UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Northwest Oregon District Office
1717 Fabry Road, S.E.
Salem, Oregon 97306

Night Walker Timber Sale
ORN04-TS-2017.0101
Date: December 14, 2016

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 SALEM 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, attached. Written and oral bids will be received by the District Manager, or his 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, December 14, 2016.

THIS TIMBER SALE NOTICE does not constitute the decision document for purposes of protest and appeal of a forest management decision. Consistent with 43 CFR Subpart 5003-Administrative Remedies, the notice of a timber sale, when published as a legal ad in a newspaper of general circulation shall constitute the decision document for purposes of protest and appeal. Protests may be filed with the Contracting Officer within 15 days of the publication of the aforementioned decision document in the newspaper. It is anticipated that the decision document will be published in the News Register on or about November 15, 2016 and in the Headlight Herald on or about November 16, 2016. BLM does not warrant publication on this exact date. All parties considering protest of the timber sale decision document are encouraged to review the aforementioned newspaper(s) to ensure accurate knowledge of the exact publication date.

AN ENVIRONMENTAL ASSESSMENT was prepared for each 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 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: This contract includes an additional special provision to ensure the Purchaser understands he/she is required to conduct all operations in compliance with Contract Section 12 (Purchaser's Contractual Responsibilities for Liability) and Contract Section 29 (Safety and Health) and the Special Provisions included in Section 42 of this Contract. 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: http://www.blm.gov/or/districts/salem/timbersales/index.php. The prospectus includes maps and tables that cannot be made Section 508 compliant. For help with its data or information, please contact the Salem District Office at 503-375-5646.

Attachments:
Form 5450-17
Form 5430-11
Form 5440-9

TIMBER SALE NOTICE

NORTHWEST OREGON DISTRICT
TILLAMOOK FIELD OFFICE
COLUMBIA MASTER UNIT

Sale Date: December 14, 2016

CONTRACT NO.: ORN04-TS-2017.0401, Night Walker Timber Sale, Lump Sum
TILLAMOOK COUNTY and YAMHILL COUNTY, OREGON: O&C: **ORAL AUCTION**:
BID DEPOSIT REQUIRED: $143,100.00

All timber designated for cutting on: SW¼NE¼, S½NW¼, SW¼, E½SE¼, Sec. 17; S½SW¼, SE¼, Sec. 18; N½NW¼, Sec. 19; NW¼NE¼, SE¼NE¼, NW¼, N½SE¼, SE¼SE¼, Sec. 20; W½NE¼, S½NW¼, N½SW¼, SW¼SW¼, W½SE¼, Sec. 21, T. 3 S., R. 6 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.

Approx. No. Merchantable Trees	Est. Vol. MBF 32' Log	Species	Est. Vol. MBF 16' Log	Appraised Price Per MBF	Estimated Volume Times Appraised Price
18,771	4,922	Douglas-fir	6,119	$233.80	$1,430,622.20
14	2	western hemlock	2	$109.10	$218.20
18,785	**4,924**	**Totals**	**6,121**		**$1,430,840.40**

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 also prohibited from substitution of exported private timber.

CRUISE INFORMATION: The timber volumes for the partial cut units were based on a variable plot cruise for estimating the board foot volume of trees. Plots were measured using a 20 basal area factor (BAF) for partial cut units. None of the total sale volume is salvage material. For merchantable Douglas-fir trees the average DBHOB is 16.7 inches; the average gross merchantable log contains 74 bf; the total gross volume is approximately 6,489 MBF; and 94% recovery is expected. The Right-of-Way volume is based on a 100% cruise for estimating the board foot volume of trees.

CUTTING AREA: Thirteen (13) units totaling approximately 330 acres shall be partial cut. In addition, approximately three (3) acres of right-of-way shall be cut. Acres shown on Exhibit A have been computed using a Trimble Pro XH Global Positioning System receiver. Acreage was 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.

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

CUTTING DIAMETER LIMITS (CDL): This timber sale has cut diameter limits in stands eighty (80) years old and older. They range from twenty-two (22) inches to thirty-three (33) inches depending on the quadratic mean diameter in each stand. If needed for safety or operational purposes, the authorized officer may approve them for cutting, but they must remain on site and will not be sold to the purchaser. Unit specific diameter limits are available upon request.

SPECIAL ATTENTION ITEMS:

- Trees reserved for Botany Habitat Objectives (Sec. 41.c.)
- Nestucca OHV Trail and OHV Staging Area requirements (Sec. 42.x.)
- Creation of Coarse Woody Debris (Sec. 42.dd.)

OPTIONAL CONTRIBUTION (Sec. 42.ee.): The Purchaser will have the option of performing Coarse Woody Debris or contributing ninety-nine thousand nine hundred ninety-six dollars and 57/100 dollars ($99,996.57) in lieu thereof. The option must be declared prior to contract execution.

LOCATION: The contract area is located approximately 13 air miles due west of Carlton, Oregon. Starting on Highway 47 in Carlton, turn west onto Meadow Lake Road, then turn south onto Bald Mountain Access Road. Follow Bald Mountain Access Road approximately one mile to Grassy Flat OHV Staging Area then consult a project location map.

ACCESS AND ROAD MAINTENANCE: Access is provided by Bureau of Land Management (BLM) controlled roads. All roads (except Road 3-6-21.10, 4-7-22.0, 4-7-27, and 3-6-13.0) used in conjunction with this sale will be maintained by the Purchaser. Purchaser will be required to pay a rock wear obligation of two thousand seven hundred three and 86/100 dollars ($2,703.86) to the Government and spread crushed rock on all Purchaser maintained roads for maintenance. Additional fees for rockwear will be calculated at the agreed upon rates for additional timber volume and be charged to Purchaser.

BLM controlled road 3-6-21.10, 4-7-22.0 (Bible Creek Road), 4-7-27 (Bald Mountain Access Road), and 3-6-13.0 (Nestucca Access Road) used in conjunction with this sale will be maintained by BLM and will require payment of a road maintenance fee by the Purchaser to the Government in the amount of fifty-five thousand four hundred eighty-six and 36/100 dollars ($55,486.36) for the appraised haul route towards Willamina, OR. Additional fees for maintenance on these roads will be calculated at current BLM rates for additional timber volume and be charged to 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. It shall also include the spreading of **500 CY** crushed rock on Purchaser maintained roads as needed and instructed by Authorized Officer.

Alternate access is available but will require a contract modification. Contact Engineers at the Tillamook Field Office for more detailed information.

ROAD CONSTRUCTION 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:

Road Spur A: 485 feet, 14-foot subgrade, Natural surfacing.

Road Spur B: 1,096 feet, 14-foot subgrade, Natural surfacing.

Road Spur C: 1,042 feet, 14-foot subgrade, Natural surfacing.

Road Spur D: 175 feet, 14-foot subgrade, Natural surfacing.

Road Spur E: 335 feet, 14-foot subgrade, Natural surfacing.

2. Renovation:

Road 3-6-16.2: 1.36 miles, Blade, Clean Culverts, Install and Replace Culverts, Install inlet markers on culverts marked in field and directed by Authorized Officer, Brush, Ditchline Re-establishment by bunching and hauling, Some Clearing and Grubbing, and Spread/Place Rock types and quantities as directed in rock sheets.

Road 3-6-17.1: 1.57 miles, Blade, Clean Culverts, Install and Replace Culverts (including OHV crossings), Install inlet markers on culverts marked in field and directed by Authorized Officer, Brush, Ditchline Re-establishment by bunching and hauling, Some Clearing and Grubbing, Construct Waste Areas as marked in field, and Spread/Place Rock types and quantities as directed in rock sheets.

Road 3-6-17.2: 0.25 miles, Blade, Clean Culverts, Replace Culverts, Install inlet markers on culverts marked in field and directed by Authorized Officer, Brush, Ditchline Re-establishment by bunching and hauling, Some Clearing and Grubbing, Construct Turnaround as marked in field, and Spread/Place Rock types and quantities as directed in rock sheets.

Road 3-6-17.5: 0.28 miles, Blade, Clean Culverts, Install Culverts, Install inlet markers on culverts marked in field and directed by Authorized Officer, Ditchline Re-establishment, Clearing and Grubbing, Construct Landing as marked in field, and Spread/Place Rock types and quantities as directed in rock sheets.

Road 3-6-17.6: 0.10 miles, Blade, Clean Culverts, Install Culvert (OHV crossing), Brush, Ditchline Re-establishment by bunching and hauling, Some Clearing and Grubbing, Construct a Turnaround with ditchline waste as marked in field, and Spread/Place Rock types and quantities as directed in rock sheets.

Road 3-6-17.10: 0.09 miles, Blade, Brush, Ditchline Re-establishment by bunching and hauling, Some Clearing and Grubbing, Construct Landing as marked in field, and Spread/Place Rock types and quantities as directed in rock sheets.

Roads 3-6-17.11: 0.05 miles, Blade, Brush, Ditchline Re-establishment by bunching and hauling, Some Clearing and Grubbing, Construct Landing as marked in field, and Spread/Place Rock types and quantities as directed in rock sheets.

Road 3-6-18.0: 0.32 miles, Blade, Clean Culverts, Install and Replace Culverts, Install inlet markers on culverts marked in field and directed by Authorized Officer, Brush, Ditchline Re-establishment by bunching and hauling, Some Clearing and Grubbing, Construct Landing and Waste Area as marked in field and directed by Authorized Officer, and Spread/Place Rock types and quantities as directed in rock sheets.

Road 3-6-18.3: 0.13 miles, Blade, Brush, Ditchline Re-establishment by bunching and hauling, Remove existing culvert and fill trench with rock as marked in field, Some Clearing and Grubbing, Construct turnaround as marked in field, and Spread/Place Rock types and quantities as directed in rock sheets.

Road 3-6-20.0: 0.82 miles, Blade, Clean Culverts, Install and Replace Culverts, Install inlet markers on culverts marked in field and directed by Authorized Officer, Cut and Replace Asphalt over one culvert as marked in field, Brush, Ditchline Re-establishment by bunching and hauling, Some

Clearing and Grubbing, Construct Waste Areas and Turnaround as marked in field and directed by Authorized Officer, and Spread/Place Rock types and quantities as directed in rock sheets.

Road 3-6-20.2: 1.37 miles, Blade, Clean Culverts, Install and Replace Culverts (including OHV Crossings), Install inlet markers on culverts marked in field and directed by Authorized Officer, Brush, Ditchline Re-establishment by bunching and hauling, Some Clearing and Grubbing, Construct Sediment Catch Basins with straw bales and a Turnaround as marked in field and directed by Authorized Officer, and Spread/Place Rock types and quantities as directed in rock sheets.

Road 3-6-20.3: 0.56 miles, Blade, Clean Culverts, Install Culverts (including OHV Crossings), Install inlet markers on culverts marked in field and directed by Authorized Officer, Brush, Ditchline Re-establishment by bunching and hauling, Some Clearing and Grubbing, Construct a Turnaround as marked in field and directed by Authorized Officer, and Spread/Place Rock types and quantities as directed in rock sheets.

Road 3-6-20.4: 0.70 miles, Blade, Clean Culverts, Replace Culverts, Install inlet markers on culverts marked in field and directed by Authorized Officer, Brush, Ditchline Re-establishment by bunching and hauling, Some Clearing and Grubbing, and Spread/Place Rock types and quantities as directed in rock sheets.

Road 3-6-20.6: 0.18 miles, Blade, Install a Culvert, Install inlet marker on culvert as marked in field and directed by Authorized Officer, Brush, Ditchline Re-establishment by bunching and hauling, Some Clearing and Grubbing, and Spread/Place Rock types and quantities as directed in rock sheets.

Road 3-6-20.7: 0.64 miles, Blade, Clean Culverts, Install and Replace Culverts, Install inlet markers on culverts marked in field and directed by Authorized Officer, Brush, Ditchline Re-establishment by bunching and hauling, Some Clearing and Grubbing, Construct a Turnaround and Landing as marked in field and directed by Authorized Officer, and Spread/Place Rock types and quantities as directed in rock sheets.

Road 3-6-21.2: 0.44 miles, Blade, Clean Culverts, Replace Culverts, Install inlet markers on culverts marked in field and directed by Authorized Officer, Brush, Ditchline Re-establishment by bunching and hauling, Some Clearing and Grubbing, and Spread/Place Rock types and quantities as directed in rock sheets.

Road 3-6-21.3: 0.11 miles, Blade, Clean Culverts, Install a Culvert, Install an inlet marker on culvert marked in field and directed by Authorized Officer, Brush, Ditchline Re-establishment by bunching and hauling as marked, Some Clearing and Grubbing, Construct a Turnaround and Landing as marked in field and directed by Authorized Officer, Save OHV Signs for re-installation during decommissioning work, and Spread/Place Rock types and quantities as directed in rock sheets.

Road 3-6-21.4: 0.18 miles, Blade, Clean Culverts, Install inlet marker on culvert marked in field and directed by Authorized Officer, Brush, Ditchline Re-establishment by bunching and hauling, Some Clearing and Grubbing, Construct a Turnaround and Landing as marked in field and directed by Authorized Officer, and Spread/Place Rock types and quantities as directed in rock sheets.

Road 3-6-21.5: 0.50 miles, Blade, Clean Culverts, Install and Replace, Install inlet markers on culverts marked in field and directed by Authorized Officer, Brush, Ditchline Re-establishment by bunching and hauling, Some Clearing and Grubbing, Construct a Turnaround and Landing as marked in field and directed by Authorized Officer, and Spread/Place Rock types and quantities as directed in rock sheets.

Road 3-6-21.8: 0.07 miles, Blade, Clean Culvert, Install inlet marker on culvert marked in field and directed by Authorized Officer, Brush, Ditchline Re-establishment by bunching and hauling, Some Clearing and Grubbing, and Spread/Place Rock types and quantities as directed in rock sheets.

Road 3-6-21.9: 0.10 miles, Blade, Clean Culvert, Install inlet marker on culvert marked in field and directed by Authorized Officer, Brush, Ditchline Re-establishment by bunching and hauling, Some Clearing and Grubbing, Construct a Landing as marked in field and directed by Authorized Officer, and Spread/Place Rock types and quantities as directed in rock sheets.

Road 3-6-21.10: 0.34 miles, Blade, Brush, Ditchline Re-establishment by bunching and hauling, Some Clearing and Grubbing, Construct Waste Areas and Landings as marked in field and directed by Authorized Officer, and Spread/Place Rock types and quantities as directed in rock sheets.

3. Estimated Quantities:

a. Clearing, Grubbing, and Brushing:

15.8 acres of Clearing and Grubbing (new construction and renovation)

10.77 miles brushing

b. Culverts:

156 feet of 12 inch Corrugated Plastic Pipe (CPP) – Type S

1,002 feet of 18 inch Corrugated Plastic Pipe (CPP) – Type S

294 feet of 24 inch Corrugated Plastic Pipe (CPP) – Type S

60 feet of 36 inch Corrugated Plastic Pipe (CPP) – Type S

c. Aggregate & Asphalt Material:

Quantity	Description
4,561 cubic yards	1-1/2" minus crushed rock – construction rock
480 cubic yards	Pit-Run –construction rock
155 cubic yards	Jaw-Run –construction rock
500 cubic yards	1-1/2" minus crushed rock -- Culvert bedding material
500 cubic yards	1-1/2" minus crushed rock – Maintenance rock
115 cubic yards	Riprap – (65 CY Class 3 & 50 CY Class 5)
4.8 Tons	Hot Asphalt Concrete Mix (Level III, ½" dense, PG 64-22)

Rock Source: (Crushed, Jaw-Run, Pit-Run, Asphalt) Commercial; (RipRap) Grassy Flats Pit

OTHER:

Compaction of all final subgrades will be required.

Right of way debris will be disposed of by scattering adjacent to all roads, outside of clearing limits.

All natural surface roads will be water barred and blocked at the end of seasonal operations.

Roads Spur A, Spur B, Spur C, Spur D, and Spur E will be subsoiled to a depth of 18 inches, culverts removed, slash spread over road prism, water barred & blocked upon completion of logging. Clearing debris shall be placed on and around the barriers so as to prevent further use of the road by vehicles. The 3-6-17.5 and 3-6-21.4 shall be decommissioned as described above (but without the subsoiling). The 3-6-16.2, 3-6-17.2, 3-6-17.6, 3-6-17.10, 3-6-17.11, 3-6-18.0, 3-6-18.3, 3-6-20.0, 3-6-20.2, 3-6-20.3, 3-6-20.6, 3-6-20.7, 3-6-21.3, 3-6-21.5, 3-6-21.9, and 3-6-21.10 roads will be stabilized by installing drivable waterbars.

Roads that utilized portions of Nestucca OHV trails are to be decommissioned in such a fashion as to preserve the trails, trail signs, access to the trails, and drainage as directed by the Authorized Officer.

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 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 areas.

All slide removal material shall be end-hauled to designated waste areas.

All culverts removed upon road decommissioning shall be salvaged and delivered to the BLM Maintenance Facility at the SW¼, Sec. 5, T. 3 S., R. 6 W., WM.

SEASONAL RESTRICTION MATRIX:

Restricted Times are Shaded

	JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEP		OCT		NOV		DEC	
Activity	1	15	1	15	1	15	1	15	1	15	1	15	1	15	1	15	1	15	1	15	1	15	1	15
Ground-Based Yarding & Harvesting																								
Cable Yarding - except units 18-2,18-3, and cable yarding portion of 17-1																								
Cable Yarding units 18-2,18-3, and cable yarding portion of 17-1	Subject to BLM approval, cable yarding would be permitted year round as long as environmental and infrastructure degradation is not occurring																							
Road Construction, Renovation & Decommissioning																								
Log Hauling – except units 18-2,18-3, and cable yarding portion of 17-1																								
Log Hauling units 18-2,18-3, and cable yarding portion of 17-1	Subject to BLM approval, hauling would be permitted year round as long as environmental and infrastructure degradation is not occurring																							

Dates are approximate – Restrictions would be dependent on actual weather conditions

TIMBER SALE CONTRACT SPECIAL PROVISIONS

Sec. 41. Timber and Area Reservation Provisions

RESERVED

a. All timber in the reserve area(s) shown on Exhibit A, and all trees that are painted orange and/or posted, which mark the boundaries of the reserve areas.

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

c. Fifty-one (51) botany habitat trees marked with orange paint above and below stump height and 4 ½" x 7" silver metal tags with the word "Botany" etched on them in the Partial Cut Areas shown on Exhibit A. These trees host special status botany species. Any damage to such reserve trees caused by the Purchaser shall be charged for on the basis of the resulting total loss to the Government including any loss in value as the host of a special status botany species.

d. All trees less than six (6) inches diameter at breast height outside bark in the Partial Cut Areas shown on Exhibit A.

e. All existing down logs, all snags, and all other tree species except Douglas-fir and western hemlock in the Partial Cut Areas shown on Exhibit A, which do not present a safety hazard as determined by the Authorized Officer.

Sec. 42. 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 he plans 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 he intends 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 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 area, 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. Trees reserved under Section 42.c. shall not have logging equipment attached to them.

f. During logging operations, the Purchaser shall keep Bald Mountain Road, where it passes through the contract area, clear of trees, rock, dirt, and other debris resulting from timber harvest operations so far as is practicable. The road shall not be blocked by such operations for more than thirty (30) minutes at a time unless otherwise approved by the Authorized Officer.

g. Tracked type equipment shall not be allowed to cross over concrete bridge decks, other concrete surfaced structures, or asphalt surfaced roads without the proper protection of that surface. Prior approval shall be obtained from the Authorized Officer when crossing with protective devices.

The Purchaser shall be responsible for repair of any damage to roads or structures caused by the use of tracked vehicles or equipment: (1) without written approval; (2) in violation of the conditions of a written approval; or, (3) in a negligent manner. The amount of actual damage shall be determined by the Authorized Officer, following a technical inspection and evaluation.

h. In the Partial Cut Area - Skyline Based shown on Exhibit A, all yarding shall be done with a skyline or similar cable system equipped with a slackpulling carriage capable of transporting logs completely clear of the ground and capable of yarding two thousand (2,000) feet slope distance from the landing and at least seventy-five (75) feet laterally from the skyline to the designated skyroad and with minimum damage to reserved trees. 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.

Additionally, the following conditions apply to skyline yarding:

1. Skyline yarding roads shall be located perpendicular to the yarding slope unless otherwise approved by the Authorized officer.
2. The leading end of all logs shall be transported free of the ground during yarding. The rigging of tail or lift trees, intermediate supports and use of tail holds outside the Partial Cut Areas shall be required where necessary to meet this requirement.
3. Skyline corridors would generally not exceed twelve (12) feet in width and would be located at least one hundred fifty (150) feet apart at one end of the yarding area.
4. Where slopes exceed sixty-five (65) percent, full suspension of logs would be required during yarding.

5. No cable yarding of logs over any streams.
6. If the skyline must pass through a riparian no-harvest buffer, the skyline would remain stationary after the initial elevation. If trees are cut within the no harvest buffer for operational purposes, they would remain on site.
7. Prior to and during rain, cable yarding corridors that are oriented in the direction of stream channels within Riparian Reserves would be water-barred and have slash placed over them as directed by the Authorized Officer.

i. In the Partial Cut Area - Ground Based shown on Exhibit A, all yarding shall be done by equipment operated entirely on designated skid trails approved by the Authorized Officer. The area composed of skid trails and landings shall not exceed ten (10) percent of the total ground based yarding area. Generally, skid trails would not exceed twelve (12) feet in width and be spaced no closer than one hundred fifty (150) feet apart. Ground based operations shall be limited to slopes of thirty-five (35) percent or less. Excavation on designated skid trails shall be limited to a maximum cut of one foot unless otherwise approved by the Authorized Officer. All trees that must be removed to facilitate construction of these skid trails shall be felled prior to falling operations in the remainder of this area. 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 would be waterbarred and blocked after each operating season before the fall wet season begins as designated by the Authorized Officer.

Additionally, the following conditions apply to ground based yarding:

1. A self-propelled mechanical harvester may be used if:
   a. It is boom mounted with a minimum reach of twenty (20) feet using a single grip rotating harvester head.
   b. It has a static ground pressure rating of eight (8) psi or less.
   c. It operates on existing disturbed trails to the extent possible, and where not possible, proceeds only on slash mats with a minimum number of passes necessary to process the timber.
   d. Harvester trails generally do not exceed fifteen (15) feet in width, and are spaced at least fifty (50) feet apart.

2. A forwarder may be used if:
   a. It has a static ground pressure of eight (8) psi or less.
   b. Forwarder trail locations are approved by the Authorized Officer prior to any operations, and generally do not exceed fifteen (15) feet in width.
   c. When leaving multi-pass trails to retrieve logs, the machine proceeds over a slash mat and is limited to two passes over the same ground.

3. Skidding:
   a. Existing skid trails will be used to the extent feasible.
   b. Skid trail will generally not exceed twelve (12) feet in width.

c. Skidding shall be done so that the leading end of the log is lifted fully off the ground.

d. Ground based skidding equipment would not be permitted to leave approved skid trails to retrieve logs, but must either pull a winch line to the logs or work in conjunction with specialized harvester equipment described above.

j. Before cutting and removing any trees necessary to facilitate logging in the Partial Cut Areas shown on Exhibit A, the Purchaser shall identify the location of skid trails, cable yarding roads, and tailhold, tieback, guyline, lift, intermediate support, and danger trees on the ground in a manner approved by the Authorized Officer at the pre-work conference, and documented in the Logging Plan. Said Purchaser identification of trees to be cut and removed does not constitute authority to proceed with cutting and removal. In addition, before proceeding the following conditions must be met:

a. All skid trails 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.

b. The Purchaser may immediately cut and remove additional timber to clear skid trails and cable yarding roads; and provide tailhold, tieback, guyline, 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.

c. The Purchaser agrees that sale of this additional timber shall be accomplished by a unilateral modification of the contract executed by the Contracting Officer and that such timber shall be sold at the unit prices shown in Exhibit B of this contract unless: the value of the timber must be reappraised subject to the terms for contract extension set forth in Sec. 9 of the contract; or, the Authorized Officer determines that the tree species are not listed in Exhibit B of this contract and otherwise reserved in Section 41 of the contract or any tree that exceeds 34 inches diameter at breast height shall be appraised and sold by bilateral modification of the contract at current fair market value in accordance with Sec. 8 of the contract.

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

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

SEASONAL RESTRICTIONS

k. No ground based yarding shall be conducted in the Partial Cut Areas shown on Exhibit A between October 16 of one calendar year and May 31 of the following calendar year, both days inclusive. If conditions are sufficiently dry, as determined by the Authorized Officer, this activity may be allowed during the seasonal restriction.

l. No cable yarding or haul, except in Units 2, 3, and 6 shall be conducted in the Partial Cut Areas shown on Exhibit A between October 16 of one calendar year and May 31 of the following calendar year, both days inclusive. If conditions are sufficiently dry, as determined by the Authorized Officer, these activities may be allowed during the seasonal restriction.

m. No hauling of timber, rock, or large equipment on the 4-7-27 (Bald Mountain) Road shall occur on weekends between Memorial Day and Labor Day weekends, both weekends inclusive, unless otherwise approved by the Authorized Officer.

n. No road renovation, road construction, road decommissioning/stabilization, sub-soiling, or road maintenance shown on Exhibit C, Exhibit D, or Exhibit E shall be conducted between October 16 of one calendar year and May 31 of the following calendar year, both days inclusive. If conditions are sufficiently dry, as determined by the Authorized Officer, these activities may be allowed during the seasonal restriction.

o. No work required in live streams (culvert replacement or removal) shall be conducted between September 16 of one calendar year and June 30 of the following calendar year, both days inclusive.

ROAD CONSTRUCTION, IMPROVEMENT, RENOVATION, MAINTENANCE AND USE

p. The Purchaser shall construct natural surfaced roads: Spur A, Spur B, Spur C, Spur D, and Spur E. The Purchaser shall renovate surfaced roads: 3-6-16.2, 3-6-17.1, 3-6-17.2, 3-6-17.5, 3-6-17.6, 3-6-17.10, 3-6-17.11, 3-6-18.0, 3-6-18.3, 3-6-20.0, 3-6-20.2, 3-6-20.3, 3-6-20.4, 3-6-20.6, 3-6-20.7, 3-6-21.2, 3-6-21.3, 3-6-21.4, 3-6-21.5, 3-6-21.8, 3-6-21.9, and 3-6-21.10. 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.

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

r. The Purchaser shall decommission Spur A, Spur B, Spur C, Spur D, and Spur E as shown on Exhibit C, by subsoiling, removing culverts, installing non-drivable waterbars, scattering slash, and blocking. Purchaser shall decommission roads 3-6-17.5 and 3-6-21.4 as shown on Exhibit C, by removing culverts, installing non-drivable waterbars, scattering slash, and blocking. Purchaser shall stabilize roads 3-6-16.2 (MP 0.895 – 1.360), 3-6-17.2, 3-6-17.6, 3-6-17.10, 3-6-17.11, 3-6-18.0, 3-6-18.3, 3-6-20.0, 3-6-20.2, 3-6-20.3, 3-6-20.6, 3-6-20.7, 3-6-21.3, 3-6-21.5, 3-6-21.9, and 3-6-21.10 as shown on Exhibit C, by installing drivable waterbars. 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 so as to prevent further use of the road by vehicles as shown on Exhibit C. The decommissioning of Spur A, Spur B, Spur C, and road segments 3-6-21.3, 3-6-21.4 and 3-6-21.10, as shown on Exhibit C, is to be accomplished in such a manner as to preserve existing OHV trails, trail signs, trail access, and drainage on and along trails, as directed by the Authorized Officer. Decommissioning and stabilization shall be completed within thirty (30) days of completion of yarding and hauling operations on that road.

s. The Purchaser is authorized to use the roads listed below and shown on Exhibit E for the removal of Government timber sold under the terms of this contract, provided that the Purchaser pay the required maintenance and rockwear obligations described in Section 42.t. Any road shown on Exhibit E and requiring improvement or renovation in Exhibit C of this contract, shall be maintained by the Purchaser until receiving written acceptance of the improvement or renovation from the Contracting Officer. The Purchaser shall pay current Bureau of Land Management maintenance and rockwear fees for the sale of additional timber under modification to the contract.

Road No. and Segment	Length Miles Used	Road Control	Road Surface Type	Maintenance Responsibility
Spur A	0.092	BLM	Natural	Purchaser
Spur B	0.208	BLM	Natural	Purchaser
Spur C	0.197	BLM	Natural	Purchaser
Spur D	0.033	BLM	Natural	Purchaser
Spur E	0.063	BLM	Natural	Purchaser
3-6-16.2 seg. b3 - b6	1.360	BLM	Rocked	Purchaser
3-6-17.1 a1 - a5	1.568	BLM	Rocked	Purchaser
3-6-17.2	0.253	BLM	Rocked	Purchaser
3-6-17.5	0.279	BLM	Rocked	Purchaser
3-6-17.6	0.096	BLM	Rocked	Purchaser
3-6-17.10	0.085	BLM	Rocked	Purchaser
3-6-17.11	0.045	BLM	Rocked	Purchaser

3-6-18.0	0.317	BLM	Rocked	Purchaser
3-6-18.3	0.130	BLM	Rocked	Purchaser
3-6-20.0 seg. a - c2	0.821	BLM	Rocked	Purchaser
3-6-20.2 seg a - b3	1.372	BLM	Rocked	Purchaser
3-6-20.3 seg. a1 - c	0.560	BLM	Rocked	Purchaser
3-6-20.4 seg. a1 - a3	0.700	BLM	Rocked	Purchaser
3-6-20.6	0.180	BLM	Rocked	Purchaser
3-6-20.7 seg. a - d	0.644	BLM	Rocked	Purchaser
3-6-21.2	0.440	BLM	Rocked	Purchaser
3-6-21.3 seg. a - b	0.111	BLM	Rocked	Purchaser
3-6-21.4	0.184	BLM	Rocked	Purchaser
3-6-21.5 seg. a - b	0.495	BLM	Rocked	Purchaser
3-6-21.8	0.073	BLM	Rocked	Purchaser
3-6-21.9	0.095	BLM	Rocked	Purchaser
3-6-21.10	0.341	BLM	Rocked	Purchaser
4-7-22.0 (Bible Cr)	5.190	BLM	Paved	BLM
4-7-27 seg. b – h (Bald Mtn. Access Rd.)	13.560	BLM	Paved	BLM
3-6-13.0 seg. a (Nestucca Access Rd.)	1.020	BLM	Paved	BLM

t. The Purchaser shall pay a road maintenance fee of fifty-five thousand four hundred eighty-six and 36/100 dollars ($55,486.36) and rockwear fee of two thousand seven hundred three and 86/100 dollars ($2,703.86) for transportation of timber included in the contract area over said roads. The above maintenance fee is for the use of twenty (20) miles of road or less. If the total road maintenance and rockwear fee does not exceed five hundred and no/100 dollars ($500.00), the Purchaser shall pay such amount in full prior to use of such roads. If the total road maintenance and rockwear fee exceeds five hundred and no/100 dollars ($500), the Authorized Officer shall establish an installment schedule of payments of the maintenance and rockwear obligations.

u. The Purchaser shall perform any required road repair and maintenance work on roads used by them, under the terms of Exhibit D, Road Maintenance Specifications, and deemed as Purchaser Maintenance in the Section 42.s. table, of this contract, which is attached hereto and made a part thereof.

ENVIRONMENTAL PROTECTION

v. In order to prevent the spread of noxious weeds, the Purchaser shall pressure wash all road construction and ground-based logging equipment that will be used off of existing roads, as well as loaders and mechanically propelled brush cutters, prior to entry onto BLM lands as directed by the Authorized Officer. Cleaning shall be defined as removal of all dirt, grease, plant parts and material that may carry noxious weed seeds.

w. The Purchaser shall post "Closed" signs on all existing OHV Trails and OHV Staging Areas within or near harvest units during active harvest operations. The Purchaser shall remove all logging debris and repair any damage that occurs to authorized OHV trails as a result of harvest activity, within ninety (90) days of completing harvest operations, as directed by the Authorized Officer.

x. The Purchaser shall immediately discontinue specified construction or timber harvesting operations upon written notice from the Contracting Officer that:

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

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

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

4. other active raptor nests have been discovered, and a determination is made that continued operations under this contract would adversely affect the present use of the discovered nesting area by the raptor, or;

5. when, in order to comply with a court order which enjoins operations on the sale or otherwise requires the Bureau of Land Management to suspend operations, or;

6. when, in order to comply with a court order, the Contracting Officer determines it may be necessary to modify or terminate the contract, or;

7. species have been discovered which were identified for protection through survey and manage and/or protection buffer standards and guidelines, or management direction established in the ROD and RMP, and the Contracting Officer determines that continued operations would affect the species or its habitat, or;

8. when, in order to protect species which were identified for protection through survey and manage and/or protection buffer standards and guidelines, or management direction established in the ROD and RMP, the Contracting Officer determines it may be necessary to modify or terminate the contract.

Those operations necessary for a safe removal of personnel and equipment from the contract area and those directed by the Contracting Officer which are required in order to leave the contract

area in an acceptable condition will be permitted. Discontinued operations may be resumed upon receipt of written instructions and authorization by the Contracting Officer.

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

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

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

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

The Contracting Officer may determine that it is necessary to terminate the cutting and removal rights under the contract in order to comply with the Endangered Species Act, prevent incidental take of northern spotted owls in accordance with the ROD and RMP, protect occupied marbled murrelet sites in accordance with the ROD and RMP, protect species that have been discovered which were identified for protection through survey and manage and/or protection buffer standards and guidelines established in the ROD and RMP, or comply with a court order. Following the issuance of a written notice that cutting and removal rights will be terminated, the

Purchaser will be permitted to remove timber cut under the contract, if allowed by the Endangered Species Act, if able to proceed without causing incidental take of northern spotted owls in accordance with the ROD and RMP, consistent with marbled murrelet occupied site protection in accordance with the ROD and RMP, consistent with survey and manage and/or protection buffer standards and guidelines established in the ROD and RMP, or court order requirements necessitating the modification or termination.

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

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

FIRE PREVENTION

y. 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 closed fire season or periods of fire danger, prepare a fire prevention and control plan to the satisfaction of the Authorized Officer. The Purchaser shall take such measures for prevention and suppression of fire on the contract area and other adjacent Government lands used or traversed by the 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 (Closed 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

z. Within thirty (30) feet of the edge of each landing, all tops, broken pieces, limbs and debris less than eight (8) inches in diameter at the large end and shorter than eight (8) 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 other non-woody debris, and shall be located as far as possible 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 covering them with plastic. The total surface area of each pile shall be covered at least seventy-five (75%) percent with four (4) mil. (0.004) inch thick black plastic. The plastic shall be oriented southwest to northeast. Placement of the plastic shall start two (2) feet above the ground at the southwest side of each pile and extend over the top and go one-quarter (1/4) the distance to the ground on the opposite northeast side. Woody debris shall then be placed on top of the plastic so that both sides and the middle are held in place during strong wind conditions. The Purchaser is required to furnish the covering materials. The timing of this covering work shall be in accordance with instructions from the Authorized Officer. If the structure of the landing piles will not permit adequate consumption of piled debris by burning, the Purchaser shall re-pile them at the direction of the Authorized Officer.

aa. In the Harvest Areas shown on Exhibit A, all logs located on or adjacent to landings post harvest, that are more than eight (8) inches in diameter at the large end, and are exceeding eight (8) feet in length shall be decked at a location designated by the Authorized Officer, except logs sold and removed from the contract area.

PRESCRIBED BURNING

bb. Notwithstanding the provisions of Section 15 of this contract, the Government shall assume all obligations for the disposal or reduction of the fire hazards caused by slash created by the Purchaser's operations on Government lands, except for logging residue reduction operations listed above, and burning and fire control assistance as required herein. Upon phone notification by the Authorized Officer of required performance prior to ignition, the Purchaser shall, under supervision of the Authorized Officer or his designated representative, assist in, hand pile burning, landing pile burning, and fire control on the day of ignition. In addition, debris which has been buried at landings and is determined to be the source of holdover fire shall be excavated by the Purchaser with a tractor and/or hydraulic excavator as directed by the Authorized Officer.

The Purchaser shall furnish, at his own expense, the services of personnel and equipment on all units requiring burning as shown below.

a. One (1) work leader (Firefighter Type 1 (FFT1)) to supervise crew and to serve as Purchaser's representative.
b. A five (5) person crew (Firefighter Type 2 (FFT2)) for ignition of hand piles, machine piles, or landing piles
c. Five (5) drip torches with thirty-five (35) gallons of slash fuel (4:1 ratio of diesel to gasoline).
d. Aluma-gel or other incendiary thickener.

e. One (1) chain saw with fuel.
f. One (1) hand tool per above listed personnel on the day of ignition.

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.

In the event of a fire escapement, the Purchaser's personnel and equipment shall, under supervision of the Authorized Officer or his designated representative, take action to control and mop-up the escaped fire until released from such service by the Government. If it becomes necessary to suppress a fire which escapes from the prescribed fire area for a period beyond midnight of ignition day, 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 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 site preparation work and/or the use of additional personnel and equipment to accomplish the planned burn, the Purchaser also shall be responsible for such additional costs.

CREATION OF COARSE WOODY DEBRIS

cc. In the Course Woody Debris Creation Units shown on Exhibit G, the Purchaser shall, upon completion of yarding, select and fall, top, high-girdle, or basal-girdle one thousand six hundred sixty-one (1,661) standing trees in accordance with Exhibit F. No adjustments of volume or value shall be made to meet these requirements.

CONTRIBUTIONS

dd. The Purchaser shall create coarse woody debris in accordance with Section 42.cc. The Purchaser shall have the option of completing this work, or in lieu thereof, may make a contribution to the Bureau of Land Management in the amount of ninety-nine thousand nine hundred ninety-six dollars and 57/100 dollars ($99,996.57), and upon making such contribution, 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 contribution prior to the date of execution of this contract. If the total contribution does not exceed five hundred and no/100 dollars ($500.00), the Purchaser shall pay such amount in full prior to the commencement of operations. If the total contribution exceeds five hundred and no/100 dollars ($500.00), the Authorized Officer shall establish an installment schedule of payments.

LOG EXPORT RESTRICTION

ee. All timber sold to the Purchaser under the terms of the contract, except exempted species, is restricted from export under the United States in the form of unprocessed timber, and is prohibited from being used as a substitute for exported private timber. For the purpose of this contract, unprocessed timber is defined as (1) any logs except those of utility grade or below, such as sawlogs, peeler logs, and pulp logs; (2) cants or squares to be subsequently remanufactured exceeding eight and three-quarters (8-3/4) inches in thickness; (3) split or round bolts or other round wood not processed to standards and specifications suitable for end-product uses; or (4) western redcedar lumber which does not meet lumber of American Lumber Standards Grades of Number 3 dimension or better, or Pacific Lumber Inspection Bureau R-List Grades of Number 3 Common or better. Thus, timber manufactured into the following will be considered processed: (1) lumber and construction timbers, regardless of size, manufactured to standards and specifications suitable for end product uses; (2) chips, pulp and pulp products; (3) green or dry veneer and plywood; (4) poles and piling cut or treated for use as such; (5) cants, squares, and lumber cut for remanufacturing of eight and three-quarters (8-3/4) inches in thickness or less; (6) shakes and shingles. Substitution will be determined under the definition found in 43 CFR 5400.0-5(n).

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

1. Date of last export sale.
2. Volume of timber contained in last export sale.
3. Volume of timber exported in the past twelve (12) months from the date of last export sale.
4. Volume of Federal timber purchased in the past twelve (12) months from date of last export sale.
5. Volume of timber exported in succeeding twelve (12) months from date of last export sale.
6. Volume of Federal timber purchased in succeeding twelve (12) months from date of last export sale.

In the event the Purchaser elects to sell any or all of the timber sold under this contract in the form of unprocessed timber, the Purchaser shall require each party buying, exchanging, or receiving such timber to execute a "Certificate as to Nonsubstitution and Domestic Processing of Timber." The original of such certification shall be filed with the Authorized Officer.

Additionally, when the other party is an affiliate of the Purchaser, the Purchaser will be required to update information under item (2) of Form 5450-17 (Export Determination) and file the form with the Authorized Officer.

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

Prior to the termination of this contract, the Purchaser shall submit to the Authorized Officer Form 5460-15 (Log Scale and Disposition of Timber Removed Report) which shall be executed by the Purchaser. In addition, the Purchaser is required under the terms of this contract to retain for a three-year period from the date of termination of the contract the records of all sales or transfer of logs involving timber from the sale for inspection and use of the Bureau of Land Management.

Unless otherwise authorized in writing by the Authorized Officer, the Purchaser shall, prior to the removal of timber from the contract area, brand with Purchaser's registered log brand at least one end of each log, bolt, or other roundwood and identify each of these by painting with highway yellow paint.

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

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 10 inches, prior to the removal of timber from the contract area. All loads of 11 logs or more will have a minimum of 10 logs clearly and legibly branded on one end regardless of the diameter of the logs. All logs will be branded on loads of 10 logs or less. One end of all branded logs to be processed domestically will be marked with a 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
NORTHWEST OREGON DISTRICT-OREGON

TIMBER SALE CONTRACT MAP-CONTRACT NO. ORN04-TS-2017.0401

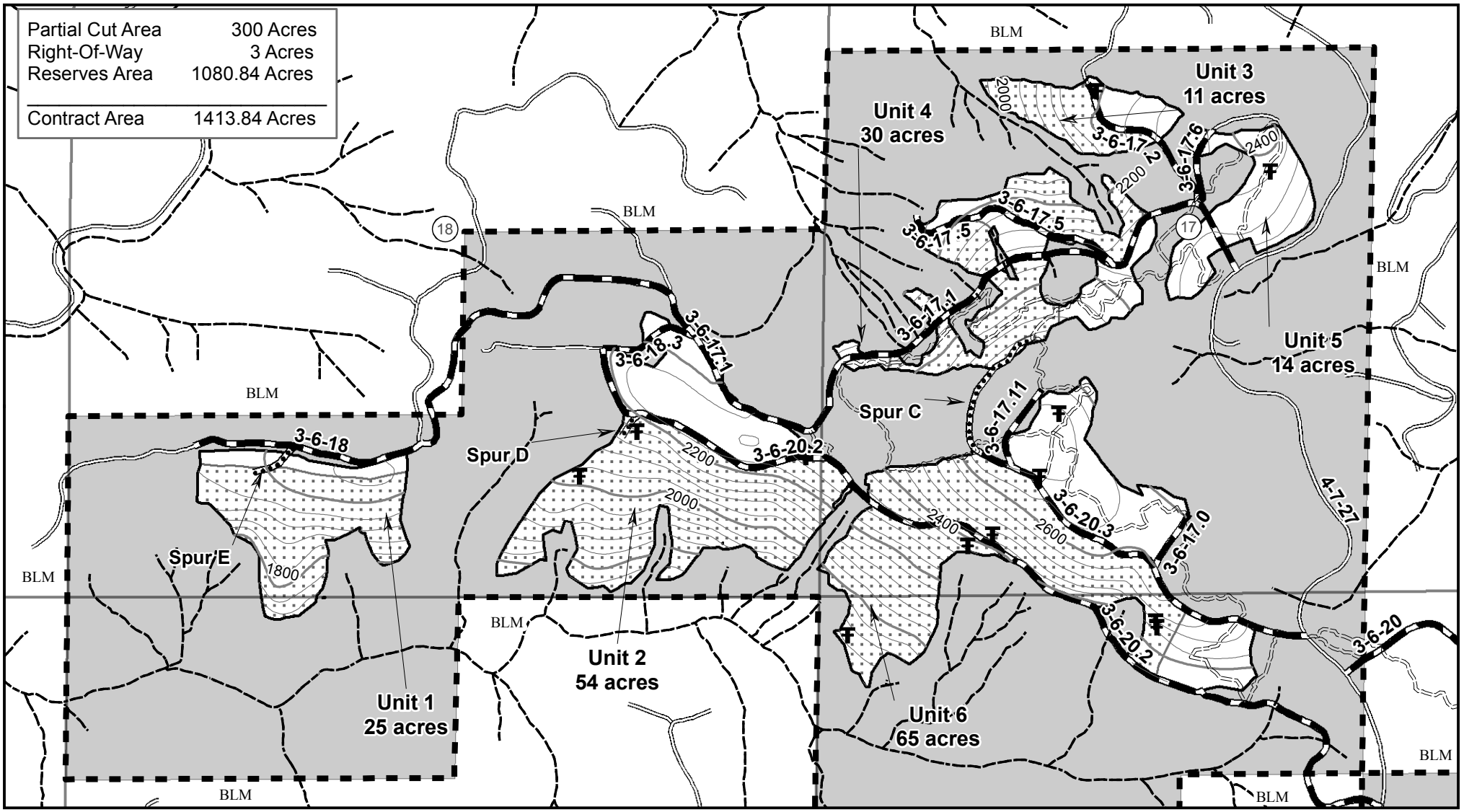
T. 3S. R. 6W, Section 17, 18, 19, 20, and 21 W. M.

Night Walker Timber Sale
Exhibit A
Sheet 1 of 2

Date: 11/8/2016

N

Partial Cut Area	300 Acres
Right-Of-Way	3 Acres
Reserves Area	1080.84 Acres
Contract Area	1413.84 Acres



Legend

- Partial Cut Area-Ground Based
- Partial Cut Area-Skyline Based
- Reserve Area
- Night Walker Contract Area
- Road to be improved
- Road to be constructed
- Existing Roads
- Streams
- Nestucca OHV Trails
- Botany habitat trees

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

1 inch = 1,000 feet

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 partial cut units and rights-of-ways (ROW) are painted orange and posted. Partial cut acres do not include existing roads or previously harvested patch cuts. Acres shown on Exhibit A for partial cut have been computed using a Trimble Geo 6000 GPS Unit.

Prepared By: csween

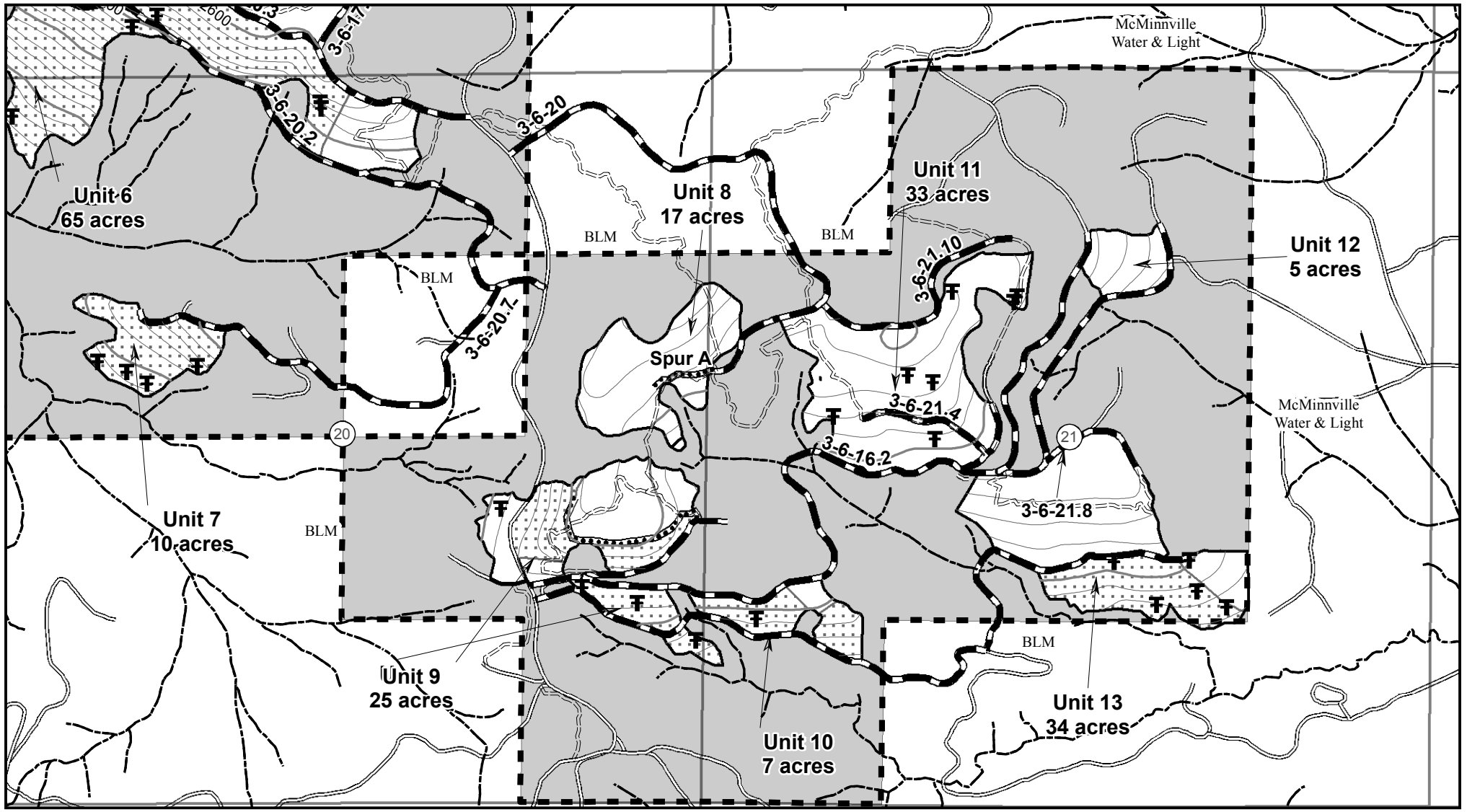
United States Department of the Interior
BUREAU OF LAND MANAGEMENT
NORTHWEST OREGON DISTRICT-OREGON

TIMBER SALE CONTRACT MAP-CONTRACT NO. ORN04-TS-2017.0401

T. 3S. R. 6W, Section 17, 18, 19, 20, and 21 W. M.

Night Walker Timber Sale
Exhibit A
Sheet 2 of 2

Date: 11/10/2016



Legend

- Partial Cut Area-Ground Based
- Partial Cut Area-Skyline Based
- Reserve Area
- Night Walker Contract Area
- Road to be improved
- Road to be constructed
- Existing Roads
- Streams
- Nestucca OHV Trails
- Botany habitat trees

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

1 inch = 1,000 feet

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 partial cut units and rights-of-ways (ROW) are painted orange and posted. Partial cut acres do not include existing roads or previously harvested patch cuts. Acres shown on Exhibit A for partial cut have been computed using a Trimble Geo 6000 GPS Unit.

Prepared By: csween

Form 5450-3a

(February 1986)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Contract No.

ORN04-TS-2017.0101

Night Walker

EXHIBIT B / PRE-SALE

5450-3

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	6,119.0 MBF	$233.80	$1,430,622.20
Western Hemlock	2.0 MBF	$109.10	$218.20
TOTALS	6,121.0 MBF		$1,430,840.40

The apportionment of the total purchase price is as follows:

Unit 1

Douglas Fir	489.0 MBF	X	$233.80	=	$114,328.20	
Total	489.0 Mbf				$114,328.20	÷ 25.0 acres = $4,573.13/Acre

Unit 2

Douglas Fir	1,057.0 MBF	X	$233.80	=	$247,126.60	
Total	1057.0 Mbf				$247,126.60	÷ 54.0 acres = $4,576.42/Acre

Unit 3

Douglas Fir	215.0 MBF	X	$233.80	=	$50,267.00	
Total	215.0 Mbf				$50,267.00	÷ 11.0 acres = $4,569.73/Acre

Unit 4

Douglas Fir	130.0 MBF	X	$233.80	=	$30,394.00	
Total	130.0 Mbf				$30,394.00	÷ 30.0 acres = $1,013.13/Acre

Unit 5

Douglas Fir	274.0 MBF	X	$233.80	=	$64,061.20	
Total	274.0 Mbf				$64,061.20	÷ 14.0 acres = $4,575.80/Acre

Unit 6

Douglas Fir	1,274.0 MBF	X	$233.80	=	$297,861.20	
Total	1274.0 Mbf				$297,861.20	÷ 65.0 acres = $4,582.48/Acre

Unit 7

Douglas Fir	196.0 MBF	X	$233.80	=	$45,824.80	

Form 5450-3a

(February 1986)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Contract No.

ORN04-TS-2017.0101

Night Walker

EXHIBIT B / PRE-SALE

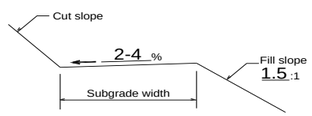
5450-3

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.**

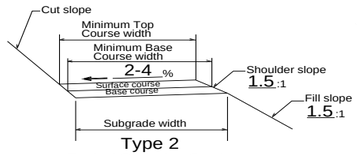
Total	196.0 Mbf				$45,824.80	÷ 10.0 acres = $4,582.48/Acre
Unit 8						
Douglas Fir	333.0 MBF	X	$233.80	=	$77,855.40	
Total	333.0 Mbf				$77,855.40	÷ 17.0 acres = $4,579.73/Acre
Unit 9						
Douglas Fir	489.0 MBF	X	$233.80	=	$114,328.20	
Total	489.0 Mbf				$114,328.20	÷ 25.0 acres = $4,573.13/Acre
Unit 10						
Douglas Fir	137.0 MBF	X	$233.80	=	$32,030.60	
Total	137.0 Mbf				$32,030.60	÷ 7.0 acres = $4,575.80/Acre
Unit 11						
Douglas Fir	646.0 MBF	X	$233.80	=	$151,034.80	
Total	646.0 Mbf				$151,034.80	÷ 33.0 acres = $4,576.81/Acre
Unit 12						
Douglas Fir	98.0 MBF	X	$233.80	=	$22,912.40	
Total	98.0 Mbf				$22,912.40	÷ 5.0 acres = $4,582.48/Acre
Unit 13						
Douglas Fir	666.0 MBF	X	$233.80	=	$155,710.80	
Total	666.0 Mbf				$155,710.80	÷ 34.0 acres = $4,579.73/Acre
Unit RW						
Douglas Fir	115.0 MBF	X	$233.80	=	$26,887.00	
Western Hemlock	2.0 MBF	X	$109.10	=	$218.20	
Total	117.0 Mbf				$27,105.20	÷ 3.0 acres = $9,035.07/Acre

150: ROAD PLAN AND DETAIL SHEET

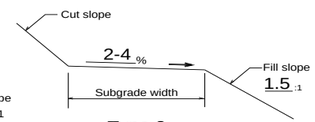
Road Number	Start Station or Milepost	End Station or Milepost	Total Length	Typical Cross Section	Min. Curve Radius	ROAD WIDTH		GRADIANT		SURFACING (*5)										Remarks
										BASE COURSE					SURFACE COURSE					
						Subgrade	Ditch	Max. Favorable	Max. Adverse	Min. Width	Comp. Depth	Surface Type (*3)	Grading Size (*3)	Number of Lifts	Min. Width	Comp. Depth	Surface Type (*3)	Grading Size (*3)	Number of Lifts	
Spur A	0+00	4+85	4+85	3		14	0	10%	10%											New Construct. Construct Landing as marked (approx. 50 ft diameter).
Spur B	0+00	10+96	10+96	3		14	0	15%	15%											New Construct. Construct Tunouts, Turnaround, and Landing as marked. (Landing approx. 40 ft diameter)
Spur C	0+00	10+42	10+42	3		14	0	16%	16%											New Construction. Construct Landing as marked (approx. 50 ft diameter).
Spur D	0+00	1+75	1+75	3		14	0	18%	18%											New Construct. Construct Landing as marked (approx. 40 ft diameter). Sta. 0+00 - 1+00: Material drifted for fill/road alignment shall not cover culvert outelt from 3-6-20.2.
Spur E	0+00	3+35	3+35	3		14	0	15%	15%											New Construct. Construct Turnaround and Landing as marked. (Landing approx. 40 ft diameter).
3-6-16.2	0.000	1.360	1.360	6		14	2	--	--			PRR	A				ASC	C		Renovation. Spread 90 CY crushed Spot Rock as marked and needed. Spread 60 CY Pit-Run Spot/Base Rock as marked. Place 70 CY Crushed Bedding/Backfill Rock as marked. Re-establish ditchline and haul material to WA or for turnout construction as directed. Construct ditchouts as marked and needed. Construct turnouts as marked and needed. Construct Lead-off ditches at culvert outlets as directed. Construct waste areas as directed. Construct a turnaround at MP 1.360 as marked. Install metal inlet markers on all existing culverts.
3-6-17.1	0.000	0.100	0.100	6		14	2	--	--						12'	4"	ASC	C	1	Renovation. Spread a 4" Lift of 1-1/2"-0" Crushed Rock (approx. 126 CY). Construct ditchouts as directed.
	0.100	1.568	1.468	6		14	2	--	--			PRR	A				ASC	C		Renovation. Spread 200 CY crushed Spot Rock as marked and needed. Spread 20 CY Pit-Run Spot Rock in turnout @ MP 0.711. as marked. Spread 30 CY Pit-Run Spot/Base Rock as marked. Place 30 CY Crushed Bedding/Backfill Rock. Place 50 CY Class 5 RipRap in ditchline between MP 0.968 - 0.997. Re-establish ditchline and haul material to WA as directed. Construct ditchouts as marked and needed. Construct turnouts as marked and needed. Construct waste areas @ MP 0.260 (tucked against bank), 0.320, 1.063, 1.154, and as directed. Construct Lead-off ditches at culvert outelts as directed. Install metal inlet markers on all existing culverts.



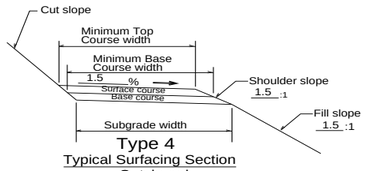
Type 1
Typical Grading Section
Insloped



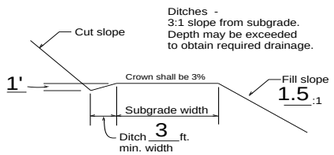
Type 2
Typical Surfacing Section
Insloped



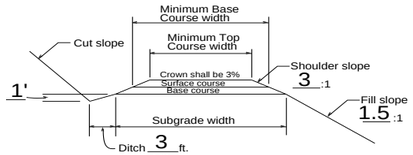
Type 3
Typical Grading Section
Outsloped



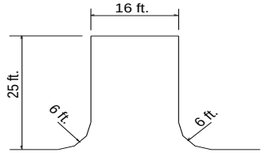
Type 4
Typical Surfacing Section
Outsloped



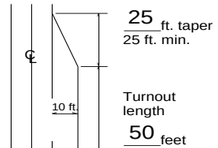
Type 5
Typical Grading Section
w / Ditch



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

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:

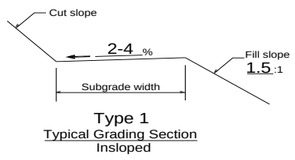
8. Drainage
   See Culvert List

10. Compaction
    See Sections 300 and 400

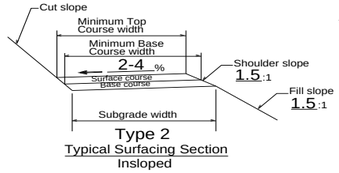
* Clearing Limits as posted on ground

150: ROAD PLAN AND DETAIL SHEET

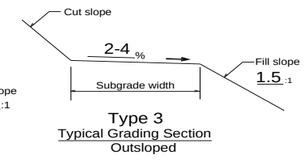
Road Number	Start Station or Milepost	End Station or Milepost	Total Length	Typical Cross Section	Min. Curve Radius	ROAD WIDTH		GRADIANT		SURFACING (*5) BASE COURSE					SURFACE COURSE					Remarks
						Subgrade	Ditch	Max. Favorable	Max. Adverse	Min. Width	Comp. Depth	Surface Type (*3)	Grading Size (*3)	Number of Lifts	Min. Width	Comp. Depth	Surface Type (*3)	Grading Size (*3)	Number of Lifts	
3-6-17.2	0.000	0.253	0.253	6		14	2					JRR	C		12'	4"	ASC	C	1	Renovation. Spread 110 CY Jaw-Run Spot Rock as marked and needed. Spread 20 CY Jaw-Run Spot/Base Rock as marked. Place 20 CY Crushed Bedding/Backfill Rock. Spread a 4" Lift of 1-1/2"-0" Crushed Rock (approx. 308 CY) after all Spot/Base Rock has been approved. Re-establish ditchline and haul material to WA as directed. Construct ditchouts as marked and needed. Construct/Surface turnaround at MP 0.253.
3-6-17.5	0+00	14+75	14+75	6		14	2					PRR	A				ASC	C		Renovation. Spread 50 CY Pit-Run Rock Spot/Base Rock as marked. Place 50 CY Crushed Bedding/Backfill Rock. Place 15 CY Class 3 RipRap as energy dissipater as marked. Re-establish ditchline and haul material to WA as directed. Construct ditchouts as marked and needed. Construct turnouts as marked. Construct a Landing (approx. 50' diameter) at Sta. 13+71.
3-6-17.6	0.000	0.096	0.096	6		14	2					JRR	C				ASC	C		Renovation. Spread 25 CY Jaw-Run Spot Rock as needed. Place 5 CY Crushed Spot Rock as marked. Re-establish ditchline and haul material to MP 0.096 (turnaround). Construct ditchouts as marked and needed. Construct turnaround at MP 0.096.
3-6-17.10	0.000	0.085	0.085	6		14	2										ASC	C		Renovation. Spread 30 CY Crushed Spot Rock as marked and needed. Re-establish ditchline and haul material to WA as directed. Construct a landing @ MP 0.085 (approx. 50' diameter).
3-6-17.11	0.000	0.045	0.045	6		14	2										ASC	C		Renovation. Spread 20 CY Crushed Spot Rock as needed. Re-establish ditchline and haul material to WA as directed. Construct a landing @ MP 0.045 (approx. 50' diameter).
3-6-18.0	0.000	0.317	0.317	6		14	2										ASC	C		Renovation. Spread 30 CY Crushed Spot Rock as marked and needed. Spread 20 CY Pit-Run Spot/Base Rock as marked. Place 20 CY Crushed Bedding/Backfill Rock. Re-establish ditchline and haul material to WA at MP 0.302. Construct ditchouts as needed. Construct a waste area at MP 0.302. Construct a landing along road at MP 0.077 as marked.
3-6-18.3	0.000	0.130	0.130	6		14	2										ASC	C		Renovation. Spread 50 CY Crushed Spot Rock as marked and needed. Re-establish ditchline and haul material to WA as directed. Construct ditchouts as marked and needed. Construct a turnaround @ MP 0.130 as marked.



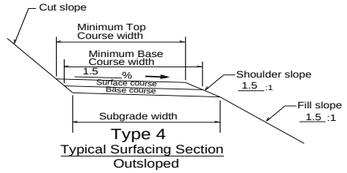
Type 1
Typical Grading Section
Insloped



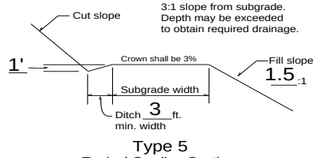
Type 2
Typical Surfacing Section
Insloped



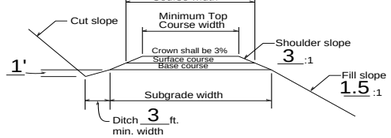
Type 3
Typical Grading Section
Outsloped



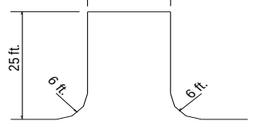
Type 4
Typical Surfacing Section
Outsloped



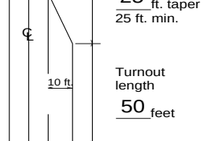
Type 5
Typical Grading Section
w / Ditch



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

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

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 750 ft. 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:

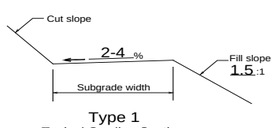
8. Drainage
   See Culvert List

10. Compaction
    See Sections 300 and 400

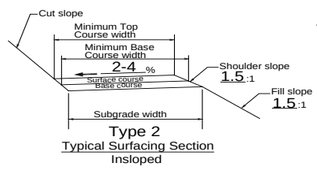
* Clearing Limits as posted on ground

150: ROAD PLAN AND DETAIL SHEET

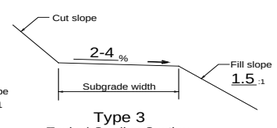
Road Number	Start Station or Milepost	End Station or Milepost	Total Length	Typical Cross Section	Min. Curve Radius	ROAD WIDTH		GRADIANT		SURFACING (*5)										Remarks
										BASE COURSE					SURFACE COURSE					
						Subgrade	Ditch	Max. Favorable	Max. Adverse	Min. Width	Comp. Depth	Surface Type (*3)	Grading Size (*3)	Number of Lifts	Min. Width	Comp. Depth	Surface Type (*3)	Grading Size (*3)	Number of Lifts	
3-6-20.0	0.000	0.821	0.821	6		14	2					PRR	A				ASC	C		Renovation. Spread 155 CY Crushed Spot Rock as marked and needed. Spread 70 CY Pit-Run Spot/Base Rock as marked. Place 70 CY Crushed Bedding/Backfill Rock. Place 5 CY Class 3 RipRap as energy dissipater. Cut and replace/spread bituminous surfacing over culvert replacement area at MP 0.000 (approx. 5' widex 32' long (approx. 4.8 tons asphalt)). Re-establish ditchline and haul material to WA as directed. Construct ditchouts as marked and needed. Construct turnouts as marked and needed. Remove existing waterbars. Construct waste areas @ MP 0.063, 0.386, 0.805(right), and as directed. Construct Turnaround @ MP 0.805(left). Install metal inlet markers on existing culverts.
3-6-20.2	0.000	1.372	1.372	6		14	2					PRR	A		12'	4"	ASC	C	1	Renovation. Spread 370 CY Crushed Spot Rock as marked and needed. Spread 40 CY Pit-Run Spot/Base Rock as marked. Place 40 CY Crushed Bedding/Backfill Rock. Place 5 CY Class 3 RipRap as energy dissipater. Spread a 4" Lift of 1-1/2"-0" Crushed Rock (approx. 1,643 CY) after all Spot/Base Rock has been approved. Re-establish ditchline and haul material to WA as directed. Construct ditchouts as marked and needed. Construct turnouts as marked and needed. Construct waste areas as directed. Construct Lead-off ditches at culvert outlets as directed. Remove existing waterbars. Construct a sediment catch basin (3'x5'x3') w/ straw bale in ditchline @ MP 0.168, 0.252, 0.284, 0.499, 0.521, as directed. Construct and surface a turnaround at MP 1.280 as marked. Install metal inlet markers on all existing culverts (reuse existing markers that are still in useable condition).
3-6-20.3	0.000	0.560	0.560	6		14	2					PRR	A		12'	4"	ASC	C	1	Renovation. Spread 110 CY Crushed Spot Rock as marked and needed. Spread 10 CY Pit-Run Spot/Base Rock as marked. Place 10 CY Crushed Bedding/Backfill Rock. Spread a 4" Lift of 1-1/2"-0" Crushed Rock (approx. 694 CY) after all Spot/Base Rock has been approved. Re-establish ditchline and haul material to WA as directed. Construct ditchouts as marked and needed. Construct turnouts as marked and needed. Construct waste areas as directed. Construct Lead-off ditches at culvert outlets as directed. Remove existing waterbars. Construct and surface a turnaround at MP 0.560 as marked. Install metal inlet markers on all existing culverts.
3-6-20.4	0.000	0.700	0.700	6		14	2					PRR	A				ASC	C		Renovation. Spread 270 CY Crushed Spot Rock as marked and needed. Spread 40 CY Pit-Run Spot/Base Rock as marked. Place 40 CY Crushed Bedding/Backfill Rock. Place 10 CY Class 3 RipRap as energy dissipater. Re-establish ditchline and haul material to WA as directed. Construct ditchouts as marked and needed. Construct turnouts as marked and needed. Construct waste area as directed. Install metal inlet markers on existing culverts.
3-6-20.6	0.000	0.180	0.180	6		14	2					PRR	A				ASC	C		Renovation. Spread 50 CY Crushed Spot Rock as marked and needed. Spread 10 CY Pit-Run Spot/Base Rock as marked. Place 10 CY Crushed Bedding/Backfill Rock. Re-establish ditchline and haul material to WA as directed. Construct ditchouts as marked and needed. Construct turnout at MP 0.150 as marked.
3-6-20.7	0.000	0.644	0.644	6		14	2					PRR	A				ASC	C		Renovation. Spread 60 CY Crushed Spot Rock as marked and needed. Spread 55 CY Pit-Run Spot/Base Rock as marked. Place 65 CY Crushed Bedding/Backfill Rock. Place 20 CY Class 3 RipRap as energy dissipater. Re-establish ditchline and haul material to WA as directed. Construct ditchouts as marked and needed. Construct turnouts as marked and needed. Construct a sediment catch basin (3'x5'x3') w/ straw bale in ditchline @ MP 0.069 as directed. Construct waste areas @ MP 0.382 (as marked on 3-6-20.11 road) and as directed. Construct Turnaround @ MP 0.574. Construct landing at MP 0.644 (approx. 50 ft. diameter). Install metal inlet markers on existing culverts (reuse existing markers that are still in useable condition).
3-6-21.2	0.000	0.440	0.440	6		14	2					PRR	A				ASC	C		Renovation. Spread 100 CY Crushed Spot Rock as marked and needed. Spread 30 CY Pit-Run Spot/Base Rock as marked. Place 30 CY Crushed Bedding/Backfill Rock. Place 10 CY Class 3 RipRap as energy dissipater. Re-establish ditchline and haul material to WA as directed. Construct ditchouts as marked and needed. Construct turnouts as marked and needed. Construct waste areas as directed. Install metal inlet markers on all existing culverts.



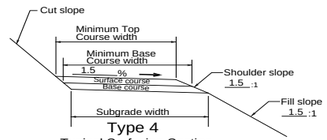
Type 1
Typical Grading Section
Insloped



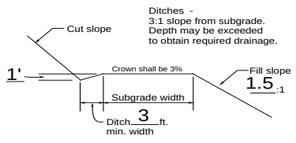
Type 2
Typical Surfacing Section
Insloped



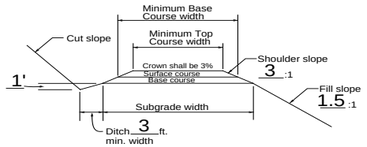
Type 3
Typical Grading Section
Outsloped



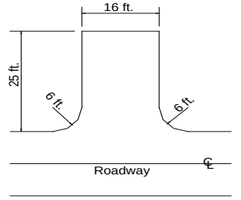
Type 4
Typical Surfacing Section
Outsloped



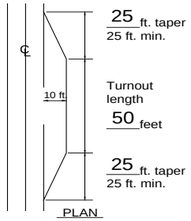
Type 5
Typical Grading Section
w / Ditch



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	C - 1-1/2"	
ASC - Aggr. surface course	D - 1"	(surface course)
WC - Wood chips	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 750 ft. 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:

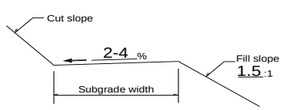
8. Drainage
   See Culvert List

10. Compaction
    See Sections 300 and 400

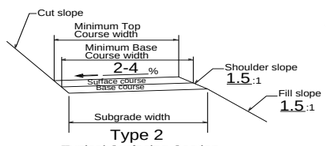
* Clearing Limits as posted on ground

150: ROAD PLAN AND DETAIL SHEET

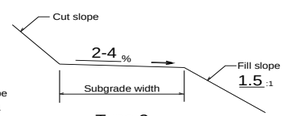
Road Number	Start Station or Milepost	End Station or Milepost	Total Length	Typical Cross Section	Min. Curve Radius	ROAD WIDTH		GRADIANT		SURFACING (*5) BASE COURSE					SURFACE COURSE					Remarks
						Subgrade	Ditch	Max. Favorable	Max. Adverse	Min. Width	Comp. Depth	Surface Type (*3)	Grading Size (*3)	Number of Lifts	Min. Width	Comp. Depth	Surface Type (*3)	Grading Size (*3)	Number of Lifts	
3-6-21.3	0+00	2+30	2+30	2		14	0										ASC	C		Renovation. Spread 10 CY Crushed Spot Rock as needed. Re-establish ditchline and haul material to construct landing at Sta. 4+33 as directed. Construct ditchouts as needed. Stockpile of rock may be used as Crushed Rock on sale. OHV trail at Sta. 2+09 (remove trail signs for sale activities and re-install after sale activities have been completed.
	2+30	5+85	3+55	6		14	2										ASC	C		Renovation. Spread 10 CY Crushed Spot Rock as needed. Re-establish ditchline and haul material to construct landing at Sta. 4+33 as directed. Construct ditchouts as needed. Construct Landing at Sta. 4+33 with material from ditchline re-establishment. Install metal inlet marker on existing culvert at Sta. 2+30.
3-6-21.4	0+00	9+72	9+72	6		14	2													Renovation. Re-establish ditchline and haul material to WA as directed. Construct ditchouts as needed. Construct turnouts as marked and needed. Construct a turnaround at Sta. 8+97 as directed. Construct a landing (approx. 40 ft. diameter) at Sta. 9+40 as directed. Install a metal inlet marker on existing culvert at Sta. 3+65.
3-6-21.5	0.000	0.495	0.495	6		14	2					PRR	A				ASC	C		Renovation. Spread 140 CY Crushed Spot Rock as marked and needed. Spread 45 CY Pit-Run Spot/Base Rock as marked. Place 45 CY Crushed Bedding/Backfill Rock. Re-establish ditchline and haul material to WA as directed. Construct ditchouts as marked and needed. Construct turnouts as marked and needed. Construct a turnaround at MP 0.445 as marked. Construct a landing (approx. 50 ft. diameter) at MP 0.495 as directed. Install metal inlet markers on all existing culverts.
3-6-21.8	0.000	0.073	0.073	6		14	2										ASC	C		Renovation. Spread 30 CY Crushed Spot Rock as marked and needed. Re-establish ditchline and haul material to WA as directed. Construct ditchouts as marked and needed. Install metal inlet marker on existing culvert at MP 0.070.
3-6-21.9	0.000	0.095	0.095	6		14	2										ASC	C		Renovation. Spread 30 CY Crushed Spot Rock as marked and needed. Re-establish ditchline and haul material to WA as directed. Construct ditchouts as marked and needed. Construct turnout as marked. Construct a landing (approx. 40 ft. diameter) at MP 0.095 as directed. Install a metal inlet marker on existing culvert at MP 0.010.
3-6-21.10	0.000	0.341	0.341	6		14	2										ASC	C		Renovation. Spread 30 CY Crushed Spot Rock as marked and needed. Re-establish ditchline and haul material to WA at MP 0.104 or as directed. Construct ditchouts as marked and needed. Construct a waste area/landing @ MP 0.104 as directed. Construct landing at MP 0.341 (approx. 50 ft. diameter) as directed.



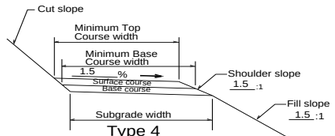
Type 1
Typical Grading Section
Insloped



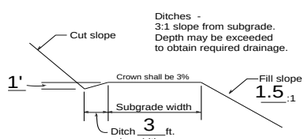
Type 2
Typical Surfacing Section
Insloped



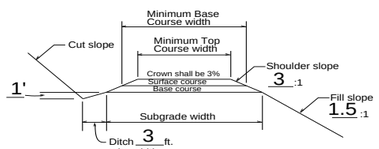
Type 3
Typical Grading Section
Outsloped



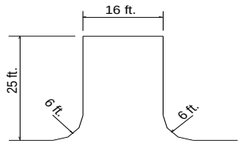
Type 4
Typical Surfacing Section
Outsloped



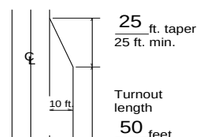
Type 5
Typical Grading Section
w / Ditch



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

   Grading

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 750 ft. 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

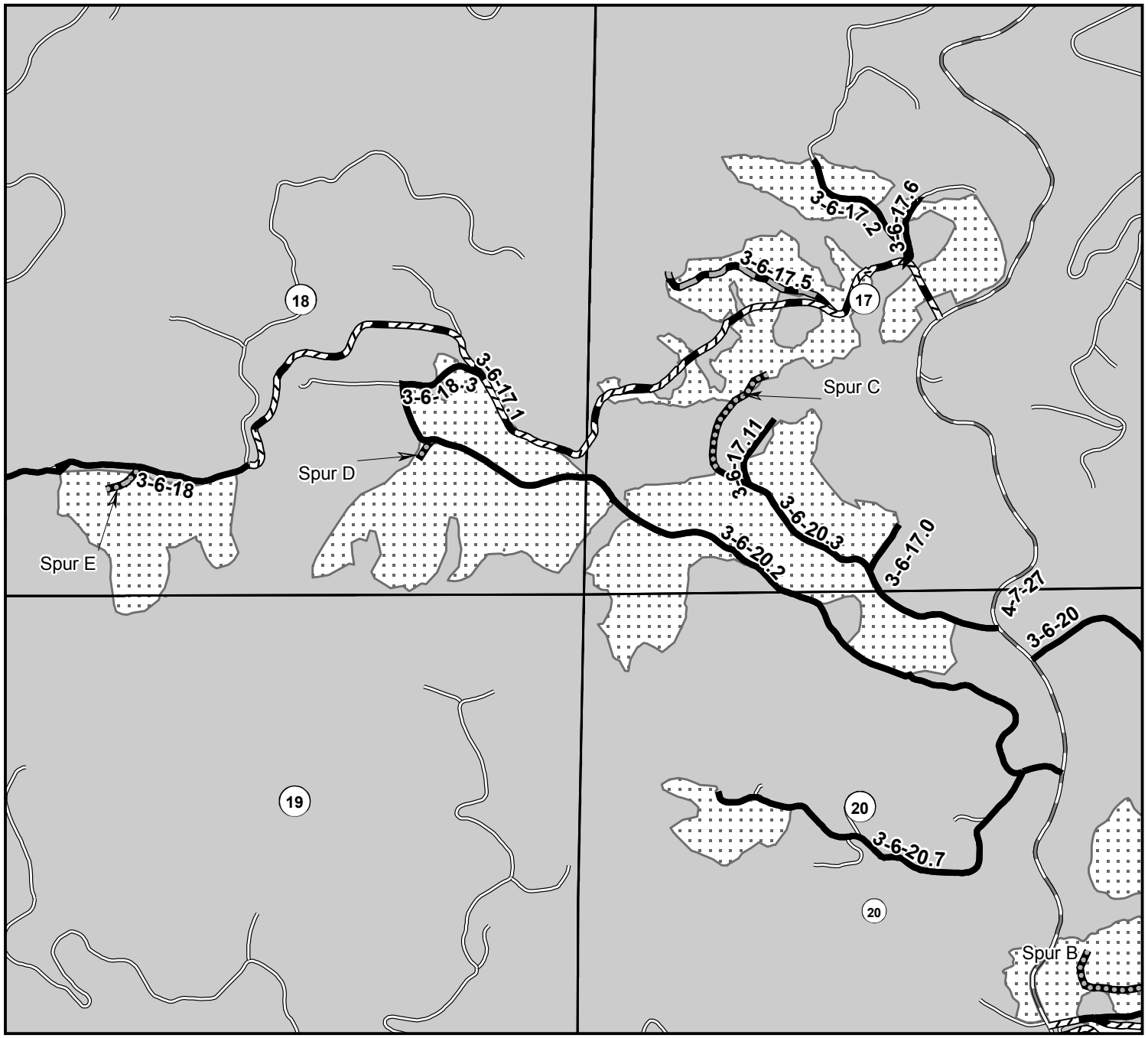
* Clearing Limits as posted on ground

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

ROAD PLAN MAP

T. 3S. R. 6W, Section 17, 18, 19, 20, and 21 W. M.

Date: 10/20/2016



0 625 1,250 2,500 3,750 Feet

1 inch = 1,250 feet

- Natural surface road to be constructed-Decommission after use
- Existing rock surfaced road to be renovated-Decommission after use
- Existing rock surface road to be renovated-Stabilize after use
- Existing rock surfaced road to be renovated
- <all other values>
- Bald Mountain Access Road
- Other Roads
- Night Walker Project Area
- BLM Land

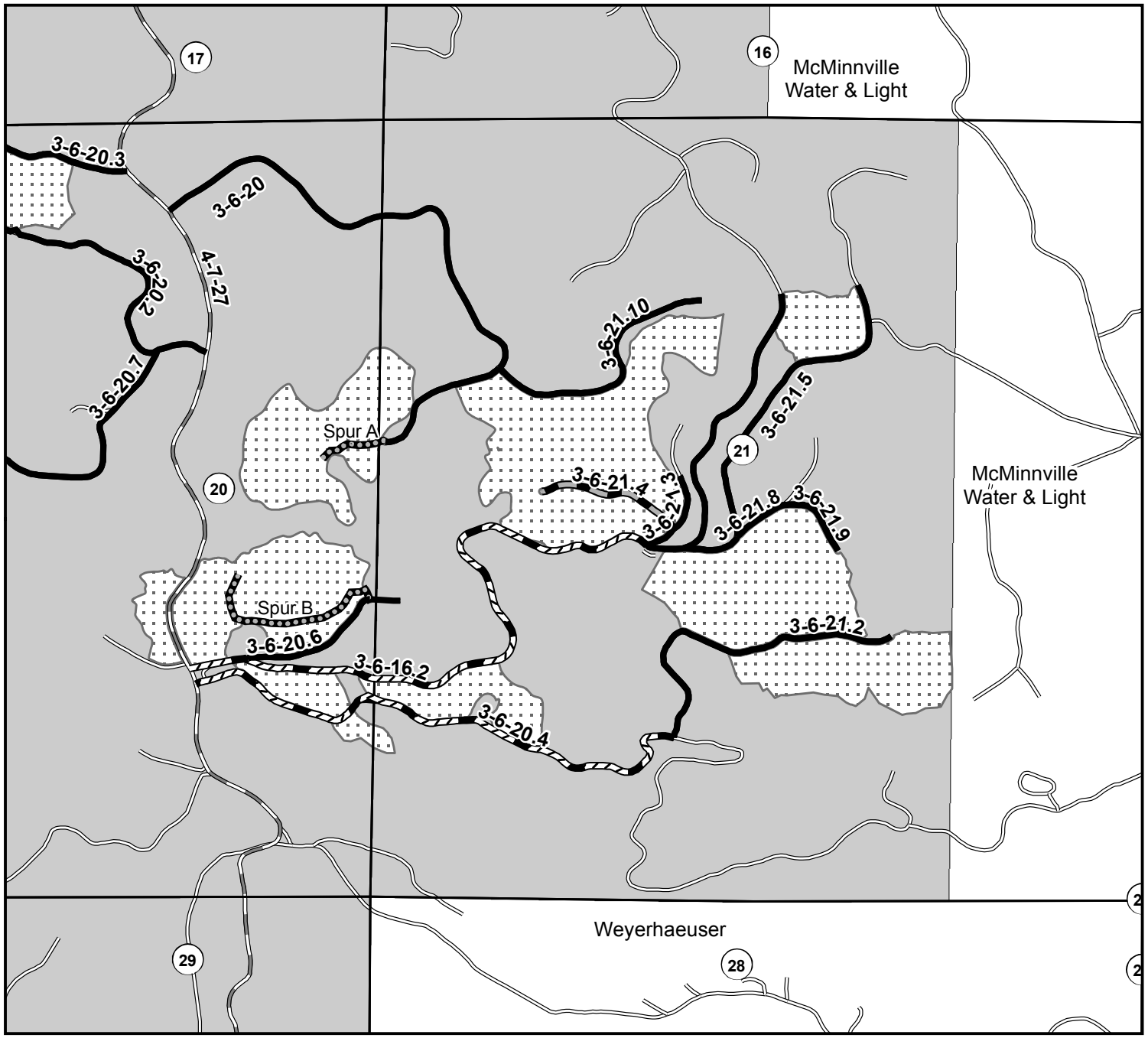
Prepared By: csween

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

ROAD PLAN MAP

T. 3S. R. 6W, Section 17, 18, 19, 20, and 21 W. M.

Date: 10/20/2016

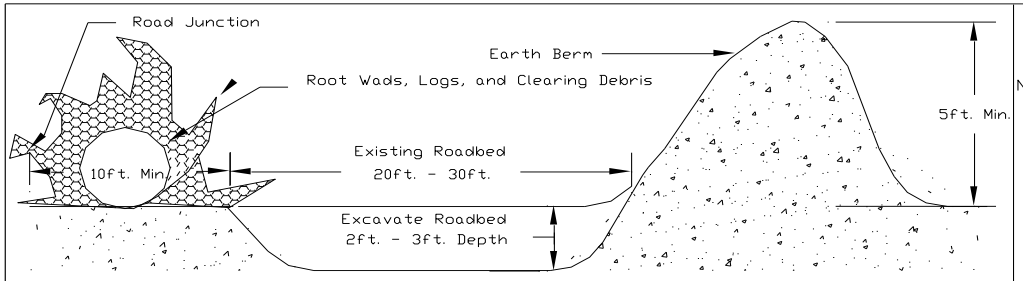


- Natural surface road to be constructed-Decommission after use
- Existing rock surfaced road to be renovated-Decommission after use
- Existing rock surface road to be renovated-Stabilize after use
- Existing rock surfaced road to be renovated
- <all other values>
- Bald Mountain Access Road
- Other Roads
- Night Walker Project Area
- BLM Land

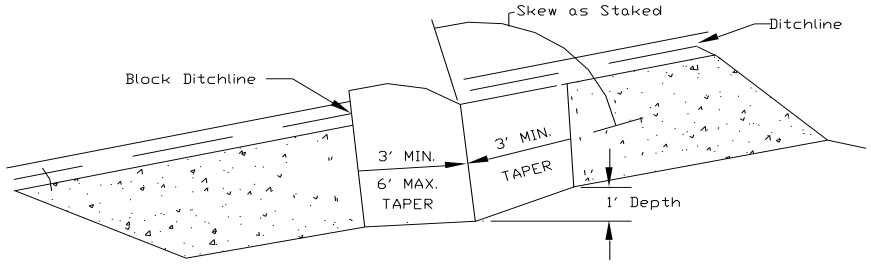
Prepared By: csween

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

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



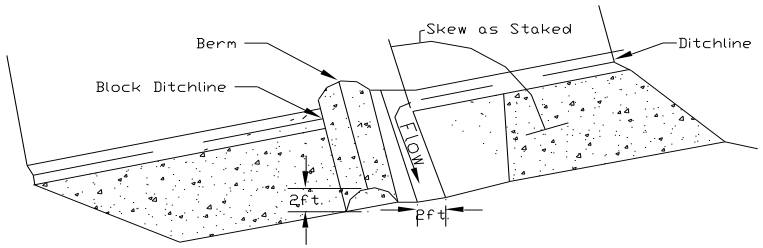
EARTH BARRICADE CONSTRUCTION



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.

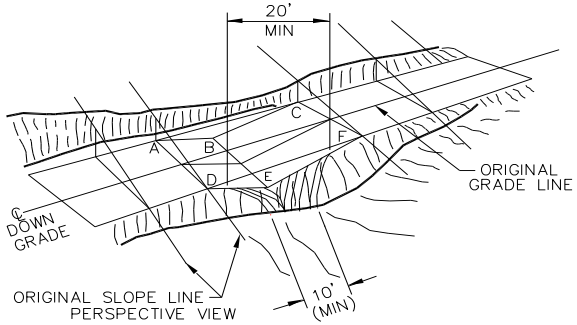


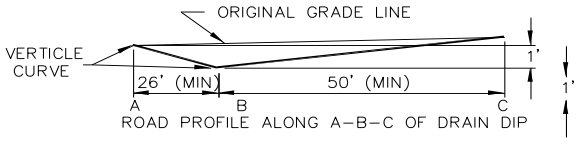
NON-DRIVABLE WATERBAR CONSTRUCTION

WATER DIP DETAIL

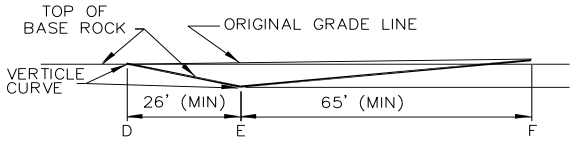
Not to Scale

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.

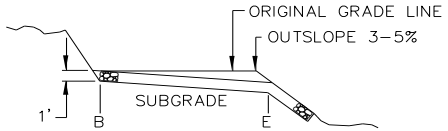




ROAD PROFILE ALONG A–B–C OF DRAIN DIP



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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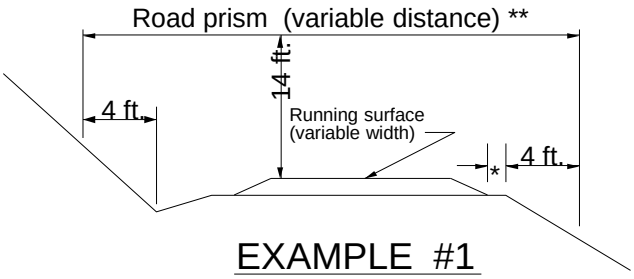
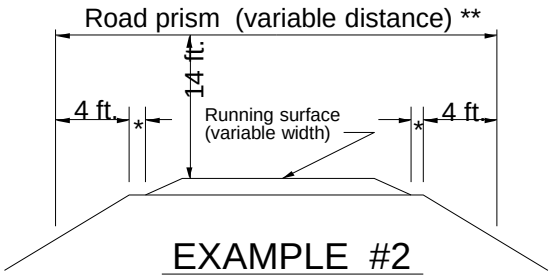
SALEM DISTRICT OFFICE - OREGON

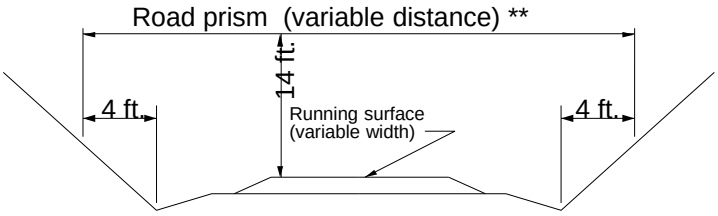
BRUSHING DETAILS



EXAMPLE #1



EXAMPLE #2

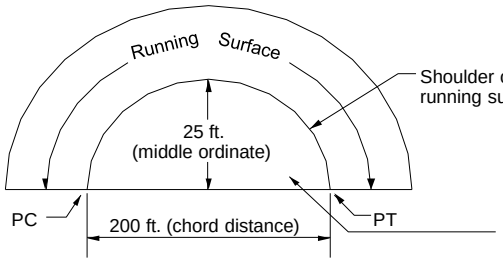


EXAMPLE #3

(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

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	
3-6-16.2	0.357	18"	--	40'	--	--	--	--	--	--	--	--	--	--	--	--	Replace Existing Culvert. Place 10 CY Crushed Bedding/Backfill. Spread 10 CY Pit-Run Base Rock over Pipe as Surfacing capped with 5 CY Crushed Rock. Install metal inlet marker.
	0.586	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Rearrange Existing RipRap at culvert outlet so it dissipates water and protects fill slope. Install metal inlet marker.
	0.750	24"	--	60'	--	--	--	--	--	--	--	--	--	--	--	--	Replace existing culvert. Place 20 CY Crushed Bedding/Backfill. Spread 15 CY Pit-Run Base Rock over pipe as Surfacing capped with 10 CY Crushed Rock. Install metal inlet marker.
	0.819	18"	--	60'	--	--	--	--	--	--	--	--	--	--	--	--	Replace existing culvert. Place 20 CY Crushed Bedding/Backfill. Spread 15 CY Pit-Run Base Rock over pipe as Surfacing capped with 10 CY Crushed Rock. Install metal inlet marker.
	0.890	18"	--	30'	--	--	--	--	--	--	--	--	--	--	--	--	Replace existing culvert. Place 10 CY Crushed Bedding/Backfill. Spread 10 CY Pit-Run Base Rock over pipe as Surfacing capped with 5 CY Crushed Rock. Install metal inlet marker.
	1.090	18"	--	40'	--	--	--	--	--	--	--	--	--	--	--	--	Replace existing culvert. Place 10 CY Crushed Bedding/Backfill. Spread 10 CY Pit-Run Base Rock over pipe as Surfacing capped with 5 CY Crushed Rock. Install metal inlet marker.
	1.290	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Existing Culvert has smashed inlet. Repair Inlet. Install metal inlet marker.
3-6-17.1	0.107	12"	--	15'	--	--	--	--	--	--	--	--	--	--	--	--	Install New culvert in ditchline for OHV trail access. Spread 5 CY Crushed Spot Rock over culvert. No culvert markers to be installed.
	0.252	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Clean debris from existing culvert outlet.
	0.423	12"	--	15'	--	--	--	--	--	--	--	--	--	--	--	--	Install New culvert in ditchline for OHV trail access. Spread 5 CY Crushed Spot Rock over culvert. No culvert markers to be installed.
	0.689	12"	--	15'	--	--	--	--	--	--	--	--	--	--	--	--	Install New culvert in ditchline for OHV trail access. Spread 5 CY Crushed Spot Rock over culvert. No culvert markers to be installed.
	0.885	18"	--	36'	--	--	--	--	--	--	--	--	--	--	--	--	Install New Culvert as marked in field. Place 10 CY Crushed Bedding/Backfill. Spread 10 CY Pit-Run Base Rock over Pipe as Surfacing capped with 5 CY Crushed Rock. Install metal inlet marker.
	0.981	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Clean silted culvert outlet.
	1.079	18"	--	30'	--	--	--	--	--	--	--	--	--	--	--	--	Install New Culvert as marked in field. Place 10 CY Crushed Bedding/Backfill. Spread 10 CY Pit-Run Base Rock over Pipe as Surfacing capped with 5 CY Crushed Rock. Install metal inlet marker.
	1.272	18"	--	40'	--	--	18"	1	20'	--	--	--	--	--	--	--	Install New Culvert and downspout as marked in field. Place 10 CY Crushed Bedding/Backfill. Spread 10 CY Pit-Run Base Rock over Pipe as Surfacing capped with 5 CY Crushed Rock. Install metal inlet marker.

Gage Chart

Gage	Dec. Inches 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).

***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 36" and smaller. All larger culvets shall be aluminized steel. 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	
3-6-17.2	0.079	18"	--	30'	--	--	18"	1	10'	--	--	--	--	--	--	--	Replace existing culvert and install downspout to new culvert. Place 10 CY Crushed Bedding/Backfill. Spread 10 CY Jaw-Run Base Rock over pipe as Surfacing. Install metal inlet marker.
	0.220	18"	--	40'	--	--	--	--	--	--	--	--	--	--	--	--	Replace existing culvert. Place 10 CY Crushed Bedding/Backfill. Spread 10 CY Jaw-Run Base Rock over pipe as Surfacing. Install metal inlet marker.
3-6-17.5	3+17	18"	--	30'	--	--	18"	1	10'	--	--	--	--	--	--	--	Install New Culvert as marked in field. Place 10 CY Crushed Bedding/Backfill. Spread 10 CY Pit-Run Base Rock over Pipe as Surfacing. Install metal inlet marker.
	4+56	18"	--	30'	--	--	--	--	--	--	--	--	--	--	5	--	Install New culvert as marked in field. Place 10 CY Crushed Bedding/Backfill. Spread 10 CY Pit-Run Base Rock over pipe as Surfacing. Place 5 CY RipRap at culvert outlet as energy dissipater. Install metal inlet marker.
	8+10	24"	--	30'	--	--	--	--	--	--	--	--	--	--	5	--	Install New culvert as marked in field. Place 15 CY Crushed Bedding/Backfill. Spread 15 CY Pit-Run Base Rock over pipe as Surfacing. Place 5 CY RipRap at culvert outlet as energy dissipater. Install metal inlet marker.
	9+91	24"	--	30'	--	--	--	--	--	--	--	--	--	--	5	--	Install New culvert as marked in field. Place 15 CY Crushed Bedding/Backfill. Spread 15 CY Pit-Run Base Rock over pipe as Surfacing. Place 5 CY RipRap at culvert outlet as energy dissipater. Install metal inlet marker.
3-6-17.6	0.010	12"	--	15'	--	--	--	--	--	--	--	--	--	--	--	--	Install New culvert in ditchline for OHV trail access. Spread 5 CY Crushed Spot Rock over culvert. No culvert markers to be installed.
3-6-18.0	0.182	18"	--	30'	--	--	18"	1	10'	--	--	--	--	--	--	--	Install New Culvert as marked in field. Place 10 CY Crushed Bedding/Backfill. Spread 10 CY Pit-Run Base Rock over Pipe as Surfacing. Install metal inlet marker.
	0.278	18"	--	30'	--	--	18"	1	10'	--	--	--	--	--	--	--	Replace existing culvert. Place 10 CY Crushed Bedding/Backfill. Spread 10 CY Pit-Run Base Rock over pipe as Surfacing. Install metal inlet marker.
3-6-18.3	0.000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Remove existing culvert. Spread 30 CY Crushed Rock in Junction to fill trench from culvert removal.
3-6-20.0	0.000	18"	--	70'	--	--	--	--	--	--	--	--	--	--	--	--	Replace existing culvert. Place 30 CY Crushed Bedding/Backfill. Spread 30 CY Pit-Run Base Rock over pipe as Surfacing capped with 15 CY Crushed Rock. Install metal inlet marker. Cut/remove bituminous surfacing over culvert and replace when Base/Cap Rock has been approved by Authorized Officer.

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).

**** Corrugated plastic pipe (CPP), Type S (double wall) shall be used for culvert sizes 36" and smaller. All larger culvets shall be aluminized steel. 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.

Culvert List

CULVERT LOCATIONS																	REMARKS *6
DESIGNED *2							DOWNSPOUT(d) or STANDPIPE(s) *4				AS BUILT			ROCK RIP RAP (GRADING)			
														(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	
3-6-20.0 (continued)	0.082	18"	--	28'	--	--	--	--	--	--	--	--	--	--	--	--	Install New Culvert as marked in field. Place 10 CY Crushed Bedding/Backfill. Spread 10 CY Pit-Run Base Rock over Pipe as Surfacing capped with 10 CY Crushed Rock. Install metal inlet marker.
	0.179	18"	--	30'	--	--	--	--	--	--	--	--	--	--	--	--	Install New Culvert as marked in field. Place 10 CY Crushed Bedding/Backfill. Spread 10 CY Pit-Run Base Rock over Pipe as Surfacing capped with 10 CY Crushed Rock. Install metal inlet marker.
	0.490	18"	--	30'	--	--	--	--	--	--	--	--	--	--	5	--	Install New Culvert as marked in field. Place 10 CY Crushed Bedding/Backfill. Spread 10 CY Pit-Run Base Rock over Pipe as Surfacing capped with 10 CY Crushed Rock. Place 5 CY RipRap at culvert outlet as energy dissipater. Install metal inlet marker.
	0.689	18"	--	28'	--	--	--	--	--	--	--	--	--	--	--	--	Replace existing culvert. Place 10 CY Crushed Bedding/Backfill. Spread 10 CY Pit-Run Base Rock over pipe as Surfacing capped with 10 CY Crushed Rock. Install metal inlet marker.
3-6-20.2	0.117	18"	--	30'	--	--	--	--	--	--	--	--	--	--	--	--	Install New culvert as marked in field. Spread 10 CY Crushed Bedding/Backfill. Spread 10 CY Pit-Run Base Rock over Pipe as Surfacing capped with 10 CY Crushed Spot Rock. Install metal inlet marker.
	0.309	12"	--	36'	--	--	--	--	--	--	--	--	--	--	--	--	Install New culvert in ditchline for OHV trail access. Spread 10 CY Crushed Spot Rock over culvert. No culvert markers to be installed.
	0.719	18"	--	30'	--	--	18"	1	10'	--	--	--	--	--	--	--	Replace existing culvert. Place 10 CY Crushed Bedding/Backfill. Spread 10 CY Pit-Run Base Rock over pipe as Surfacing capped with 10 CY Crushed Rock. Install metal inlet marker.
	0.866	18"	--	30'	--	--	18"	1	10'	--	--	--	--	--	--	--	Install New Culvert as marked in field. Place 10 CY Crushed Bedding/Backfill. Spread 10 CY Pit-Run Base Rock over pipe as Surfacing capped with 10 CY Crushed Rock. Install metal inlet marker.
	0.937	24"	--	30'	--	--	--	--	--	--	--	--	--	--	5	--	Replace existing Culvert. Place 10 CY Crushed Bedding/Backfill. Spread 10 CY Pit-Run Base Rock over Pipe as Surfacing capped with 10 CY Crushed Rock. Place 5 CY RipRap at culvert outlet as energy dissipater. Install metal inlet marker.
	0.983	12"	--	20'	--	--	--	--	--	--	--	--	--	--	--	--	Install New culvert in ditchline for OHV trail access. Spread 10 CY Crushed Spot Rock over culvert. No culvert markers to be installed.
3-6-20.3	0.015	18"	--	30'	--	--	--	--	--	--	--	--	--	--	--	--	Install New Culvert as marked in field. Place 10 CY Crushed Bedding/Backfill. Spread 10 CY Pit-Run Base Rock over Pipe as Surfacing capped with 10 CY Crushed Rock. Install metal inlet marker.
	0.095	12"	--	20'	--	--	--	--	--	--	--	--	--	--	--	--	Install New culvert in ditchline for OHV trail access. Spread 10 CY Crushed Spot Rock over culvert. No culvert markers to be installed.
	0.390	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Existing Culvert has smashed inlet. Repair Inlet. Install metal inlet marker.
	0.462	12"	--	20'	--	--	--	--	--	--	--	--	--	--	--	--	Install New culvert in ditchline for OHV trail access. Spread 10 CY Crushed Spot Rock over culvert. No culvert markers to be installed.

Gage Chart

Gage	Dec. Inches 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).

**** Corrugated plastic pipe (CPP), Type S (double wall) shall be used for culvert sizes 36" and smaller. All larger culvets shall be aluminized steel. 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.

Culvert List

CULVERT LOCATIONS														ROCK			REMARKS *6
DESIGNED *2							DOWNSPOUT(d) or STANDPIPE(s) *4				AS BUILT			RIP RAP (GRADING)			
														(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	
3-6-20.4	0.057	18"	--	34'	--	--	--	--	--	--	--	--	--	--	--	--	Replace existing culvert. Place 10 CY Crushed Bedding/Backfill. Spread 10 CY Pit-Run Base Rock over pipe as Surfacing capped with 10 CY Crushed Rock. Install metal inlet marker.
	0.238	24"	--	40'	--	--	--	--	--	--	--	--	--	--	--	--	Replace existing culvert. Place 20 CY Crushed Bedding/Backfill. Spread 20 CY Pit-Run Base Rock over pipe as Surfacing capped with 10 CY Crushed Rock. Install metal inlet marker.
	0.400	--	--	--	--	--	--	--	--	--	--	--	--	--	5	--	Place 5 CY RipRap at existing culvert outlet as dissipater. Install metal inlet marker.
	0.583	--	--	--	--	--	--	--	--	--	--	--	--	--	5	--	Place 5 CY RipRap at existing culvert outlet as dissipater. Install metal inlet marker.
	0.660	18"	--	34'	--	--	--	--	--	--	--	--	--	--	--	--	Replace existing culvert. Place 10 CY Crushed Bedding/Backfill. Spread 10 CY Pit-Run Base Rock over pipe as Surfacing capped with 10 CY Crushed Rock. Install metal inlet marker.
3-6-20.6	0.080	18"	--	30'	--	--	--	--	--	--	--	--	--	--	--	--	Install New Pipe as marked in field. Place 10 CY Crushed Bedding/Backfill. Spread 10 CY Pit-Run Base Rock over Pipe as Surfacing capped with 10 CY Crushed Rock. Install metal inlet marker.
3-6-20.7	0.077	36"	--	60'	--	--	--	--	--	--	--	--	--	--	20	--	Replace existing culvert. Place 40 CY Crushed Bedding/Backfill. Spread 30 CY Pit-Run Base Rock over pipe as Surfacing capped with 20 CY Crushed Rock. Place 20 CY RipRap at culvert outlet as Fill Slope Stabilization/energy dissipater. Install metal inlet marker.
	0.382	18"	--	40'	--	--	--	--	--	--	--	--	--	--	--	--	Install New Pipe as marked in field. Place 15 CY Crushed Bedding/Backfill. Spread 15 CY Pit-Run Base Rock over Pipe as Surfacing capped with 10 CY Crushed Rock. Install metal inlet marker.
	0.559	18"	--	28'	--	--	--	--	--	--	--	--	--	--	--	--	Install New Pipe as marked in field. Place 10 CY Crushed Bedding/Backfill. Spread 10 CY Pit-Run Base Rock over Pipe as Surfacing capped with 10 CY Crushed Rock. Install metal inlet marker.
3-6-21.2	0.120	--	--	--	--	--	--	--	--	--	--	--	--	--	5	--	Place 5 CY RipRap at existing culvert outlet as dissipater. Install metal inlet marker.
	0.140	24"	--	34'	--	--	--	--	--	--	--	--	--	--	--	--	Replace existing culvert. Place 20 CY Crushed Bedding/Backfill. Spread 20 CY Pit-Run Base Rock over pipe as Surfacing capped with 10 CY Crushed Rock. Install metal inlet marker.
	0.290	18"	--	34'	--	--	--	--	--	--	--	--	--	--	5	--	Replace existing culvert. Place 10 CY Crushed Bedding/Backfill. Spread 10 CY Pit-Run Base Rock over pipe as Surfacing capped with 10 CY Crushed Rock. Place 5 CY RipRap at culvert outlet as dissipater. Install metal inlet marker.
3-6-21.5	0.065	18"	--	30'	--	--	--	--	--	--	--	--	--	--	--	--	Install New Pipe as marked in field. Place 10 CY Crushed Bedding/Backfill. Spread 10 CY Pit-Run Base Rock over Pipe as Surfacing capped with 10 CY Crushed Rock. Install metal inlet marker.

Gage Chart

Gage	Dec. Inches 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).

**** Corrugated plastic pipe (CPP), Type S (double wall) shall be used for culvert sizes 36" and smaller. All larger culvets shall be aluminized steel. 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.

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	
3-6-21.5 (continued)	0.160	24"	--	40'	--	--	--	--	--	--	--	--	--	--	--	--	Replace existing culvert. Place 20 CY Crushed Bedding/Backfill. Spread 20 CY Pit-Run Base Rock over pipe as Surfacing capped with 10 CY Crushed Rock. Install metal inlet marker.
	0.194	24"	--	30'	--	--	--	--	--	--	--	--	--	--	--	--	Replace existing culvert. Place 15 CY Crushed Bedding/Backfill. Spread 15 CY Pit-Run Base Rock over pipe as Surfacing capped with 10 CY Crushed Rock. Install metal inlet marker.

Gage Chart

Gage	Dec. Inches Steel	Alum.
10	.138	.135
12	.109	.105
14	.079	.075
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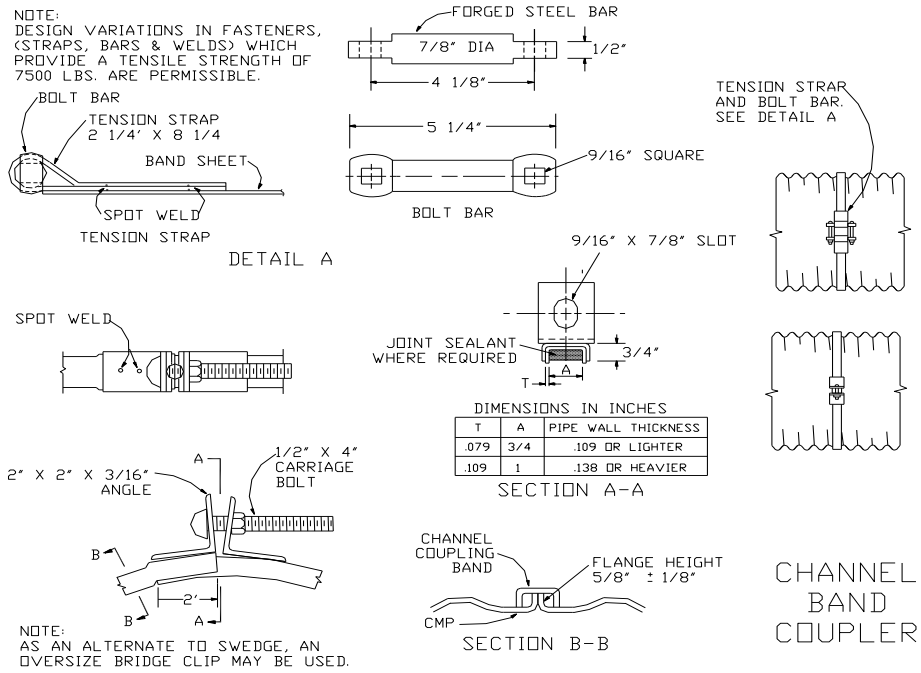
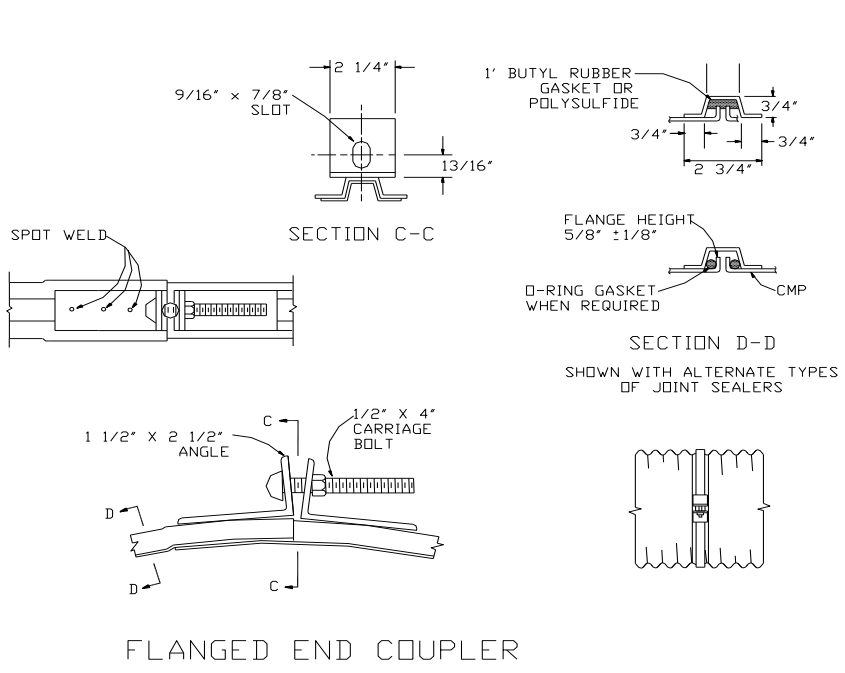
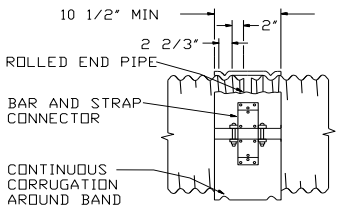
CULVERT BAND DETAILS







STANDARD CONSTRUCTION IS 1 PIECE 12" THRU 48" AND 2 PIECE 54" AND ABOVE

THE HUGGER COUPLER BAND OR AN APPROVED EQUIVALENT COUPLER BAND SHALL BE MADE OF THE SAME MATERIAL AND FINISH AS THE PIPES JOINED. THE COUPLER BANDS SHALL HAVE A MINIMUM WIDTH OF 10 1/2 INCHES AND MAY BE TWO NUMERICAL THICKNESSES LIGHTER THAN THE GAGE OR THICKNESS DESIGNATED FOR THE CONDUIT JOINED. THE BAND SHALL BE DESIGNED TO BE DRAWN TOGETHER WITH TWO 1/2 INCH BOLTS THROUGH USE OF A BAR AND STRAP SUITABLY WELDED TO THE BAND. THE BAND SHALL ENGAGE AND MESH WITH THE SECOND ANNULER CORRUGATION INWARD FROM THE END OF EACH OF THE CONDUIT SECTIONS JOINED.

GASKETS AND "HUGGER" TYPE BANDS, OR AN APPROVED EQUIVALENT COUPLER, SHALL BE INSTALLED INSTALLED ON ALL 48" AND LARGER METAL PIPES.

''HUGGER'' COUPLER BANDS

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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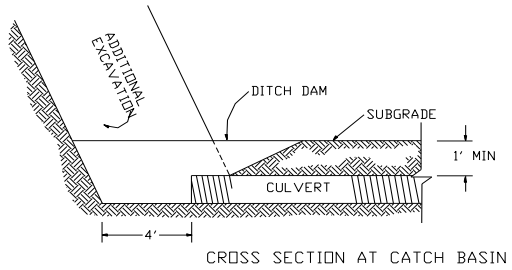
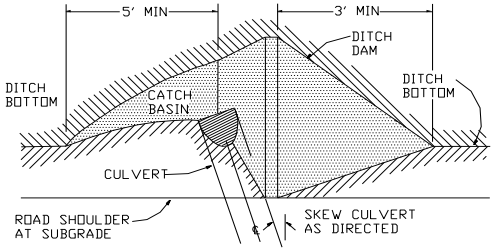
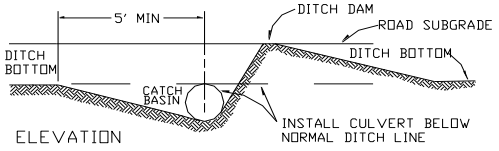
CULVERT INSTALLATION DETAILS



CROSS SECTION AT CATCH BASIN



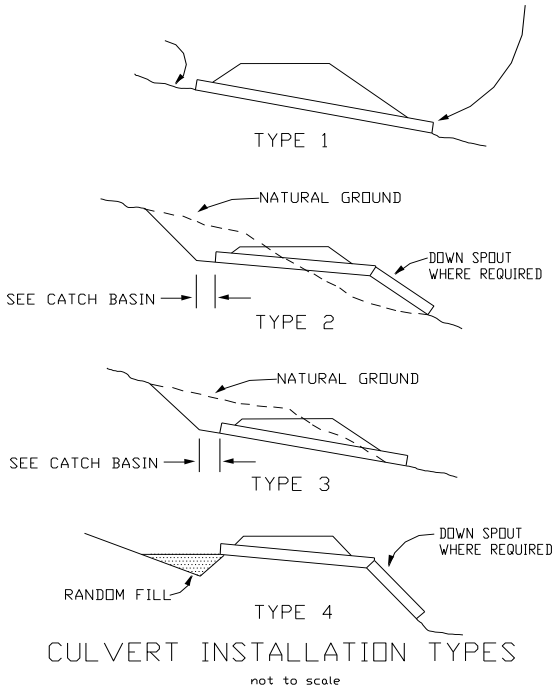
PLAN VIEW



ELEVATION

CATCH BASIN

not to scale



CULVERT INSTALLATION TYPES

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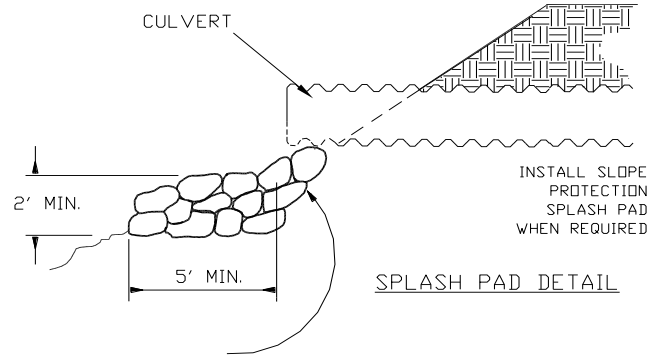
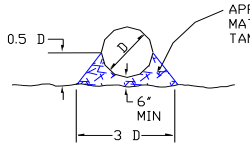


SPLASH PAD DETAIL

NOTE:

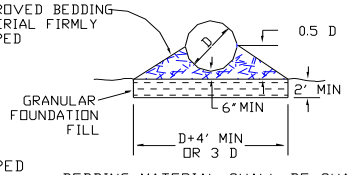
1. PLACE ROCKS UNDER THE OUTLET
2. SPLASH PAD WIDTH SHALL MEET OR EXCEED CULVERT DIAMETER

not to scale



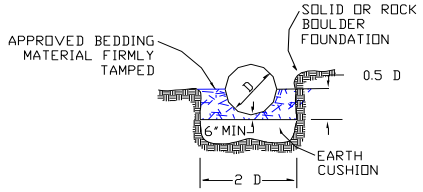
BEDDING MATERIAL SHALL BE SHAPED TO FIT THE BOTTOM OF THE CULVERT.

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

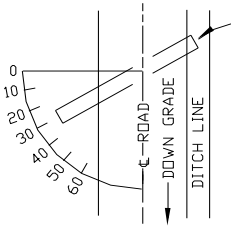


BEDDING MATERIAL SHALL BE SHAPED TO FIT THE BOTTOM OF THE CULVERT. EARTH CUSHIONING OF SILTY CLAY LOAM OR SAND MAY BE USED IF MATERIAL CAN BE PLACED IN THE DRY CONDITION. IF THE EXCAVATION IS WET, USE GRANULAR FOUNDATION FILL MATERIAL. MAINTAIN 8" MIN. DEPTH BETWEEN HIGH POINTS OF ROCKS AND/OR BOULDERS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

BEDDING OF CULVERT IN SOLID ROCK OR BOULDER FOUNDATION

BEDDING OF CULVERTS

not to scale



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:		3-6-16.2		MILEAGE:	0.000 to 1.360		
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"	Spot Rock	---	---	---	---	90
Culverts	Pit-Run	Spot/Base Rock	---	---	---	---	60
Culverts	1-1/2"-0"	Bedding/Backfill	---	---	---	---	70

ROAD SEGMENT:		3-6-17.1		MILEAGE:	0.000 to 1.568		
Application	Rock Size and Type	Location	Compacted Depth	Volume per Station/Item (CY)	Approx. Total Includes Turnouts (CY)	Curve Widening (CY)	Summary Totals
Road Rock	1-1/2"-0"	Spot Rock	---	---	---	---	200
Road Rock	1-1/2"-0"	MP. 0.000 - 0.100	4"	20	121	5	126
Culverts	Pit-Run	Spot/Base Rock	---	---	---	---	30
Culverts	1-1/2"-0"	Bedding/Backfill	---	---	---	---	30
Turnout	Pit-Run	MP 0.711	---	---	---	---	20
Ditchline Armor/Barricade	RipRap: Class 5	MP 0.968 - 0.997	---	---	---	---	50

ROAD SEGMENT:		3-6-17.2		MILEAGE:	0.000 to 0.253		
Application	Rock Size and Type	Location/Number	Compacted Depth	Volume per Station/Item (CY)	Approx. Total Includes Turnouts (CY)	Curve Widening (CY)	Summary Totals
Road Rock	Jaw-Run	Spot Rock	---	---	---	---	110
Road Rock	1-1/2"-0"	MP 0.000 - 0.253	4"	20	277	11	288
Culverts	Jaw-Run	Spot/Base Rock	---	---	---	---	20
Culverts	1-1/2"-0"	Bedding/Backfill	---	---	---	---	20
Turnaround	1-1/2"-0"	MP 0.253	---	---	---	---	20

ROAD SEGMENT:		3-6-17.5		STATION:	0+00 to 14+75		
Application	Rock Size and Type	Location/Number	Compacted Depth	Volume per Station/Item (CY)	Approx. Total (CY)	Curve Widening (CY)	Summary Totals
Culverts	Pit-Run	Spot/Base Rock	---	---	---	---	50
Culverts	1-1/2"-0"	Bedding/Backfill	---	---	---	---	50
Fill Armor Outlet/ Energy Dissipater	RipRap: Class 3	Sta. 4+56, 8+10 & 9+91	---	---	---	---	15

ROCK VOLUMES TOTALS

ROAD SEGMENT:		3-6-17.6		MILEAGE:	0.000 to 0.096		
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"	Spot Rock: MP 0.010	---	---	---	---	5
Road Rock	Jaw-Run	Spot Rock	---	---	---	---	25

ROAD SEGMENT:		3-6-17.10		MILEAGE:	0.000 - 0.085		
Application	Rock Size and Type	Location/Number	Compacted Depth	Volume per Station/Item (CY)	Approx. Total (CY)	Curve Widening (CY)	Summary Totals
Road Rock	1-1/2"-0"	Spot Rock	---	---	---	---	30

ROAD SEGMENT:		3-6-17.11		MILEAGE:	0.000 - 0.045		
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"	Spot Rock	---	---	---	---	20

ROAD SEGMENT:		3-6-18.0		MILEAGE:	0.000 to 0.317		
Application	Rock Size and Type	Location/Number	Compacted Depth	Volume per Station/Item (CY)	Approx. Total (CY)	Curve Widening (CY)	Summary Totals
Road Rock	1-1/2"-0"	Spot Rock	---	---	---	---	30
Culverts	Pit-Run	Spot/Base Rock	---	---	---	---	20
Culverts	1-1/2"-0"	Bedding/Backfill	---	---	---	---	20

ROAD SEGMENT:		3-6-18.3		MILEAGE:	0.000 to 0.130		
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"	Spot Rock	---	---	---	---	50

ROAD SEGMENT:		3-6-20.0		MILEAGE:	0.000 to 0.821		
Application	Rock Size and Type	Location	Compacted Depth	Volume per Station/Item (CY)	Approx. Total Includes Turnouts (CY)	Curve Widening (CY)	Summary Totals
Road Rock	1-1/2"-0"	Spot Rock	---	---	---	---	155
Culverts	Pit-Run	Spot/Base Rock	---	---	---	---	70
Culverts	1-1/2"-0"	Bedding/Backfill	---	---	---	---	70
Fill Armor Outlet/ Energy Dissipater	RipRap: Class 3	MP 0.490	---	---	---	---	5

ROCK VOLUMES TOTALS

ROAD SEGMENT:		3-6-20.2		MILEAGE:	0.000 to 1.372		
Application	Rock Size and Type	Location	Compacted Depth	Volume per Station/Item (CY)	Approx. Total Including Turnouts (CY)	Curve Widening (CY)	Summary Totals
Road Rock	1-1/2"-0"	Spot Rock	---	---	---	---	370
Road Rock	1-1/2"-0"	MP. 0.000 - 1.372	4"	20	1551	72	1623
Culverts	Pit-Run	Spot/Base Rock	---	---	---	---	40
Culverts	1-1/2"-0"	Bedding/Backfill	---	---	---	---	40
Turnaround	1-1/2"-0"	MP 1.280	---	---	---	---	20
Fill Armor Outlet/ Energy Dissipater	RipRap: Class 3	MP 0.937	---	---	---	---	5

ROAD SEGMENT:		3-6-20.3		MILEAGE:	0.000 - 0.560		
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"	Spot Rock	---	---	---	---	110
Road Rock	1-1/2"-0"	MP. 0.000 - 0.560	4"	20	644	30	674
Culverts	Pit-Run	Spot/Base Rock	---	---	---	---	10
Culverts	1-1/2"-0"	Bedding/Backfill	---	---	---	---	10
Turnaround	1-1/2"-0"	MP 0.560	---	---	---	---	20

ROAD SEGMENT:		3-6-20.4		MILEAGE:	0.000 to 0.700		
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"	Spot Rock	---	---	---	---	270
Culverts	Pit-Run	Spot/Base Rock	---	---	---	---	40
Culverts	1-1/2"-0"	Bedding/Backfill	---	---	---	---	40
Fill Armor Outlet/ Energy Dissipater	RipRap: Class 3	MP 0.400 & 0.583	---	---	---	---	10

ROAD SEGMENT:		3-6-20.6		MILEAGE:	0.000 to 0.180		
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"	Spot Rock	---	---	---	---	50
Culverts	Pit-Run	Spot/Base Rock	---	---	---	---	10
Culverts	1-1/2"-0"	Bedding/Backfill	---	---	---	---	10

ROCK VOLUMES TOTALS

ROAD SEGMENT:		3-6-20.7		MILEAGE:	0.000 to 0.644		
Application	Rock Size and Type	Location	Compacted Depth	Volume per Station/Item (CY)	Approx. Total Including Turnouts (CY)	Curve Widening (CY)	Summary Totals
Road Rock	1-1/2"-0"	Spot Rock	---	---	---	---	60
Culverts	Pit-Run	Spot/Base Rock	---	---	---	---	55
Culverts	1-1/2"-0"	Bedding/Backfill	---	---	---	---	65
Fill Armor Outlet/ Energy Dissipater	RipRap: Class 3	MP 0.077	---	---	---	---	20

ROAD SEGMENT:		3-6-21.2		MILEAGE:	0.000 - 0.440		
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"	Spot Rock	---	---	---	---	100
Culverts	Pit-Run	Spot/Base Rock	---	---	---	---	30
Culverts	1-1/2"-0"	Bedding/Backfill	---	---	---	---	30
Fill Armor Outlet/ Energy Dissipater	RipRap: Class 3	MP 0.120 & 0.290	---	---	---	---	10

ROAD SEGMENT:		3-6-21.3		STATION:	0+00 to 5+85		
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"	Spot Rock	---	---	---	---	20

ROAD SEGMENT:		3-6-21.5		MILEAGE:	0.000 to 0.495		
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"	Spot Rock	---	---	---	---	140
Culverts	Pit-Run	Spot/Base Rock	---	---	---	---	45
Culverts	1-1/2"-0"	Bedding/Backfill	---	---	---	---	45

ROAD SEGMENT:		3-6-21.8		MILEAGE:	0.000 to 0.073		
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"	Spot Rock	---	---	---	---	30

ROAD SEGMENT:		3-6-21.9		MILEAGE:	0.000 to 0.095		
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"	Spot Rock	---	---	---	---	30

ROAD SEGMENT:		3-6-21.10		MILEAGE:	0.000 to 0.0341		
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"	Spot Rock	---	---	---	---	30

United States Department of the Interior
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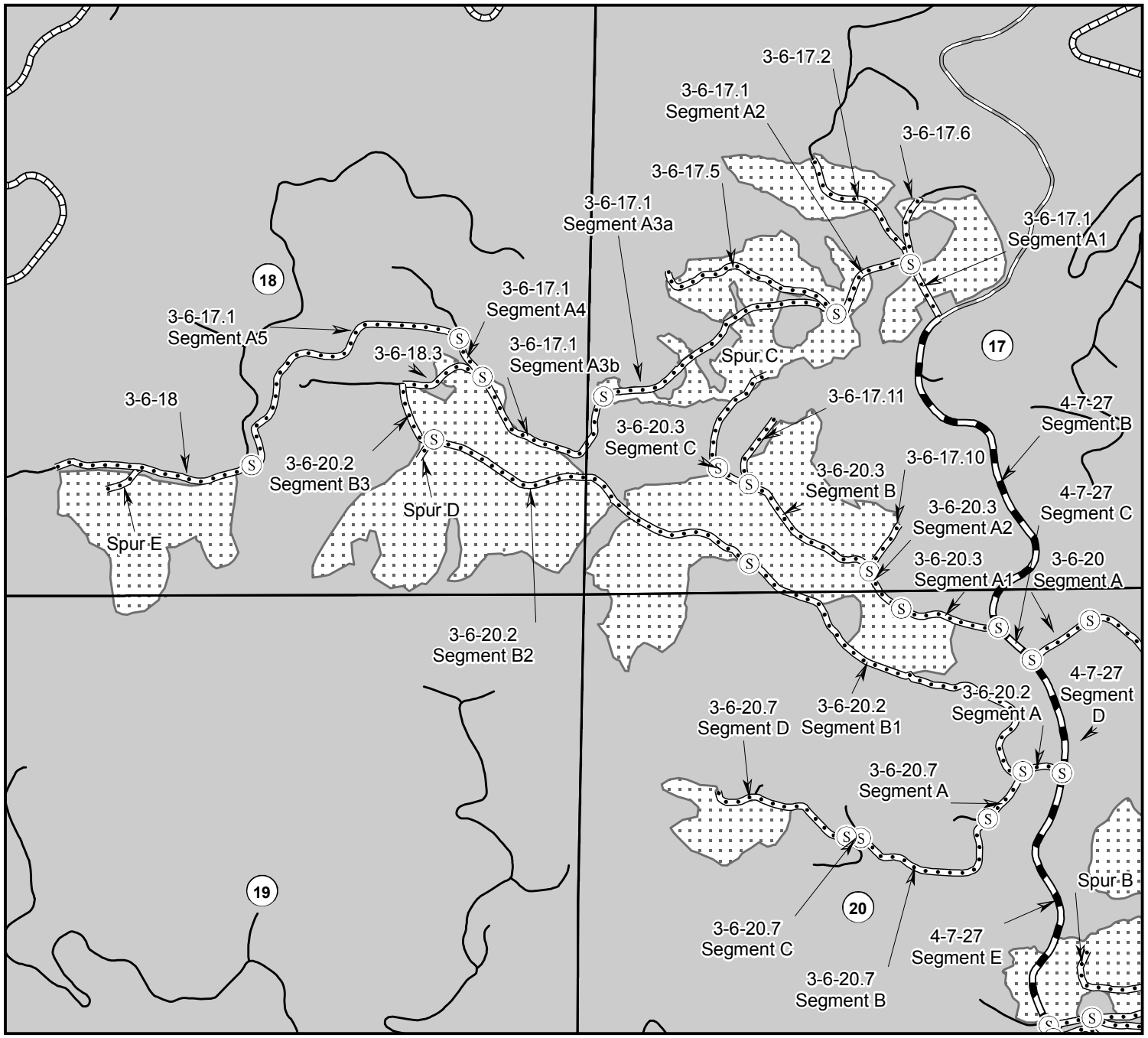
NORTHWEST OREGON DISTRICT-OREGON

MAINTENANCE AND ACCESS MAP

T. 3S. R. 6W, Section 17, 18, 19, 20, and 21 W. M.

Date: 10/21/2016



0 625 1,250 2,500 3,750 Feet

1 inch = 1,250 feet

- Segment breaks
- Bald Mountain Road
- BLM controlled road- BLM maintenance
- BLM controlled road- Purchaser maintenance
- Nestucca Access Road
- Other Roads
- Night Walker Project Area
- BLM Land

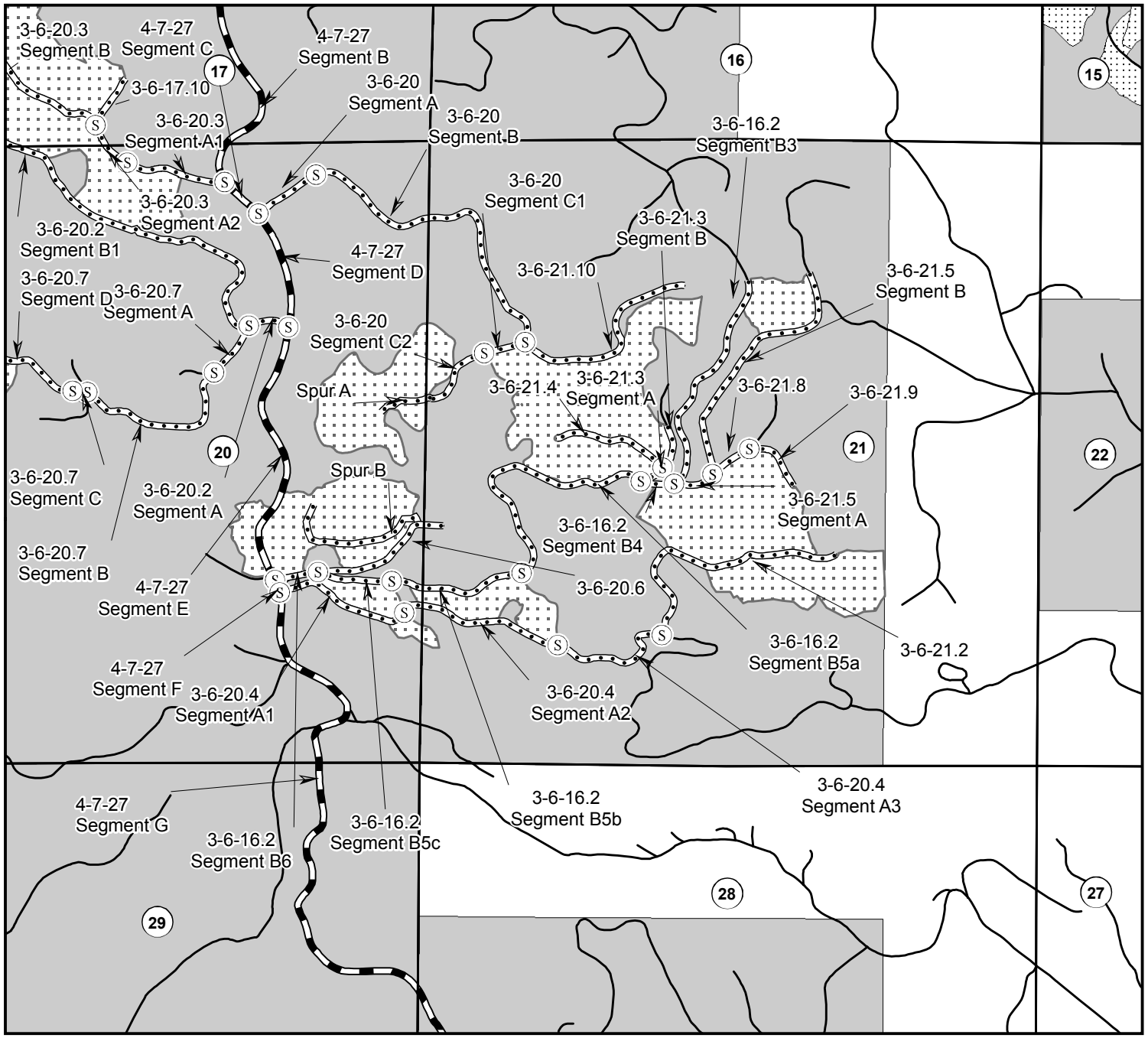
Prepared By: csween

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

MAINTENANCE AND ACCESS MAP

T. 3S. R. 6W, Section 17, 18, 19, 20, and 21 W. M.

Date: 10/21/2016



0 625 1,250 2,500 3,750 Feet

1 inch = 1,250 feet

- Segment breaks
- BLM controlled road- BLM maintenance
- BLM controlled road- Purchaser maintenance
- Other Roads
- Night Walker Project Area
- Day Walker Project Area
- BLM Land

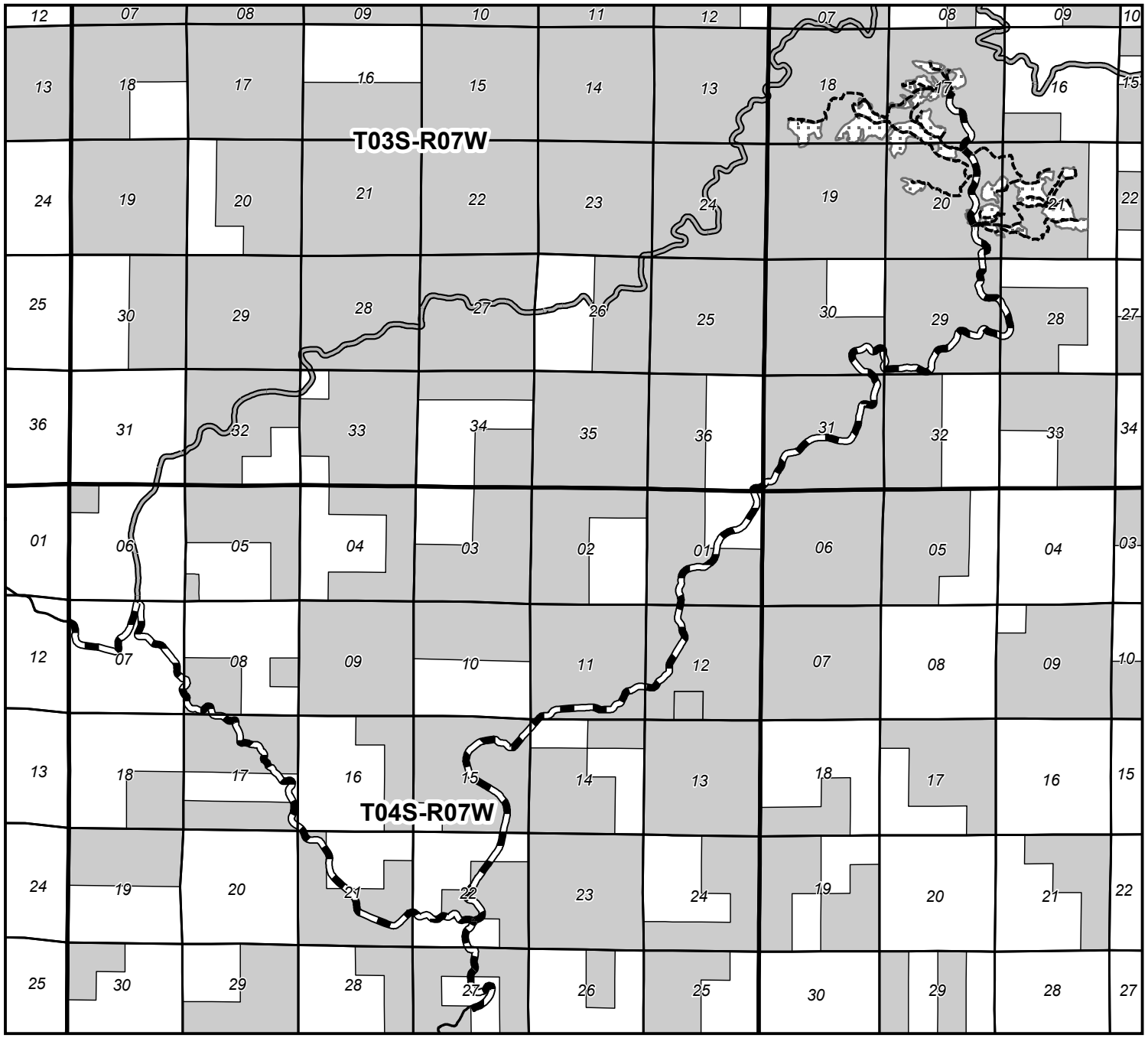
Prepared By: csween

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

MAINTENANCE AND ACCESS MAP

T. 3S. R. 6W, Section 17, 18, 19, 20, and 21 W. M.

Date: 10/21/2016



- BLM controlled road- BLM maintenance
- BLM controlled road- Purchaser maintenance
- Nestucca Access Road
- Other Roads
- Night Walker Project Area
- BLM Land

Prepared By: csween

CREATION OF COARSE WOODY DEBRIS

The Purchaser shall select and treat at total of one thousand six hundred sixty-one (1,661) trees to create Coarse Woody Debris by saw-topping, high-girdling, basal-girdling or felling; treated trees will be marked with aluminum tags and flagging. The Purchaser shall record treatment data on the Wildlife Tree Data Recording Forms (Illustration #4).

Treatment of trees to create Coarse Woody Debris within any given unit shall not be started until all yarding operations within that unit have been completed. The Purchaser must provide a proposed schedule of work to the Authorized Officer at least one week prior to commencing Coarse Woody Debris Creation activities.

Course Woody Debris Creation per Timber Sale Unit

Exhibit G Unit Number	Acres	Total Trees	Saw-Top	High Girdle	Basal Girdle	Fell
1	25	108	34	32	32	10
2A	14	111	28	28	28	27
2B	40	264	76	76	76	36
3	11	58	17	17	16	8
5	14	84	21	21	21	21
6A	16	46	12	12	11	11
6B	31	221	62	61	61	37
6C	18	119	35	34	34	16
7	10	35	11	7	7	0
8	17	116	29	29	29	29
9A	12	72	19	19	17	11
9B	13	26	7	7	6	0
10	7	8	8	0	0	0
11	33	184	46	46	46	46
12	5	28	7	7	7	7
13A	8	7	4	3	0	0
13B	26	196	50	50	49	47
Totals	**300**	**1661**	**466**	**449**	**440**	**306**

SPECIFIC TASKS

1. **Tree Selection** – Trees to be treated shall be selected by the Purchaser according to the following guidelines.

   a. **Saw-topping and High-girdling:** When possible, healthy appearing Douglas-fir trees with live crown ratios generally **greater** than thirty (30) percent and with **average or larger** crown spread shall be selected.

   b. **Basal-girdling and Tree felling:** When possible Douglas-fir trees with live crown ratios generally **less** than thirty (30) percent and **smaller** than average crown spread shall be selected.

   c. Selected trees shall be evenly distributed and range in size from 22-32 inches DBH, leaving the largest dominant tree within any given area.

   d. Treatment types and selected trees shall be scattered uniformly throughout the units and selected both singly with at 75% being in small clumps of 3-5 trees.

   e. No trees marked with any existing metal tags shall be selected for treatment.

   f. No trees with nests or any nest-like structures of any birds or mammals, or trees with defects such as cavities, platforms, mistletoe infection and dead, or forked or broken tops shall be selected.

   g. Selected trees shall generally not be located within approximately one hundred fifty (150) feet of a drivable road or a property line boundary where BLM land abuts non-federal ownership.

   h. Specific individual trees may be selected by the BLM for treatment, which will be clearly identified prior to treatment.

2. **Treatment of Selected Trees by Saw-Topping**

   a. Treatment will require climbing and topping the tree 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; equally vary the treatment heights within this range (See Illustration 1). Topping will be done with power tools (ie. chainsaws).

   b. The Purchaser shall cut several V-type notches which are a minimum of six (6) cuts into the sawn top surface of the tree, each a minimum of six (6) inches deep.

   c. To the extent practicable, the Purchaser shall retain all green limbs and the largest dead limbs on the treated trees during the climbing and topping operations.

   d. Tree tops shall be completely severed from the tree and fall completely to the ground inside unit boundaries.

   e. Directionally fall tops in order to not damage existing snags and decay class 3 and 4 down wood larger than twenty-four (24) inches in diameter, 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 BLM road spurs.

f. The Purchaser shall tie two pieces of flagging of a color approved by the Authorized Officer around the bole of each treated tree, one at a height of approximately twenty to thirty (20-30) feet above the ground and another at four and one-half (4.5) feet above the ground (measured from the uphill side of the tree).

3. **Treatment of Selected Trees by High-Girdling** – within live crown

a. Treatment will require climbing and girdling trees within the live crown, which shall occur at a point where approximately twenty to fifty (20-50) percent of the live crown remains below the point of girdling, at a height of at least sixty (60) feet above the ground; equally vary the treatment heights within this range. Girdling may be done with a hand tool or power tool and will consist of removing all bark and cambium in a ten to twelve (10-12) inch band completely around the main stem of the tree. (See Illustration #3)

b. Tool cuts must not penetrate more than one-half (½) inch into the wood of high-girdled trees.

c. 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 and high-girdling operations.

d. The Purchaser shall tie three pieces of flagging of a color approved by the Authorized Officer to each treated tree. One flagging shall be tied on a branch visible from the ground near the point of girdle, a second flag shall be tied around the bole of the tree at a height of approximately twenty to thirty (20-30) feet above the ground and a third flag at four and one-half (4.5) feet above the ground (measured from the uphill side of the tree). The two highest flags shall extend at least four (4) feet from the knot.

4. **Treatment of Selected Trees by Basal-Girdling**

a. Basal-girdling will be accomplished by making three (3) parallel cuts around the tree; power tools may be used. Each cut must connect with itself completely around the tree and penetrate through the cambium layer into the wood at least one-half (½) inch, but not more than one and one-half (1½) inches. The distance between the top cut and the bottom cut shall not exceed twelve (12) inches. Trees shall be girdled between three (3) and four (4) feet above ground level measured on the uphill side of the tree. (See Illustration #2)

b. The Purchaser shall tie a piece of flagging of a color approved by the Authorized Officer around the bole of each treated tree four and one-half (4.5) feet above the ground (measured from the uphill side of the tree).

5. **Treatment of Selected Trees by Felling**

a. Fallen trees shall be completely severed from the stump and fall completely to the ground.

b. Stumps shall be no more than four and one-half (4.5) feet tall measured on the uphill side.

c. No part of a fallen tree shall rest outside of unit boundaries, or within one hundred fifty (150) feet of any open (unblocked) road as determined by the Authorized Officer.

d. Directionally fall trees in order to not damage existing snags, decay class three (3) and four (4) down wood larger than twenty-four (24) inches in diameter, under-story conifers, any tree containing a suspected nest of a bird or mammal, or any green tree with defect such as multiple tops, hollow cavities, or decay.

6. **Documentation of Treated Trees**

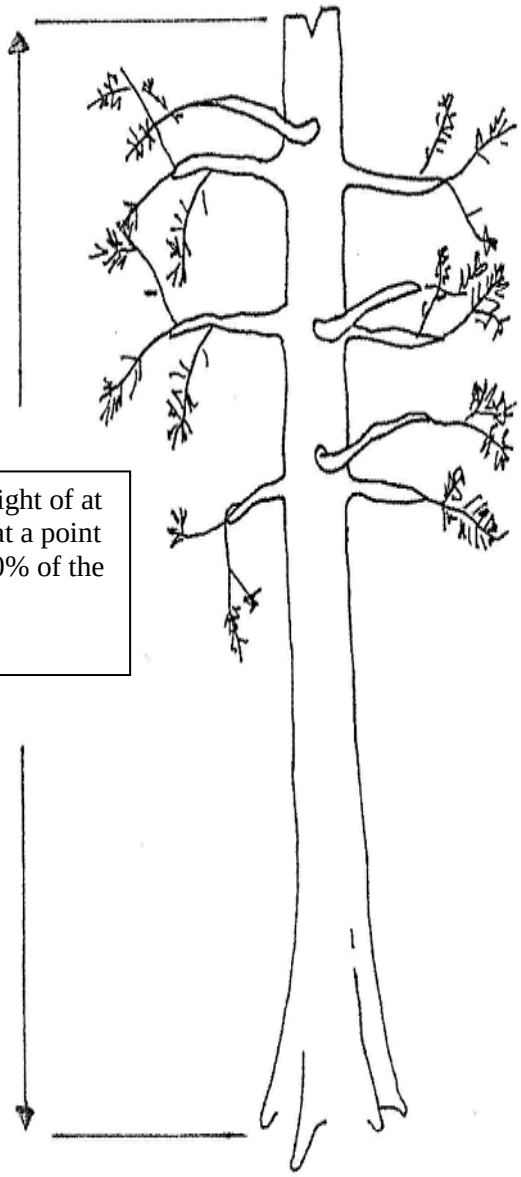
a. Purchaser shall record UTM coordinates for all treated trees using their GPS unit as well as recording them on the Wildlife Tree Data Recording Forms. Use NAD83 datum, zone 10. If acceptable GPS satellite coverage cannot be obtained at sites then indicate so on the recording form.

b. At one week intervals (or as established at the pre-work conference), the Purchaser shall provide to the Authorized Officer: Wildlife Tree Data Recording Forms and the UTM coordinates for treated trees in a digital format for work completed in the previous week.

c. All information recorded on the Wildlife Tree Data Recording Forms shall be legible, clear and reproducible on a black and white copy machine. All submissions shall be reviewed to ensure completeness, legibility, accuracy and consistency in style before submitting to the Authorized Officer.

ILLUSTRATION #1 – Saw-topping within the Live Crown

Cut a V-type notch or a "King's Crown" (with a minimum of 6 cuts) into the sawn top surface, a minimum of 6 inches deep, to provide for a greater potential of future decay in the treetop. To the extent practicable, retain all green limbs and the largest dead limbs on the treated trees during the climbing and topping operation.



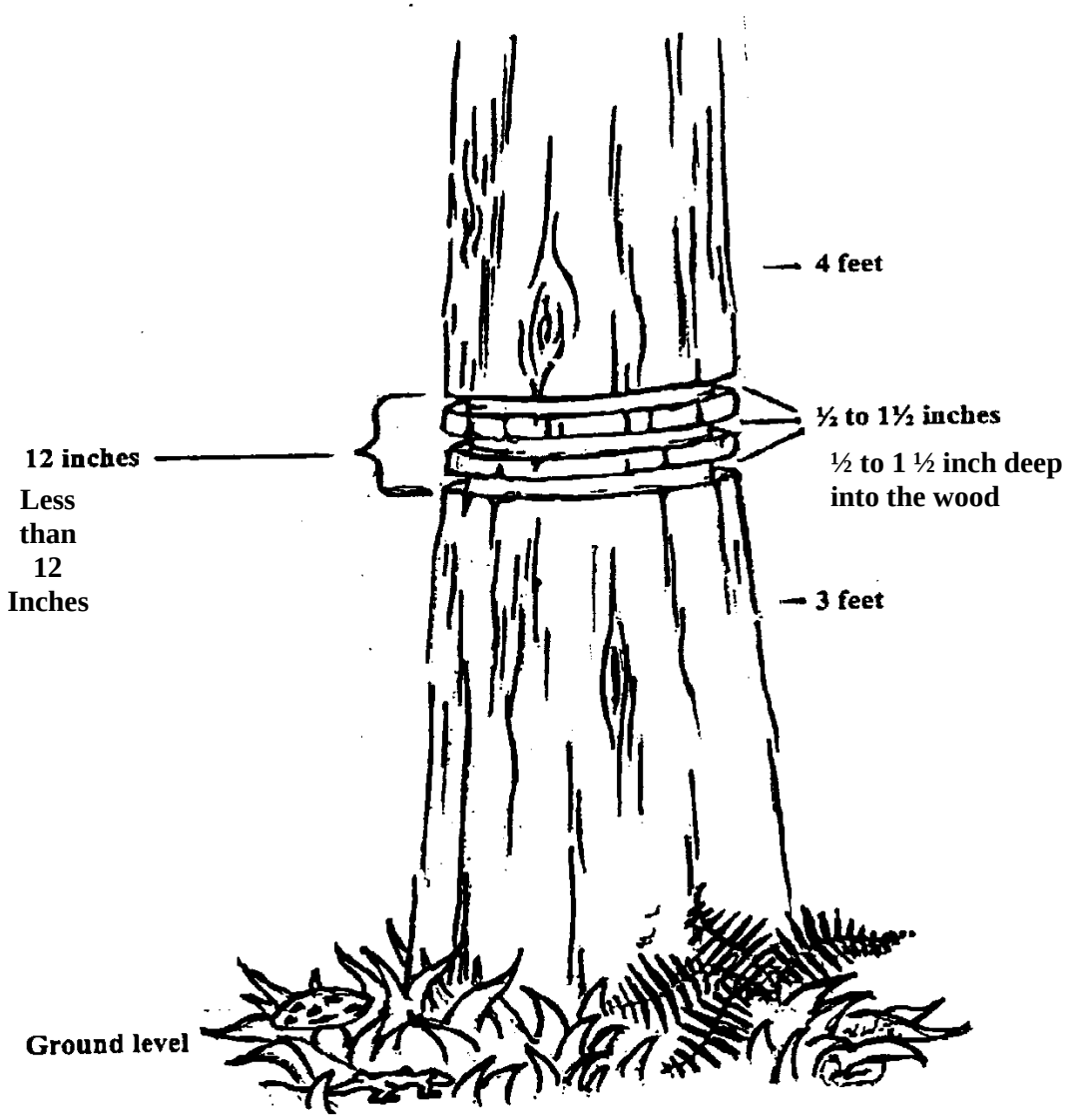
The tree shall be topped at a height of at least 60 feet above the ground at a point where approximately 20% to 50% of the live crown remains.

Tie two pieces of flagging around the bole of each saw-topped tree, one at a height of approximately 20-30 feet and one 4.5 feet above the ground. A small aluminum tag is nailed to the base of the tree (uphill side).

Basal-Girdling

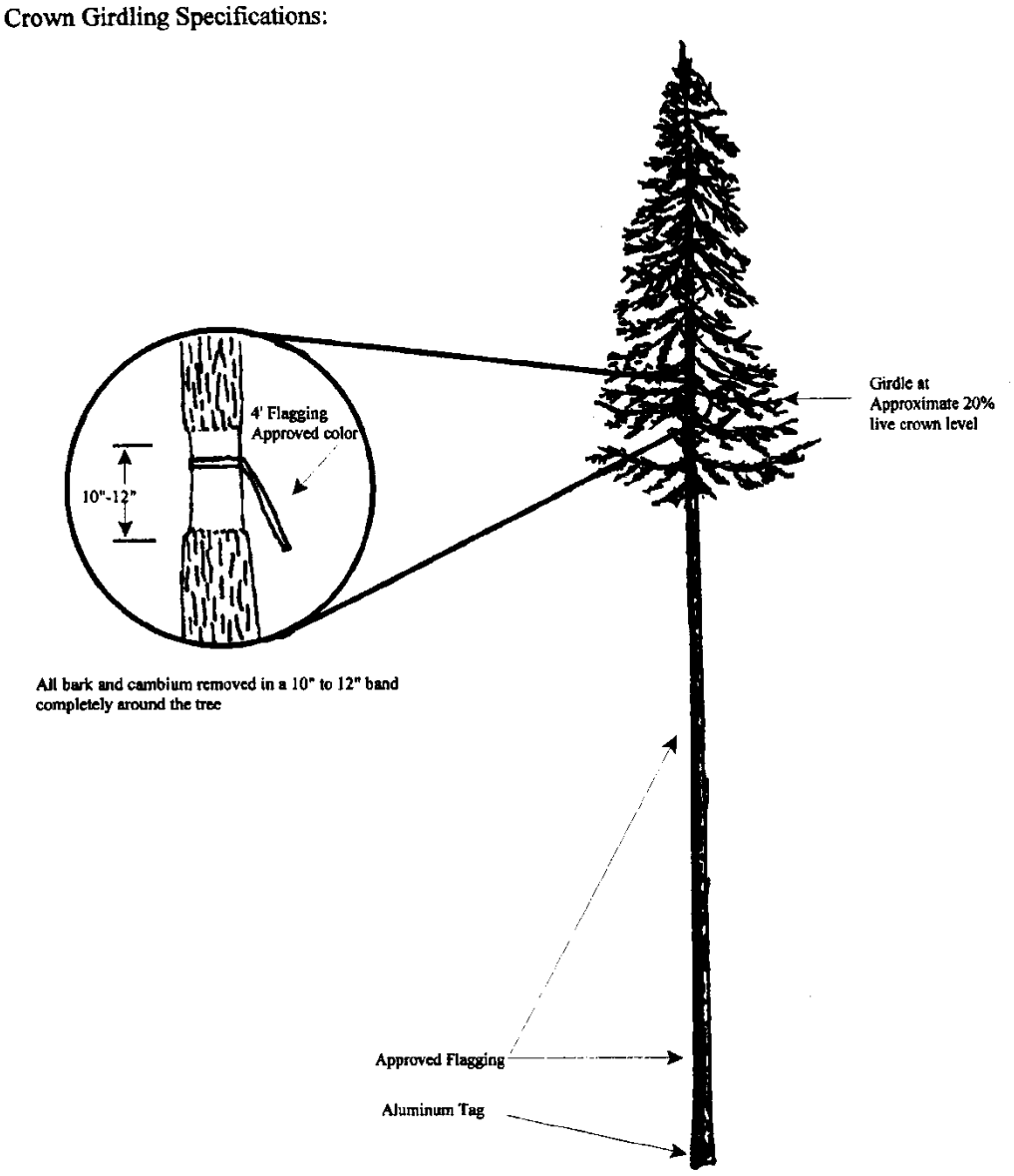
ILLUSTRATION #2

Girdling example: make three (3) parallel unbroken cuts around the tree. The distance between the top and the bottom of the cut shall not exceed twelve iinches. Cuts must penetrate at least ½ iinch, but not more than 1½ inches into the wood of the tree. Trees shall be girdled between 3 and 4 feeet from the ground.



Tie one piece of flagging around the bole of each basal-girdled tree 4.5 feet above the ground. A small aluminum tag is nailed to the base of the tree (up-hill side).

Illustration #3 – High-Girdling within the Live Crown



To the extent practicable, retain all green limbs and the largest dead limbs on the treated trees below the point of treatment. Treatment heights shall be greater than or equal to 60 feet above the ground at a point in the live crown where 20% to 50% of live branches remain. Tie three pieces of flagging around the bole of each high-girdled tree, one at the point of girdling, one at a height of approximately 20-30 feet and one 4.5 feet above the ground. A small aluminum tag is nailed to the base of the tree (uphill side).

ILLUSTRATION #4 Wildlife Tree Data Recording Form Date _____ Page _____

UNIT # _____ Name(s) _____

Tree #	Treatment Type[1]	DBH [2]	UTM [3](E)	UTM [3](N)	Treatment Diameter	Initials	Remarks

[1] **Treatment Types**: **ST** = Saw-top; **HG** = High-Girdle; **BG** = Basal-Girdle; **F** = Fell.
[2] **DBH** = Diameter of treated tree measured at 4.5 feet above the ground on the uphill side to the nearest one (1) inch.
[3] **UTM =** Universal Transverse Mercat*or Coordinates (GPS) in NAD 83 datum*

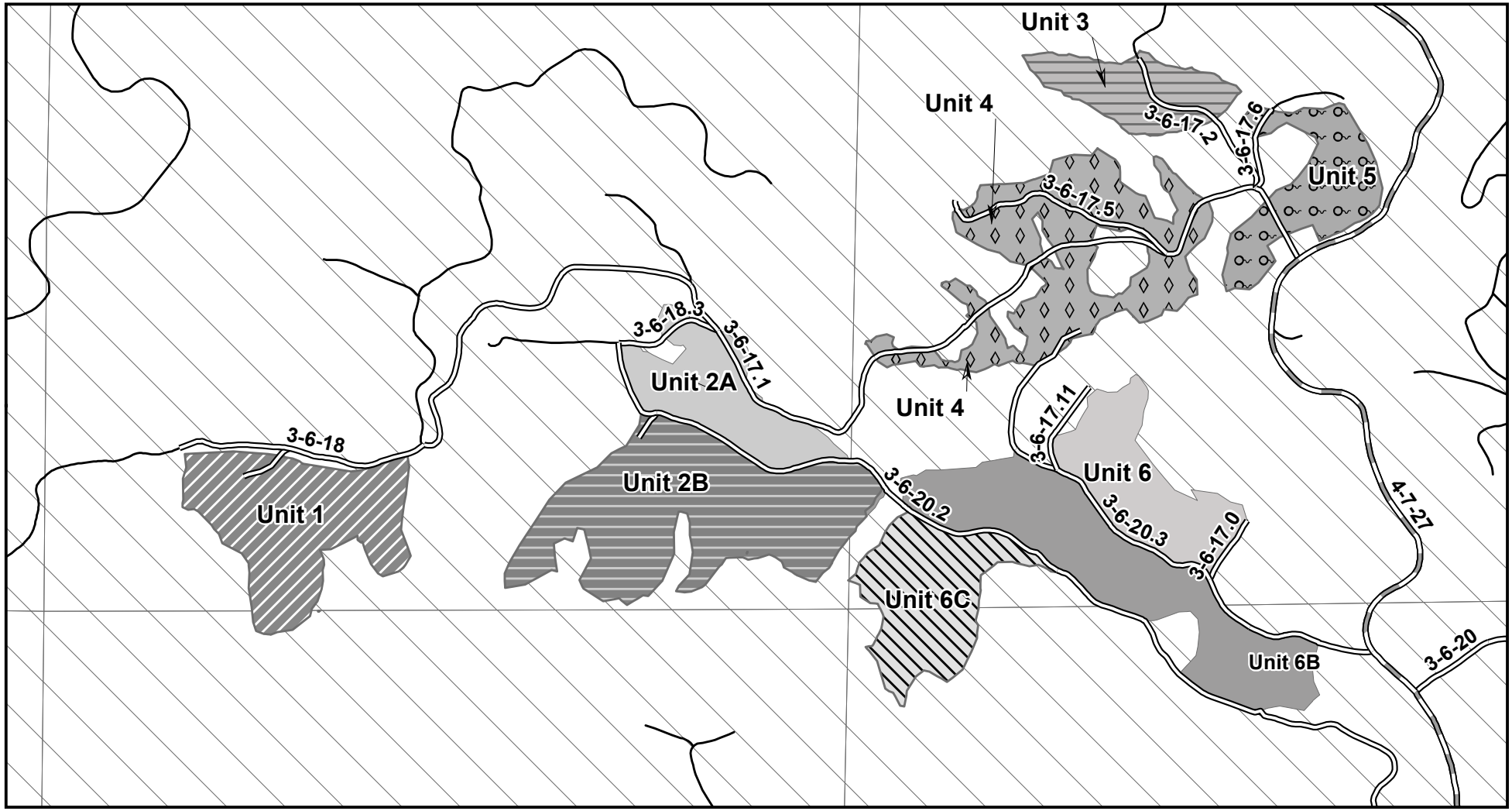
United States Department of the Interior
BUREAU OF LAND MANAGEMENT
NORTHWEST OREGON DISTRICT-OREGON

COARSE WOODY DEBRIS CREATION MAP

T. 3S. R. 6W, Section 17, 18, 19, 20, and 21 W. M.

Contract No. ORN04-TS-2017.0401
Night Walker Timber Sale
Exhibit G

Date: 11/10/2016



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

1 inch = 1,000 feet

Coarse Woody Debris Creation Units

- 1
- 2A
- 2B
- 3
- 4
- 5
- 6A
- 6B
- 6C
- Project_Roads
- Bald Mountain Access Road
- Other Roads
- BLM Land

Note: Boundaries of partial cut units and rights-of-ways (ROW) are painted orange and posted. Partial cut acres do not include existing roads or previously harvested patch cuts. Acres shown on Exhibit A for partial cut have been computed using a Trimble Geo 6000 GPS Unit.

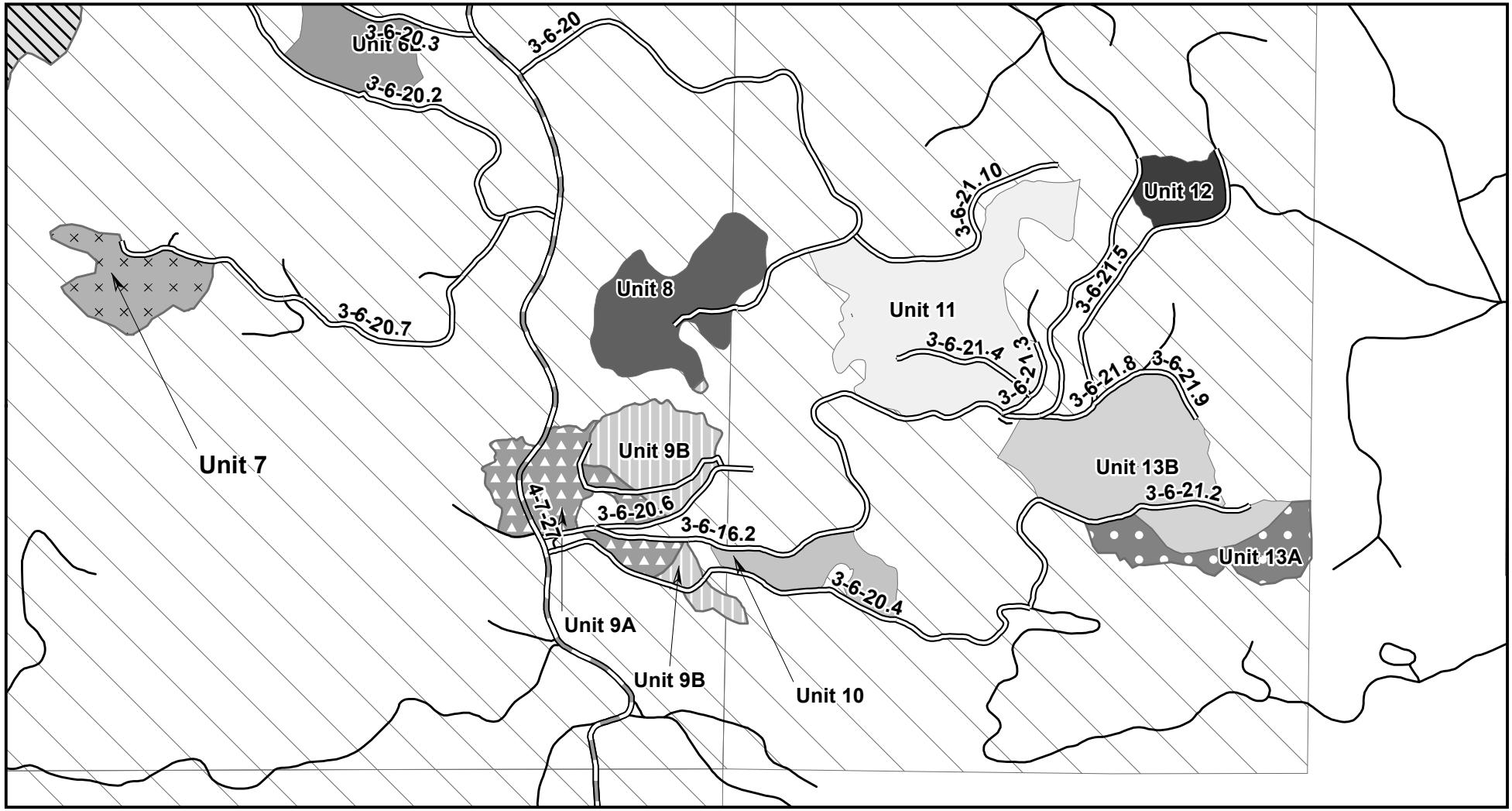
Prepared By: csween

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

COARSE WOODY DEBRIS CREATION MAP

T. 3S. R. 6W, Section 17, 18, 19, 20, and 21 W. M.

Date: 11/10/2016



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

1 inch = 1,000 feet

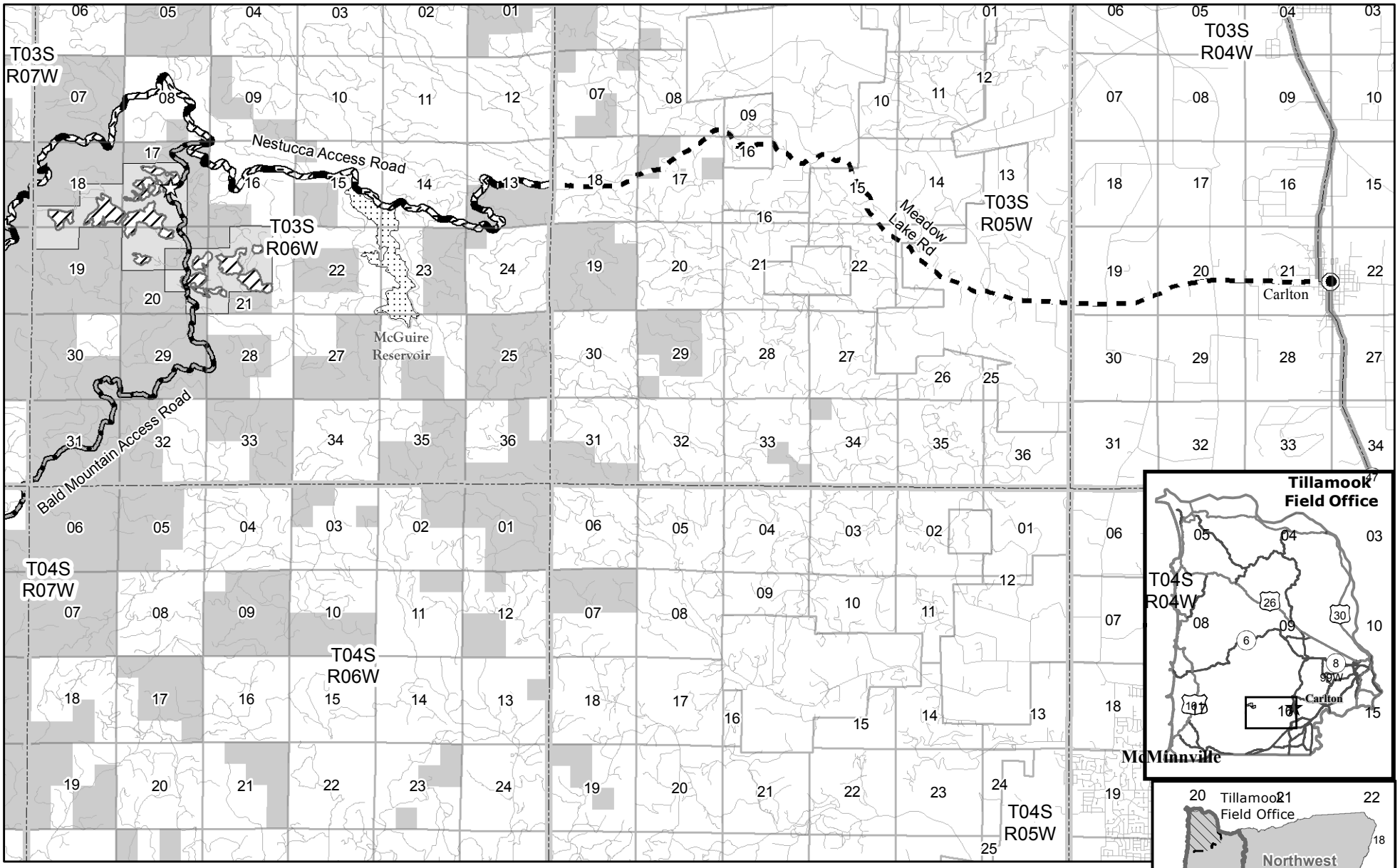
Coarse Woody Debris Creation Units

- 6B
- 6C
- 7
- 8
- 9A
- 9B
- 10
- 11
- 12
- 13A
- 13B
- Project_Roads
- Bald Mountain Access Road
- Other Roads
- BLM Land

Prepared By: csween

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
SALEM DISTRICT-OREGON
T. 3S. R. 6W, Sections 15, 22, 23, 25 and 26 W. M.

Contract No. ORN04-TS-2017.0401
Night Walker Timber Sale
Project Location Map



csween Date: 11/7/2016

Prospectus

Appraisal Method : (16' MBF)

Species	Trees	Net Volume 16' MBF	Net Volume 32' MBF	Net Volume CCF
Douglas-fir	18,771	6,119	4,922	
Western Hemlock	14	2	2	
Total	**18,785**	**6,121**	**4,924**	

All Species

Gross Volume	Number Trees	Avg bf Volume Per Tree	DBH	Gross Merch Volume	Merch Logs	Avg bf Gross Merch Log
6,491	18,785	345	16.6	6,404	86,779	74

Merch Logs	Cull Logs	Total Logs	Logs per Tree	Net Volume	Gross Volume	Recovery
86,779	2,262	89,041	4.7	6,121	6,491	94 %

Douglas-fir

Gross Volume	Number Trees	Avg bf Volume Per Tree	DBH	Gross Merch Volume	Merch Logs	Avg bf Gross Merch Log
6,489	18,771	345	16.7	6,402	86,740	74

Merch Logs	Cull Logs	Total Logs	Logs per Tree	Net Volume	Gross Volume	Recovery
86,740	2,261	89,001	4.7	6,119	6,489	94 %

Cutting Areas

Unit	Regen Acres	Partial Cut Acres	Right Of Way Acres	Total Acres
1		25		25
2		54		54
3		11		11
4		30		30
5		14		14
6		65		65
7		10		10
8		17		17
9		25		25
10		7		7
11		33		33
12		5		5
13		34		34
RW			3	3
Totals :		**330**	**3**	**333**

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Stumpage Summary

Stumpage Computation (16' MBF)

Species	Trees	Net Volume	Pond Value	(-) Profit & Risk	(-) Logging Cost	(+) Marginal Log Value	(-) Back Off	Appraised Price	Appraised Value
DF	18,771	6,119	$ 544.31	$ 43.55	$ 266.97			$ 233.80	$ 1,430,622.20
WH	14	2	$ 408.82	$ 32.71	$ 266.97			$ 109.10	$ 218.20
Totals	**18,785**	**6,121**							**$ 1,430,840.40**

Log Code by Percent

Species	Code #1	Code #2	Code #3	Code #4	Code #5	Code #6
Douglas-fir				61.0	36.0	3.0
Western Hemlock				37.0	50.0	13.0

Marginal Log Volume

Species	Grade #7	Grade #8
Douglas-fir		
Western Hemlock		

Appraised By : Bryant, William **Date :** 11/07/2016

Area Approval By : Bryant, William **Date :** 11/07/2016

District Approval By : **Date :**

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Timber - Sale - Summary

Legal Description

Forest Type	Township	Range	Section	Subdivision
O&C	T3S	R6W	17	SW1/4 NE1/4, S1/2 NW1/4, SW1/4, NW1/4 SE1/4
O&C	T3S	R6W	18	S1/2 SW1/4, SE1/4
O&C	T3S	R6W	19	NE1/4 NW1/4
O&C	T3S	R6W	20	NW1/4 NE1/4, SE1/4 NE1/4, NW1/4, N1/2 SE1/4, SE1/4 SE1/4
O&C	T3S	R6W	21	W1/2 NE1/4, S1/2 NW1/4, N1/2 SW1/4, SW1/4 SW1/4, W1/2 SE1/4

Cutting Volume (16' MBF)

Unit	DF	WH							Total	Regen	Partial	ROW
1	489								489	0	25	0
2	1,057								1,057	0	54	0
3	215								215	0	11	0
4	130								130	0	30	0
5	274								274	0	14	0
6	1,274								1,274	0	65	0
7	196								196	0	10	0
8	333								333	0	17	0
9	489								489	0	25	0
10	137								137	0	7	0
11	646								646	0	33	0
12	98								98	0	5	0
13	666								666	0	34	0
RW	115	2							117	0	0	3
Totals	**6,119**	**2**							**6,121**	**0**	**330**	**3**

Logging Costs per 16' MBF

Stump to Truck	$	134.58
Transportation	$	37.97
Road Construction	$	62.65
Road Amortization	$	0.00
Road Maintenance	$	17.06

Other Allowances :

Equipment Washing	$ 0.15
Landing Clean-up	$ 0.36
Misc	$ 14.20
Total Other Allowances :	**$ 14.70**

Total Logging Costs per 16' MBF	$	**266.97**

Utilization Centers

Center #1 : Willamina	36	Miles
Center #1 : Willamina	36	Miles
Weighted distance to Utilization Centers	36	

Length of Contract

Cutting and Removal Time	36	Months
Personal Property Removal Time	1	Months

Profit & Risk

Total Profit & Risk		8 %
Basic Profit & Risk	8 % + Additional Risk	0 %
Back Off		0 %

Tract Features

Avg Log	Douglas-fir : 74 bf	All : 74 bf
Recovery	Douglas-fir : 94 %	All : 94 %
Salvage	Douglas-fir : 0 %	All : 0 %

Avg Volume (16' MBF per Acre)	18
Avg Yarding Slope	35 %
Avg Yarding Distance (feet)	400
Avg Age	80
Volume Cable	49 %
Volume Ground	51 %
Volume Aerial	0 %
Road Construction Stations	31.33
Road Improvement Stations	0.00
Road Renovation Stations	535.88
Road Decomission Stations	55.88

Cruise

Cruised By	Bill Bryant
Date	12/01/2014
Type of Cruise	VP 100%
County, State	Columbia, OR

Net Volume

Green (16' MBF)	6,121
Salvage (16' MBF)	0
Douglas-fir Peeler	0
Export Volume	0
Scaling Allowance ($0.00 per 16' MBF)	$0.00