DROP INLET, OR OVERSIDE DRAIN, OR DRAINAGE DITCH. WHEN OUTSLOPED, THEY SHALL DISCHARGE INTO AN OVERSIDE DRAIN OR ON TO NATURAL GROUND. THE MINIMUM CROSS GRADE FROM "B" TO "E" IS 4% GREATER THAN THE ORIGINAL ROAD GRADE. SKEW LINE B-E TO FIT LOW POINT IN DRAW, IF LOCATED IN NATURAL DRAIN.

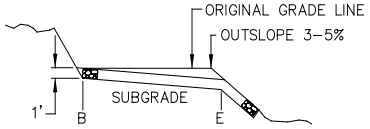




ROAD PROFILE ALONG A-B-C OF DRAIN DIP



ROAD PROFILE ALONG D-E-F OF DRAIN DIP



ROCK SPILL APRON 15' WIDE WITH MATERIAL AS SHOWN ON SCHEDULE OF ITEMS TO TOE OF FILL.

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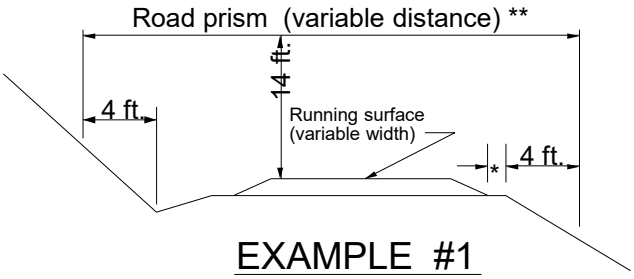
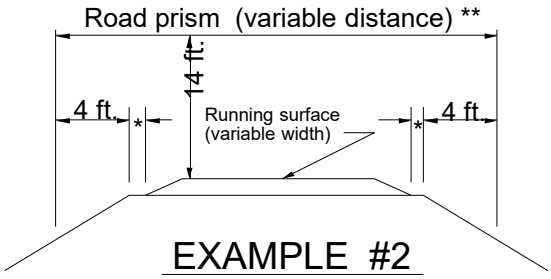
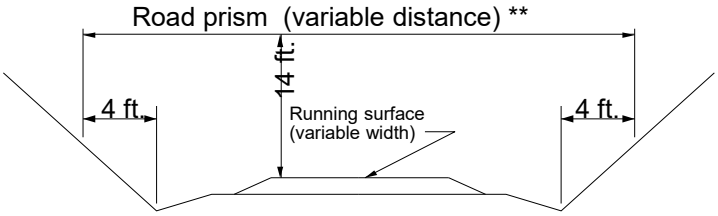
BRUSHING DETAILS



EXAMPLE #1



EXAMPLE #2

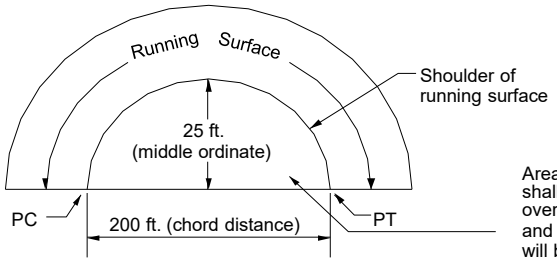


EXAMPLE #3

(NO SCALE)

* Variable distance between running surface and start of fill slope

** All areas within the variable distance shall be free of all vegatation capable of growing one (1) foot in height or higher and all overhanging limbs and branches 14 feet in elevation above the running surface



Area to be cut: shall be free of overhanging limbs and all vegatation will be cut to a maximum height of one (1) foot.

SIGHT DISTANCE DIAGRAM

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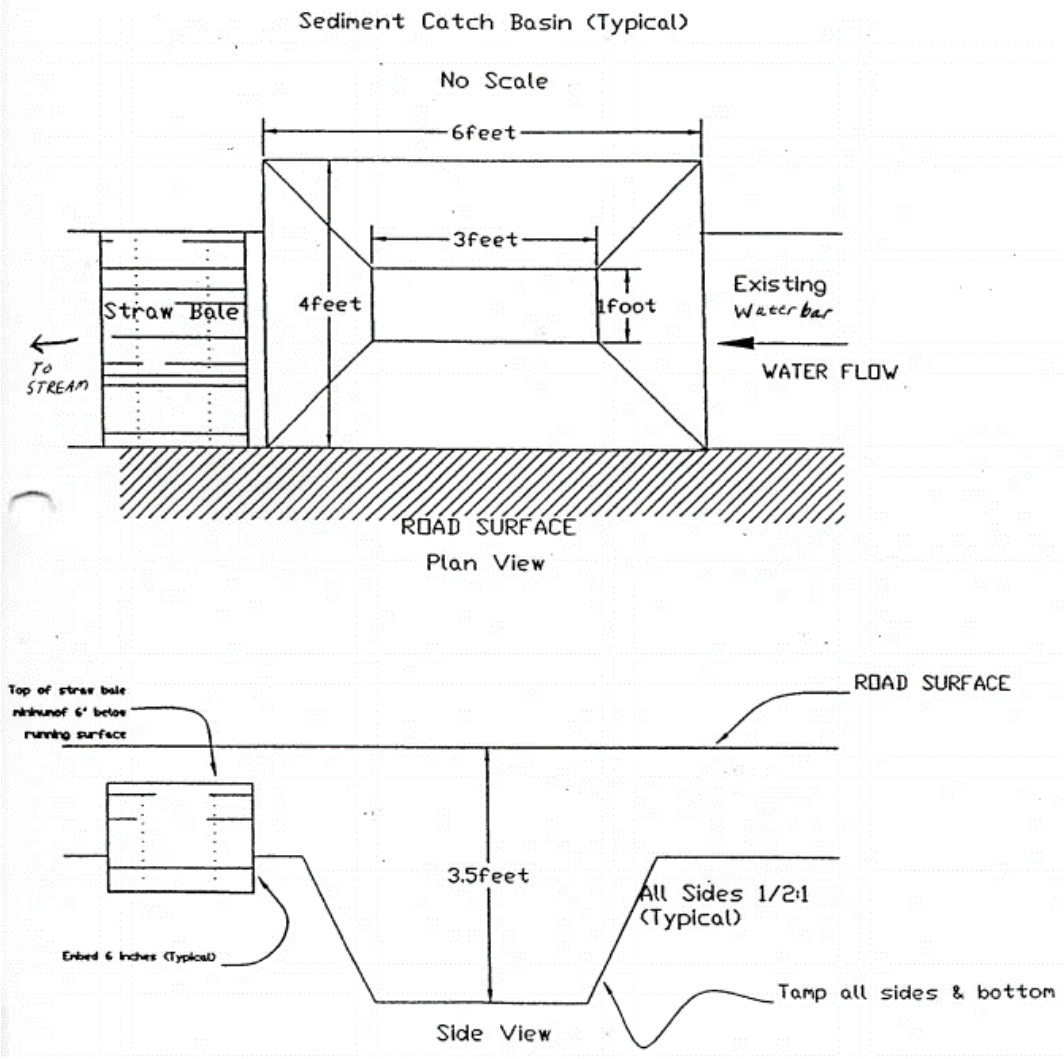
Sediment Catch Basin with Straw Bale Details



Culvert List

CULVERT LOCATIONS							DOWNSPOUT(d) or STANDPIPE(s) *4				AS BUILT			ROCK RIP RAP (GRADING)			REMARKS *6
DESIGNED *2														(a)		(b)	
Road #	Sta./ M.P	SIZE	GAGE	LENGTH	CULVERT GRADE	INSTALL TYPE *3	SIZE	TYPE	LENGTH	TYPE OF ELBOW *5	SIZE	GAGE	LENGTH	INLET	OUTLET	Stucture inside pipe	
4-6-7.0 West	2+52	24"	--	60'	--	--	--	--	--	--	--	--	--	--	--	--	Stream crossing. Install culvert as marked and directed by Authorized Officer (approx. 3' fill @ inlet, 7' fill @ outlet, and 5' fill @ CL). Place 25 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Spread 20 CY of 6" Jaw Run Base Rock over pipe for surfacing, capped with 15 CY of 1 1/2"-0" Crushed Rock. Install inlet marker.
4-6-7.0 East	2+82	18"	--	30'	--	--	--	--	--	--	--	--	--	--	--	--	Install culvert as marked and directed by Authorized Officer (approx. 4' fill @ CL). Place 10 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Spread 10 CY of 6" Jaw Run Base Rock over pipe for surfacing, capped with 10 CY of 1 1/2"-0" Crushed Rock. Install inlet marker. Daylight ditchline on right. Continue ditchline on left.
	8+56	18"	--	30'	--	--	--	--	--	--	--	--	--	--	10	--	Install culvert as marked and directed by Authorized Officer (approx. 4' fill @ CL). Place 10 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Spread 10 CY of 6" Jaw Run Base Rock over pipe for surfacing, capped with 10 CY of 1 1/2"-0" Crushed Rock. Place 10 CY Class 5 RipRap @ outlet as energy dissipater/fill armor. Install inlet marker.
	11+78	18"	--	40'	--	--	--	--	--	--	--	--	--	--	--	--	Install culvert as marked and directed by Authorized Officer (approx. 4' fill @ CL). Place 20 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Spread 20 CY of 6" Jaw Run Base Rock over pipe for surfacing, capped with 15 CY of 1 1/2"-0" Crushed Rock. Install inlet marker.
	15+65	18"	--	30'	--	--	--	--	--	--	--	--	--	--	--	--	Install culvert as marked and directed by Authorized Officer (approx. 4' fill @ CL). Place 10 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Spread 10 CY of 6" Jaw Run Base Rock over pipe for surfacing, capped with 10 CY of 1 1/2"-0" Crushed Rock. Install inlet marker.
	20+95	18"	--	40'	--	--	--	--	--	--	--	--	--	--	--	--	Install culvert as marked and directed by Authorized Officer (approx. 6' fill @ CL). Place 20 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Spread 20 CY of 6" Jaw Run Base Rock over pipe for surfacing, capped with 15 CY of 1 1/2"-0" Crushed Rock. Install inlet marker.
4-6-7.1	0.047	18"	--	36'	--	--	--	--	--	--	--	--	--	--	--	--	Replace existing culvert as marked and directed by Authorized Officer (approx. 3' fill @ CL). Place 15 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Spread 15 CY of 6" Jaw Run Base Rock over pipe for surfacing, capped with 10 CY of 1 1/2"-0" Crushed Rock. Keep inlet in same location. Move outlet approx. 20' to the right to add skew as marked and directed. Install inlet marker.
	0.152	24"	--	40'	--	--	--	--	--	--	--	--	--	--	--	--	Stream Crossing. Replace existing culvert as marked and directed by Authorized Officer (approx. 6' fill @ CL). Place 20 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Spread 20 CY of 6" Jaw Run Base Rock over pipe for surfacing, capped with 15 CY of 1 1/2"-0" Crushed Rock. Drop outlet 2' to bottom of fillslope as marked and directed. Install inlet marker.
4-6-7.3	0+00	18"	--	50'	--	--	18"	1	10'	--	--	--	--	--	--	--	Install culvert and downspout as marked and directed by Authorized Officer across Peavine County Road. **Obtain authorization from Yamhill County.** Place 20 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Spread 20 CY of 6" Jaw Run Base Rock over pipe for surfacing, capped with 15 CY of 1 1/2"-0" Crushed Rock. Install inlet marker.
4-6-18.0 (East Creek Tie Rd)	0.214	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Stream Crossing. Install inlet marker.
	0.372	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Clean buried inlet and outlet.
	0.462	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Install inlet marker.
	0.486	30"	14	45'	--	--	--	--	--	--	--	--	--	--	30	--	Stream Crossing. Replace existing culvert as marked and directed by Authorized Officer (approx. 4' fill @ inlet, 11' fill @ outlet, and 7.5' fill @ CL). Place 20 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Spread 20 CY of 6" Jaw Run Base Rock over pipe for surfacing, capped with 15 CY of 1 1/2"-0" Crushed Rock. Place 30 CY Class 5 RipRap @ outlet as fill armor. Culvert lay will be deeper and steeper than existing (drop outlet 6'). Install inlet marker.
	0.603	24"	--	45'	--	--	--	--	--	--	--	--	--	--	20	--	Stream Crossing. Replace existing culvert as marked and directed by Authorized Officer (approx. 3' fill @ inlet, 10' fill @ outlet, and 6.5' fill @ CL). Place 20 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Spread 20 CY of 6" Jaw Run Base Rock over pipe for surfacing, capped with 15 CY of 1 1/2"-0" Crushed Rock. Place 20 CY Class 5 RipRap @ outlet as fill armor. Culvert lay will be deeper and steeper than existing (drop outlet 2'). Install inlet marker.
	0.648	18"	--	35'	--	--	--	--	--	--	--	--	--	--	--	--	Replace culvert as marked and directed by Authorized Officer. Place 15 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Spread 15 CY of 6" Jaw Run Base Rock over pipe for surfacing, capped with 10 CY of 1 1/2"-0" Crushed Rock. Install inlet marker.
	0.722	18"	--	40'	--	--	--	--	--	--	--	--	--	--	--	--	Replace culvert as marked and directed by Authorized Officer. Place 20 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Spread 20 CY of 6" Jaw Run Base Rock over pipe for surfacing, capped with 15 CY of 1 1/2"-0" Crushed Rock. Install inlet marker.
	0.907	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Install inlet marker.
	0.982	24"	--	35'	--	--	--	--	--	--	--	--	--	--	5	--	Stream Crossing. Replace existing culvert as marked and directed by Authorized Officer. Place 20 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Spread 20 CY of 6" Jaw Run Base Rock over pipe for surfacing, capped with 15 CY of 1 1/2"-0" Crushed Rock. Place 5 CY Class 5 RipRap @ outlet as energy dissipater. Install inlet marker.
	1.076	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Install inlet marker.
	1.151	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Stream Crossing. Install inlet marker. Clean outlet and re-attach existing downspout.
	1.292	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Stream Crossing. Install inlet marker.
	1.468	36"	14	50'	--	--	--	--	--	--	--	--	--	--	50	--	Stream Crossing. Replace existing culvert as marked and directed by Authorized Officer (approx. 5' fill @ inlet, 10' fill @ outlet, and 7.5' fill @ CL). Place 30 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Spread 25 CY of 6" Jaw Run Base Rock over pipe for surfacing, capped with 20 CY of 1 1/2"-0" Crushed Rock. Place 30 CY Class 5 RipRap @ outlet as fill armor and 20 CY as energy dissipater (total of 50 CY). Install inlet marker. Culvert lay will be deeper and steeper than existing (drop outlet 6').
	1.540	18"	--	40'	--	--	--	--	--	--	--	--	--	--	--	--	Replace culvert as marked and directed by Authorized Officer (deeper than existing). Place 20 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Spread 40 CY of 6" Jaw Run Base Rock over pipe for surfacing, capped with 30 CY of 1 1/2"-0" Crushed Rock. Install inlet marker.
	1.623	18"	--	35'	--	--	--	--	--	--	--	--	--	--	--	--	Low Spot. Install culvert as marked and directed by Authorized Officer. Place 15 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Spread 15 CY of 6" Jaw Run Base Rock over pipe for surfacing, capped with 10 CY of 1 1/2"-0" Crushed Rock. Install inlet marker.

Gage Chart		
	Dec. Inches	
Gage	Steel	Alum.
10	.138	.135
12	.109	.105
14	.079	.075
16	.064	.060

1. Designed culvert lengths and locations are approximate.

***2**. all culverts have 2-2/3" x 1/2" unless otherwise noted.

***4.** Downspout or Standpipe Types

1) Full
2) Half
3) Flume

*** Downspouts and stand pipes (under 36" diameter) shall be CPP, Type C (single wall); unless otherwise specified.

***5.** 1) Conventional or Fabricated
2) Turner type
3) Slip joint

***6.** Include special sections, structures, headwalls, footings & other data.

**** Corrugated plastic pipe (CPP), Type S (double wall) shall be used for culvert sizes 24" and smaller. All larger culvets shall be aluminized steel. All aluminized steel culverts are to have hugger type bands and neoprene gaskets. Culverts 20' in length or smaller shall be one piece (no joints). No Culvert piece shall be shorter than 6 foot. Minimization of banding is required.

Culvert List

CULVERT LOCATIONS							DOWNSPOUT(d) or STANDPIPE(s) *4				AS BUILT			ROCK RIP RAP (GRADING)			REMARKS *6
DESIGNED *2														(a)		(b)	
Road #	Sta./ M.P	SIZE	GAGE	LENGTH	CULVERT GRADE	INSTALL TYPE *3	SIZE	TYPE	LENGTH	TYPE OF ELBOW *5	SIZE	GAGE	LENGTH	INLET	OUTLET	Stucture inside pipe	
4-6-18.0 (East Creek Tie Rd) cont.	1.657	36"	14	35'	--	--	--	--	--	--	--	--	--	--	--	--	Stream Crossing. Replace existing culvert as marked and directed by Authorized Officer (approx. 4' fill @ inlet, 6' fill @ outlet, and 5' fill @ CL). Place 20 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Spread 20 CY of 6" Jaw Run Base Rock over pipe for surfacing, capped with 20 CY of 1 1/2"-0" Crushed Rock. Install inlet marker.
	1.770	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Install inlet marker.
4-6-19.0	0.238	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Install inlet marker.
	0.292	18"	--	30'	--	--	--	--	--	--	--	--	--	--	--	--	Install culvert as marked and directed by Authorized Officer. Place 10 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Spread 10 CY of 6" Jaw Run Base Rock over pipe and cap with 4" lift of 1 1/2"-0" Crushed Rock. Install inlet marker.
	0.298	24"	--	50'	--	--	--	--	--	--	--	--	--	5	--	--	Stream Crossing. Replace culvert as marked and directed by Authorized Officer (approx. 5' fill @ inlet, 15' fill @ outlet, and 10' fill @ CL). Place 20 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Spread 15 CY of 6" Jaw Run Base Rock over pipe and cap with 4" lift of 1 1/2"-0" Crushed Rock. Place 5 CY Class 5 RipRap @ inlet as fill armor. Install inlet marker. Install new culvert with outlet lowered to stream elevation and outlet 6' right to align with stream channel.
	0.300	24"	--	50'	--	--	--	--	--	--	--	--	--	5	--	--	Stream Crossing. Replace culvert as marked and directed by Authorized Officer (approx. 5' fill @ inlet, 15' fill @ outlet, and 10' fill @ CL). Place 20 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Spread 15 CY of 6" Jaw Run Base Rock over pipe and cap with 4" lift of 1 1/2"-0" Crushed Rock. Place 5 CY Class 5 RipRap @ inlet as fill armor. Install inlet marker. Install new culvert with outlet lowered to stream elevation and outlet 6' right to align with stream channel.
	0.298 - 0.300																Place 50 CY Class 5 RipRap at both outlets and tie togther for fill armor for entire slope.
	0.316	24"	14	40'	--	--	--	--	--	--	--	--	--	--	--	--	Sub surface flow present. Construct a french-drain with perferated pipe as marked and directed by Authorized Officer (approx. 6.5' fill @ CL). AUTHORIZED OFFICER TO BE PRESENT DURING INSTALLATION. Excavate approx. 300 CY of material from fill and haul to designated waste area. Ensure culvert is bedded on 6" drain rock. Wrap 300 CY 1-1/2"-3/4" drain rock with 400 SY non-woven geo-synthetic fabric. Spread 30 CY 6" JawRun Base Rock and cap with 4" lift of 1 1/2"-0" Crushed Rock. Install inlet marker.
	0.506	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Install inlet marker. Clean existing culvert inlet.
	0.590	18"	--	30'	--	--	--	--	--	--	--	--	--	--	--	--	Install culvert as marked and directed by Authorized Officer. Place 10 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Spread 10 CY of 6" Jaw Run Base Rock over pipe and cap with 4" lift of 1 1/2"-0" Crushed Rock. Install inlet marker.
	0.598	36"	14	40'	--	--	--	--	--	--	--	--	--	--	--	--	Stream Crossing. Replace culvert as marked and directed by Authorized Officer (approx. 9' fill @ CL). Place 20 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Spread 20 CY of 6" Jaw Run Base Rock over pipe and cap with 4" lift of 1 1/2"-0" Crushed Rock. Install inlet marker.
4-6-19.2	0+15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Install inlet marker.
4-6-19.3	0+30	18"	--	40'	--	--	--	--	--	--	--	--	--	--	--	--	Install culvert as marked and directed by Authorized Officer. Place 20 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Install inlet marker.
4-6-19.5	11+70	24"	--	50'	--	--	24"	1	10'	--	--	--	--	--	60	--	Stream Crossing. Install culvert and downspout as marked and directed by Authorized Officer (approx. 3' fill @ inlet, 20' fill @ outlet, and 11.5' fill @ CL). Place 20 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Spread 20 CY of 6" Jaw Run Base Rock over pipe for surfacing, capped with 15 CY 1 1/2"-0" Crushed Rock. Place 60 CY Class 5 RipRap @ outlet as fill armor. Install inlet marker. Excavate into cutbank to widen subgrade to achieve desired width and haul material to waste area.
	18+32	24"	--	55'	--	--	--	--	--	--	--	--	--	--	--	--	Stream Crossing. Install culvert as marked and directed by Authorized Officer (approx. 4' fill @ inlet, 6' fill @ outlet, and 5' fill @ CL). Place 20 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Spread 20 CY of 6" Jaw Run Base Rock over pipe for surfacing, capped with 15 CY 1 1/2"-0" Crushed Rock. Install inlet marker. Excavate channel above inlet to create artificial channel and direct water into culvert. Excavate a lead-off ditch. Use suitable excavated material to build fill slopes and haul remaining material to designated waste area.
4-7-36.0 (Willamina Creek Road)	2.218	24"	--	65'	--	--	--	--	--	--	--	--	--	40	60	--	Stream Crossing/Wet Area. Replace culvert as marked and directed by Authorized Officer (approx. 11' fill @ inlet, 18' fill @ outlet, and 14.5' fill @ CL). Place 30 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Spread 25 CY of 6" Jaw Run Base Rock over pipe for surfacing, capped with 20 CY 1 1/2-0" Crushed Rock. Place 40 CY Class 5 RipRap @ inlet as fill armor. Place 60 CY Class 5 RipRap @ outlet as fill armor. Install inlet marker.
	2.704	36"	14	70'	--	--	--	--	--	--	--	--	--	20	90	--	Stream Crossing. Replace culvert as marked and directed by Authorized Officer (approx. 8' fill @ inlet, 24' fill @ outlet, and 16' fill @ CL). Place 30 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Spread 25 CY of 6" Jaw Run Base Rock over pipe for surfacing, capped with 20 CY 1 1/2-0" Crushed Rock. Place 20 CY Class 5 RipRap @ inlet as fill armor. Place 90 CY Class 5 RipRap @ outlet as fill armor. Install inlet marker. New culvert to be installed deeper to remove shot-gunned outlet.
East Creek County Road	2.231	18"	--	30'	--	--	--	--	--	--	--	--	--	--	--	--	Install culvert as marked and directed by Authorized Officer. Obtain authorization form Yamhill County. Place 10 CY of 1 1/2"-0" Crushed Bedding/Backfill Rock as marked. Spread 10 CY of 6" Jaw Run Base Rock over pipe for surfacing, capped with 10 CY 1 1/2"-0" Crushed Rock. Install inlet marker. Construct ditchout left.

Gage Chart		
	Dec. Inches	
Gage	Steel	Alum.
10	.138	.135
12	.109	.105
14	.079	.075
16	.064	.060

1. Designed culvert lengths and locations are approximate.

***2**. all culverts have 2-2/3" x 1/2" unless otherwise noted.

***4.** Downspout or Standpipe Types

1) Full	*** Downspouts and stand pipes (under 36" diameter) shall be CPP, Type C (single wall); unless otherwise specified.
2) Half	
3) Flume	

**** Corrugated plastic pipe (CPP), Type S (double wall) shall be used for culvert sizes 24" and smaller. All larger culvets shall be aluminized steel. All aluminized steel culverts are to have hugger type bands and neoprene gaskets. Culverts 20' in length or smaller shall be one piece (no joints). No Culvert piece shall be shorter than 6 foot. Minimization of banding is required.

***5.** 1) Conventional or Fabricated
2) Turner type
3) Slip joint

***6.** Include special sections, structures, headwalls, footings & other data.

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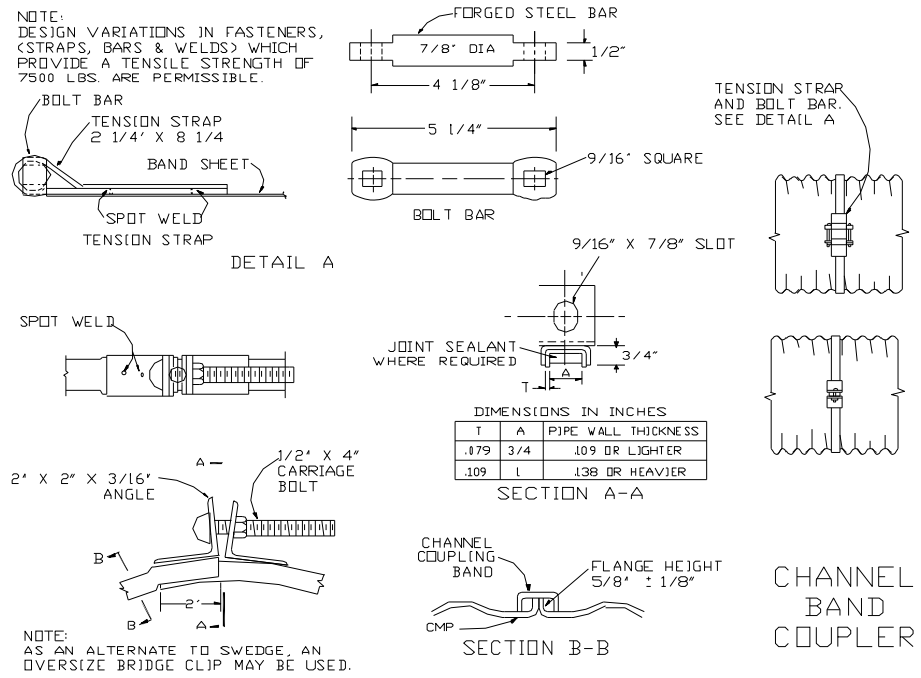
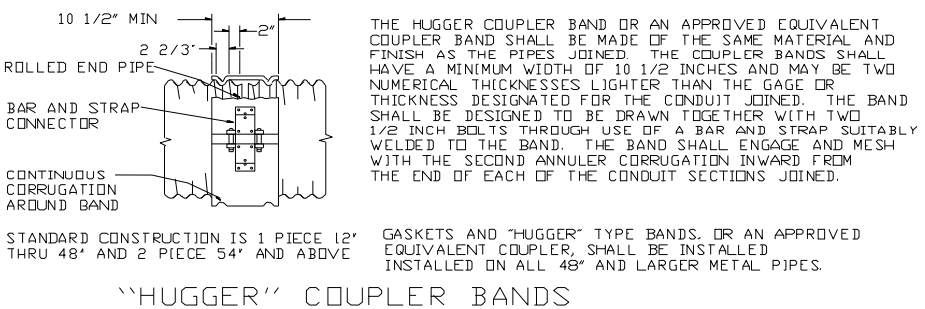
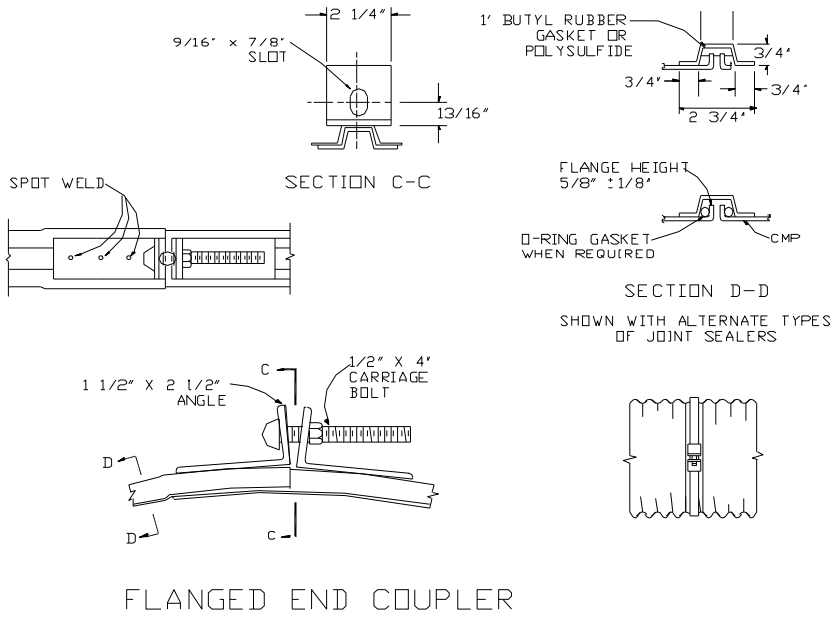
CULVERT BAND DETAILS







STANDARD COUPLER BANDS								
CORRUGATED								
CULVERT SIZE (INCHES	STD. ANNULAR		HELICAL		3" X 1"		6" X 1"	
	WIDTH	NO. OF BOLTS	WIDTH	NO. OF BOLTS	WIDTH	NO. OF BOLTS	WIDTH	NO. OF BOLTS
UNDER 18	7	2	7	2				
18 TO 54	12	3	12	3	14	3	18	3
OVER 54	24	5	24	5	24	5	24	4

DATA IN THIS BLOCK DOES NOT APPLY TO PERFORATED PIPE UNDERDRAIN.
FOR BANDS WITH "PUNCH-OUT" TYPE CONNECTIONS, 2 BOLTS ARE PERMISSIBLE FOR EACH LAP. BANDS SHALL LAP 1/2 WIDTH ONTO EACH SECTION OF PIPE AND MUST FULLY ENCIRCLE THE JOINT FORMING A NEARLY WATERTIGHT CONNECTION.

Ⓐ BANDS WITH ANGLES
Ⓑ BANDS WITH TENSION TYPE CONNECTIONS

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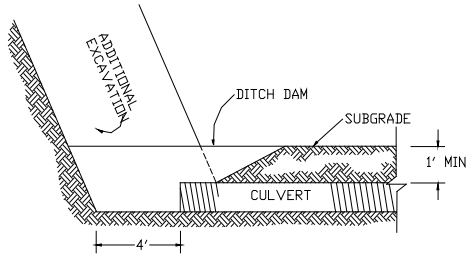
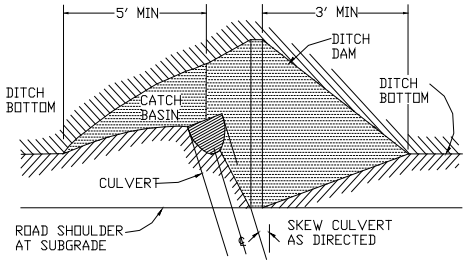
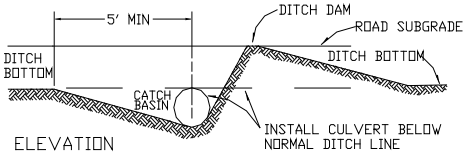
CULVERT INSTALLATION DETAILS



CROSS SECTION AT CATCH BASIN



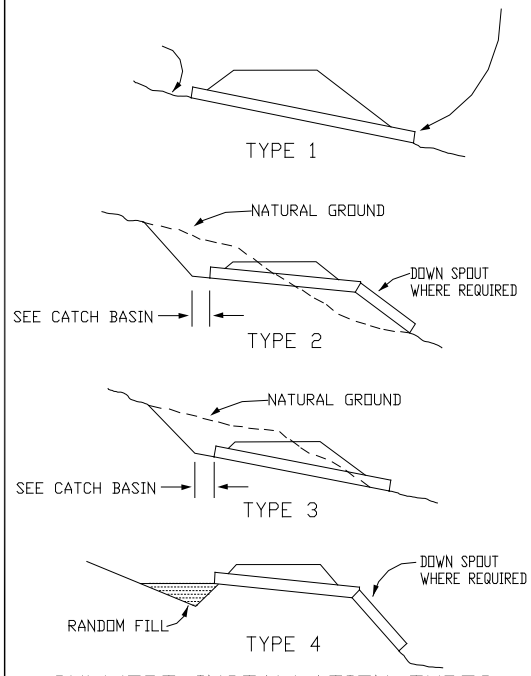
PLAN VIEW



ELEVATION

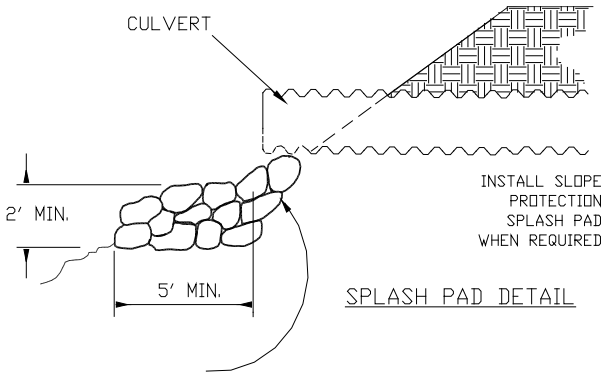
CATCH BASIN

not to scale



CULVERT INSTALLATION TYPES

not to scale

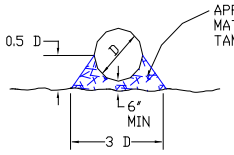


SPLASH PAD DETAIL

NOTE:

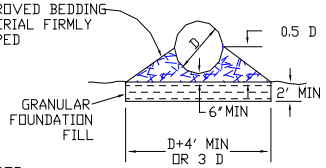
1. PLACE ROCKS UNDER THE OUTLET
2. SPLASH PAD WIDTH SHALL MEET OR EXCEED CULVERT DIAMETER

not to scale



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

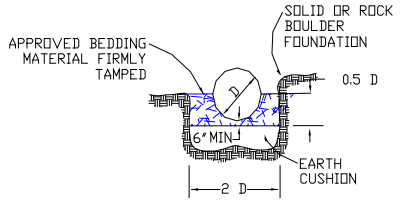
BEDDING OF CULVERTS ON STABLE NATURAL GROUND FOUNDATION OR COMPACTED EMBANKMENT



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

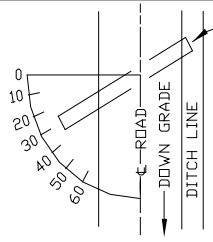
BEDDING OF CULVERTS ON SOFT SPONGY OR UNSTABLE SOIL FOUNDATION

BEDDING OF CULVERTS



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

BEDDING OF CULVERT IN SOLID ROCK OR BOULDER FOUNDATION



SKEW DIAGRAM

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

ALWAYS THINK SAFETY

not to scale

ROCK VOLUMES TOTALS

ROAD SEGMENT:		4-6-7.0 West		STATION:		0+00 - 5+54	
Application	Rock Size and Type	Location	Compacted Depth	Volume per Station/Item (CY)	Approx. Total (CY)	Curve Widening (CY)	Summary Totals
Road Rock	1-1/2"-0"	Cap Spot Rock	--	--	--	--	25
Road Rock	6" Jaw Run	Base Spot Rock	--	--	--	--	40
Culverts	1-1/2"-0"	Bedding/Backfill	--	--	--	--	25

ROAD SEGMENT:		4-6-7.0 East		STATION:		0+00 - 22+05	
Application	Rock Size and Type	Location	Compacted Depth	Volume per Station/Item (CY)	Approx. Total (CY)	Curve Widening (CY)	Summary Totals
Road Rock	1-1/2"-0"	Cap Spot Rock	--	--	--	--	70
Road Rock	6" Jaw Run	Base Spot Rock	--	--	--	--	90
Culverts	1-1/2"-0"	Bedding/Backfill	--	--	--	--	70
Outlet Fill Armor/ Energy Dissipater	RipRap: Class 5	Sta. 8+56	---	---	---	---	10

ROAD SEGMENT:		4-6-7.1		MILEAGE:		0.000 - 0.185	
Application	Rock Size and Type	Location	Compacted Depth	Volume per Station/Item (CY)	Approx. Total (CY)	Curve Widening (CY)	Summary Totals
Road Rock	1-1/2"-0"	Cap Spot Rock	--	--	--	--	35
Road Rock	6" Jaw Run	Base Spot Rock	--	--	--	--	55
Culverts	1-1/2"-0"	Bedding/Backfill	--	--	--	--	35

ROAD SEGMENT:		4-6-7.3		STATION:		0+00 - 5+03	
Application	Rock Size and Type	Location	Compacted Depth	Volume per Station/Item	Approx. Total (CY)	Curve Widening	Summary Totals
Road Rock	1-1/2"-0"	Cap Spot Rock	--	--	--	--	25
Road Rock	6" Jaw Run	Base Spot Rock	--	--	--	--	40
Culverts	1-1/2"-0"	Bedding/Backfill	--	--	--	--	20

ROAD SEGMENT:		4-6-18.0 (East Creek Tie Rd)		MILEAGE:		0.000 - 1.847	
Application	Rock Size and Type	Location	Compacted Depth	Volume per Station/Item (CY)	Approx. Total (CY)	Curve Widening (CY)	Summary Totals
Road Rock	1-1/2"-0"	Cap Spot Rock	--	--	--	--	450
Road Rock	6" Jaw Run	Base Spot Rock	--	--	--	--	535
Culverts	1-1/2"-0"	Bedding/Backfill	--	--	--	--	200
Trail Blockage	RipRap: Class 5	MP 0.024 - 0.082 & 0.297	--	--	--	--	100
Outlet Energy Dissipater	RipRap: Class 5	MP 0.982 & 1.468	---	---	---	---	25
Outlet Fill Armor	RipRap: Class 5	MP 0.486, 0.603, & 1.468	---	---	---	---	80

ROCK VOLUMES TOTALS

ROAD SEGMENT:	4-6-19.0		MILEAGE:		0.000 - 0.702		
Application	Rock Size and Type	Location	Compacted Depth	Volume per Station/Item (CY)	Approx. Total (CY)	Curve Widening (CY)	Summary Totals
Road Rock	1-1/2"-0"	Cap Spot Rock	--	--	--	--	90
Road Rock	1-1/2"-0"	Cap Rock: 0.000 - 0.702	4"	20	741	49	790
Road Rock	6" Jaw Run	Base Spot Rock	--	--	--	--	240
Culverts	1-1/2"-0"	Bedding/Backfill	--	--	--	--	80
Drain Rock	1-1/2"-3/4"	MP 0.316	--	--	--	--	300
Inlet Fill Armor	RipRap: Class 5	MP 0.298 & 0.300	---	---	---	---	10
Outlet Fill Armor	RipRap: Class 5	MP 0.298-0.300	---	---	---	---	50

ROAD SEGMENT:	4-6-19.1		MILEAGE:		0.000 - 0.217		
Application	Rock Size and Type	Location	Compacted Depth	Volume per Station/Item (CY)	Approx. Total (CY)	Curve Widening (CY)	Summary Totals
Road Rock	1-1/2"-0"	Cap Spot Rock	--	--	--	--	10
Road Rock	6" Jaw Run	Base Spot Rock	--	--	--	--	20

ROAD SEGMENT:	4-6-19.2		STATION:		0+00 - 5+15		
Application	Rock Size and Type	Location	Compacted Depth	Volume per Station/Item (CY)	Approx. Total (CY)	Curve Widening (CY)	Summary Totals
Road Rock	1-1/2"-0"	Cap Spot Rock	--	--	--	--	20

ROAD SEGMENT:	4-6-19.3		STATION:		0+00 - 3+90		
Application	Rock Size and Type	Location	Compacted Depth	Volume per Station/Item	Approx. Total (CY)	Curve Widening	Summary Totals
Road Rock	1-1/2"-0"	Cap Spot Rock	--	--	--	--	10
Road Rock	6" Jaw Run	Base Spot Rock	--	--	--	--	20
Culverts	1-1/2"-0"	Bedding/Backfill	--	--	--	--	20

ROAD SEGMENT:	4-6-19.4		STATION:		0+00 - 5+50		
Application	Rock Size and Type	Location	Compacted Depth	Volume per Station/Item (CY)	Approx. Total (CY)	Curve Widening (CY)	Summary Totals
Road Rock	1-1/2"-0"	Cap Spot Rock	--	--	--	--	10
Road Rock	6" Jaw Run	Base Spot Rock	--	--	--	--	20

ROAD SEGMENT:	4-6-19.5		STATION:		0+00 - 27+16		
Application	Rock Size and Type	Location	Compacted Depth	Volume per Station/Item (CY)	Approx. Total (CY)	Curve Widening (CY)	Summary Totals
Road Rock	1-1/2"-0"	Cap Spot Rock	--	--	--	--	40
Road Rock	6" Jaw Run	Base Spot Rock	--	--	--	--	60
Culverts	1-1/2"-0"	Bedding/Backfill	--	--	--	--	40
Outlet Fill Armor	RipRap: Class 5	Sta. 11+70	---	---	---	---	60

ROCK VOLUMES TOTALS

ROAD SEGMENT:	4-6-19.7		STATION:	0+00 - 20+06			
Application	Rock Size and Type	Location	Compacted Depth	Volume per Station/Item (CY)	Approx. Total (CY)	Curve Widening (CY)	Summary Totals
Road Rock	1-1/2"-0"	Cap Spot Rock	--	--	--	--	10
Road Rock	6" Jaw Run	Base Spot Rock	--	--	--	--	20

ROAD SEGMENT:	4-7-36.0 (Willamina Cr Rd)		MILEAGE:	2.218 & 2.704			
Application	Rock Size and Type	Location	Compacted Depth	Volume per Station/Item (CY)	Approx. Total (CY)	Curve Widening (CY)	Summary Totals
Road Rock	1-1/2"-0"	Cap Spot Rock	--	--	--	--	40
Road Rock	6" Jaw Run	Base Spot Rock	--	--	--	--	50
Culverts	1-1/2"-0"	Bedding/Backfill	--	--	--	--	60
Inlet Fill Armor	RipRap: Class 5	MP 2.218 & 2.704	---	---	---	---	60
Outlet Fill Armor	RipRap: Class 5	MP 2.218 & 2.704	---	---	---	---	150

ROAD SEGMENT:	East Creek County Road		MILEAGE:	0.000 - 5.612			
Application	Rock Size and Type	Location	Compacted Depth	Volume per Station/Item (CY)	Approx. Total (CY)	Curve Widening (CY)	Summary Totals
Road Rock	1-1/2"-0"	Cap Spot Rock	--	--	--	--	10
Road Rock	6" Jaw Run	Base Spot Rock	--	--	--	--	10
Culverts	1-1/2"-0"	Bedding/Backfill	--	--	--	--	10

ROAD MAINTENANCE SPECIFICATIONS

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

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

GENERAL - 3000

3001 The Purchaser shall be required to maintain all roads as shown on the Exhibit E maps of this contract in accordance with Sections 3000, 3100, 3200, 3300, 3400, and 3500 of this exhibit.

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

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

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

OPERATIONAL MAINTENANCE - 3100

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

3102 The Purchaser shall furnish and place **200** cu.yds. of aggregate conforming to the requirements in Sections 1200 of Exhibit C of this contract on the roadway at locations and in the amounts designated by the Authorized Officer.

200 cu.yds. - To be placed on BLM controlled roads as directed by Authorized Officer (maintenance rock: Sec. 44(x)).

This aggregate shall be used to repair surface failures and areas of depleted surface depth excluding damages covered by Section 12 of this contract. The aggregate shall be furnished, hauled, placed, spread, and compacted by use of dump trucks, water trucks, and motor grader or similar equipment.

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

3104a Removal of bank slough and slide material includes placement of material at the nearest designated, suitable disposal site where material cannot erode into streams, lakes, or reservoirs or cause undue damage to road fill slopes which have been planted or mulched to control soil erosion as directed by the Authorized Officer.

3104b The Purchaser shall be responsible for removal of all slides or slough, up to fifteen station yards in quantity, at any one site. This work includes unlimited multiple sites on all roads required to be maintained by the purchaser.

Prior to removal of any slough or slide material exceeding fifteen station yards at any one site, the Purchaser and the Authorized Officer or their Authorized Representatives shall agree in writing, in the field, to the quantity of material, method of disposal, and the disposal site. Work may commence immediately after agreement.

Upon completion of agreed upon work, a reduction in timber sale purchase price will be made to offset the cost of the work, based on current BLM Road Cost Guide. Adjustments in purchase price for completed work shall be made as necessary and no less than once per year when actual work is ongoing.

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

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

SEASONAL MAINTENANCE - 3200

3201 The Purchaser shall perform preventative maintenance at the end of Purchaser's hauling each season and during non-hauling periods which occur between other

operations on the contract area. This includes requirements specified in Section 3100.

3202 The purchaser shall perform and complete maintenance specified in Sections 3000, 3100, and 3200 on all roads maintained by him, during times when there is a low potential to deliver sediment to streams, as determined by Authorized Officer, and as specified in Subsection 3203, after initial commencement of construction or logging operations. Thereafter, all roads shall have continuous preventive maintenance and road cleanup. This includes all roads used and not used during the preceding operating seasons.

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

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

FINAL MAINTENANCE - 3300

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

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

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

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

OTHER MAINTENANCE - 3400

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

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

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

DECOMMISSIONING – 3500

3501 Decommissioning on the following roads shall consist of removing cross drains and draw culverts. Work includes subsoiling, installing non-drivable waterbars, scattering slash, removing culverts, and blocking roads from access by vehicles. This work is *not* required for road acceptance under Section 18 of this contract.

Road No or Site	From Sta/MP	To Sta/MP	Length
4-6-7.3	0+00	5+03	503 feet
4-6-19.3	0+00	3+90	390 feet
4-6-19.4	0+00	5+50	550 feet
4-6-19.5	0+00	27+16	2,716 feet
4-6-19.6	0+00	3+95	395 feet
4-6-19.7	0+00	20+06	2.006 feet
4-6-19.8	0+00	21+05	2,105 feet
4-6-19.9	0+00	5+10	510 feet

3501c Decommissioning on the following roads shall consist of removing cross drains and draw culverts. Work includes installing non-drivable waterbars, spread government supplied grass seed, and blocking roads from access by vehicles. This work is *not* required for road acceptance under Section 18 of this contract.

Road No or Site	From Sta/MP	To Sta/MP	Length
4-6-7.0 West	0+00	5+54	554 feet
4-6-7.1	0+00	9+77	977 feet

3501d Decommissioning on the following roads shall consist of installing non-drivable waterbars, spreading government supplied grass seed, and blocking roads from access by vehicles. This work is *not* required for road acceptance under Section 18 of this contract.

Road No or Site	From Sta/MP	To Sta/MP	Length
4-6-7.0 East	0+00	22+05	2,205 feet

3504 Decommissioning and Stabilization work shall be completed after all harvesting activities requiring that road segment have ceased, unless otherwise authorized in writing by the Authorized Officer. All decommissioning and stabilization work shall be performed during times when there is a low potential to deliver sediment to streams, as determined by the Authorized Officer (except in-stream work, which is in North Yamhill River Watershed:

From	To
July 15	September 30

3505 Where draw crossing fill material is to be excavated and removed, the finished bottom of draw profile shall be reestablished to its original channel grade, and resulting adjacent banks shall be constructed to a 2:1 backslope ratio.

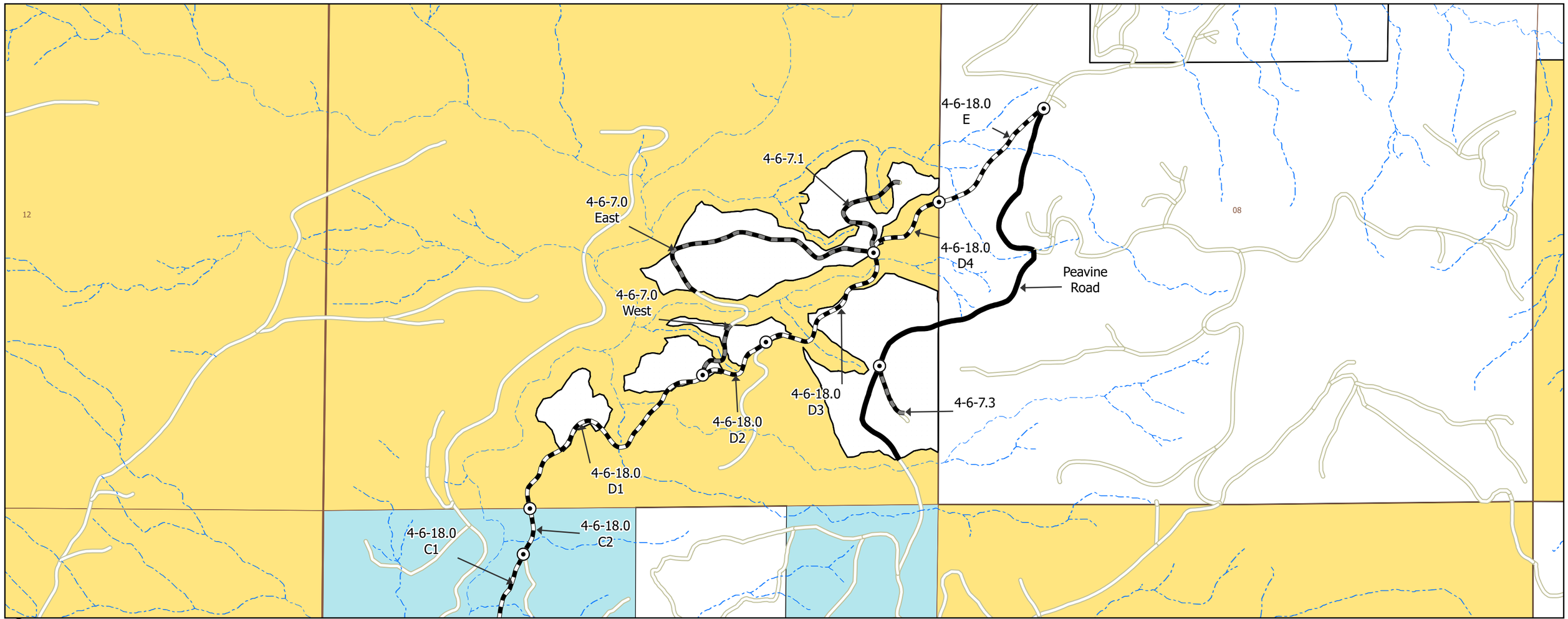
3507 Culverts and Inlet Markers removed during decommissioning shall become the property of the BLM. All culverts and bands removed from the roadbed shall be recovered in such a manner as to preserve the pipe from rips and holes. The Purchaser shall be responsible for delivering culvert materials to the BLM Cedar Creek Storage Facility (SW¼ sec. 5, T. 3 S., R. 6 W., WM.) and for payment of any fees required. This task shall be done prior to termination of this contract.

3509 Decommissioned roads shall have access blocked with barricades as shown on Exhibit C page 38. Stumps and woody debris used in the construction of barricades shall be material piled and stored during the clearing and grubbing process of road construction.

3511 Subsoiling shall be accomplished by using excavator attachments, log loader tongs, or other acceptable equipment capable of de-compacting the soil to a depth of 18 inches. The full width of the roadbed shall be loosened by the subsoiling operation, with no portion of the bed having been left at the original compacted density. Ripper entries into the roadbed shall be spaced where total subgrade subsoiling is accomplished.

3513 Waterbars (drivable and non-drivable)/Waterdips shall be installed across full width of roadway at locations marked in the field by Authorized Officer and constructed to the dimensions of the waterbar detail on Page 38 of Exhibit C.

United States Department of the Interior
BUREAU OF LAND MANAGMENT
NORTHWEST OREGON DISTRICT - OREGON
Road Plan Map
T. 04S. R. 06W. Sections 7 & 19 W.M. - NORTHWEST OREGON DISTRICT - OREGON



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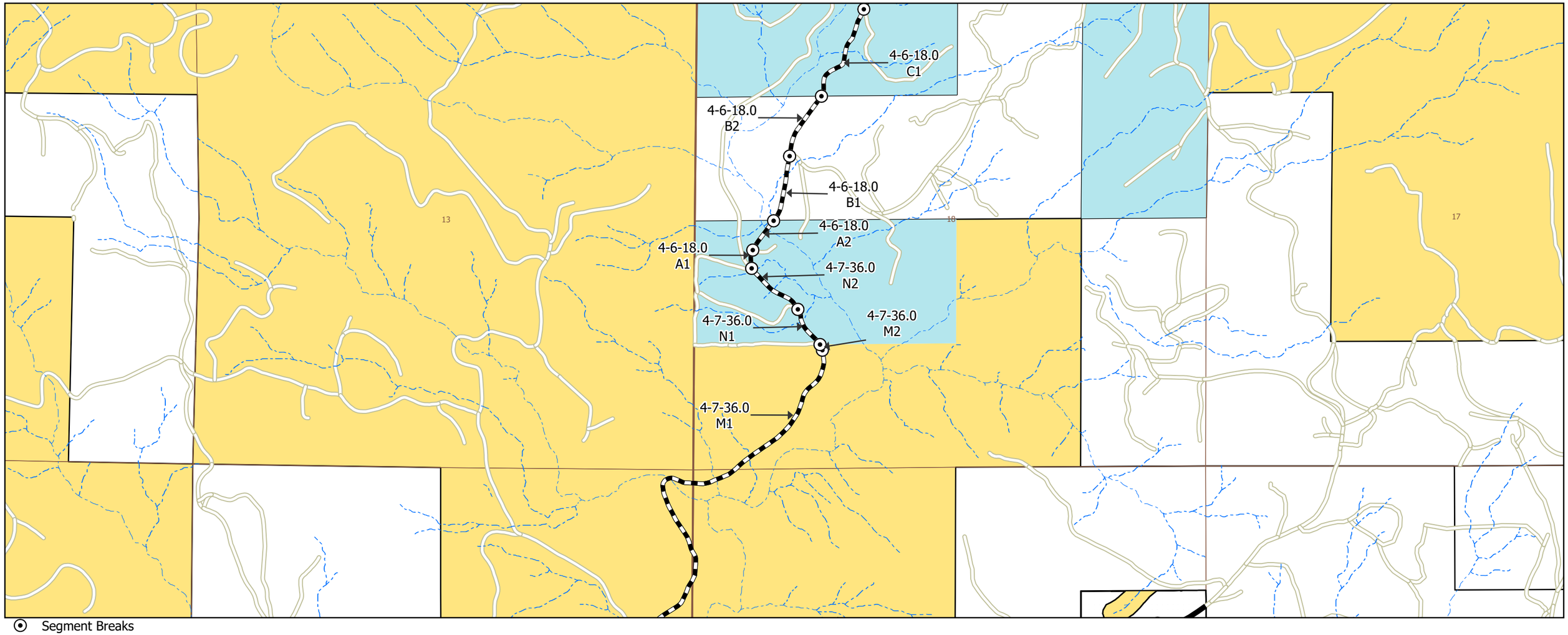
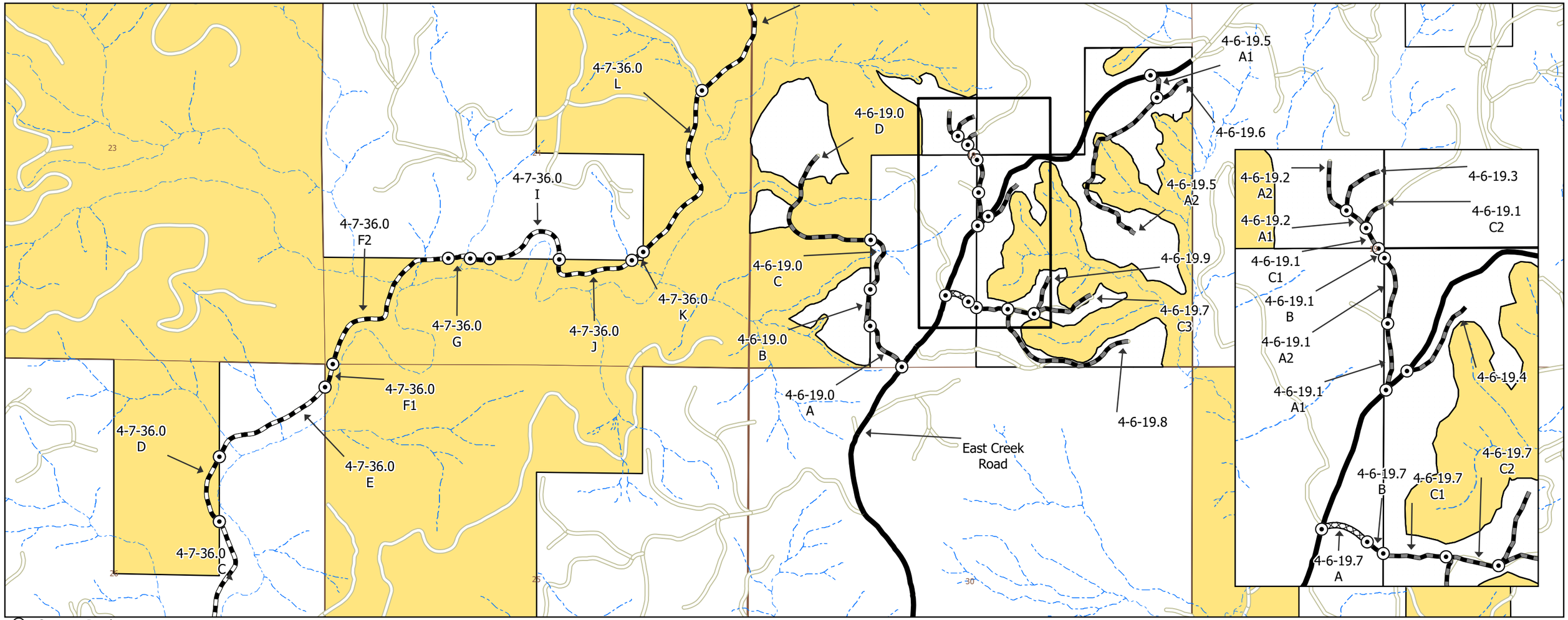
Prepared By: Austin Bettis

United States Department of the Interior
BUREAU OF LAND MANAGMENT
NORTHWEST OREGON DISTRICT - OREGON
Road Plan Map
T. 04S. R. 06W. Sections 7 & 19 W.M. - NORTHWEST OREGON DISTRICT - OREGON



Prepared By: Austin Bettis

United States Department of the Interior
BUREAU OF LAND MANAGMENT
NORTHWEST OREGON DISTRICT - OREGON
Road Plan Map
T. 04S. R. 06W. Sections 7 & 19 W.M. - NORTHWEST OREGON DISTRICT - OREGON



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Prepared By: Austin Bettis

United States Department of the Interior
BUREAU OF LAND MANAGMENT
NORTHWEST OREGON DISTRICT - OREGON
Road Plan Map
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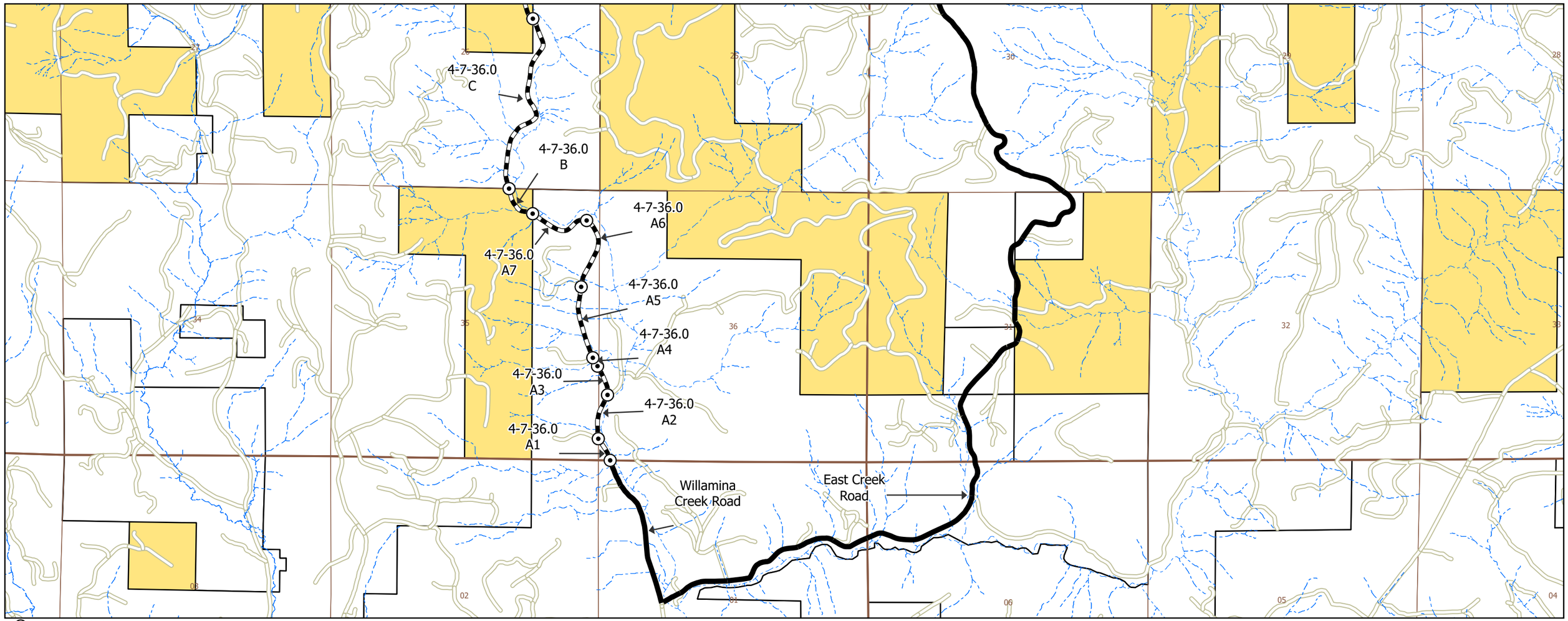


Prepared By: Austin Bettis

COARSE WOODY DEBRIS (CWD) CREATION REQUIREMENTS

1. Coarse Woody Debris (CWD) Tree Selection and Location

a. The Purchaser shall select one thousand eight hundred and seventy-two (1,872) reserve trees to treat for the creation of coarse woody debris (CWD) by saw-topping, high-girdling, basal-girdling, cavity creation, or felling. The sizes and quantities of trees to select, specific to each CWD treatment unit, are displayed in Table 1. Individual CWD units are depicted on the CWD Creation maps (Exhibit F pages 6-8).

b. For all methods of CWD creation, the Purchaser shall adhere to the following stipulations:

   i. Select only healthy, live Douglas-fir trees.

   ii. Select trees within CWD unit boundaries, unless designated otherwise by the Authorized Officer.

   iii. Select trees within the specified DBH ranges for each CWD unit, as displayed in Table 1.

   iv. Distribute selected trees and treatment types evenly throughout the CWD units.

c. For all methods of CWD creation, do not select trees with any of the following characteristics:
   i. Trees containing any nests or nest-like structures.

   ii. Trees with unique structures, such as cavities, mistletoe, platforms, forked/multiple tops, spike tops, existing broken tops, defects, fire scars, or mechanical damage.

   iii. The largest, most dominant tree within any given area.

   iv. Trees marked with any existing metal tags.

   v. Trees within the striking distance, after the CWD treatment has been completed, of any road, designated trail, property line, power line, or structure.

d. Trees selected for saw-topping and high-girdling shall have live crown ratios greater than thirty (30) percent. If the only available trees have live crown ratios smaller than thirty (30) percent, select trees with the largest crown ratio present.

e. Trees selected for basal-girdling and felling shall be from the smaller diameter classes available within each CWD unit.

f. Trees selected for felling shall be those trees which provide minimal to no shade to streams (e.g., trees located along the north side of the stream channel).

2. CWD Treatments

a. **Saw-Topping**

i. The Purchaser shall climb and top selected trees at a height of at least sixty (60) feet above the ground at a point where approximately twenty to fifty (20-50) percent of the live crown remains.

ii. Live limbs below the point of saw-topping shall not be removed. To the extent practicable, the Purchaser shall retain the largest dead limbs on the trees during the climbing.

iii. Saw-topped trees must be severed completely from the bole and fall to the ground. No tops shall be left hung up in other trees or left leaning against the bole of the tree.

iv. No part of the severed top shall rest on non-BLM land.

v. To the extent practicable, directionally fall tops in order to not damage existing snags, under-story conifers, any tree containing a suspected nest of a bird or mammal, or any tree with defects such as hollow cavities, multiple tops, or decay, and avoid contact with unburned burn piles and drivable roads.

vi. The Purchaser shall tie two pieces of flagging of a color approved by the Authorized Officer on a branch, or around the bole, directly below the saw top. Flagging shall extend a minimum of three feet downward and must be visible from the ground.

b. **High-girdling**:

i. The Purchaser shall climb, and girdle selected trees within the live crown at a point where approximately twenty to fifty (20-50) percent of the live crown remains below the point of girdling and at a height of at least sixty (60) feet above the ground.

ii. Girdling shall consist of removing all bark and cambium in a twelve (12) inch wide or greater band completely encircling the bole of the tree.

iii. Tool cuts must not penetrate more than one-half (0.5) inches into the wood of high-girdled trees.

iv. Live limbs below the point of high-girdling shall not be removed. To the extent practicable, the Purchaser shall retain the largest dead limbs on the trees during the climbing.

v. The Purchaser shall tie two pieces of flagging of a color approved by the Authorized Officer on a branch, or around the bole, directly below the girdle site. Flagging shall extend a minimum of three feet downward and must be visible from the ground.

c. **Basal-Girdling**

i. Each basal-girdled tree shall have the bark and cambium layer removed from a twelve (12) inch wide or greater band completely encircling the bole of the tree at or below breast height.

ii. The Purchaser shall tie one piece of flagging of a color approved by the Authorized Officer around the bole of each treated tree near DBH level.

d. **Felling**:

i. Trees shall be selected singly, not in groups.

ii. Trees shall be directionally felled perpendicular to the stream channel. The portion of the tree in contact with the stream channel shall be at least six (6) inches in diameter.

iii. No work required in live streams shall be conducted between October 1 of one calendar year and July 14 of the following calendar year in the Yamhill River watershed, both days inclusive, unless BLM receives a waiver from the Oregon Department of Fish and Wildlife and is approved by the Authorized Officer.

e. **Cavity Creation**:

i. The Purchaser shall create cavity starts at least 35 feet above ground level to accommodate the invasion of heart-rot fungus, and treatments shall be distributed evenly throughout the project area.

ii. The cavity shall be directed toward an open area or gap in the tree crown canopy. The cavity start shall have an oblong hole, approximately 3 inches wide by 6 inches high, cut into a tree bole to a depth of 1/3 the diameter at the point of treatment using a 3-inch drill bit.

iii. The Purchaser may use a choice of tools (chainsaw, auger, or other hand tools) unless otherwise specified.

iv. If trees with the diameters specified in Table 1 cannot be treated without having part of the cut extend more than 1/3 the diameter of the tree, then the cavity may be located lower down the bole to no less than 15 feet in height. This will create the cavity without removing more than 1/3 of the vertical support for the crown.

v. Each treatment shall have flagging tied at the upper-most treatment location so that it is visible from the ground.

3. <u>Documentation</u>

a. The Purchaser shall field locate CWD units by using a GPS enabled device capable of geo-referencing PDF maps. The CWD units will not be delineated in the field.

b. The Purchaser shall provide a schedule of work to the BLM prior to implementation.

c. The Purchaser shall provide the location for all saw-topped, high-girdled, basal-girdled, cavity-treated, and felled trees by collecting GPS points and submitting the point features to the Authorized Officer.

d. The Purchaser shall tally all CWD trees by 2-inch diameter class, tree species, snag type, and unit identifier on a daily basis. The Authorized Officer may request the tally at any time during CWD operations. At the completion of operations, the Purchaser shall submit a completed tally to the Authorized Officer.

Table 1. Coarse woody debris treatments by unit.

CWD Unit Number	CWD Unit Acres	Total Trees	Saw Top	High Girdle	Cavity	Basal Girdle	Fell	Tree Size (Inches DBH)
1A	8.6	82	13	13	6	50		10-20
1B	12.9	115	26	25	4	60		10-20
1C	2.6	50	5	5	0	40		10-20
1D	1.4	3	3	0	0	0		10-20
1E	12.7	66					66	15-20 (59 trees) 28-32 (7 trees)
1F	6.9	30	5	5	2	18		10-20
1G	2.6	30	5	5	2	18		10-20
2A	1.0	10	1	3	0	6		10-20
2B	3.0	30	6	6	0	18		10-20
2C	5.7	29					29	15-20 (26 trees) 28-32 (3 trees)
3A	1.7	25	4	3	0	18		10-20
3B	1.4	5	5	0	0	0		10-20
3C	1.9	7	0	4	1	2		10-20
3D	1.1	5	3	0	0	2		10-20
3E	2.7	13					13	15-20 (12 trees) 28-32 (1 trees)
3F	1.1	18	2	2	0	14		10-20
4A	5.0	50	10	10	0	30		10-20
4B	0.7	2	2	0	0	0		10-20
4C	0.8	8	2	0	0	6		10-20
5A	7.4	90	15	15	3	57		10-20
5B	10.1	85	14	14	5	52		10-20
5C	2.6	57	12	12	3	30		10-20
5D	4.1	8	3	0	0	5		10-20
5E	5.0	17	4	3	0	10		10-20
5F	2.9	35	7	6	2	20		10-20
5G	1.8	3	0	0	0	3		10-20
5H	2.0	25	5	5	0	15		10-20
6A	45.6	30	12	13	5	0		16-24
6B	3.9	3	3	0	0	0		16-24
6C	2.3	10	5	5	0	0		16-24
6D	11.6	60	10	10	0	40		16-24
6E	2.4	21	5	4	0	12		16-24
6F	2.9	3	0	0	0	3		16-24
6G	9.4	100	15	15	10	60		16-24

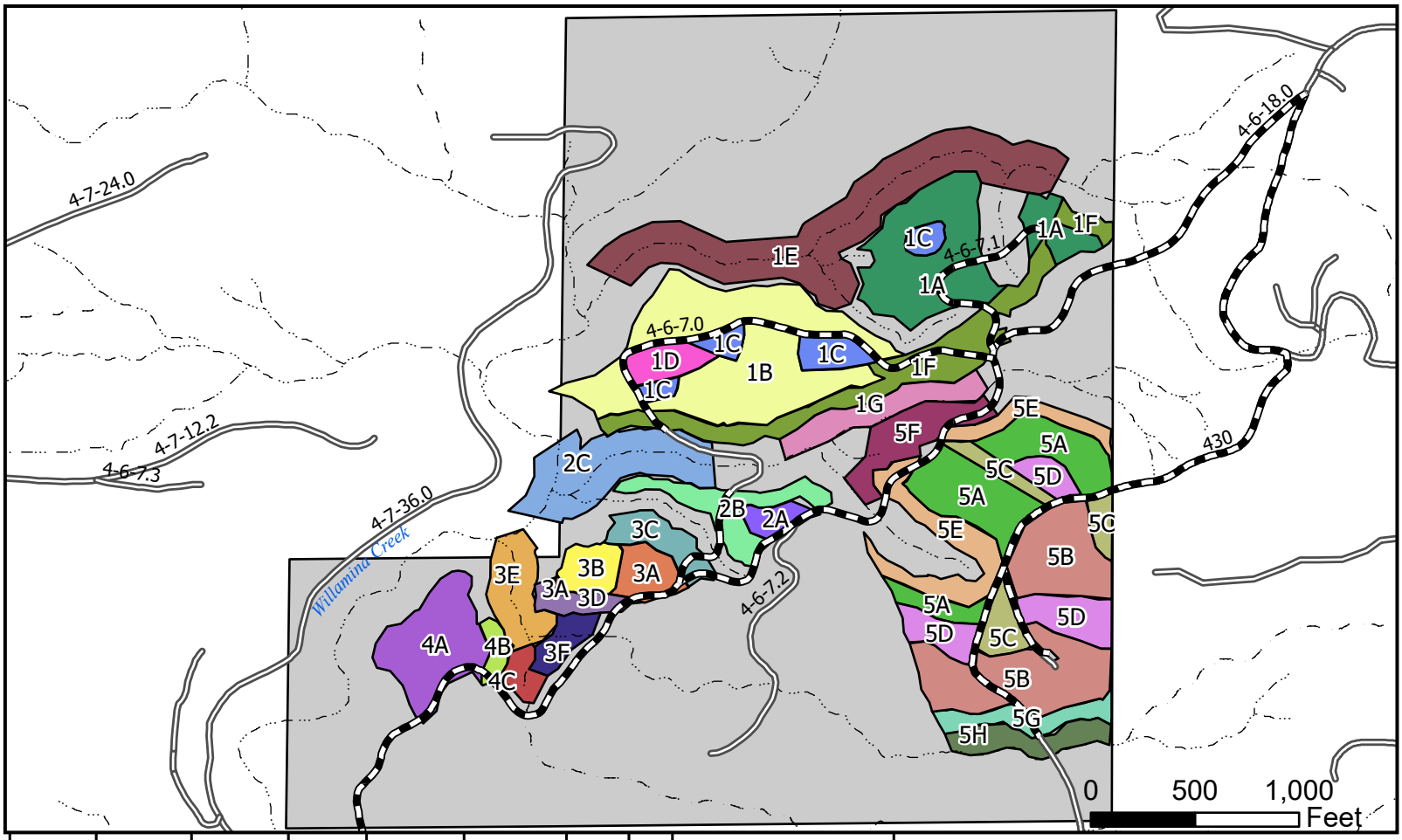
6H	20.5	67					67	20-22
6I	1.7	5	2	0	0	3		16-24
6J	0.6	6	3	0	0	3		16-24
6K	2.3	25	7	7	0	11		16-24
6L	6.8	3	3	0	0	0		16-24
6M	28.7	10	5	5	0	0		16-24
6N	3.4	30	14	13	3	0		16-24
7A	10.3	88	15	15	3	55		10-20
7B	3.6	60	10	10	5	35		10-20
7C	1.5	2	2	0	0	0		10-20
8A	14.4	136	20	20	6	90		16-24
8B	4.4	90	20	19	3	48		16-24
8C	3.8	4	4	0	0	0		16-24
8D	0.5	5	2	0	0	3		16-24
8E	3.3	16	2	0	0	3	11	Snags: 16-24 Fell: 15-20 (8 trees), 28-32 (3 trees)
9A	2.4	20	5	3	0	12		16-24
9B	1.0	20	5	3	0	12		16-24
9C	0.6	3	3	0	0	0		16-24
9D	0.5	7	1	0	0	6		16-24
10A	6.0	60	9	9	4	38		10-20
10B	0.6	18	4	4	0	10		10-20
10C	0.9	2	2	0	0	0		10-20
10D	4.4	30	4	5	3	18		10-20
10E	2.4	40	6	7	3	24		10-20
Total:	**312.2**	**1872**	**350**	**303**	**73**	**960**	**186**	

[1] See Coarse Woody Debris Creation maps (Exhibit F pages 6-8)

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
TIMBER SALE CONTRACT MAP

7/8/2024

T. 4S. R. 6W, Section 7 W. M.



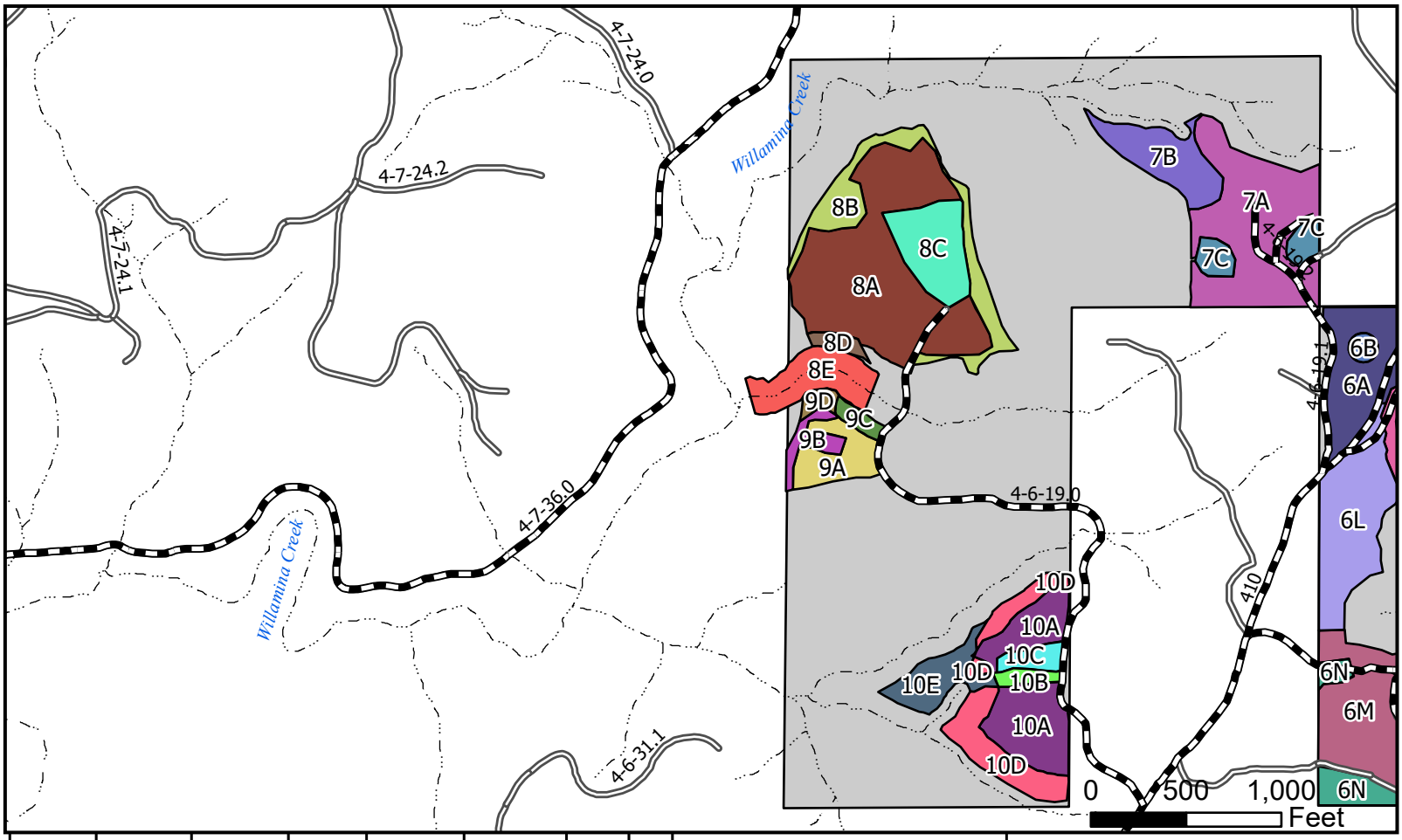
CWD Unit	CWD Acres	Total Trees	Saw Top	High Girdle	Basal Girdle	Cavity	Fell	DBH Range
1A	8.6	82	13	13	50	6	0	10-20
1B	12.9	115	26	25	60	4	0	10-20
1C	2.6	50	5	5	40	0	0	10-20
1D	1.4	3	3	0	0	0	0	10-20
1E	12.7	66	0	0	0	0	66	15-20 (59 trees), 28-32 (7 trees)
1F	6.9	30	5	5	18	2	0	10-20
1G	2.6	30	5	5	18	2	0	10-20
2A	0.9	10	1	3	6	0	0	10-20
2B	3	30	6	6	18	0	0	10-20
2C	5.7	29	0	0	0	0	29	15-20 (26 trees), 28-32 (3 trees)
3A	1.7	25	4	3	18	0	0	10-20
3B	1.4	5	5	0	0	0	0	10-20
3C	1.9	7	0	4	2	1	0	10-20
3D	1.1	5	3	0	2	0	0	10-20
3E	2.7	13	0	0	0	0	13	15-20 (12 trees), 28-32 (1 tree)
3F	1.1	18	2	2	14	0	0	10-20
4A	5	50	10	10	30	0	0	10-20
4B	0.7	2	2	0	0	0	0	10-20
4C	0.8	8	2	0	6	0	0	10-20
5A	7.4	90	15	15	57	3	0	10-20
5B	10.1	85	14	14	52	5	0	10-20
5C	2.6	57	12	12	30	3	0	10-20
5D	4.1	8	3	0	5	0	0	10-20
5E	4.9	17	4	3	10	0	0	10-20
5F	2.9	35	7	6	20	2	0	10-20
5G	1.8	3	0	0	3	0	0	10-20
5H	2	25	5	5	15	0	0	10-20

Other Roads
Streams
Project Roads
Contract_Area

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
TIMBER SALE CONTRACT MAP

7/8/2024

T. 4S. R. 6W, Section 19 W. M.



CWD Unit	CWD Acres	Total Trees	Saw Top	High Girdle	Basal Girdle	Cavity	Fell	DBH Range
9D	0.5	7	1	0	6	0	0	16-24
10A	6	60	9	9	38	4	0	10-20
10B	0.6	18	4	4	10	0	0	10-20
10C	0.9	2	2	0	0	0	0	10-20
10D	4.4	30	4	5	18	3	0	10-20
10E	2.4	40	6	7	24	3	0	10-20
6A	45.6	30	12	13	0	5	0	16-24
6B	3.8	3	3	0	0	0	0	16-24
6D	11.6	60	10	10	40	0	0	16-24
6L	6.8	3	3	0	0	0	0	16-24
6M	28.7	10	5	5	0	0	0	16-24
6N	3.3	30	14	13	0	3	0	16-24
7A	10.3	88	15	15	55	3	0	10-20
7B	3.6	60	10	10	35	5	0	10-20
7C	1.5	2	2	0	0	0	0	10-20
8A	14.4	136	20	20	90	6	0	16-24
8B	4.4	90	20	19	48	3	0	16-24
8C	3.8	4	4	0	0	0	0	16-24
8D	0.5	5	2	0	3	0	0	16-24
8E	3.3	16	2	0	3	0	11	Snags: 16-24. Fell: 15-20 (8 trees), 28-32 (3 trees)
9A	2.4	20	5	3	12	0	0	16-24
9B	1	20	5	3	12	0	0	16-24
9C	0.6	3	3	0	0	0	0	16-24

Other Roads
Streams
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United States Department of the Interior
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TIMBER SALE CONTRACT MAP

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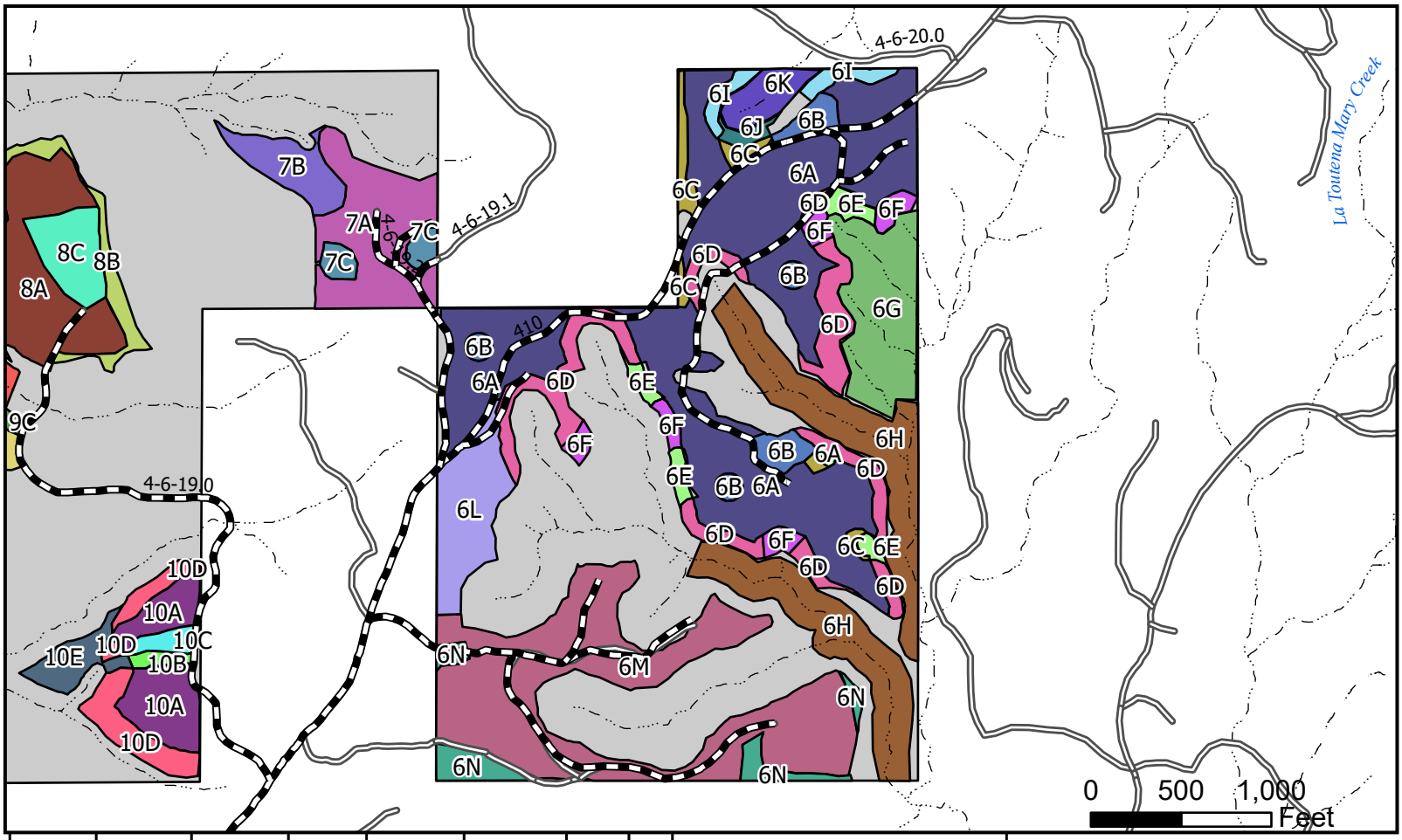

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10C	0.9	2	2	0	0	0	0	10-20
10D	4.4	30	4	5	18	3	0	10-20
10E	2.4	40	6	7	24	3	0	10-20
6A	45.6	30	12	13	0	5	0	16-24
6B	3.8	3	3	0	0	0	0	16-24
6C	2.3	10	5	5	0	0	0	16-24
6D	11.6	60	10	10	40	0	0	16-24
6E	2.4	21	5	4	12	0	0	16-24
6F	2.9	3	0	0	3	0	0	16-24
6G	9.4	100	15	15	60	10	0	16-24
6H	20.5	67	0	0	0	0	67	20-22
6I	1.7	5	2	0	3	0	0	16-24
6J	0.6	6	3	0	3	0	0	16-24
6K	2.3	25	7	7	11	0	0	16-24
6L	6.8	3	3	0	0	0	0	16-24
6M	28.7	10	5	5	0	0	0	16-24
6N	3.3	30	14	13	0	3	0	16-24
7A	10.3	88	15	15	55	3	0	10-20
7B	3.6	60	10	10	35	5	0	10-20
7C	1.5	2	2	0	0	0	0	10-20
8A	14.4	136	20	20	90	6	0	16-24
8B	4.4	90	20	19	48	3	0	16-24
8C	3.8	4	4	0	0	0	0	16-24
8D	0.5	5	2	0	3	0	0	16-24
8E	3.3	16	2	0	3	0	11	Snags: 16-24. Fell: 15-20 (8 trees), 28-32 (3 trees)
9A	2.4	20	5	3	12	0	0	16-24
9C	0.6	3	3	0	0	0	0	16-24

Other Roads
Streams
Project Roads
Contract_Area

Legal Description of Contract Area

Land Status	County	Township	Range	Section	Subdivision	Meridian
O&C	Yamhill	4S	6W	7	S½ NE¼, SE¼ SW¼, SE¼	Willamette
O&C	Yamhill	4S	6W	19	SE¼ NE¼, S½ NW¼, W½ SW¼, SE¼	Willamette

Species Totals

Species	Net	Gross Merch	Gross	# of Merch Logs	# of Cull Logs	# of Trees
Douglas Fir	5,412.0	5,637.0	5,637.0	86,737	0	19,323
Bigleaf Maple	21.0	29.0	29.0	503	421	421
Grandfir	5.0	6.0	6.0	157	0	79
Totals	**5,438.0**	**5,672.0**	**5,672.0**	**87,397**	**421**	**19,823**

Cutting Area Acres

Regeneration Harvest Acres	Partial Cut Acres	Right of Way Acres	Total Acres	Net Volume per Acre
34.0	187.0	2.0	223.0	24.4

Logging Costs

Stump to Truck	$749,302.00
Transportation	$238,224.00
Road Construction	$453,970.50
Maintenance/Rockwear	$45,666.75
Road Use	$1,900.00
Other Allowances	$180,784.20
Total:	**$1,669,847.45**
Total Logging Cost per MBF:	**$307.07**

Utilization Centers

Location	Distance	% of Net Volume
Willamina	15.0 miles	100%

Profit & Risk

Profit	11%
Risk	2%
Total Profit & Risk	**13%**

Tract Features

Quadratic Mean DBH	15.6 in
Average GM Log	65 bf
Average Volume per Acre	24.4 mbf
Recovery	96%
Net MBF volume:	
Green	5,438.0 mbf
Salvage	0 mbf
Export	0 mbf
Ground Base Logging:	
Percent of Sale Volume	50%
Average Yarding Slope	25%
Average Yarding Distance	600 ft
Cable Logging:	
Percent of Sale Volume	50%
Average Yarding Slope	55%
Average Yarding Distance	650 ft
Aerial Logging:	
Percent of Sale Volume	0%
Average Yarding Slope	0%
Average Yarding Distance	0 ft

Cruise

Cruise Completed	May 2024
Cruised By	Mario Salmon

Cruise Method

Thin Units VP 20 BAF Regen Units VP 40 BAF RW 100%

Stumpage Computation

Species	# of Trees	Net Volume	Pond Value	(-) Profit & Risk	(-) Logging Costs	(+) Marginal Log Value	Stumpage Adjustment	Appraised Price/MBF		Appraised Value ($)
Douglas Fir	19,323	5,412.0	$586.92	$76.30	$307.07	$0.00	($0.63)	$202.90		$1,098,094.80
Bigleaf Maple	421	21.0	$216.68	$28.17	$307.07	$0.00	$0.00	$21.70	*	$455.70
Grandfir	79	5.0	$332.34	$43.20	$307.07	$0.00	$0.00	$33.30	*	$166.50
Totals	**19,823**	**5,438.0**								**$1,098,717.00**

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

Percent of Volume By Log Grade

Species	No. 1 & 2 Peeler	No. 3 Peeler	Special Mill	No. 2 Sawmill	No. 3 Sawmill	No. 4 Sawmill	Camp Run
Douglas Fir				49.0%	46.0%	5.0%	

Species	No. 1 Sawmill	No. 2 Sawmill	No. 3 Sawmill	No. 4 Sawmill	No. 5 Sawmill		Camp Run
Bigleaf Maple							100.0%

Species	Peeler	No. 1 Sawmill	Special Mill	No. 2 Sawmill	No. 3 Sawmill	No. 4 Sawmill	Camp Run
Grandfir					77.0%	23.0%	

Unit: 1

Net Volume/Acre: 18.9 MBF

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	586.0	612.0	612.0	2,375
Totals:	**586.0**	**612.0**	**612.0**	**2,375**

Regeneration Harvest	0.0
Partial Cut	31.0
Right of Way	0.0
Total Acres:	**31.0**

Unit: 2

Net Volume/Acre: 21.0 MBF

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	84.0	87.0	87.0	339
Totals:	**84.0**	**87.0**	**87.0**	**339**

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

Unit: 3

Net Volume/Acre: 21.0 MBF

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	126.0	131.0	131.0	509
Totals:	**126.0**	**131.0**	**131.0**	**509**

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

Unit: 4

Net Volume/Acre: 21.0 MBF

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	126.0	131.0	131.0	509
Totals:	**126.0**	**131.0**	**131.0**	**509**

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

Unit: 5

Net Volume/Acre: 19.0 MBF

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	607.0	634.0	634.0	2,460
Totals:	**607.0**	**634.0**	**634.0**	**2,460**

Regeneration Harvest	0.0
Partial Cut	32.0
Right of Way	0.0
Total Acres:	**32.0**

Unit: 6

Net Volume/Acre: 28.6 MBF

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	2,744.0	2,858.0	2,858.0	8,855
Bigleaf Maple	21.0	29.0	29.0	421
Grandfir	5.0	6.0	6.0	79
Totals:	**2,770.0**	**2,893.0**	**2,893.0**	**9,355**

Regeneration Harvest	34.0
Partial Cut	63.0
Right of Way	0.0
Total Acres:	**97.0**

Unit: 7

Net Volume/Acre: 20.9 MBF

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	230.0	240.0	240.0	933
Totals:	**230.0**	**240.0**	**240.0**	**933**

Regeneration Harvest	0.0
Partial Cut	11.0
Right of Way	0.0
Total Acres:	**11.0**

Unit: 8

Net Volume/Acre: 20.9 MBF

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	398.0	415.0	415.0	1,612
Totals:	**398.0**	**415.0**	**415.0**	**1,612**

Regeneration Harvest	0.0
Partial Cut	19.0
Right of Way	0.0
Total Acres:	**19.0**

Unit: 9

Net Volume/Acre: 21.0 MBF

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	84.0	87.0	87.0	339
Totals:	**84.0**	**87.0**	**87.0**	**339**

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

Unit: 10

Net Volume/Acre: 20.9 MBF

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	230.0	240.0	240.0	933
Totals:	**230.0**	**240.0**	**240.0**	**933**

Regeneration Harvest	0.0
Partial Cut	11.0
Right of Way	0.0
Total Acres:	**11.0**

Unit: RW

Net Volume/Acre: 98.5 MBF

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	197.0	202.0	202.0	459
Totals:	**197.0**	**202.0**	**202.0**	**459**

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

Total Stump To Truck	Net Volume	$/MBF
$749,302.00	5,438.0	$137.79

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

Yarding System	Unit of Measure	# of Units of Measure	$/Unit of Measure	Total Cost	Remarks
Cable: Medium Yarder	GM MBF	1,464.0	$196.00	$286,944.00	Cable Thin
Cable: Medium Yarder	GM MBF	1,364.0	$119.00	$162,316.00	Cable Regen
Shovel	GM MBF	2,490.0	$107.00	$266,430.00	Ground THin
Shovel	GM MBF	354.0	$78.00	$27,612.00	Ground Regen
Subtotal				**$743,302.00**	

Additional Costs

Item	Unit of Measure	# of Units of Measure	$/Unit of Measure	Total Cost	Remarks
Intermediate Support	Each	20.0	$300.00	$6,000.00	
Subtotal				**$6,000.00**	

Additional Moves

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

Comments:
Thin cable 7 loads/day, Thin Regen 9 loads/day
Thin Ground 9 loads/day, Thin Regen 11 loads/day
5 MBF/Load

Total	Net Volume	$/MBF
$238,224.00	5,438.0	$43.81

Utilization Center	One Way Mileage	Description	Unit of Measure	# of Units	$/Unit of Measure	Total Cost	% of Sale Volume
Willamina	15.0	All Species	GM MBF	5,672.0	$42.00	$238,224.00	100%

Engineering Allowances

Total	Net Volume	$/MBF
$501,537.25	5,438.0	$92.23

Cost Item	Total Cost
Road Construction:	$453,970.50
Road Maintenance/Rockwear:	$45,666.75
Road Use Fees:	$1,900.00

Comments:
See engineering appraisal for details

Total	Net Volume	$/MBF
$180,784.20	5,438.0	$33.24

Environmental Protection

Cost item	Total Cost
Equipment Washing	$400.00
Subtotal	**$400.00**

Logging

Cost item	Total Cost
Road Flagger	$12,000.00
Subtotal	**$12,000.00**

Miscellaneous

Cost item	Total Cost
Wildlife	$119,869.20
Subtotal	**$119,869.20**

Slash Disposal & Site Prep

Cost item	Total Cost
Fuels Treatments	$48,515.00
Subtotal	**$48,515.00**

Comments:
Wildlife Appraisal
Treatment Type Quantity Price Total
Saw-Top (10-20) 204 $105.00 $21,420.00
Saw-Top (16-24) 146 $115.00 $16,790.00
High Girdle (10-20) 186 $100.00 $18,600.00
High Girdle (16-24) 117 $110.00 $12,870.00
Cavity Creation (10-20) 46 $100.00 $4,600.00
Cavity Creation (16-24) 27 $110.00 $2,970.00
Basal Girdle (10-20) 654 $25.00 $16,350.00
Basal Girdle (16-24) 306 $30.00 $9,180.00
Felling (15-20) 105 $30.00 $3,150.00
Felling (20-22) 67 $36.00 $2,412.00

Felling (28-32) 14 $45.00 $630.00
Total: 1872 $108,972.00
10% Admin $10,897.20
$119,869.20

100% BO $144,754.05
Climbing BO $102,615.81

SLASH DISPOSAL APPRAISAL WORKSHEET
Sale Name: Canadian Springer TS Tract #:
Acres: 96
Appraiser: Schade Appraisal Date: 6/10/2024

FUELS ALLOWANCE SUMMARY
("Y" under the column labeled "C1?" indicates purchaser will have the option to contribute in lieu of performance)

UNIT # Treatment Type Quantity Measure Allowance C1? Total

Units 1,2,3,4,5 Landing pile and cover 7 acres $125.00 N $875.00
Hand pile and cover 0 acres $- N
Machine Pile and Cover 6 acres $475.00 N $2,850.00
Landing Pile Burn 7 acres $100.00 N
Handpile Burn 0 acres $- N
Machine Pile Burn 6 acres $100.00 N $600.00
Slashing - L1 0 acres $- N

$4,325.00

Units 6 Landing pile and cover 3 acres $125.00 N $375.00
Hand pile and cover 0 acres $- N $-
Machine Pile and Cover 15 acres $475.00 N $7,125.00
Landing Pile Burn 3 acres $100.00 N $300.00
Handpile Burn 0 acres N $-
Machine Pile Burn 15 acres $125.00 N $1,875.00
Slashing - L1 0 acres N $-

$9,675.00

Units 7,8,9,10 Landing pile and cover 6 acres $125.00 N $750.00
Hand pile and cover 0 acres $- N $-
Machine Pile and Cover 4 acres $400.00 N $1,600.00
Landing Pile Burn 6 acres $125.00 N $750.00
Handpile Burn 0 acres N $-
Machine Pile Burn 4 acres $125.00 N $500.00
Slashing - L1 0 acres N $-

$3,600.00

All Units Landing pile and cover 0 acres $- N $-
Site Prep Hand pile and cover 24 acres $750.00 N $18,000.00

Gaps Machine Pile and Cover 7 acres $400.00 N $2,800.00
Site Prep Landing Pile Burn 0 acres $- N $-
Site Prep Handpile Burn 24 acres $150.00 N $3,600.00
Gaps Machine Pile Burn 7 acres $125.00 N $875.00
Site Prep Slashing - L1 24 acres $235.00 N $5,640.00

$30,915.00

Total $48,515.00

Remarks: No Buy-out offered
Total landing acres are 16 and total machine piling are 25 acres for a total of 41 acres of fuels reduction. An additional 7 acres maching piling in gaps for site prep as well as an additional 24 acres of slashing and 24 acres of handpiling for site prep will be added for site prep needs.