

PROSPECTUS

SCALE SALE LOCKED GATE

Sale Date: August 20, 2019

(2) Roseburg Sale No.: 2019.0006
Douglas County, Oregon: O&C: Oral Auction

Sale Name: Harvest Moon
Bid Deposit Required: \$92,100.00

All timber designated for cutting on:

NW¼; N½SW¼; SW¼SW¼
E½; N½NW¼; SE¼NW¼; E½SW¼

Sec. 5, T. 22 S., R. 6 W., Willamette Meridian
Sec. 21, T. 22 S., R. 6 W., Willamette Meridian

Approx. Number Merch. Trees	Est. Vol. MBF 32' Log	Species	Est. Vol. MBF 16' Log	Appraised Price Per MBF	Est. Volume Times Appraised Price
29,623	5,239	Douglas-fir	6,461	\$134.30	\$867,712.30
2,812	801	Grand Fir	988	\$52.20	\$51,573.60
25	5	Western Hemlock	7	\$32.20 *	\$225.40
9	2	Incense-cedar	2	\$322.50	\$645.00
8	1	Western Redcedar	2	\$58.50	\$117.00
32,477	6,048		7,460		\$920,273.30

* BLM appraised price per MBF is a minimum stumpage value.

THE VOLUMES LISTED herein are estimates only, 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 total purchase price, without regard to the amount bid per unit, even though quantity of timber actually cut or removed or designated for taking is more or less than the estimated volume or quantity so listed.

APPRAISED PRICES are determined by analytical appraisal methods unless otherwise noted on individual timber sale notices.

LOG EXPORT AND SUBSTITUTION RESTRICTIONS:

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 5424 as amended.

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.

CRUISE INFORMATION:

For all Harvest Areas: The timber volumes for all tree species are based on a variable plot cruise, containing a total of 132 plots and 158 randomly selected sample trees. Plots were measured using a 20 basal area factor

(BAF). The volume of the randomly selected sample trees has been expanded to a total sale volume. A map showing the location of the plots and sample trees is available at the Roseburg District Office.

With respect to merchantable trees of all species: the average tree is 14.6 inches D.B.H.O.B., the average log contains 56 bd. ft., the total gross volume is approximately 8,091 MBF and 92% recovery is expected.

CUTTING AREA: An area of approximately 135 acres distributed throughout 2 units will be regeneration harvested, an area of approximately 120 acres distributed throughout 3 units will be thinned, and rights-of-ways totaling approximately 2 acres will be clearcut.

TIMBER ACREAGE:

Area 1: 114 acres	Area 2: 120 acres	Area 3: 21 acres	R/W: 2 acres
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ACCESS: Access to the sale area is provided by Government, County, and privately controlled roads. Road use fees required to be paid to Seneca Jones Timber Company, LLC are estimated at \$10,985.91; the final amount due will be adjusted based on the final scaled timber volume.

DIRECTIONS TO SALE AREA: From Roseburg, proceed north on Interstate 5 to exit 150. Exit Interstate 5 and proceed north on Highway 99 to Drain. In Drain, turn west on Highway 38 towards Elkton and proceed approximately 4 miles to Putnam Valley Road and follow the Exhibit D map to the sale area.

ROAD MAINTENANCE: Rockwear and maintenance fees required to be paid to the BLM are estimated at \$21,396.24; the final amount due will be adjusted based on the final scaled timber volume.

ROAD CONSTRUCTION: Estimates include the following: construct 12+15 stations, renovate 334+80 stations, and decommission 3+35 stations of road. Additional information is available in Exhibit C and Exhibit D of the Timber Sale Contract.

DURATION OF CONTRACT will be 36 months for cutting and removal of timber. The contract will contain SPECIAL PROVISIONS regarding: logging; road construction, renovation, maintenance, and use; environmental protection; fire prevention; slash disposal; snag creation; optional contributions; log exports; safety.

ADDITIONAL INFORMATION: This prospectus includes maps and tables that cannot be made Section 508 compliant. For help with its data or information, please contact the Roseburg District Office at 541-440-4930.

NOTES:

1. 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 in accordance with management direction established in the ROD and RMP.
2. Seasonal restrictions apply to this sale regarding logging operations, use of native surfaced roads, road work and subsoiling. Refer to Sections 42(A)(5)(b), 42(A)(6)(b), 42(A)(7)(b), 42(A)(12), 42(A)(13), 42(A)(19), 42(B)(2), 42(C)(3)(c), and 42(C)(4)(d) for details. A "seasonal restriction matrix" is included with this prospectus to serve as a guide in planning and scheduling operations for each harvest unit.
3. A license agreement with Seneca Jones Timber Company LLC is required. The terms and conditions of the license agreement are available for inspection at the Roseburg District Office.

4. This contract contains regeneration and thinning harvest areas. Refer to Exhibit A to see which areas are scheduled for regeneration or thinning harvest.

For the thinning harvest areas, this contract contains provisions for the sale and removal of additional timber necessary to facilitate safe and efficient Purchaser operations. It is estimated that approximately 160 MBF of such additional timber would be removed under the contract, but is not included in the advertised sale volume.

Portions of Regeneration Harvest Area 2 were severely impacted by the winter storms of 2019 and contain considerable "snowdown" timber. For the portions of this unit designated for cable yarding, this contract contains provisions requiring the cutting and removal of timber to be completed earlier than the cutting and removal rights accorded under Section 4 of the contract in order to maximize recovery of downed timber. Refer to Section 42(A)(18) for details.

5. Slash disposal requirements consist of the following: machine piling, covering and burning slash and debris within a fifty (50) foot radius of landings (approximately 93 landings). The Purchaser will have the option to assist in burning or to make a contribution to the Bureau of Land Management in lieu thereof. Refer to Sections 42(E) and 42(G)(1) for details.
6. Girdling (or felling) of approximately 948 trees in the Harvest Land Base and Riparian Reserve to create snags (or down woody material) after completion of logging operations will be required. The Purchaser will have the option to complete the required snag creation work or to make a contribution to the Bureau of Land Management in lieu thereof. Refer to Sections 42(F) and 42(G)(2) for details.
7. As appraised, approximately 73% of the sale area is available for wet season operations, including all of Harvest Area 3 and portions of Harvest Areas 1 and 2. Wet season operations may be maximized at the Purchaser's expense by:
 - Cable yarding portions of Harvest Areas 1 and 2 to the existing rocked roads approved for wet season operations, instead of ground-based yarding (approximately 67 additional acres);In order to maximize wet season operations, the Authorized Officer must approve the logging plan, and a contract modification may be required.

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

Section 41. TIMBER RESERVED FROM CUTTING -The following timber in the Contract Area is hereby reserved from cutting and removal under the terms of this contract and is retained as the property of the Government.

- (a) All orange painted and posted trees (standing and downed) which are on or mark the boundaries of the Reserve Areas, as shown on Exhibit A.
- (b) All retention trees (standing and downed) marked with orange paint above and below stump height within Harvest Areas 1, 2, and 3.
- (c) All timber (standing and downed, painted and not painted) located within the 2019 Riparian Snowdown portion of Harvest Unit 2, as shown on Exhibit A. These areas are comprised of the outer zone of the Riparian Reserve Land Use Allocation and had been targeted for riparian thinning prior to the 2019 winter storms; however, following the 2019 snow event, it has been determined that no additional treatment is necessary to meet density management objectives and the downed riparian timber shall not be salvaged in accordance with management direction in the Record of Decision (ROD) and Resource Management Plan (RMP). The Riparian Reserve Land Use Allocation is defined by a distance equivalent to one (1) site potential tree height, approximately one hundred eighty-four (184) feet, slope distance from the stream; for reference, the riparian buffers are located approximately one hundred twenty (120) feet slope distance from the stream.
- (d) All snags in the Harvest Areas as shown on Exhibit A. Snags which pose a hazard to operations may be felled with the approval of the Authorized Officer.

Section 42. The Purchaser shall comply with the special provisions which are attached hereto and made apart hereof, unless otherwise authorized in writing by the Authorized Officer.

Section 42(A) Logging:

- (1) Before beginning operations on the Contract Area for the first time or after a shutdown of ten (10) or more days, the Purchaser shall notify the Authorized Officer in writing of the day they plan to begin operations. The Purchaser shall also notify the Authorized Officer in writing if they intend to cease operations for any period of ten (10) or more days.

In addition, the Purchaser shall notify the Authorized Officer five (5) days prior to starting or stopping of hauling operations performed under the contract.

- (2) Prior to the commencement of operations, the Purchaser shall obtain from the Authorized Officer written approval of a written operations and logging plan commensurate with the terms and conditions of the contract which shall include measures needed to assure protection of the environment and watershed. A pre-work conference between the Purchaser's authorized representative and the Authorized Officer must be held at a location designated by the Authorized Officer before the logging plan will be approved. All logging shall be done in accordance with the plan developed by this provision.
- (3) In the Harvest Areas shown on Exhibit A, all trees designated for cutting which are within one hundred (100) feet of the Reserve Areas shall be felled and yarded away from these areas.
- (4) No cable yarding, ground-based yarding or log loading is permitted in or through the Reserve Areas as shown on Exhibit A, unless otherwise approved by the Authorized Officer, except in portions of Harvest Area 3.
- (5) In Thinning Harvest Area 1, as shown on Exhibit A, all trees designated for cutting shall be manually felled, limbed and cut into log lengths not to exceed forty-two (42) feet before being yarded, unless otherwise approved by the Authorized Officer. Portions of Thinning Harvest Area 1 may be felled mechanically using a feller-processor or feller-buncher with the approval of the Authorized Officer and in accordance with the following specifications:
 - (a) Mechanized felling operations shall generally be limited to slopes of thirty-five (35) percent or less.
 - (b) Mechanized felling operations are subject to seasonal operating restrictions as described in Section 42(A)(7)(b) of this contract.
 - (c) The feller-processor or feller-buncher shall be approved by the Authorized Officer prior to the start of mechanized felling operations. Only purpose-built carriers with boom-mounted felling heads may be approved. The purpose-built carrier may be of the articulated, rubber-tired design or the zero tail swing, leveling, track-mounted design.
 - (d) In Harvest Areas where mechanical felling is permitted with the approval of the Authorized Officer, all trees designated for cutting may be felled and whole tree yarded

except when excessive stand damage occurs as determined by the Authorized Officer. If excessive stand damage occurs, all trees shall be completely limbed and bucked into log lengths not to exceed forty-two (42) feet prior to being yarded.

- (6) In Regeneration Harvest Areas 2 and 3 as shown on Exhibit A, all trees designated for cutting shall be manually felled, unless otherwise approved by the Authorized Officer. Portions of Regeneration Harvest Area 2 may be felled mechanically using a feller-processor or feller-buncher with the approval of the Authorized Officer and in accordance with the following specifications:
- (a) Mechanized felling operations shall generally be limited to slopes of thirty-five (35) percent or less.
 - (b) Mechanized felling operations are subject to seasonal operating restrictions as described in Section 42(A)(7)(b) of this contract.
 - (c) The feller-processor or feller-buncher shall be approved by the Authorized Officer prior to the start of mechanized felling operations. Only purpose-built carriers with boom-mounted felling heads may be approved. The purpose-built carrier may be of the articulated, rubber-tired design or the zero tail swing, leveling, track-mounted design.
- (7) In the portions of Harvest Areas 1 and 2 designated for ground-based yarding as shown on Exhibit A (approximately 67 acres):
- (a) Ground-based yarding operations shall generally be limited to slopes of thirty-five (35) percent or less, and existing skid trails shall be utilized to the greatest extent possible.
 - (b) No ground-based yarding shall be permitted between October 1 of one calendar year and July 15 of the following calendar year, both days inclusive, or other periods of unseasonably wet weather and soil moisture conditions, unless otherwise approved by the Authorized Officer.
 - (c) A rubber-tired or track-mounted skidder may be used in accordance with the following specifications:
 - (1) The skidder shall be approved by the Authorized Officer prior to ground-based yarding operations.
 - (2) Yarding shall be done with one end of the log suspended.
 - (3) The skidder shall be restricted to designated skid trails. Skid trails shall be clearly identified on the ground, twelve (12) feet or less in width and spaced at least one hundred fifty (150) feet apart. Designated skid trails, whether existing or newly proposed, shall be approved by the Authorized Officer prior to the felling of timber.
 - (d) A track-mounted log loader, or shovel yarding system, may be used in accordance with the following specifications:

- (1) The track-mounted log loader shall be approved by the Authorized Officer prior to ground-based yarding operations.
 - (2) The track-mounted log loader shall be restricted to designated skid trails and shall utilize the swing yarding method to the greatest extent practicable. The designated skid trail network shall minimize both the amount of ground covered by the tractor treads and the number of passes over any single spot on the ground. Designated skid trails, whether existing or newly proposed, shall be approved by the Authorized Officer prior to the felling of timber.
 - (3) The track-mounted log loader shall be required to place logging slash in front of the machine's tracks prior to traveling designated skid trails in order to reduce soil compaction.
- (e) A cut-to-length system may be used in accordance with the following specifications:
- (1) The harvester shall be required to cut off limbs and tops in front of the machine's tracks in order to reduce the potential for soil compaction. The harvester must have a lateral reach of twenty (20) feet or more, and the machine's lateral reach must be utilized as much as possible.
 - (2) The forwarder shall operate only on designated skid trails approved by the Authorized Officer. Forwarder trails shall be located on existing skid trails and/or the slash-covered areas traversed by the harvester. Forwarder trails shall be perpendicular to hill-slope contour lines as much as possible. Forwarder trails shall be located such that there are two harvester trails between forwarder trails, resulting in a spacing of at least one hundred (100) feet between forwarder trails.
 - (3) Logs that are too large for the harvester/forwarder operation may be yarded with a rubber-tired or track-mounted skidder, or a track-mounted log loader approved by the Authorized Officer, and as directed by the Authorized Officer. The skidder shall operate on designated skid trails approved by the Authorized Officer.
- (8) In the portions of Thinning Harvest Area 1 designated for cable yarding as shown on Exhibit A (approximately 66 acres):
- (a) Yarding shall be done with a cable skyline system utilizing a mechanical slack-pulling carriage capable of maintaining a fixed position on the skyline while lateral yarding and having a lateral capability of seventy-five (75) feet. The carriage must not move during in-haul. The cable yarder shall have a maximum tower height of fifty (50) feet and a maximum of two hundred fifty (250) horsepower. The system shall have the capability to yard in multi-span configuration.

- (b) Wherever possible, cable yarding corridors shall be perpendicular to hill-slope contour lines, parallel to each other and spaced at least one hundred fifty (150) feet apart to minimize damage to reserve trees.
 - (c) Cable yarding of logs shall be done under the canopy and with one end suspended. Lift trees and/or intermediate support trees shall be employed where necessary to meet this requirement. All logs shall be yarded away from or parallel to streams as shown on Exhibit A.
 - (d) 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.
- (9) In all of Regeneration Harvest Area 3 and the portions of Regeneration Harvest Area 2 designated for cable yarding as shown on Exhibit A (approximately 122 acres):
- (a) Yarding shall be done with a cable skyline system utilizing a mechanical slack-pulling carriage capable of maintaining a fixed position on the skyline while lateral yarding and having a lateral capability of seventy-five (75) feet. The carriage must not move during in-haul. The system shall have the capability to yard in multi-span configuration.
 - (b) The leading end of all logs shall be suspended free of the ground during yarding. Lift trees and/or intermediate support trees shall be employed where necessary to meet this requirement.
 - (c) All logs shall be yarded away from or parallel to streams as shown on Exhibit A, except in portions of Harvest Area 3 where full suspension over the stream will be required.
 - (d) 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.
- (10) Before cutting and removing any trees necessary to facilitate logging in the Harvest Areas shown on Exhibit A, the Purchaser shall identify the location of the skid trails, cable yarding corridors, 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 with cutting the following conditions must be met:
- (a) All skid trails and/or cable yarding corridors upon which timber is identified by the Purchaser to be cut and removed in accordance with this special provision must be necessary for the safe and expeditious removal of timber sold under this contract and shall be limited to the minimum width necessary for yarding of logs with a minimum of damage to reserve trees, however, unless otherwise approved in writing by the Authorized Officer, the width of skid trails shall be limited to twelve (12) feet and cable yarding corridors shall be limited to fifteen (15) feet.

- (b) The Purchaser may immediately cut and remove additional timber to clear skid trails and cable yarding corridors; and provide tailhold, tieback, guyline, lift and intermediate support trees; and to clear danger trees when the trees have been marked with blue paint above and below stump height by the Authorized Officer and thereby approved for cutting and removal by the Authorized Officer. The volume of the timber to be sold will be determined by the Authorized Officer in accordance with Bureau of Land Management prescribed procedures. No timber may be cut or removed under terms of this provision unless sufficient installment payments have been made in accordance with Section 3(a) of the contract or sufficient bonding has been provided in accordance with Section 3(e) of the contract.
- (c) The Purchaser agrees that sale of this additional timber shall be accomplished by a unilateral modification of the contract executed by the Contracting Officer and that such timber shall be sold at the unit prices shown in Exhibit B of this contract unless: the value of the timber must be reappraised subject to the terms for contract extension set forth in Section 9 of the contract; or the Authorized Officer determines that trees otherwise reserved in Section 41 of the contract or any tree that exceeds thirty-six (36) inches diameter at breast height shall be appraised and sold by bilateral modification of the contract at current fair market value in accordance with Section 8 of the contract.
- (d) This authorization for the Purchaser to cut and remove additional timber prior to the execution of a modification may be withdrawn by the Contracting Officer if the Authorized Officer determines that the Purchaser has cut and removed any tree not previously marked and approved for cutting by the Authorized Officer, which under Section 10 of the contract constitutes a violation of the contract and under Section 13 of the contract may constitute a trespass rendering the Purchaser liable for damages under applicable law.
- (e) If authorization is withdrawn, the Contracting Officer shall issue a written notice to the Purchaser that the sale of additional timber under this special provision is no longer approved. In this case, the Purchaser shall inform the Authorized Officer at least one (1) working day prior to the need for cutting and removing any additional timber, and execute a bilateral modification prior to cutting for such additional approved timber at the unit prices shown in Exhibit B of the contract or in accordance with Section 8 or Section 9 of the contract as determined by the Authorized Officer in accordance with this provision. The Contracting Officer may issue a written order to the Purchaser to suspend, delay, or interrupt any or all contract work for the period of time deemed necessary and appropriate for the Government to safely measure and mark additional timber.
- (f) The Government may reserve trees previously designated for cutting and removal by applying orange paint as replacements for additional trees cut and removed for skid trails and/or cable yarding corridors when the Authorized Officer determines such reservation is necessary to maintain stand densities consistent with objectives set forth in the management prescription(s). This may include the replacement of trees damaged by storm events, or insects or disease. The volume of this timber to be reserved will be determined by the Authorized Officer in accordance with Bureau of Land Management prescribed procedures and the value shall be based on the unit

prices shown in Exhibit B of the contract. The Purchaser agrees that the Total Purchase Price shall be reduced accordingly through a unilateral modification to the contract executed by the Contracting Officer.

- (11) In accordance with the requirements of Section 8 it has been determined that the sale of additional timber located in the Contract Area, as shown on Exhibit A, which is obstructing needed cable yarding corridors, hazardous to workers, needed for guyline, tail hold or tieback trees, and/or severely damaged from the normal conduct of felling or yarding operations is needed to meet all applicable State safety laws, codes or regulations. This timber must be cut or removed so that the Purchaser can continue active falling and yarding operations. The Purchaser is, therefore, authorized to cut and remove such additional timber in accordance with the provisions of Section 8 of the contract; provided that:
- (a) Trees reserved for the tree improvement program and trees reserved for the wildlife habitat objectives under Section 41 of the contract are not included in the authorization.
 - (b) The Purchaser shall identify each tree sold and cut in accordance with the provision by marking the cut surface of the stump and the bottom log immediately after falling with high visibility red paint. The stump shall be marked by flagging the location of the stump with plastic fluorescent pink ribbon hung within five (5) feet of the stump at eye level so that the stump can be visually located from a distance of not less than one hundred (100) feet.
 - (c) The volume and value for such timber shall be determined by the Authorized Officer in accordance with Bureau of Land Management prescribed procedures and paid for by the Purchaser in accordance with Section 3(a) or 3(e) of the contract through a unilateral modification executed by the Contracting Officer.
 - (d) No timber may be cut or removed under the terms of this provision until all contract payments required by Section 3(a) or 3(e) of the contract have been made.
 - (e) The permission to cut and remove additional timber contained in this provision may be withdrawn by the Contracting Officer if the Authorized Officer determines that the Purchaser:
 - (1) Failed to properly mark any stump as designated in this provision.
 - (2) Failed to identify the location of any stump.
 - (3) Cut any tree that was reserved for tree improvement and/or wildlife habitat.
 - (4) Cut any tree in or adjacent to cable yarding corridors that was not necessary to facilitate cable yarding.
 - (5) Cut any reserve tree in or adjacent to skid trails that was not necessary to facilitate ground based yarding.
 - (6) Failed to properly segregate any pulled-over tree that was yarded to the landing.
 - (7) Cut any reserve tree that was not severely damaged (as defined during the pre-work conference) from felling and yarding operations.
 - (8) Cut more than the minimum number of trees necessary to properly serve as guyline anchor stumps.

- (9) Cut or topped more than the minimum number of trees necessary to properly serve as tail hold trees.
- (10) Cut more than the minimum number of trees necessary to properly serve as tie-backs for topped tail hold trees.
- (11) Failed to maintain accurate and current (no more than twenty-four [24] hours old) documentation of additional timber cut and removed.

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

If the permission to cut and remove additional timber provision is withdrawn, the Purchaser shall inform the Authorized Officer at least two (2) working days prior to the need for cutting and yarding any guyline tree, tailhold tree, tie-back tree, danger tree, corridor tree, pulled over tree, and severely damaged tree. All sales of additional timber shall comply with Section 8 of the contract. The Contracting Officer may order the Purchaser, in writing, to suspend, delay, or interrupt all or any part of the work of this contract for the period of time that the Contracting Officer determines appropriate for the Government to safely measure and mark additional timber.

All cable yarding corridors and/or ground based equipment skid trails upon which timber may be cut and removed in accordance with this special provision must be needed for the removal of timber sold under this contract and shall be limited to the narrowest width necessary for the yarding of logs with minimum damage to reserved trees.

The Purchaser shall be liable for damages in accordance with Section 13 of the contract for any reserved timber cut or removed in violation of the terms of this special provision.

- (12) Except for right-of-way logging, no falling or yarding shall be conducted in Thinning Harvest Area 1, as shown on Exhibit A, between April 15 and July 15 (bark slip period), both days inclusive, unless otherwise approved by the Authorized Officer.
- (13) No logging activity or log hauling shall be conducted on unsurfaced roads between October 15 of one calendar year and May 15 of the following calendar year (wet season), both days inclusive, unless otherwise approved by the Authorized Officer.
- (14) The Purchaser shall brand clearly and legibly one end of all logs prior to the removal of timber from the Contract Area. One end of all branded logs to be processed domestically will be marked with a spot of highway yellow paint, unless otherwise directed in writing by the authorized officer.
- (15) The Purchaser shall not haul logs from the contract area on weekends; Memorial Day, Fourth of July, Labor Day, Thanksgiving, Christmas, and New Year's holidays; or outside the hours of 4:00 a.m. to 8:00 p.m. daily, unless otherwise approved in writing by the Authorized Officer or designated in the approved logging plan.

- (16) The Purchaser will be required to label with a permanent ink marker each load ticket with the corresponding unit number that the logs originated from, as shown on Exhibit A, as directed by the Authorized Officer.
- (17) For a distance of fifty (50) feet from the perimeter of each landing designated by the Authorized Officer, all logs more than eight (8) inches in diameter at the large end and longer than eight (8) feet in length shall be decked or windrowed at the location designated by the Authorized Officer, except logs sold and removed from the Contract Area. If a log or piece of log meeting or exceeding the above specifications is bucked and left in place, all portions of that log shall be yarded and decked at the above described location.
- (18) Notwithstanding the provisions of Section 4 of this contract, the cutting and removal of timber from those portions of Harvest Area 2 designated for cable yarding shall be completed before April 1, 2021.
- (19) To prevent potential disturbance to nesting Marbled Murrelets, the following restrictions apply: for those portions of the Contract Area that are within the Marbled Murrelet Restriction Area, as designated on Exhibit E, which is attached hereto and made a part hereof, no operations except hauling shall be conducted between April 1 and August 5, both days inclusive, after which daily timing restrictions shall be in effect from August 6 through September 15, both days inclusive. During the daily timing restriction period, all operations except hauling shall be scheduled to begin a minimum of two (2) hours after sunrise and conclude a minimum of two (2) hours before sunset.

Section 42(B) Road Construction, Maintenance & Use:

- (1) Purchaser shall construct Spurs 1, 2, 3, 4, and 5 and renovate Road 22-6-5.0 Segments A1 and A2, Road 22-6-5.1 Segment A, Road 22-6-6.1 Segments A and B, Road 22-6-7.0 Segment C, Road 22-6-15.0 Segment B, Road 22-6-21.0 Segment B, Road 22-6-21.1 Segment B, Road 22-6-21.2 Segment A, and Road 22-6-21.3 Segment A (Por).

Any required construction or renovation shall be completed in strict accordance with the plans and specifications shown on Exhibit C, which is attached hereto and made a part hereof. Any required construction or renovation of structures and roads shall be completed and accepted, in accordance with Section 18, prior to the removal of any timber, except right-of-way timber, over that road.

- (2) No road construction or renovation shall be conducted between October 15 of one calendar year and May 15 of the following calendar year, both days inclusive, or other periods of unseasonably wet weather and soil moisture conditions, unless otherwise approved by the Authorized Officer.
- (3) Upon completion of logging operations, the following roads and spurs shall be decommissioned in strict accordance with the plans and specifications shown on Exhibit D, which is attached hereto and made a part hereof: Spur 5.

- (4) The Purchaser is authorized to use the roads listed and shown on Exhibit D which are under the jurisdiction of the Bureau of Land Management for the removal of Government timber sold under the terms of this contract provided that the Purchaser pay the required maintenance and rockwear obligations described in Section 42(B)(5). Any road listed on Exhibit D and requiring improvement or renovation in Exhibit C of this contract shall be maintained by the Purchaser until receiving written acceptance of the construction or renovation from the Authorized Officer. The Purchaser shall pay current Bureau of Land Management maintenance and rockwear fees for the sale of additional timber under modification to the contract.
- (5) The Purchaser shall pay the Government a road maintenance fee of \$0.75 per thousand board feet log scale per mile and a rockwear fee of \$0.60 per thousand board feet log scale per mile for the use of rock surfaced roads listed on Exhibit D. The Purchaser shall pay the Government a road maintenance fee of \$0.92 per thousand board feet log scale per mile for the use of bituminous surfaced roads listed on Exhibit D. The total maintenance fee due shall be based upon volumes determined pursuant to Exhibit B of this contract and mileage of roads used as determined by the Authorized Officer. Prior to the use of such roads, the Purchaser shall give written notice to the Authorized Officer of the roads intended for use in the removal of timber purchased under this contract, together with an estimate of the volume to be hauled over such roads. The Authorized Officer shall establish an installment schedule of payment of the road maintenance and rockwear obligation. If it is determined by the Authorized Officer, after all merchantable timber has been cut and scaled, that the total maintenance and rockwear payments made under this contract exceed the total maintenance and rockwear payment due, such excess shall be returned to the Purchaser after such determination is made.
- (6) The Purchaser shall perform any required road repair and maintenance work on roads used by them, under the terms of Exhibit D of this contract.
- (7) The Purchaser also agrees that if they elect to use any other private road which is the subject of a right-of-way agreement with the Government for the removal of Government timber sold under the terms of this contract, the Purchaser shall request and agree to the modification of this contract to provide for such use and for allowances for amortization of the Government's share of the capital investment of any such road.

IF OTHER THAN SENECA JONES TIMBER COMPANY, LLC PURCHASES:

- (8) In the use and/or renovation of Road 22-6-6.1 Segments A and B, and Road 22-6-7.0 Segment B (base), the Purchaser shall comply with the conditions, including but not limited to those set out below, of the Right-of-Way and Road Use Agreement R-645A, dated June 27, 1962, between the United States of America and Seneca Jones Timber Company, LLC., available for inspection at the Bureau of Land Management, Roseburg District Office, 777 N.W. Garden Valley Blvd., Roseburg, Oregon 97471. These conditions include:
 - (a) Prior to the use of said roads, the Purchaser shall furnish the Authorized Officer a copy of the executed license agreement.

- (b) Payment of road use fees in the amount of \$5.09 per thousand board feet log scale for the use of Road 22-6-6.1 Segment A and \$11.48 per thousand board feet log scale for the use of road 22-6-6.1 Segment B.
- (c) Default by the Purchaser of said Right-of-Way and Road Use Agreement, or any License Agreement executed pursuant thereto, for failure to pay appropriate stumpage fees, road use fees or road maintenance fees shall be considered a violation of this contract. The amount of unpaid fees shall be considered as the amount of damage suffered by the Government as a result of the violation of this provision.

IF SENECA JONES TIMBER COMPANY, LLC PURCHASES:

- (9) The Government is hereby granted the allowance listed here as payment towards the Government's share of the replacement cost of the following road(s) included in Right-of-Way and Road Use Agreement R-645A:

Agreement	Road	Estimated Volume (MBF)	Road Use Fee	Estimated Subtotal
R-645A	22-6-6.1 A	663	\$5.09	\$3,374.67
R-645A	22-6-6.1 B	663	\$11.48	\$7,611.24
Total Road Use Fees: to be determined based on final scaled volumes				

It is understood that the purchase price stated in Section 2 of this contract is the net price and no deductions will be made from the purchase price because of such allowances.

Section 42(C) Environmental Protection:

- (1) In addition to the requirements set forth in Section 26 of this contract, the Purchaser shall clean road surfaces, cut banks, landings, ditch lines and culverts of all debris created by logging operations.
- (2) In addition to the requirements set forth in Section 26 of this contract, the Purchaser shall steam clean or pressure wash all logging and road building equipment, except logging trucks, prior to initial move-in, to minimize the likelihood of spreading noxious weeds and non-native plant species to the Contract Area. Equipment washing shall occur at a location approved by the Authorized Officer. Equipment will be visually inspected by the Authorized Officer prior to use. Any logging or road building equipment removed from the Contract Area during the duration of the contract must be steam cleaned or pressure washed before it is returned to the Contract Area. Cleaning shall be defined as removal of all dirt, grease, plant parts and material that may carry noxious weed seeds.
- (3) In addition to the requirements set forth in Section 26 of this contract, the Purchaser shall winterize all native surfaced roads used under Section 42(B)(1) or any portion thereof, in accordance with the plans and specifications shown on Exhibit D, and in accordance with the following stipulations:

- (a) The Purchaser intends to use the native surfaced roads or portions thereof for more than a single operating season; or, circumstances require that the roads or portions thereof overwinter before decommissioning.
 - (b) Winterizing shall consist of water-barring, blocking and mulching to the satisfaction of the Authorized Officer.
 - (c) Winterizing shall take place prior to the end of the operating season as described in Section 42(A)(13) of this contract, or as directed by the Authorized Officer.
- (4) In addition to the requirements set forth in Section 26 of this contract, the Purchaser shall, upon completion of logging operations, perform subsoiling operations on approximately nine-tenths (0.9) miles of landings, main skid trails, and associated compacted areas such as turnouts, truck turnarounds and log decking areas as designated by the Authorized Officer and in accordance with the following stipulations:
- (a) All subsoiling equipment shall be inspected and approved by the Authorized Officer before subsoiling begins.
 - (b) The compacted surfaces shall be subsoiled (broken up, loosened, and de-compacted) using excavator attachments, log loader tongs or other approved equipment.
 - (c) Slash and other organic debris and some topsoil will be spread over the subsoiled surface to cover at least (50) percent of the subsoiled area, where levels of this material are available. Waterbars shall be constructed concurrently with subsoiling operations on grades steeper than ten (10) percent, as directed by the Authorized Officer.
 - (d) Subsoiling shall occur during the same dry season as ground-based harvesting as described in Section 42(A)(7)(b), unless otherwise approved by the Authorized Officer.
 - (e) Subsoiling shall be completed to a minimum depth of eighteen (18) inches below the ground surface, unless otherwise approved by the Authorized Officer.
 - (f) Treated areas shall span the total width of compaction, as identified by the Authorized Officer. At least eighty (80) percent of the compacted soil profile shall be shattered. No more than fifty (50) percent of the treated soil shall have clods greater than two (2) inches in diameter, unless otherwise approved by the Authorized Officer.
 - (g) Subsoiling shall not occur within a five foot radius of the boles of residual trees where major roots can be cut, mangled or pulled, unless otherwise directed by the Authorized Officer.
 - (h) Equipment shall not be allowed to operate on slopes in excess of thirty-five (35) percent or to cross streams or drainages unless approved by the Authorized Officer.
- (5) The Purchaser shall immediately discontinue specified construction or timber harvesting operations upon written notice from the Contracting Officer that:

- (a) 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;
- (b) 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 management direction of the ROD and RMP, the Contracting Officer determines it may be necessary to modify or terminate the contract, or;
- (c) 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;
- (d) 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;
- (e) When, in order to comply with a court order, the Contracting Officer determines it may be necessary to modify or terminate the contract, or;
- (f) Species have been discovered which were identified for protection in accordance with management direction established in the ROD and RMP, and the Contracting Officer determines that continued operations would affect the species or its habitat, or;
- (g) When, in order to protect species which were identified for protection in accordance with management direction established in the ROD and RMP, the Contracting Officer determines it may be necessary to modify or terminate the contract.

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

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

In the event of a suspension period or a combination of suspension periods that exceed a total of 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(a) 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(a) of the contract within fifteen (15) days after the bill for collection is issued, subject to Section 3(i) 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 modify the contract or terminate the cutting and removal rights under the contract in order to comply with the Endangered Species Act, prevent incidental take of northern spotted owls in accordance with the ROD and RMP, protect occupied marbled murrelet sites in accordance with the ROD and RMP, protect species that have been discovered which were identified for protection in accordance with management direction established in the ROD and RMP, or comply with a court order. 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 species protection in accordance with management direction 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.

Section 42(D) Fire Prevention and Control:

- (1) 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.

Section 42(E) Slash Disposal and Site Preparation:

- (1) Fire Hazard Reduction. In addition to the requirements of Section 15 of this contract, and notwithstanding the Purchaser's satisfactory compliance with state laws and regulations regarding offsetting or abating the additional fire hazard created by this operation and the State's willingness to release the Purchaser from liability for such hazard, the Purchaser shall remain responsible to the Government for performance of the following hazard reduction measures required by this contract:
 - (a) Slash, as defined for this section, shall mean all material (brush, limbs, tops, unmerchantable stems and chunks) severed or knocked over as a result of the Purchaser's operations under the terms of this contract.
 - (b) Landings shall be piled and covered within thirty (30) days of the completion of yarding from each landing.
 - (c) Covering of slash piles shall be done concurrently with piling operations. The covers shall be firmly fixed to each pile.
 - (d) Finished piles shall be tight and free of earth.
 - (e) Machine pile and cover all slash within fifty (50) feet of all landings or other locations as directed by the Authorized Officer in accordance with the following specifications:
 - (1) Landing slash piles shall be capped with a ten (10) foot by ten (10) foot cover of four (4) mil black plastic to maintain a dry ignition point.
 - (2) Slash piles shall be located away from unit boundaries, retention trees, snags, downed logs and stumps.

- (2) Notwithstanding the provisions of Section 15 of this contract, the Government shall assume all obligations for disposal or reduction of fire hazards created by the Purchaser's operations on Government lands, except for burning and mop-up assistance as required herein. In accordance with written instructions to be issued by the Authorized Officer at least ten (10) days in advance of the earliest date of required performance, the Purchaser shall, under supervision of the Authorized Officer or designated representative, assist in preparing units for burning, mop-up and patrol by furnishing, at the Purchaser's own expense, the services of personnel and equipment on each unit as shown below:

For igniting and burning landing piles in all Harvest Areas, the Purchaser shall provide one (1) eight (8) person hand crew including a designated crew foreman. The crew shall be equipped with fuel, ten (10) drip torches or propane burners, four (4) fire shovels, four (4) pulaskis, one (1) power saw and enough radios to facilitate inter-crew communications. All crew members must have a current qualification card for FFT2 or higher. All qualifications are defined according to National Wildfire Coordinating Group (NWCG) Wildland Fire Qualifications System guide, PMS 310-1. Qualifications and equipment levels are the minimum and may exceed those stated above.

Aircraft and pilots used for logging residue reduction or the suppression of escaped fires from logging residue reduction operations, shall be acquired from a list of aircraft and pilots approved (i.e. carded for these specific activities) by the Office of Aircraft Services or the U.S. Forest Service. This list is available from BLM District Offices upon request.

All listed personnel shall be physically fit, experienced and fully capable of functioning as required. All personnel shall arrive at the project area with the following personal safety equipment: lug-soled leather boots with minimum eight (8) inch uppers that provide ankle support; an approved hardhat; leather gloves; long pants and a long sleeve shirt made of approved aramid fabric (Nomex or equivalent); and an approved fire shelter.

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 addition, all listed personnel directly involved in burning operations shall be certified Fire Fighters qualified according to National Wildfire Coordinating Group (NWCG) Wildland Fire Qualification System guide, PMS 310-1 and provide documentation. The work leaders must be fluent in English and be able to effectively speak to all crew members under their direction. Personnel who do not meet these requirements or who do not have proper clothing and personal protective equipment (PPE) will not be allowed to participate.

Except as provided hereafter for fire escapement, the Purchaser shall continue the required assistance in mop-up on each Harvest Area as shown on Exhibit A for seventy-two (72) hours as directed by the Authorized Officer within a thirty (30) day period beginning 8:00 a.m. the day following completion of ignition in that unit or until released from such services by the Authorized Officer, whichever occurs first.

In the event of a fire escapement, the Purchaser's personnel and equipment shall, under supervision of the Authorized Officer, take action to suppress, including 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:

- (a) Reimburse Purchaser for such additional use of personnel and equipment at wage rates shown in the current Administratively Determined Pay Rates for Western Area and at equipment rates shown in current Oregon-Washington Interagency Fire Fighting Equipment Rental Rates schedule, until the Purchaser is released from such service by the Government, or
- (b) Release the Purchaser from additional suppression work and assume responsibility for suppressing the escaped fire.

In situations where an escaped fire is controlled and contained by an adequate fire break (e.g., trail, road, stream, rock formation), the Government may permit the Purchaser to remove personnel for that day; provided that, all mop-up work on the escaped fire area is included with mop-up work on the prescribed fire area. In such an event, the Purchaser must sign a statement of agreement to complete mop-up work on all escaped fire areas concurrently with mop-up work on the prescribed fire area.

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

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

Section 42(F) Harvest Land Base and Riparian Reserve Snag Creation:

- (1) Notwithstanding the provisions of Section 13 of this contract, the Purchaser shall, within 1 year following the completion of yarding operations, create approximately Nine Hundred Forty-eight (948) snags as directed by the Authorized Officer and in accordance with the following table and stipulations:

Harvest Area	LUA	Acres	Snags $\geq 20"$ DBH*	Snags 10" – 19" DBH	Total Snags
1	HLB	116	348	0	348
	RR	3	18	21	39
2	HLB	140	420	0	420
	RR	2	12	14	26
3	HLB	21	63	0	63
	RR	4	24	28	52
Totals:			885	63	948

*If trees are not available in the size class specified, use trees from the largest size class available

- (a) Trees used to create snags under this subsection are not included in the volume or the appraised unit prices shown on Exhibit B and shall not be yarded or otherwise removed from the Harvest Land Base (HLB) or Riparian Reserve (RR).
- (b) The Purchaser shall create snags in a variety of spatial patterns, including aggregated groups and individual trees.
- (c) The Purchaser may meet snag creation requirements with trees from any species, except in the Riparian Reserve as described below in Section 42F(1)(i)(1-2).
- (d) Snags shall generally be located a minimum distance of one and one-half (1½) tree lengths away from power lines, structures, roads that will remain open after logging operations are complete, and/or property lines where BLM managed lands abut non-federal ownership; where it is not possible to meet this requirement, the Purchaser shall fall trees equivalent to the required number of snags and retain the felled trees on site as down woody material.
- (e) Snags shall generally be created by girdling live, green trees at three and one-half (3½) feet above the root collar; girdling will generally consist of removing a four (4) inch band of bark and completely severing the cambial tissue around the bole of the tree, without cutting into the sapwood more than one and one-half (1½) inches. In addition to girdling, trees severely damaged through normal logging operations and/or natural disturbance events subsequent to this logging entry may be counted towards the snag creation requirements with the approval of the Authorized Officer—examples would include, but need not be limited to, intermediate support trees, tail trees, trees pulled over during yarding, recent broken tops or windfalls.
- (f) The Purchaser shall number each snag created; the number shall be painted on the bole of the snag using high visibility paint such that the number is visible from at least one hundred (100) feet away. The Purchaser shall depict the number and location of snags on a legible map along with a tally by diameter and LUA (either HLB or RR) which shall be submitted to the Authorized Officer to facilitate inspection.
- (g) In addition to the requirements described herein, for the Harvest Land Base (HLB) portion of Harvest Areas 2 and 3, snags shall be created primarily in the Retention Aggregates, as shown on Exhibit A, which are flagged in fluorescent orange and green

ribbon. As necessary to meet the requirements described above, the Purchaser may also create snags within the Harvest Area boundaries, excluding the riparian thinning portion, using dispersed retention trees.

- (h) In addition to the requirements described herein, for the Harvest Land Base (HLB) portion of Harvest Area 1, snags shall be created primarily within the Harvest Area boundaries, excluding the riparian thinning portion, using dispersed retention trees. As necessary to meet the requirements described above, the Purchaser may also create snags in the Retention Aggregate adjacent to Harvest Area 1, as shown on Exhibit A.
- (i) In addition to the requirements described herein, for the Riparian Reserve (RR) portion of Harvest Areas 1, 2, and 3, snags shall be created along the stream reaches indicated for riparian thinning, as shown on Exhibit A, and located entirely within the Riparian Reserve which is defined by a distance equivalent to one (1) site potential tree height, approximately one hundred eighty-four (184) feet, slope distance from the stream and including the riparian thinning portion of the Harvest Area; for reference, the riparian buffers are located approximately one hundred twenty (120) feet slope distance from the stream. Additionally:
 - (1) Snag creation requirements can be met with trees of any species, except Bigleaf maple (*Acer macrophyllum*), Western redcedar (*Thuja plicata*) and Incense-cedar (*Calocedrus decurrens*).
 - (2) The Purchaser shall target any Bigleaf maple (*Acer macrophyllum*) trees greater than twenty (20) inches DBH for "release" by girdling (or falling) all other trees, except Western redcedar (*Thuja plicata*) and Incense-cedar (*Calocedrus decurrens*), within or immediately adjacent to the crown of the Bigleaf maple. Trees girdled or felled for this purpose may be counted to meet the snag creation requirements.

Section 42(G) Optional Contributions:

- (1) The Purchaser shall assist in burning as described in Section 42(E)(2). 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 Two Thousand Eight Hundred Twenty-seven and 20/100 dollars (\$2,827.20) and upon making such contribution, the Purchaser shall be relieved of the obligations set out in this subsection. The amount of the contribution shown above shall be paid prior to cutting. The Purchaser shall notify the Authorized Officer of his intention to make this contribution upon execution of this contract.
- (2) The Purchaser shall complete the snag creation work as described in Section 42(F)(1). 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 Thirteen Thousand One Hundred Thirty-Two and 80/100 dollars (\$13,132.80) and upon making such contribution, the Purchaser shall be relieved of the obligations set out in this subsection. The amount of the contribution shown above shall be paid prior to cutting. The Purchaser shall notify the Authorized Officer of his intention to make this contribution upon execution of this contract.

Section 42(H) Log Exports:

- (1) All timber sold to the Purchaser under the terms of this contract, except exempted species, is restricted from export from the United States in the form of unprocessed timber, and is prohibited from being used as a substitute for exported private timber. For the purpose of this contract, unprocessed timber is defined as: (1) any logs except those of utility grade or below, such as sawlogs, peeler logs and pulp logs; (2) cants or squares to be subsequently remanufactured exceeding eight and three-quarters (8¾) inches in thickness; (3) split or round bolts or other roundwood not processed to standards and specifications suitable for end-product uses; or (4) western red cedar 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 timber, 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 (8¾) 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:

- (a) Date of last export sale.
- (b) Volume of timber contained in the last export sale.
- (c) Volume of timber exported in the past twelve (12) months from the date of last export sale.
- (d) Volume of Federal timber purchased in the past twelve (12) months from the date of last export sale.
- (e) Volume of timber exported in succeeding twelve (12) months from date of last export sale.
- (f) Volume of Federal timber purchased in succeeding twelve (12) months from date of last export sale.

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

In the event an affiliate of the Purchaser has exported private timber within twelve (12) months prior to purchasing or otherwise acquiring Federal timber sold under this contract, the

Purchaser shall, upon request, obtain from the affiliate information in a 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 the Purchaser's registered log brand at least one end of each 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.

Section 42(l) Safety:

- (1) Purchaser's operations shall facilitate BLM's safe and practical inspection of Purchaser's operations and BLM's conduct of other official duties on Contract Area. Purchaser has all responsibility for compliance with safety requirements for Purchaser's employees, contractors and subcontractors.

In the event that the Authorized Officer identifies a conflict between the requirements of this contract or agreed upon methods of proceeding hereunder and State or Federal safety requirements, the contract may be modified. If the cost of such contract modification is of a substantial nature (\$2,000.00 or more), the Purchaser may request, in writing, an adjustment in the total contract purchase price specified in Section 2 of the timber sale contract, as amended, to compensate for the changed conditions.

Unless otherwise specified in writing, when operations are in progress adjacent to or on roads and/or trails in the harvest unit area, Purchaser shall furnish, install, and maintain all temporary traffic controls that provide the road or trail user with adequate warning of and protection from hazardous or potentially hazardous conditions associated with its operations. Purchaser shall prepare a Traffic Control Plan, which the Purchaser has determined is compliant with state and local OSHA and Transportation standards no later than the pre-work meeting and prior to commencing operations. Traffic control devices shall be appropriate to current operating and/or weather conditions and shall be covered or removed when not needed. Flagmen and devices shall be as specified in state OSHA and Transportation standards for logging roads or the "Manual on Uniform Traffic Control Devices for Streets and Highways" (MUTCD) published by the U.S. Department of Transportation – Federal Highway Administration. Included in the Traffic Control Plan, Purchaser shall note traffic control device locations on a Purchaser produced copy of the contract Exhibit "A" Map.

Seasonal Restriction Matrix

Note: This matrix is provided to serve prospective purchasers as a guide only; refer to the timber sale contract Special Provisions for a complete statement of the seasonal operating restrictions.

Seasonal Restriction Daily Timing Restriction		Jan		Feb		Mar		Apr		May		Jun		Jul		Aug			Sep		Oct		Nov		Dec	
Harvest Area	Activity	1	15	1	15	1	15	1	15	1	16	1	15	1	16	1	5	6	1	16	1	15	1	15	1	15
Unit 1 (thinning)	Right-of-way logging and clearing, road construction, renovation ¹																									
	Falling and bucking ³																									
	Ground-based yarding ^{2,3}																									
	Cable yarding on rocked roads																									
	Loading or hauling on rocked roads																									
Unit 2 (regen)	Right-of-way logging and clearing, road construction, renovation ¹																									
	Falling and bucking																									
	Ground-based yarding ²																									
	Cable yarding on rocked roads																									
	Loading or hauling on rocked roads																									
Unit 3 (regen)	All operations except hauling within the Marbled Murrelet restriction area as shown on Exhibit E ⁴																									
	Right-of-way logging and clearing, road construction, renovation ¹																									
	Falling and bucking																									
	Cable yarding on rocked roads																									
	Loading or hauling on rocked roads																									

¹ Wet season restriction applying to use of unsurfaced (or limited strength) roads and all road construction/renovation from October 15 – May 15 may be shortened or extended depending on weather conditions.

² Wet season restriction applying to ground-based yarding from October 1 – July 15 may be shortened or extended depending on soil moisture and weather conditions.

³ Bark slip restriction from April 15 – July 15 may be conditionally waived.

⁴ Marbled Murrelet seasonal operating restrictions will be in effect from April 1 through August 5; Marbled Murrelet daily timing restrictions will be in effect from August 6 through September 15, during which operations shall begin two hours after sunrise and must conclude two hours before sunset.

Township 22 South, Range 6 West, Sections 5 and 21, Willamette Meridian

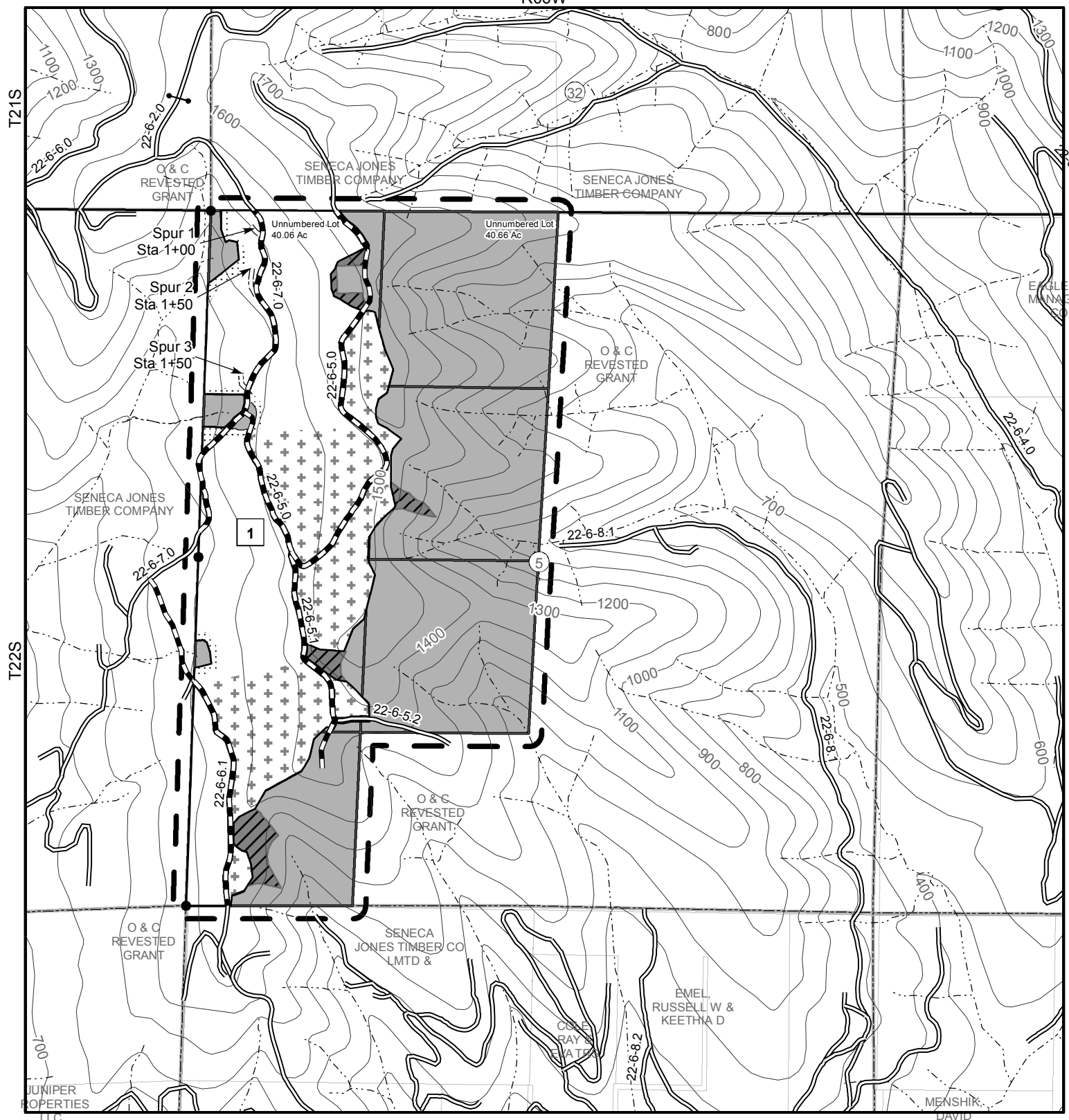
Harvest Area	Thinning Acres	Regeneration Acres	Total Harvest Acres	Harvest Method
1	114	0	114	Cable/ground
2	2	118	120	Cable/ground
3	4	17	21	Cable
Totals	120	135	255	

Regeneration Harvest Area.....	135 Acres
Thinning Harvest Area.....	120 Acres
Right-of-Way (Clearing).....	2 Acres
Total Harvest Area.....	257 Acres
Reserve Area.....	543.72 Acres
Total Contract Area.....	800.72 Acres













1. Harvest Area boundaries are posted with tags that read "Boundary of Timber Reserve" and boundary trees are blazed and painted orange. Trees marked with orange blazes to delineate the boundaries of the Harvest Areas and trees marked with orange paint within the Harvest Areas are reserved by the government.
2. Property lines are posted with orange and white tags that read "Timber Cutting Boundary".
3. Clearing limits on road rights-of-ways within the Harvest Areas are posted with fluorescent paper flasher tags.
4. Ground-based yarding is limited to dry season operations and slopes 35% or less within the ground-based area shown on Exhibit A, approximately 67 acres.

Note: Acres shown on Exhibit A have been computed using a Trimble Geo XT Global Positioning System receiver and/or ESRI ArcMap 10.4 GIS software. Harvest Acreages were calculated based on Global Positioning System traverse procedures including differential correction.

R06W

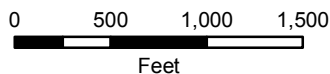


Legend

-
-  Gate
 Survey Corner
 Road Construction
 Road Renovation
 Existing Road
 Stream
 Harvest Area - Cable Yarding
 Harvest Area - Ground Based
 Riparian Thinning
 Retention Aggregate
 Reserve Area
 Contract Area

1:12,000

1 inch = 1,000 feet



Date: 7/1/2019

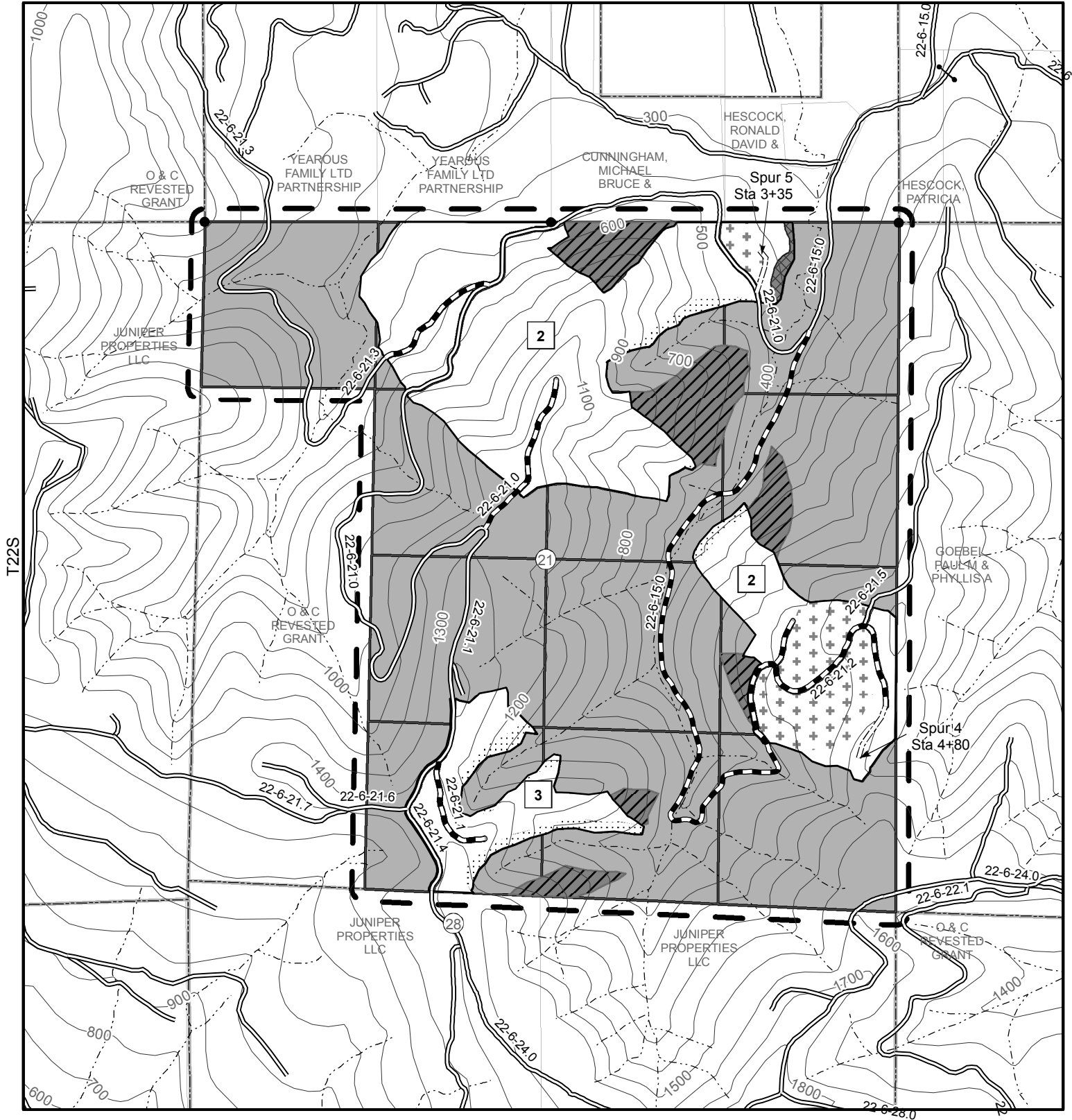
Roseburg District
Bureau of Land Management
777 NW Garden Valley Blvd.
Roseburg, Oregon 97471



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R06W

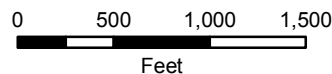


Legend

- Gate
- Survey Corner
- Road Construction
- Road Renovation
- Existing Road
- Stream
- Harvest Area - Cable Yarding
- Harvest Area - Ground Based
- ▨ 2019 Snowdown
- ▤ Riparian Thinning
- ▧ Retention Aggregate
- ▩ Reserve Area
- ▭ Contract Area

1:12,000

1 inch = 1,000 feet



Date: 7/1/2019

Roseburg District
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777 NW Garden Valley Blvd.
Roseburg, Oregon 97471



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**UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT (BLM)**

**EXHIBIT B
SCALE SALE
PURCHASE PRICE SCHEDULE AND
MEASUREMENT SPECIFICATIONS**

Contract No.: ORR04-TS-2019.0006

Sale Name: Harvest Moon

Purchaser:

Issuing Office: Roseburg

- I. **Total Actual Purchase Price** - In accordance with Section 3(f) of the contract, the Purchaser agrees to pay the Government for the timber sold under the contract in accordance with the following schedule and measurement requirements. Timber sold is comprised of Merchantable Timber, Merchantable Timber Remaining, and Other Timber as defined below. In the event an Extension of Time is approved, the prices per measurement unit are subject to readjustment (refer to Section 9 of the contract).

Schedule of Species, Measurement Units, and Prices		
Species	Measurement Unit	Price Per Measurement Unit
Douglas-fir	MBF	\$134.30
Grand Fir	MBF	\$52.20
Western Hemlock	MBF	\$32.20
Incense-cedar	MBF	\$322.50
Western Redcedar	MBF	\$58.50

- II. **Merchantable Timber** - All timber which can be cut into logs, which equal or exceed the following specifications, shall be considered merchantable timber. Purchaser shall pay for same in accordance with Sec. 3 of the contract at the unit prices shown in Section I of this Exhibit.

Schedule of Minimum Material Specifications			
Species and Products	Length	Diameter (inside bark at small end)	Net Scale
All Species	14 feet	7 inches	33 1/3% of gross volume of any log segment

If Purchaser elects to remove any logs which do not meet the above minimum log specifications and which have not been reserved to Government in Sec. 41 of the contract, such logs shall be scaled for their merchantable content as provided herein and be paid for in accordance with Sec. 2 and 3 of this contract and the value in Section 1 of this Exhibit.

III. **Merchantable Timber Remaining - Measurement Requirements** - The remaining volume of any merchantable sold timber on the contract area shall be determined as provided in Section 3.(g). of the contract. Purchaser shall pay for same in accordance with Sec. 3 of the contract at the unit prices shown in Section I of this Exhibit.

IV. **Scaling**

- A. **Log Rule and Measurement** - All logs shall be scaled according to the Northwest Log Rules Eastside Log Scaling Handbook, as amended, or supplemented by BLM before the first advertisement date of the sale. A Scaling Authorization Form (OR 5300-18) must be completed prior to beginning of operations.
- B. **Scaling Service** - Log scaling services shall be provided and performed by BLM personnel or parties under contract to BLM.
 - 1. All logs shall be scaled and volumes determined by BLM or a certified contract scaler.
 - 2. The BLM scaler or contract scaler is designated to collect Eastside MBF scale data from all loads.
- C. **Other Timber** - If any timber is of a species or size not listed in Section II of this Exhibit (above) or is of a quality different from merchantable timber described herein, the Authorized Officer shall establish volumes and values in accord with Standard BLM methods.
- D. **Defect Caused by Abnormal Delay** - Scaling deductions made for rot, check or other defect resulting from abnormal delay in scaling caused by Purchaser shall be recorded separately and charged to the Purchaser in accordance with Section 3. of the contract.
- E. **Log Presentation** - Purchaser shall present logs so that they may be scaled in an economical and safe manner in accordance with the Memorandum(s) of Agreement for Yard Scaling required in Section IV.G.5. of this Exhibit.
- F. **Check Scale** - The Government will conduct check scales as set forth in Instruction Memorandum OR-2003-081, Item 2b (Administrative Check Scaler). Determinations as to volume of timber made by a government check scaler in conformance with the standards as set forth herein shall be final. All loads check scaled by BLM will be identified with the check scaler's initials legibly marked or painted in the face of the first log in each load. When such checks show a variance in scale in excess of acceptable standards, as set forth in Instruction Memorandum OR-2003-081, Item 2b (Administrative Check Scaler), in two or more consecutive check scales, an adjustment to the volume reported as scaled will be made by BLM. Such adjustments will be made based on the difference between available BLM check scales and the original scale during the period covered by the unsatisfactory check scales. Unless otherwise approved in writing by the Authorized Officer, the volume to which this difference will be applied will be 50 percent of the volume scaled between the last satisfactory

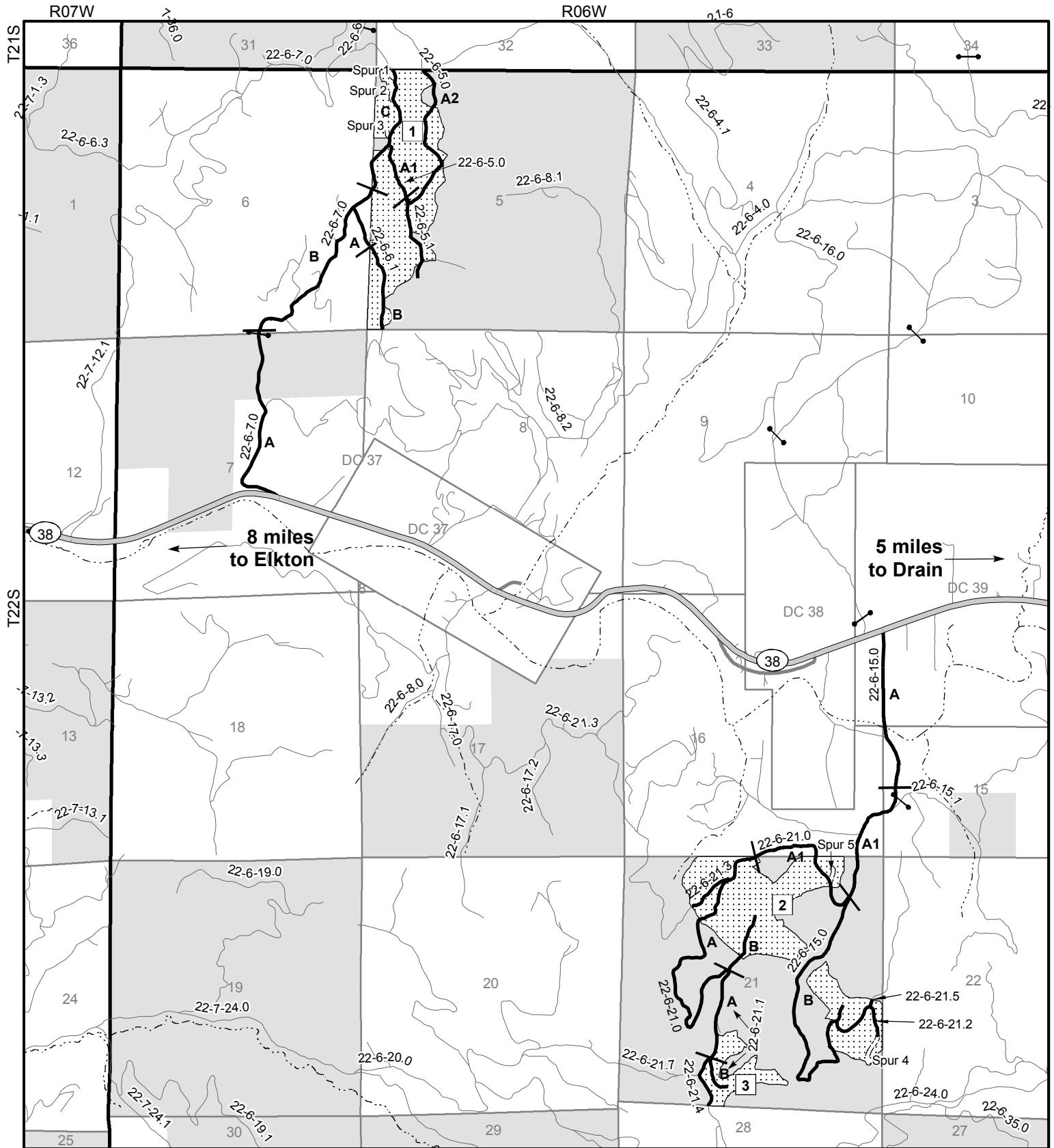
check and the first unsatisfactory check, 100 percent of the volume scaled during the unsatisfactory check, and 50 percent of the volume between the last unsatisfactory check scale and the next satisfactory check scale.

G. Accountability

1. Purchaser shall notify the Authorized Officer five (5) days prior to starting or stopping of hauling operations performed under the contract.
2. **All logs will be painted and branded at the landing and accounted for in accordance with Sec. 42(A) of the contract. If Sale Area is within a State that maintains a log brand register, brands shall be registered with the State. Purchaser shall use assigned brand(s) exclusively on logs from this sale until the Authorized Officer releases the brand(s).** Each truck driver shall obtain a load receipt and a BLM scaler receipt from the Log Truck Ticket Book issued by the Authorized Officer and comply with the instructions specified on the cover of said book. While products are in transit, the truck driver shall display the load receipt and BLM scaler receipt on the bunk or wing log at the front of the load on the driver's side. All logs on each load shall be delivered to the destination listed on the woods receipt. The BLM scaler receipt shall be surrendered at the location of BLM scaling, the unloading location, or as requested by BLM. A designated area shall be identified at the yard scaling location for logs arriving during off hours. Logs arriving during off hours shall be left on the truck or may be off loaded to the designated area.
3. The Purchaser shall not haul logs from the contract area on weekends; Memorial Day, Fourth of July, Labor Day, Thanksgiving, Christmas, and New Year's holidays; or outside the hours of 4:00 a.m. to 8:00 p.m. daily, unless otherwise approved in writing by the Authorized Officer or designated in the Approved Logging Plan. (Refer to Section 42(A) of the contract).
4. The Purchaser shall furnish BLM a map showing the route which shall be used to haul logs from the timber sale area to the scaling location. Such route shall be the most direct haul route between the two points, unless another route is approved by BLM. The route of haul may be changed only with advance notice to and approval by BLM. The haul route map shall be attached to the Approved Logging Plan.
5. All loads will be scaled at scale locations listed on the Scaling Authorization (Form OR 5300-18) as approved by the Authorized Officer. The Purchaser shall ensure that all scale site owners listed on the Scaling Authorization enter into a Memorandum of Agreement for Yard Scaling before requesting BLM approval of the Scaling Authorization. Areas for scaling BLM logs will be designated on the ground and identified on the yard map as required in the Memorandum(s) of Agreement for Yard Scaling.
6. Any removal of logs from loaded trucks before being accounted for and/or scaled as required by the contract shall be considered a willful trespass and render the Purchaser liable for damages under applicable law. Any payment made for purchase of such logs shall be deducted from amount due because of trespass.

- H. **Scaling Lost Products** - The value of lost loads shall be equal to the highest value load for the month in which the lost load is hauled regardless of where the highest value load is scaled. If no loads have been scaled in that month, value will be determined from the closest month in which loads were scaled.
- V. **Estimated Volumes and Values** - The following volume estimates and calculations of value of timber sold are made solely as an administrative aid for determining payment amounts, when payments are due, the value of timber subject to any special bonding provisions, and other purposes specified in various portions of the contract. The cutting areas are shown on Exhibit A of the contract.
- A. **Merchantable Timber Volume Removed from Contract Area** - The total volume of removed timber shall be determined using the Government's records of scaled volumes of timber skidded or yarded monthly, or a shorter period if agreed to by the Purchaser and Government, to loading points or removed from the contract area.
- B. **Merchantable Timber Not Yet Removed from Contract Area** - The value of merchantable timber which has not been removed will be determined by multiplying the value per acre as shown below times the amount of acreage subject to the purpose of the value determination, as determined by the Authorized Officer:

Total Estimated Purchase Price And/Or Schedule of Volumes and Values for Merchantable Timber Not Yet Removed from Contract Area					
Cutting Area		Total Estimated Volume (MBF)		Total Estimated Purchase Price	
Cutting Area Number	Approximate Number of Acres	Volume per Acre	Total Volume	Value per Acre	Total Value
1	114	28.1	3,206	\$3,107.87	\$354,297.60
2	120	29.4	3,533	\$3,917.07	\$470,048.50
3	21	29.7	623	\$3,949.04	\$82,930.00
RW1	1	68	68	\$4,029.00	\$4,029.00
RW2	1	30	30	\$8,968.20	\$8,968.20
Sale Total	257		7,460		\$920,273.30

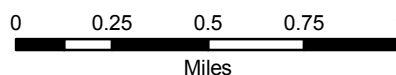


Legend

- Gate
- Segment Break
- Construction
- Haul Route
- Existing Road
- Major Stream
- Harvest Area
- BLM Ownership

1:31,680

1 in = 0.5 miles



Date: 6/25/2019

Roseburg District
Bureau of Land Management
777 NW Garden Valley Blvd.
Roseburg, Oregon 97471



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**United States Department of the Interior
Bureau of Land Management Roseburg District
EXHIBIT "D"**

Sale Name: Harvest Moon							
Contract No. ORR04-TS-2019.0006							
Road Number	Road Seg.	Segment Length	Segment Owner	Road Use Fees	Surface Type	Timber Haul Fees*	Maintained By
22-6-15.0	A	0.60	BLM		BST	\$0.92	BLM
22-6-15.0	A1	0.40	BLM		Rock	\$1.35	BLM
22-6-15.0	B	1.32	BLM		Rock	\$0.60	Purchaser
22-6-21.0	A	1.31	BLM		Rock	\$1.35	BLM
22-6-21.0	A1	0.55	BLM		Rock	\$1.35	BLM
22-6-21.0	B	0.25	BLM		Rock	\$0.60	Purchaser
22-6-21.1	A	0.34	BLM		Rock	\$1.35	BLM
22-6-21.1	B	0.16	BLM		Rock	\$0.60	Purchaser
22-6-21.2	A	0.38	BLM		Rock	\$0.60	Purchaser
22-6-21.3	A (Por)	0.20	BLM		Rock	\$0.60	Purchaser
22-6-21.4	A (Por)	0.20	BLM		Rock	\$1.35	BLM
22-6-21.5	A	0.05	BLM		Rock	\$0.60	Purchaser
22-6-5.0	A1	0.26	BLM		Rock	\$0.60	Purchaser
22-6-5.0	A2	0.60	BLM		Rock	\$0.60	Purchaser
22-6-5.1	A	0.30	BLM		Rock	\$0.60	Purchaser
22-6-6.1	A	0.17	Seneca	\$5.09	Rock		Purchaser
22-6-6.1	B	0.34	Seneca	\$11.48	Rock		Purchaser
22-6-7.0	A	1.05	BLM		Rock	\$1.35	BLM
22-6-7.0	B (Base)	0.75	Seneca	Paid Off	Native		Purchaser
22-6-7.0	B (Imp)	0.75	BLM		Rock	\$0.60	Purchaser
22-6-7.0	C	0.60	BLM		Rock	\$0.60	Purchaser
Spur 1	A	0.02	BLM		Rock	\$0.60	Purchaser
Spur 2	A	0.03	BLM		Rock	\$0.60	Purchaser
Spur 3	A	0.03	BLM		Rock	\$0.60	Purchaser
Spur 4	A	0.08	BLM		Rock	\$0.60	Purchaser
Spur 5	A	0.06	BLM		Rock	\$0.60	Purchaser

ROAD MAINTENANCE SPECIFICATIONS

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

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

ROAD MAINTENANCE SPECIFICATIONS

GENERAL - 3000

- 3001 The Purchaser shall be required to maintain all roads listed and/or referenced in Section 42.B., Special Provisions of this contract in accordance with Sections 3000, 3100, 3200, 3300, 3400 and 3500 of this exhibit.
- 3002 The Purchaser shall maintain the cross section of existing dirt or graveled roads to the existing geometric standards. Any roads required to be constructed, improved, or renovated under terms of this contract shall be maintained to the geometric standards required in Exhibit C of this contract.
- 3003 The minimum required maintenance on any roads shall include the provisions specified in Subsections 3101, 3104, and 3105.
- 3004 The Purchaser shall be responsible for providing timely maintenance and cleanup on any roads with logging units substantially completed prior to moving operations to other roads. The maximum length of non-maintained or non-cleanup of the road prism shall not exceed the sum of one (1) mile at any time. Release of maintenance requirements may be granted, upon written request, when the conditions specified in Sections 3300 and 3400 are met satisfactorily.

OPERATIONAL MAINTENANCE - 3100

- 3101 The Purchaser shall blade and shape the road surface and shoulders with a motor grader. Banks shall not be undercut. Back blading with tractors or similar equipment will be allowed only around landings and other areas when approved by the Authorized Officer.
- 3102 The Purchaser shall furnish and place 300 cu. yds. of aggregate, conforming to the requirements in Section 1000 of Exhibit C of this contract, on the roadway at locations and in the amounts designated by the Authorized Officer.
- This aggregate shall be used to repair surface failures and areas of depleted surface depth excluding damages covered by Section 12 of this contract. The aggregate shall be furnished, hauled, placed, spread and compacted by use of dump trucks, water trucks and motor grader or similar equipment.
- 3103 The purchaser shall maintain established berms and place additional berms using adjacent material where needed to protect fills as directed by the Authorized Officer.
- 3104 The purchaser shall perform other road cleanup including removal of debris, fallen timber, bank slough, and slides which can practicably be accomplished by a motor grader, rubber tired front end bucket loader, rubber tired backhoe or comparable equipment, and by the use of hand tools.

ROAD MAINTENANCE SPECIFICATIONS

- 3104a Removal of bank slough and slide material includes placement of material at the nearest designated, suitable disposal site where material cannot erode into streams, lakes, or reservoirs or cause undue damage to road fill slopes which have been planted or mulched to control soil erosion as directed by the Authorized Officer.
- 3104b The Purchaser shall be responsible for removal of all slides or slough, up to fifteen station yards in quantity, at any one site. This work includes unlimited multiple sites on all roads required to be maintained by the purchaser.
- Prior to removal of any slough or slide material exceeding fifteen station yards at any one site, the Purchaser and the Authorized Officer or their Authorized Representatives shall agree in writing, in the field, to the quantity of material, method of disposal, and the disposal site. Work may commence immediately after agreement.
- Upon completion of agreed upon work, a reduction in timber sale purchase price will be made to offset the cost of the work, based on current BLM Road Cost Guide. Adjustments in purchase price for completed work shall be made as necessary and no less than once per year when actual work is ongoing.
- 3105 The Purchaser shall be responsible for maintaining normal flow in drainage structures. This includes cleaning out drainage ditches, catch basins, clearing pipe inverts of sediment and other debris lodged in the barrel of the pipe, and maintaining water dips and water-bars using equipment specified in Subsection 3104 and other culvert cleaning and flushing equipment.
- 3106 The Purchaser shall be responsible for repair and replacement of all materials eroded from road shoulders and fill slopes, up to fifteen station yards in quantity, at any one site. This work includes unlimited multiple sites on all roads required to be maintained by the Purchaser. Prior to repair and replacement of eroded material exceeding fifteen station yards at any one site, the Purchaser and the Authorized Officer or their Authorized Representatives shall agree in writing, in the field, to the quantity of material, borrow source and method of repair. Work may commence immediately after agreement.
- Upon completion of agreed upon work, a reduction in timber sale purchase price will be made to offset the cost of the work based upon current BLM Road Cost Guide. Adjustments in purchase price for completed work shall be made as necessary and no less than once per year when actual work is ongoing.
- 3107 The Purchaser shall cut or trim trees and brush which obstructs vision or prevents the safe passage of traffic along the traveled way when directed by the Authorized Officer.
- The Purchaser shall also cut trees or brush encroaching on the road prism that are a result of his activities or winter damage during the contract period. Disposal of such vegetative material shall be by scattering below the road.

ROAD MAINTENANCE SPECIFICATIONS

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

SEASONAL MAINTENANCE - 3200

- 3201 The Purchaser shall perform preventative maintenance at the end of Purchaser's hauling each season and during non-hauling periods which occur between other operations on the contract area. This includes requirements specified in Section 3100.
- 3202 The purchaser shall perform and complete maintenance specified in Sections 3000, 3100, and 3200 on all roads maintained by him, prior to October 1 each year, except as specified in Subsection 3203, after initial commencement of construction or logging operations. Thereafter, all roads shall have continuous preventive maintenance and road cleanup until suspension of seasonal operations. This includes all roads used and not used during the proceeding operating seasons.
- 3203 The Purchaser shall complete road cleanup and maintenance, as specified in Section 3100, at the completion of logging operations on any roads located in an area separate from the area where logging activities will resume.
- 3204 The Purchaser shall be responsible for performing post storm inspections and maintenance during the winter season to minimize erosion and potential road or watershed damage.

FINAL MAINTENANCE - 3300

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

ROAD MAINTENANCE SPECIFICATIONS

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

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

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

OTHER MAINTENANCE - 3400

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

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

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

DECOMMISSIONING – 3500

- 3501 Decommissioning shall consist of installing water bars, placement of slash and blocking road from access by vehicles. This work is not required for road acceptance under Section 18 of this contract.

ROAD MAINTENANCE SPECIFICATIONS

3503 Decommissioning shall be performed on existing roads in accordance with these specifications, at the following locations:

Road No.	From Sta	To Sta	Decommission
Spur 5	0+00	1+00	Block

3504 Decommissioning work shall be completed at the end of timber hauling activities .

3506 Stockpiled slash shall be used to protect exposed areas created by the Purchaser's operations described in these sections. Slash shall be uniformly spread and placed without bunching. The operation shall produce a dense, uniform mat. Where slash is not available exposed soil areas shall be stabilized in accordance with Section 1800.

3509 Access shall be blocked with barricades as shown on the typical detail sheet and at locations as shown in Subsection 3503.

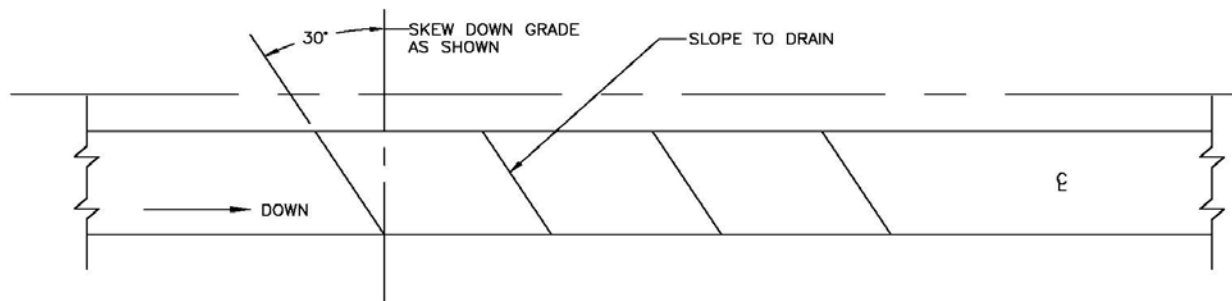
3511 Water barring shall be done on designated roadways, turnouts, disturbed areas and landings.

3513 Water bars shall be installed across the full width of roadway at locations and spacing shown in the specifications and typical detail sheet. Water bars shall be constructed as shown on typical detail sheet. No water bar will be installed closer than 50 feet to a draw crossing.

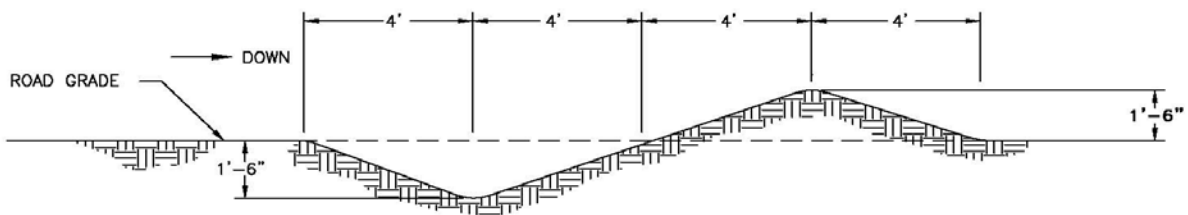
3514 Protection of exposed surfaces shall be accomplished by placement of soil stabilization material in accordance with Section 1800 on designated roadways, turnouts, disturbed areas, landings, cut banks, fill slopes and other areas disturbed by the purchaser's operations in accordance with these specifications.

ROAD MAINTENANCE SPECIFICATIONS

EXHIBIT D WATERBAR DETAIL



ROAD PLAN
 SCALE: NONE

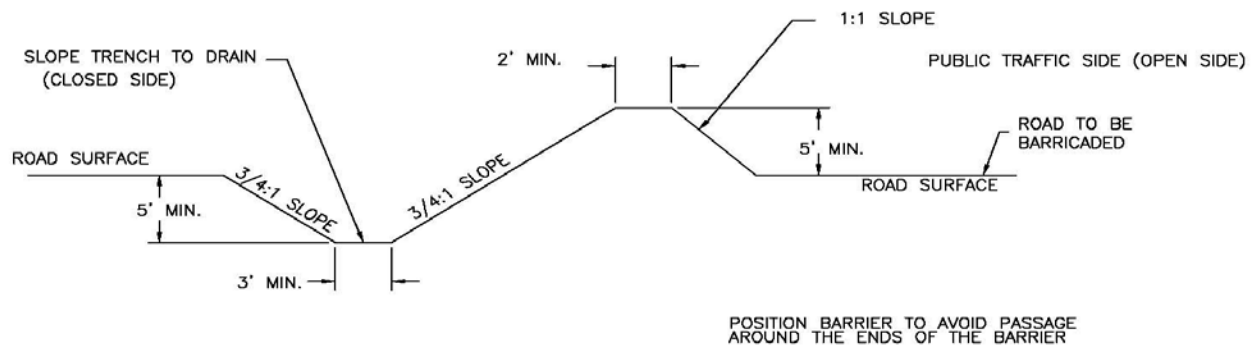


ROAD PROFILE
 SCALE: NONE

WATERBAR SPACING IN FEET	
ROAD GRADIENT IN %	SPACING
3 TO 5	300
6 TO 10	200
11 TO 15	150
16 TO 20	75
21 TO 35	50

ROAD MAINTENANCE SPECIFICATIONS

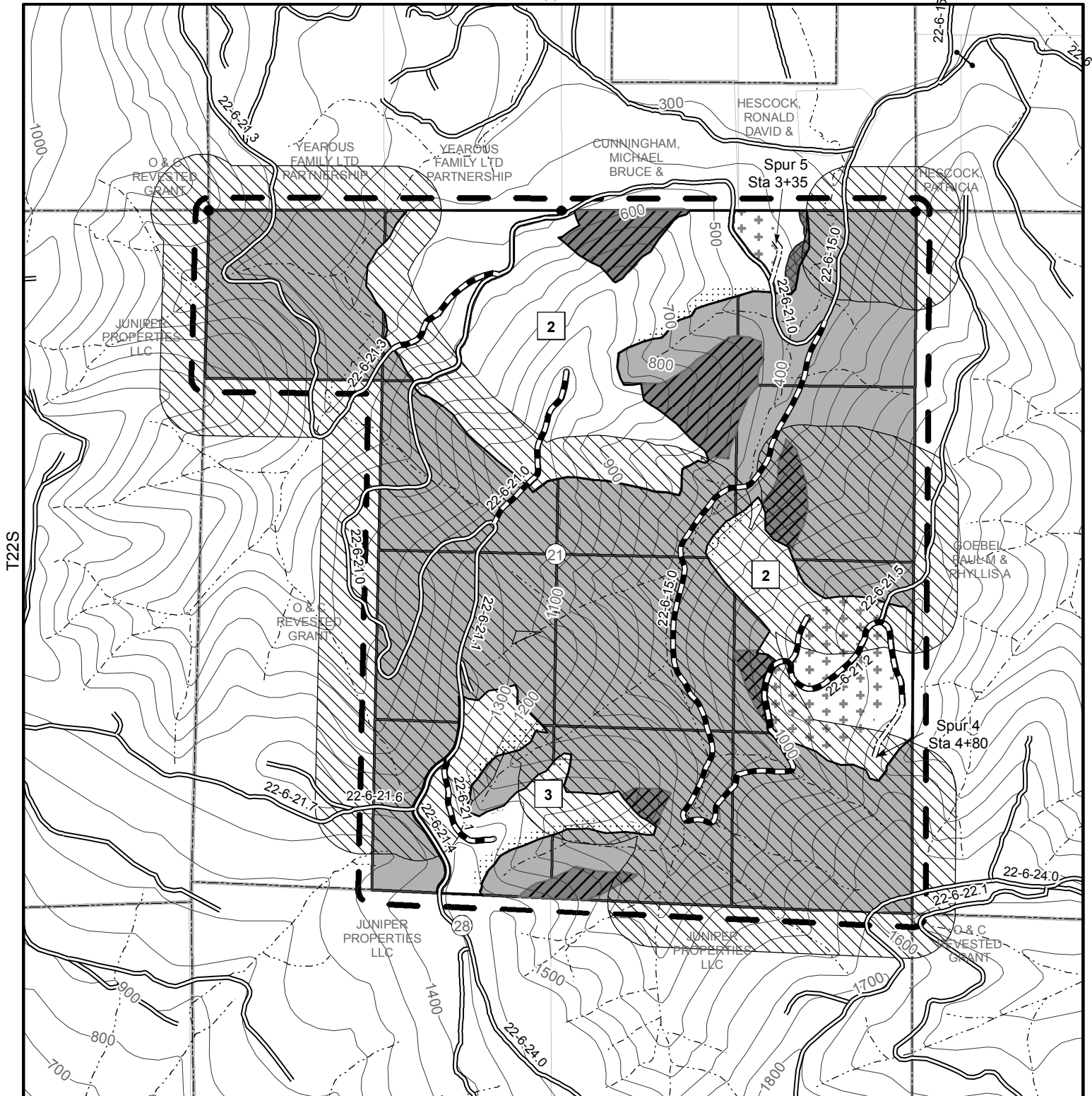
EXHIBIT D
TRENCH BARRIER DETAIL



TRENCH BARRIER
SCALE: NONE



R06W

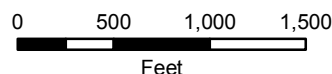


Legend

- Gate
- Survey Corner
- Road Construction
- == Road Renovation
- == Existing Road
- Stream
- Harvest Area - Cable Yarding
- + Harvest Area - Ground Based
- ▨ 2019 Snowdown
- ▤ Riparian Thinning
- ▦ Retention Aggregate
- ▧ Marbled Murrelet Restriction Area
- ▩ Reserve Area
- ▭ Contract Area

1:12,000

1 inch = 1,000 feet



Date: 7/8/2019

Roseburg District
Bureau of Land Management
777 NW Garden Valley Blvd.
Roseburg, Oregon 97471



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

Timber Appraisal

Sale Name:	Harvest Moon	Sale Date:	Tuesday, August 20, 2019
BLM District:	Roseburg DO	Unit of Measure:	16' MBF
Contract #:	ORR04-TS-2019.0006	Contract Term:	36 months
Sale Type:	Advertised	Contract Mechanism:	5450-4
			Sale of Timber - Scale Sale

Content

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

Prepared By: Kress, Christopher J - 7/16/2019

Approved By: Snider, Douglas A - 7/18/2019

Legal Description of Contract Area

Land Status	County	Township	Range	Section	Subdivision	Meridian
O&C	Douglas	22S	6W	5	NW 1/4, N 1/2 SW 1/4, SW 1/4 SW 1/4	Willamette
O&C	Douglas	22S	6W	21	E 1/2, N 1/2 NW 1/4, SE1/4 NW1/4, E 1/2 SW 1/4	Willamette

Species Totals

Species	Net	Gross Merch	Gross	# of Merch Logs	# of Cull Logs	# of Trees
Douglas Fir	6,461.0	6,963.0	7,015.0	128,686	1,237	29,623
Grandfir	988.0	1,055.0	1,063.0	13,592	68	2,812
Western Hemlock	7.0	8.0	8.0	127	0	25
Incense-cedar	2.0	3.0	3.0	34	0	9
Western Redcedar	2.0	2.0	2.0	34	0	8
Totals	7,460.0	8,031.0	8,091.0	142,473	1,305	32,477

Cutting Area Acres

Regeneration Harvest Acres	Partial Cut Acres	Right of Way Acres	Total Acres	Net Volume per Acre
135.0	120.0	2.0	257.0	29.0

Comments:

Logging Costs

Stump to Truck	\$1,109,815.63
Transportation	\$474,810.00
Road Construction	\$371,867.93
Maintenance/Rockwear	\$29,550.06
Road Use	\$10,985.91
Other Allowances	\$28,613.00
Total:	\$2,025,642.53
Total Logging Cost per MBF:	\$271.53

Utilization Centers

Location	Distance	% of Net Volume
Winchester	40.3 miles	100 %

Profit & Risk

Profit	9 %
Risk	3 %
Total Profit & Risk	12 %

Tract Features

Quadratic Mean DBH	14.6 in
Average GM Log	56 bf
Average Volume per Acre	29.0 mbf
Recovery	92 %
<u>Net MBF volume:</u>	
Green	7,460.0 mbf
Salvage	0 mbf
Export	0 mbf
<u>Ground Base Logging:</u>	
Percent of Sale Volume	26 %
Average Yarding Slope	30 %
Average Yarding Distance	400 ft
<u>Cable Logging:</u>	
Percent of Sale Volume	74 %
Average Yarding Slope	65 %
Average Yarding Distance	800 ft
<u>Aerial Logging:</u>	
Percent of Sale Volume	0 %
Average Yarding Slope	0 %
Average Yarding Distance	0 ft

Cruise

Cruise Completed	May 2019
Cruised By	Jason Coppersmith, Chris Kress
Cruise Method	PCMTRE for all harvest units. 100% cruise for R/W's

Stumpage Computation

Species	# of Trees	Net Volume	Pond Value	(-) Profit & Risk	(-) Logging Costs	(+) Marginal Log Value	Appraised Price/MBF	Appraised Value
Douglas Fir	29,623	6,461.0	\$461.16	\$55.34	\$271.53	\$0.00	\$134.30	\$867,712.30
Grandfir	2,812	988.0	\$367.90	\$44.15	\$271.53	\$0.00	\$52.20	\$51,573.60
Western Hemlock	25	7.0	\$321.44	\$38.57	\$271.53	\$0.00	\$32.20 *	\$225.40
Incense-cedar	9	2.0	\$675.00	\$81.00	\$271.53	\$0.00	\$322.50	\$645.00
Western Redcedar	8	2.0	\$375.00	\$45.00	\$271.53	\$0.00	\$58.50	\$117.00
Totals	32,477	7,460.0						\$920,273.30

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

Percent of Volume By Log Grade

Species	No. 1 & 2 Peeler	No. 3 Peeler	Special Mill	No. 2 Sawmill	No. 3 Sawmill	No. 4 Sawmill	Camp Run
Douglas Fir				41.0 %	53.0 %	6.0 %	

Comments: Temporary price placement until auction

Species	Peeler	No. 1 Sawmill	Special Mill	No. 2 Sawmill	No. 3 Sawmill	No. 4 Sawmill	Camp Run
Grandfir				65.0 %	32.0 %	3.0 %	

Species	Peeler	No. 1 Sawmill	Special Mill	No. 2 Sawmill	No. 3 Sawmill	No. 4 Sawmill	Camp Run
Western Hemlock				36.0 %	60.0 %	4.0 %	

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

Species	No. 1 Sawmill	No. 2 Sawmill	No. 3 Sawmill	No. 4 Sawmill			Camp Run
Western Redcedar							100.0 %

Harvest Moon**Unit Summary****ORR04-TS-2019.0006****Unit: 1**

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	2,272.0	2,435.0	2,475.0	6,756
Grandfir	923.0	982.0	990.0	2,695
Western Hemlock	7.0	8.0	8.0	25
Incense-cedar	2.0	3.0	3.0	9
Western Redcedar	2.0	2.0	2.0	8
Totals:	3,206.0	3,430.0	3,478.0	9,493

Net Volume/Acre: 28.1 MBF

Regeneration Harvest	0.0
Partial Cut	114.0
Right of Way	0.0
Total Acres:	114.0

Unit: 2

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	3,479.0	3,763.0	3,771.0	19,200
Grandfir	54.0	60.0	60.0	98
Totals:	3,533.0	3,823.0	3,831.0	19,298

Net Volume/Acre: 29.4 MBF

Regeneration Harvest	118.0
Partial Cut	2.0
Right of Way	0.0
Total Acres:	120.0

Unit: 3

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	614.0	664.0	666.0	3,388
Grandfir	9.0	11.0	11.0	17
Totals:	623.0	675.0	677.0	3,405

Net Volume/Acre: 29.7 MBF

Regeneration Harvest	17.0
Partial Cut	4.0
Right of Way	0.0
Total Acres:	21.0

Unit: RW 1

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	66.0	69.0	70.0	118
Grandfir	2.0	2.0	2.0	2
Totals:	68.0	71.0	72.0	120

Net Volume/Acre: 68.0 MBF

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

Unit: RW 2

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	30.0	32.0	33.0	161
Totals:	30.0	32.0	33.0	161

Comments:

RW 1 is all spur volume in unit 1
RW 2 is all spur volume in unit 2

Net Volume/Acre: 30.0 MBF

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

Total Stump To Truck	Net Volume	\$/MBF
\$1,109,815.63	7,460.0	\$148.77

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

Yarding System	Unit of Measure	# of Units of Measure	\$/Unit of Measure	Total Cost	Remarks
Cable: Small Yarder	GM MBF	510.0	\$407.15	\$207,646.50	Unit 2 Downhill Cable Thinning. 2 Loads a day.
Cable: Small Yarder	GM MBF	2,708.0	\$130.29	\$352,825.32	Unit 2 Cable Regen. 5 Loads a day.
Wheel Skidder	GM MBF	1,444.0	\$114.13	\$164,803.72	Unit 1 Ground-base Thinning. 6 Loads a day.
Wheel Skidder	GM MBF	605.0	\$114.13	\$69,048.65	Unit 2 Ground-base Regen. 6 Loads a day.
Cable: Small Yarder	GM MBF	675.0	\$108.57	\$73,284.75	Unit 3 Cable Regen. 6 Loads a day.
Cable: Small Yarder	GM MBF	1,986.0	\$108.57	\$215,620.02	Unit 1 Cable Thinning. 6 Loads a day.
Track Skidder	GM MBF	103.0	\$95.89	\$9,876.67	New Construction. 6 Loads a day. 2 Cutters
Subtotal				\$1,093,105.63	

Additional Costs

Item	Unit of Measure	# of Units of Measure	\$/Unit of Measure	Total Cost	Remarks
Lift Tree	Each	85.0	\$150.00	\$12,750.00	Unit 1: 38 Lift Trees. Unit 2: 40 Lift Trees. Unit 3: 7 Lift Trees
Subtotal				\$12,750.00	

Additional Moves

Equipment	Unit of Measure	# of Units of Measure	\$/Unit of Measure	Total Cost	Remarks
Cable: Small Yarder	Move	2.0	\$1,980.00	\$3,960.00	Equipment consists of 1 yarder, 1 wheel skidder 1 shovel for ground-base logging and 1 shovel for cable logging
Subtotal				\$3,960.00	

Comments:

All equipment was appraised with \$3.25/ Gal, 4.5 MBF/Load, \$400 for Cutter/day and default number of cutters/ Day unless noted otherwise.

Total	Net Volume	\$/MBF
\$474,810.00	7,460.0	\$63.65

Utilization Center	One Way Mileage	Description	Unit of Measure	# of Units	\$/Unit of Measure	Total Cost	% of Sale Volume
Winchester	40.3	All Gross Merch	Hour	4,998.0	\$95.00	\$474,810.00	100 %

Comments:

Mid-Point to JCT. HWY 38/22-6-15.0 = 3.8 miles

JCT HWY 38/22-6-15.0 to D.C. 389 = 5.7 miles

HWY 38 to I-5 (Exit 150) = 7.8 miles

Exit 150 to Exit 129 = 21 miles

I-5 (Exit 129) to Utilization Center= 2 miles

8031 G.M. / 4.5MBF/Load = 1785 Loads

168 mins/Load / 60 min. = 2.8 hrs/load

2.8 hrs/load x 1785 loads = 4998 hrs

4998 hrs x \$95/hr = \$474,810.00

Engineering Allowances

Total	Net Volume	\$/MBF
\$412,403.90	7,460.0	\$55.28

Cost Item	Total Cost
Road Construction:	\$371,867.93
Road Maintenance/Rockwear:	\$29,550.06
Road Use Fees:	\$10,985.91

Comments:

Road Use Fees: Payment made to Seneca- \$10,985.91

Maintenance and & Rockwear: Payment made to BLM- \$10,940.12. Purchaser Credit - \$8,153.82

Total	Net Volume	\$/MBF
\$28,613.00	7,460.0	\$3.84

Environmental Protection

Cost item	Total Cost
Equipment Cleaning	\$1,485.00
Sub-soiling: Equipment Move-in	\$308.00
Sub-soiling	\$2,070.00
Snag Creation	\$10,800.00
Subtotal	\$14,663.00

Slash Disposal & Site Prep

Cost item	Total Cost
Burn Landing Piling	\$2,325.00
Landing Piling	\$11,625.00
Subtotal	\$13,950.00

Comments:

Equipment Cleaning

- Two Yarder x 3 hours = 3 hours
- Two Wheeled Skidder x 3 hours = 3 hours
- Three Shovels x 3 hours = 6 hours
- Track Skidder 1 x 3 hours = 3 hours
- Excavator from sub-soiling cleaning 1 x 3 = 3 hours

27 Total Hours x \$55/ hour = \$1,485.00

*Additional Cleaning for yarder, wheel skidder, and shovel for additional move-in

Snag Creation

- 948 snags ÷ 35 snags/day = 27 days of work
- \$400/day for cutter x 27 days = \$10,800.00

Slash Disposal

- Landing piling/ covering: 93 Landings @ \$125/landing = \$11,625.00
- To burn landing piles: 93 x \$25 = \$2,325.00

Slash Disposal Buyout Option:

- \$2,325.00 x 21.6% = \$502.20
- o 21.6 % represents admin fees
- \$2,325.00 + \$502.20 = \$2,827.20

Sub-soiling

- 0.9 subsoil miles
- Production per day = $\frac{3}{4}$ miles = 1.2 = 2 days of subsoiling
- 0.9 / .75/day = 2 x 9hrs/day = 18 total hrs x \$115 = \$2,070.00
- 1 move to sale @ 2.8 hours/move x \$ 110/hr = \$308.00
- Total subsoil cost = \$2,070.00 + \$308.00 = \$2,378.00

Snag Creation Buyout Option

- \$10,800.00 x 21.6% = \$2,332.80
- o 21.6 % represents admin fees
- \$10,800.00 + \$2,332.80 = \$13,132.80

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Version: 5.2.0.133
Updated: 6/14/2017

Summary of All Roads and Projects

T.S. Contract Name: Harvest Moon Tract No: ORR04-TS-2019.0006

200 Clearing and Grubbing: 4.5 acres	\$11,199.25
300 Excavation:	\$4,075.60
Haul < 500 ft: 0 sta-yds	
Haul > 500 ft: 0 yd-mi	
400 Drainage:	\$40,570.82
Culvert: 40 lf	DownSpout: 0 lf
PolyPipe: 280 lf	
500 Renovation:	\$9,207.51
Blading 4.48 mi	
Slide Removal 175 cy	
700-1200 Surfacing:	\$292,790.76
Commercial Quarry Name: WWD 16,210 LCY	
1300 Geotextiles:	\$169.40
1400 Slope Protection:	\$4,414.15
Gradation Class 4: 100 cy	
1800 Soil Stabilization: 0.0 acres	\$0.00
1900 Cattleguards:	\$0.00
2100 RoadSide Brushing:	\$3,833.61
Mechanical Brushing: 9.5 acres	
2300 Engineering: 8.10 sta.	\$883.22
2400 Minor Concrete:	\$0.00
2500 Gabions:	\$0.00
8000 Miscellaneous:	\$0.00
Mobilization: Const. \$4,723.60 Surf. \$0.00.....	\$4,723.60
Quarry Development:	\$0.00

Total: 7,460 mbf @ \$49.848/mbf = \$371,867.93

Notes:

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Contract Name: Harvest Moon
Tract No: ORR04-TS-2019.0006

ROAD CONSTRUCTION SUMMARY

1/ Const/Impr/Renov/Decom/Temp 2/ yd-miles haul 3/ Lin ft CMP 4/ Lin ft Polypipe 5/ Lin ft Downspout 6/ slide removal cy

Road Number	Type 1/	Miles	Clear Grubb	Excav -ation	Drain -age	Reno- vation	Surf- acing	Geo- textile	Slope Protect	Soil Stabil	Cattle Guard	Rdside Brush	Engin- eering	Minor Concrete	Gab- ions	Miscel- laneous	Mobil- ization	Quarry Develop	Sub- Total
22-6-15.0	R	1.22			\$30,478	\$2,360	\$83,660					\$604					\$1,507		\$118,609
22-6-21.0 Seg A	R	1.86			\$8,855												\$114		\$8,968
22-6-21.0 Seg B	R	0.25	\$1,482			\$346	\$15,252					\$242					\$223		\$17,545
22-6-21.1	R	0.16	\$1,041			\$2,551	\$9,082	\$169	\$4,414			\$161					\$224		\$17,643
22-6-21.2	R	0.38	\$2,272			\$527	\$24,157					\$370					\$352		\$27,677
22-6-21.3	R	0.20				\$277	\$11,116					\$201					\$149		\$11,744
22-6-5.0	R	0.86				\$1,192	\$53,131					\$846					\$710		\$55,878
22-6-5.1	R	0.30				\$416	\$18,405					\$302					\$246		\$19,369
22-6-6.1	R	0.51				\$707	\$22,046					\$503					\$299		\$23,555
22-6-7.0	R	0.60				\$831	\$25,913					\$604					\$352		\$27,700
Spur 1	C	0.02	\$489	\$499			\$3,748										\$61		\$4,796
Spur 2	C	0.03	\$489	\$499			\$5,612										\$85		\$6,684
Spur 3	C	0.03	\$489	\$499			\$5,612										\$85		\$6,684
Spur 4	C	0.09	\$2,469	\$1,289			\$6,614						\$518				\$140		\$11,030
Spur 5	C	0.06	\$2,469	\$1,289	\$1,238		\$8,443						\$365				\$178		\$13,982

TIMBER SALE ROAD SPECIFICATIONS

TABLE OF CONTENTS

SECTION	DESCRIPTION
100	General
200	Clearing and Grubbing
300	Excavation and Embankment
400	Pipe Culverts
500	Renovation and Improvement of Existing Roads
600	Watering
1000	Aggregate Base Course - Crushed Rock
1400	Slope Protection
1700	Erosion Control
2100	Roadside Brushing

TIMBER SALE ROAD SPECIFICATIONS

GENERAL – 100

101 - Prework Conference(s):

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

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

102 - Definitions:

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

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

ACI - American Concrete Institute

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

ASTM - American Society for Testing and Materials.

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

BLM - Bureau of Land Management

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

TIMBER SALE ROAD SPECIFICATIONS

Burst Strength - The resistance of a geotextile material to rupture from pressure applied at right angles to the plane of the geotextile material under specified conditions, usually

expressed as the amount of pressure causing failure. Rupture or burst results from tensile failure of the geotextile material.

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

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

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

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

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

Grab Tensile Strength - A modified tensile strength of a geotextile material. The strength of a specific width of geotextile material together with the additional strength contributed by adjacent areas. Typically, grab strength is determined on a 12-inch-wide strip of geotextile material, with the tensile load applied at the midpoint of the geotextile material width through 1-inch-wide jaw faces.

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

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

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

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

TIMBER SALE ROAD SPECIFICATIONS

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

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

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

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

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

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

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

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

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

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

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

Road Centerline - The longitudinal center of a roadbed.

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

TIMBER SALE ROAD SPECIFICATIONS

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

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

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

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

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

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

Spalls - Flakes or chips of stone.

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

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

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

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

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

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

TIMBER SALE ROAD SPECIFICATIONS

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

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

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

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

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

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

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

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

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

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

102a - Tests Used in These Specifications:

AASHTO T 11

Quantity of rock finer than No. 200 sieve.

AASHTO T 27

Sieve analysis of fine and coarse aggregate using sieves with square openings; gradation.

AASHTO T 89

Liquid limit of material passing the No. 40 sieve. Water content at which the soil passes from a plastic to a liquid state.

TIMBER SALE ROAD SPECIFICATIONS

AASHTO T 90

Plastic limits and plasticity index of soil.

- a. Plastic limit - lowest water content at which the soil remains plastic.
- b. Plasticity index - range of water content, within which the material is in a plastic state.
Numerical difference between the liquid and plastic limits of the soil.

AASHTO T 96

Resistance to abrasion of small size coarse aggregate by use of the Los Angeles machine.

AASHTO T 99

Relationship between soil moisture and density of soil.

Method A - 4" mold, soil passing a No. 4 sieve

25 blows/layer & 3 layers.

Method C - 4" mold, soil passing a 3/4 inch sieve

25 blows/layer & 3 layers.

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

AASHTO T 119

Slump of hydraulic cement concrete.

AASHTO T 152

Air content of freshly mixed concrete.

AASHTO T 166

Specific Gravity of compacted Bituminous Mixtures.

AASHTO T 176

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

AASHTO T 180

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

AASHTO T 191

Sand Cone. Density of soil in place: For subgrade use 6-inch or 12-inch cone, for rock surfacing 1-1/2-inch minus to 3-inch minus use 12-inch cone.

AASHTO T 205

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

TIMBER SALE ROAD SPECIFICATIONS

AASHTO T 209

Maximum Specific Gravity of Bituminous Paving Mixtures.

AASHTO T 210

Durability of aggregates based on resistance to produce fines.

AASHTO T 224

Correction for coarse particles in the soil.

AASHTO T 238

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

AASHTO T 248

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

ASTM D 4564

Determination of relative density of cohesionless soils.

DMSO (dimethyl sulfide)

Determines volume of expanding clays in aggregates. Usually associated with marine basalts.

- 103 - Compaction equipment shall meet the following requirements:
- 103a - Padded Drum (Tamping) Rollers. The unit shall consist of a drum with pads, be either self-propelled or towed by a tractor, and capable of operating at a speed of 6 mph. The drum shall be no less than 48 inches in diameter over the pads and not less than 60 inches in width. The pads shall have a minimum height of 3 inches, and a face area of not less than 14 square inches. The weight at drum shall be no less than 8000 lb.
- 103b - Sheepfoot (Tamping) rollers. A tamping roller unit shall consist of two watertight metal drums mounted in frames in such manner as to be fully oscillating, together with a tractor having sufficient weight and power under actual working conditions to pull the roller drums at a minimum speed of 2.5 miles per hour. The drums shall be no less than 60 inches in diameter and no less than 54 inches in length, measured at the drum's surface, and shall be studded with tamping feet projecting not less than 7 inches from the face of the drums.

The distance between circumferential rows of tamper feet shall be such that the diagonal distance from any foot to the nearest foot in each adjacent row shall be

TIMBER SALE ROAD SPECIFICATIONS

not more than 12 inches. The cross-sectional area of the face of each tamper foot, measured perpendicular to the axis of the stud, shall be not less than 5-1/2 square inches nor more than 8 square inches.

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

- 103c - Smooth-wheel power rollers. Smooth-wheel power rollers shall either be of the 3-wheel type, weighing not less than 10 tons, or of the tandem type, 2-wheel or 3-wheel, weighing not less than 8 tons. Smooth-wheel roller shall provide compression of 325 pounds per linear inch of width of rear wheels or drum.
- 103d - Pneumatic-tired rollers. Pneumatic-tired rollers shall be of the double-axle type equipped with pneumatic tires each of equal size and type. The spacing between the sidewalls of adjacent tires shall not exceed 5 inches and the rear tires shall be staggered in relation to the front tires. The rolling width of the unit shall be not less than 60 inches, exclusive of the power unit. The roller shall be so constructed that the contact pressure is uniformly distributed on all of the tires, and the tires shall be inflated to maintain the air pressure in the several tires within a total tolerance of 5 pounds per square inch. The roller shall be so constructed that the total weight shall be between 1,000 and 2,000 pounds per tire. The actual operating weight of the rollers shall be as ordered by the Authorized Officer.

Each pneumatic-tired roller shall be drawn by equipment having sufficient power and weight under normal working condition to pull the roller at a minimum speed of 5 miles per hour, or it may be self-propelled to obtain a minimum speed of 5 miles per hour.

- 103e - Grid roller. A grid roller shall consist of two or more cylindrical drums independently mounted on a common shaft in a rigid frame. Each drum shall have a minimum outside diameter of 5 feet and a minimum width of 2 feet 6 inches. The overall width of the roller exclusive of frame shall be not less than 5 feet 6 inches of which not more than 6 inches shall be used for center spacing between two roller drums. The face of the drums shall have the appearance of woven open-mesh made by interlacing bars of not less than 1-1/4 inches nor

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more than 1-3/4 inches diameter space spaced on 4-1/2 inches to 5-1/2 inches center. Net opening between the bars shall be not less than 3 inches nor more than 4 inches. The roller shall be so constructed that counterweights can be used to adjust the gross weight of the roller to not less than 27,000 pounds. The grid roller shall be drawn by a power unit capable of propelling the fully loaded roller through 6 inches of loose embankment material at a speed of at least 4 miles per hour.

- 103f - Vibratory roller. The drum diameter shall be not less than 48 inches, the drum width not less than 58 inches, and have a turning radius of 15 feet or less. Vibration frequency shall be regulated in steps to 1400, 1500, and 1600 vibrations per minute (VPM), corresponding to engine speeds of 1575, 1690, and 1800 RPM. The centrifugal force developed shall be 7 tons at 1600 RPM. It shall be activated by a power unit of not less than 25 horsepower. The vibratory roller shall be self-propelled or drawn by a vehicle of sufficient horsepower to enable the unit to travel through a loose layer of material at a speed ranging from 0.9 mile to 1.8 miles per hour, as directed by the Authorized Officer.

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

- 103g - Vibratory compactor. Vibratory compactors shall consist of multiple or gang-type compacting units or pads with a minimum variable width of 2 feet. It shall be self-contained and capable of compacting material as required.
- 103h - Drum drive self-propelled vibratory grid roller. The unit shall consist of one cylindrical drum with a drum diameter of not less than 56 inches, nor more than 66 inches and the drum width shall be 84 inches. Vibratory frequency shall be regulated in steps from 1200 to 1800 vibrations per minute (VPM), and the centrifugal force developed shall be at least 40,000 pounds at 1800 RPM. The vibratory grid roller shall be self-propelled and have a power unit of not less than 112 horsepower. The "grid" design shall be a herringbone or z-bar pattern around the circumference of the drum. The grid bars shall be 1 inch in height and spaced not more than 8-1/2 inches apart.
- 103i - Other. Compaction equipment approved by the Authorized Officer.

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CLEARING AND GRUBBING - 200

- 201 - This work shall consist of clearing, grubbing, removing and disposing of vegetation, debris, surface objects, and protruding obstructions within the clearing limits in accordance with these specifications and conforming to the lines, grades, dimensions and typical cross sections shown on the plans.
- 201a - This work shall consist of clearing, grubbing, removing and disposing of vegetation, debris, surface objects, and protruding obstructions from borrow pits, quarries, channel changes, stockpile sites, etc., in accordance with these specifications.
- 202 - Where clearing limits have not been staked, established by these specifications or shown on the plans, the limits shall extend 10 feet back of the top of the cut slope and 5 feet out from the toe of the fill slope.
- 202a - Where clearing limits for structures have not been staked or shown on the plans, the limits shall extend 10 feet out from the outside edge of the structure.
- 202b - Where clearing limits for borrow pits, or quarries, stockpile sites, channel changes, and ditches have not been staked or shown on the plans, the limits shall extend 10 feet back of the top of the cut slope and 5 feet outside of the outside slope lines.
- 203 - Clearing shall consist of the removal and disposal of trees, logs, rotten material, brush, and other vegetative materials and surface objects in accordance with these specifications and within the limits established for clearing as specified under Subsections 202, 202a, and 202b as posted.
- 203a - Brush less than 2 feet in height need not be cut within the limits established for clearing.
- 203b - Standing trees and snags to be cleared shall be felled within the limits established for clearing unless otherwise authorized.
- 203c - Disposal of logs from private timber cleared within the limits established as staked on the ground shall be sold.

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- 204 - Grubbing shall consist of the removal and disposal of stumps, roots, and other wood material embedded in the ground and protruding obstacles remaining as a result of the clearing operation in accordance with Subsections 204a, 204b, and 204c .
- 204a - Stumps, including those overhanging cut banks, shall be removed within the required excavation limits.
- 204b - Stumps and other protruding objects shall be completely removed within the limits of required embankments having heights of less than 4 feet. When authorized, stumps and other nonperishable objects may be left provided they do not extend more than 6 inches above the existing ground line.
- 204c - On excavated areas, roots and embedded wood shall be removed to a depth not less than 6 inches below the subgrade.
- 205 - Clearing and grubbing debris shall not be placed or permitted to remain in or under road embankment sections.
- 210 - Disposal of clearing and grubbing debris shall be by scattering over government owned lands outside of established clearing limits in a manner acceptable to the Authorized Officer. The areas for such scattering shall have the prior approval of the Authorized Officer.
- 210a - Disposal of clearing and grubbing debris on non-government property by scattering this material outside of clearing limits will be permitted provided the Purchaser obtains a written permit from the property owner on whose property the disposal is to be made. The Purchaser shall furnish the Authorized Officer a certified copy of the permit and a written release from the property owner absolving the Government from responsibilities in connection with the disposal of debris on said property.
- 212 - No grading will be permitted prior to completion and approval by the Authorized Officer of the required clearing and grubbing work, except that stump grubbing may proceed with the excavation of the road prism.
- 213 - No clearing or grubbing debris shall be left lodged against standing trees.

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EXCAVATION AND EMBANKMENT - 300

- 301 - This work shall consist of excavating, overhaul, placement of embankments, backfilling, borrowing, leveling, ditching, grading, insloping, outsloping, crowning and scarification of the subgrade, compaction, disposal of excess and unsuitable materials, and other earth-moving work in accordance with these specifications and conforming to the lines, grades, dimensions, and typical cross sections shown on the plans.
- 302 - Excavation shall also consist of the excavation of road and landing cut sections, borrow sites, backfilling, leveling, ditching, grading, compaction, and other earth moving work necessary for the construction of the roadway in accordance with these specifications and conforming to the lines, grades, dimensions, and typical cross sections shown on the plans and as marked on the ground with stakes or metal tags.
- 303 - Suitable material removed from the excavation shall be used in the formation of embankment subgrade, shoulders, slopes, bedding, backfill for structures, and for other purposes as shown on the plans.
- 305 - Embankment construction shall consist of the placement of excavated and borrowed materials, backfilling, leveling, grading, compaction, and other earth-moving work necessary for the construction of the roadway and landings in accordance with these specifications and conforming to the lines, grades, dimensions, and typical cross sections shown on the plans.
- 305a - Material used in the construction of embankment sections shall be free of stumps, cull logs, brush, muck, sod, roots, frozen material, and other deleterious materials and shall be placed and compacted as specified.
- 305b - Embankment materials shall be placed in successive parallel layers on areas cleared of stumps, cull logs, brush, sod, and other vegetative and deleterious materials, except as provided under Subsection 204. Roadway embankments of earth material shall be placed in horizontal layers not exceeding 12 inches in depth.

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- 305c - Embankments formed of material containing less than 25 percent rock not larger than 8 inches in the greatest dimension shall be placed in 12-inch layers. Material containing more than 25 percent rock not larger than 12- inches in the greatest dimension shall be placed in successive layers not exceeding 2 feet in thickness. Individual rocks and boulders greater than 12-inches in diameter may be used to construct 2-foot embankment layers, provided they are carefully distributed, with interstices filled with fine material to form a dense and compact mass.

- 306 - Layers of embankment, selected borrow, final subgrade and selected roadway excavation material as specified under Subsections 305a, and 305b shall be moistened or dried to a uniform optimum moisture content suitable for maximum density and compacted to full width with compacting equipment conforming to requirements of Subsections 103f and 103i.

- 306a - Minimum compaction for each layer of embankment, selected borrow, and selected roadway excavation material placed at optimum moisture shall be a minimum of 4 complete passes or until visual displacement ceases.

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

- 309 - The top of cut slopes shall be rounded by blending into the adjacent terrain for a distance not less than 1 foot and not more than 3 feet beyond the top of the cut. Rounding shall be performed in soils that can be shaped without ripping or blasting.

- 312 - When material, except solid rock, encountered in cuts at subgrade, is suitable for use in forming the finished roadbed, the top 6-inch layer of the subgrade shall be thoroughly scarified for the full width of the roadbed. Roots, sod, and other deleterious material or stones that will not pass a 6-inch square opening shall be removed. The scarified material shall be processed to the optimum moisture content suitable for maximum density and compacted in accordance with Subsection 306.

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- 320 - Ditches shall conform to the slope, grade, dimensions, and shape of the required cross section shown on the plans. Roots, stumps, rocks, and other projections shall be removed to form smooth, even slopes.
- 321 - Excess excavated, unsuitable, or slide materials shall not be disposed of on areas where the material will encroach on a stream course or other body of water. Such materials shall be disposed of in accordance with Subsection 321c. Materials not disposed of in this manner shall be retrieved and disposed of at the Purchaser's expense and at the direction of the Authorized Officer.
- 321c - End-dumping will be permitted for the placement of excess materials under Subsection 321 in designated disposal areas or within areas approved by the Authorized Officer. Watering, rolling, and placement in layers are not required. Materials placed shall be sloped, shaped, and otherwise brought to a visible condition acceptable to the Authorized Officer.
- 323 - In the construction of channel changes and stream-crossing embankment sections, natural stream flow shall be maintained unless otherwise provided.
- 324 - Excavated material shall not be allowed to cover boles of standing trees to a depth in excess of 2 feet on the uphill side.
- 327 - The finished grading shall be approved by the Authorized Officer in segments or for the total project. The Purchaser shall give the Authorized Officer 3 days' notice prior to start of surfacing operations.

PIPE CULVERTS - 400

- 401 - This work shall consist of furnishing and installing pipe culverts and other erosion control devices in accordance with these specifications and conforming to the lines, grades, dimensions, and typical cross sections shown on the plans. Individual lengths and locations are approximate; final lengths and locations will be determined by the Authorized Officer upon completion of the roadbed and upon installation of the appurtenance structures. Additional pipe and erosion control devices may be required at the option of the Authorized Officer, in which case a reduction in the total purchase price shall be made to offset the cost of

TIMBER SALE ROAD SPECIFICATIONS

furnishing and installing such items. Costs will be based upon the unit prices set forth in the current BLM Timber Appraisal Production Cost Schedule.

- 403 - Grade culverts shall have a gradient of from 2 percent to 4 percent greater than the adjacent road grade. Grade culverts shall be skewed down grade 30 degrees as measured from the perpendicular to the centerline unless otherwise specified on the plans.
- 404 - Damage to the spelter, or burn back in excess of 3/8 inch, shall be wire brushed and painted with two coats of zinc-rich paint on zinc-coated, steel pipe and aluminum-rich paint on aluminum or aluminum-coated pipe.
- 405b - Corrugated-aluminum-alloy pipe culverts and pipe-arch culverts shall conform to the requirements of AASHTO M 196.
- 405e - Corrugated-polyethylene pipe for culverts 12-inch through 36-inch diameter shall meet the requirements of AASHTO M 294. Installation will be subject to the same specification as other pipe materials.
- 407 - Special sections, such as elbows, branch connections, and flared-end sections, shall be of the same gauge and material as the pipe to which they are joined. Metal pipe shall conform to the requirements of AASHTO M 36 and AASHTO M 218 or AASHTO M 274.
- 408 - Pipe culverts and pipe-arch culverts shall be placed on the bed starting at the downstream end with the inside circumferential laps pointing downstream and with the longitudinal laps at the side or quarter points. Coupling bands of the type required under these specifications shall be installed so as to provide the circumferential and longitudinal strength necessary to preserve the pipe alignment, prevent separation of the pipe sections, and minimize infiltration of fill material.
- 410 - Pipe shall be unloaded and handled with reasonable care. If the Authorized Officer determines any structure is damaged to the extent that it is unsuitable for use in the road construction, it shall be replaced at the Purchaser's expense.

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- 411 - Trenches necessary for the installation of pipe culverts shall conform to the lines, grades, dimensions, and typical diagram that are shown on the Culvert Installation Detail Sheet.

- 412 - Where ledge rock or boulders are encountered, they shall be excavated a minimum of 10 inches below the invert grade for a width of at least 2 feet on each side of the pipe and shall be backfilled with compacted select fill.

- 412a - Where soft or spongy soils are encountered, they shall be excavated a minimum of 2 feet below the invert grade for a width of at least one pipe diameter on each side of the pipe and shall be backfilled with compacted select fill.

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

- 416 - Select-fill material for pipe culverts shall be well graded crushed rock material free of excess moisture and devoid of rocks or stones 3 inches or larger which may impinge upon and damage the pipe or otherwise interfere with proper compaction.

- 417 - For pipe culverts:
Side-fill material conforming to the requirements of Subsection 416 shall be placed and compacted under the haunches of the pipe, and shall be brought up evenly and simultaneously on both sides of the pipe to 1 foot above the pipe, in layers not exceeding 12 inches in depth and 1 pipe diameter/span, or a minimum of 2 feet in width each side of, and adjacent to, the full length of the pipe barrel. Each layer shall be moistened or dried to uniform moisture content suitable for maximum compaction and immediately compacted by approved hand or pneumatic tampers as specified in Subsection 306A.

- 418 - Side fills beyond the compaction limits specified under Subsection 417 shall be compacted as specified under Section 300.

TIMBER SALE ROAD SPECIFICATIONS

- 419 - The pipe culvert after being bedded and backfilled as required by these specifications shall be protected by a 1-foot cover of fill before heavy equipment is permitted to cross the drainage structure. Removal of the protection fill shall be as directed by the Authorized Officer.

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

- 424 - Construction of splash pads conforming to lines, grades, dimensions and typical diagram shown on the plans, shall be required for culverts as stated on the renovation notes and culvert summary.

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

- 428 - Remove and dispose of old culverts in a legal manner, and for any fees required. The Purchaser shall remove the old culverts from the work site prior to road acceptance.

- 429 - Keep the excavation site dewatered so that the installation of culverts is completed under dry conditions. Dispose of excess water in a manner that will avoid damage to adjacent property. Diversion streams shall not be returned to the natural channel until all in-stream work has been completed.

RENOVATION AND IMPROVEMENT OF EXISTING ROADS – 500

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

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

TIMBER SALE ROAD SPECIFICATIONS

- .
 - 502 - The existing road surface shall be bladed and shaped to the lines, grades, dimensions, and typical cross sections shown on the plans and as marked on the ground with metal tags.
 - 502a - Rocks larger than 4 inches in maximum dimension shall be removed from the scarified layers of the roadbed. Material so removed will not be permitted to remain on road shoulders or in ditches.
 - 502b - Drainage ditches shall be bladed and shaped in accordance with the lines, grades, dimensions, and typical cross sections shown on the plans.
 - 504 - Existing road surface shall be uniformly moistened or dried to the optimum moisture content suitable for maximum density and compacted to full width with equipment conforming to requirements of Subsections 103f and 103i.
 - 504a - Minimum compaction required shall be a minimum of 3 passes over each full-width layer, or until visual displacement ceases.
 - 506 - The inlet end of existing drainage structures shall be cleared of vegetative debris and boulders that are of sufficient size to obstruct normal stream flow. Pipe inverts shall be cleared of sediment and other debris lodged in the barrel of the pipe. The outflow area of pipe structures shall be cleared of rock and vegetative obstructions which will impede the structure's designed outflow configuration. Catch basins shall conform to the lines, grade, dimensions, and typical diagram shown on the plans.
 - 509 - The finished grading shall be approved by the Authorized Officer 1 day prior to surfacing operations. The Purchaser shall give the Authorized Officer 3 days' notice prior to final inspection of the grading operations.

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WATERING – 600

- 601 - This work shall consist of furnishing and applying water required for the compaction of embankments, roadbeds, backfills, base courses, surface courses, finishing and reconditioning of existing roadbeds, laying dust, or for other uses in accordance with these specifications.
- 602 - Water, when needed for compaction or laying dust, shall be applied at the locations, in the amounts, and during the hours as directed by the Authorized Officer. Amounts of water to be provided will be the minimum needed to properly execute the compaction requirements in conformance with these specifications, and for laying dust during work periods.
- 603 - Water trucks used in this work shall be equipped with a distributing device of ample capacity and of such design as to ensure uniform application of water on the road bed.
- 605 - The Purchaser shall secure the necessary water permits and pay all required water fees for use of water sources selected by the Purchaser and approved by the Authorized Officer.

AGGREGATE BASE COURSE - 1000
CRUSHED ROCK MATERIAL

- 1001 - This work shall consist of furnishing, hauling and placing one or more lifts of crushed rock material on roadbeds and landings approved for placing crushed rock material, in accordance with these specifications and conforming to the dimensions and typical cross sections shown on the plans. Material not conforming to these specifications will be rejected and shall be removed from the road at the purchaser's expense.
- 1002 - Crushed rock materials used in this work shall consist of quarry rock, stone, gravel, or other approved materials obtained from the sources shown on the plans.

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- 1002a - Crushed rock materials may be obtained from commercial sources selected by the Purchaser at his option and expense providing that the rock materials selected comply with the specifications in this section.
- 1003 - Crushed rock material produced from gravel shall have 2 manufactured fractured faces on 65 percent, by weight, of the material retained on the No. 4 sieve.
- 1004 - Crushed rock materials shall consist of hard durable rock fragments conforming to the following gradation requirements:

TABLE 1004
AGGREGATE BASE COURSE
CRUSHED ROCK MATERIAL
 Percentage by Weight Passing Square Mesh Sieves
 (AASHTO T 11 & T 27)
 GRADATION

Sieve Designation	A	B	C	D	F	G	H	I
6-inch		-	-	-	-	-	-	100
3-inch	100-	-	100	-	100	-	-	45-65
2-inch	90-95	100	-	100	65-95	100	100	-
1 1/2-inch	-	90-95	-	-	-	-	-	-
1-inch	45-75	50-90	-	-	-	50-85	60-90	-
3/4-inch	-	-	-	-	28-70	-	-	-
1/2-inch	-	-	-	-	-	27-60	44-70	-
3/8-inch	-	-	-	-	-	-	-	-
No. 4	15-45	15-50	-	-	10-35	15-40	28-50	0-10
No. 8	-	-	-	-	-	-	20-41	-
No. 10	-	-	-	-	-	-	-	-
No. 30	-	-	-	-	5-22	8-26	9-26	-
No. 40	5-25	5-25	-	-	-	-	-	-
No. 200	2-15	2-15	-	-	3-10	3-12	3-12	-

TIMBER SALE ROAD SPECIFICATIONS

- 1008a - Each layer of crushed rock material shall be thoroughly mixed on the roadbed by alternately blading, to full depth, until a uniform mixture has been obtained. The mixture shall then be spread to full width. When completed, the spreading shall produce a surface which is smooth, presents uniform shoulder lines, and conforms to the specified cross section.

- 1009 - The roadbed, as shaped and compacted under Sections 300 and 500 of these specifications, shall be approved by the Authorized Officer prior to placement of crushed rock materials. Notification for final inspection prior to rocking shall be 3 days' notice prior to that inspection.

- 1010 - Crushed rock materials shall be placed and processed on the approved roadbed in accordance with these specifications and conforming to the lines, grades, dimensions, and typical cross sections shown on the plans and compacted in layers not to exceed 4 inches in depth. When more than one layer is required, each shall be shaped, processed, compacted, and approved by the Authorized officer before the succeeding layer is placed. Irregularities or depressions that develop during compaction of the top layer shall be corrected by loosening the material at these places and adding or removing crushed rock material until the surface is smooth and uniform.

- 1010a - Crushed rock material used to repair or reinforce a soft, muddy, frozen, yielding, or rutted roadbed shall not be construed as surfacing under this specification unless approved as such by the Authorized Officer prior to placement.

- 1012 - Each layer of crushed rock material shall be placed, processed, shaped, moistened or dried to uniform moisture content suitable for maximum compaction, and compacted to full width by compaction equipment conforming to the requirements of Subsection 103f and 103i. Minimum compaction shall be 3 passes over each full-width layer or until visual displacement ceases.

- 1015 - The Purchaser is authorized to remove Gradation 1004A & 1004I crushed rock material, from BLM stockpiles for placement on the roads in accordance with the requirements and details shown on the plans.

TIMBER SALE ROAD SPECIFICATIONS

SLOPE PROTECTION - 1400

- 1401 - This work shall consist of furnishing, hauling, and placing stone materials for slope protection structures in accordance with these specifications and conforming to the lines, grades, dimensions, and typical cross-sections shown on the plans. Material not conforming to these specifications will be rejected and shall be removed from the slope protection structure at the purchaser's expense as directed by the Authorized Officer.
- 1402 - Stone material shall consist of blasted rock and coarse stone from roadway excavation of such quality that it will not disintegrate on exposure to water or weathering, and shall be graded in accordance with these specifications.

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1405 - Rip rap shall conform to the following gradations:

TABLE 1405

Class	Approx. Cubic Dimension (inches)	Sphere Diameter (inches)	% of Total Volume Smaller than Size of Stone
1	6-8	8	100
	5-6	6	80
	2-5	6	50
	0-2	2	10
2	8-10	12	100
	6-8	8	80
	3-6	6	50
	0-3	4	10
3	14-16	21	100
	10-14	18	80
	5-10	12	50
	0-5	6	10
4	18-20	24	100
	14-18	22	80
	6-14	18	50
	0-6	8	10
5	26-28	36	100
	20-26	32	80
	8-20	25	50
	0-8	10	10
6	28-34	42	100
	22-28	34	80
	10-22	27	50
	0-10	12	10

*Rocks smaller than six inches in diameter are not counted.

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- 1406a - The embankment shall be placed in successive horizontal layers of sufficient depth to contain the maximum size rock present in the material. Spalls and finer fragments of stone other than specified in Subsection 1405 shall be used to chock the larger stones solidly in position and to fill voids between the major stones as laid in the embankment. The exposed face of the embankment shall be reasonably smooth and uniform; material shall be prevented from escaping beyond the toe of the structure.

- 1406b - Spaces in back of hand-laid embankment shall be filled with hand-tamped or rammed rock-spall material.

- 1407 - Determination of the acceptability of the slope protection material gradation will be through visual inspection by the Authorized Officer.

- 1408 - Trenches for slope protection structures shall be excavated to the lines, elevations, and typical diagram shown on the plans. They shall be of sufficient size to permit the placing of structure footing of the full widths and length shown. Trenches shall be approved by the Authorized Officer prior to placement of slope protection material.

- 1408a - Foundation trenches and other required excavation as shown on the plans shall be approved prior to placing the slope protection material.

- 1409 - Slope protection material shall be placed so as to form the cross sections shown on the plans. The face of the slope protection structure above the low-water line

 shall be uniform, free from humps, depressions, or large cavities.

- 1411 - Slope protection materials shall be placed on geotextile material as shown on the plans.

EROSION CONTROL – 1700

- 1701 - This work shall consist of measures to control soil erosion or water pollution during the construction operation through the use of berms, dikes, dams,

TIMBER SALE ROAD SPECIFICATIONS

sediment basins, fiber mats, netting, gravel, mulches, grasses, slope drains, and other erosion control devices or methods in accordance with these specifications and conforming to the lines, grades, dimensions and typical cross sections shown on the plans.

- 1708a - Road segments not completed during dry weather periods shall be winterized, by providing a well-drained roadway using water bars, maintaining drainage, and performing additional measures necessary to minimize erosion and other damage to the roadway, as directed by the Authorized Officer. Portions of roads not having surface rock in place will be blocked or barricaded to prevent vehicular traffic.

ROADSIDE BRUSHING – 2100

- 2101 - This work shall consist of the removal of vegetation from the road prism - variable distance, and inside curves in accordance with these specifications and conforming to the lines, grades, dimensions, and typical cross sections shown on the Roadside Brushing Detail Sheet of this exhibit, at designated locations as shown in the plans.
- 2102 - Roadside brushing may be performed mechanically with self-powered, self-propelled equipment and/or manually with hand tools, including chain saws.
- 2103 - Vegetation cut manually and/ or mechanically less than 6 inches in diameter when measured 6 inches above the ground shall be cut to a maximum height of 2 inches above the ground surface or above obstructions such as rocks or stumps on cut and fill slopes and all limbs below the 2 inch area will be severed from the trunk.
- 2103a - Vegetation shall be cut and removed from the road bed between the outside shoulders and the ditch centerline and such vegetation shall be cut to a maximum height of 4 inches above the ground and running surface. Limbs below the 4 inch area will be severed from the trunk. Sharp pointed ends will not be permitted. Cuts shall be parallel to the ground line or running surface.

TIMBER SALE ROAD SPECIFICATIONS

- 2104 - Trees in excess of 8 inches in diameter when measured 6 inches above the ground line shall be limbed, so that no limbs extend into the treated area or over the roadbed to a height of 14 feet above the running surface of the roadway on cut and fill slopes, within the road prism-variable distance. Limbs shall be cut to within 1 inch of the trunk to produce a smooth vertical face. Removal of trees larger than 6 inches in diameter for sight distance or safety may be directed by the Authorized Officer.

- 2105 - Vegetation that is outside of the road prism-variable distance that protrudes into the road prism and within 14 feet in elevation above the running surface shall be cut, to within 1 inch of the trunk to produce a smooth vertical face.

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

- 2107 - Inside curves shall be brushed out for a sight distance of 200 feet chord distance or a distance of 15 feet from edge of subgrade, whichever is achieved first. Overhanging limbs and vegetation in excess of 1 foot in height shall be cut within these areas.

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

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

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

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

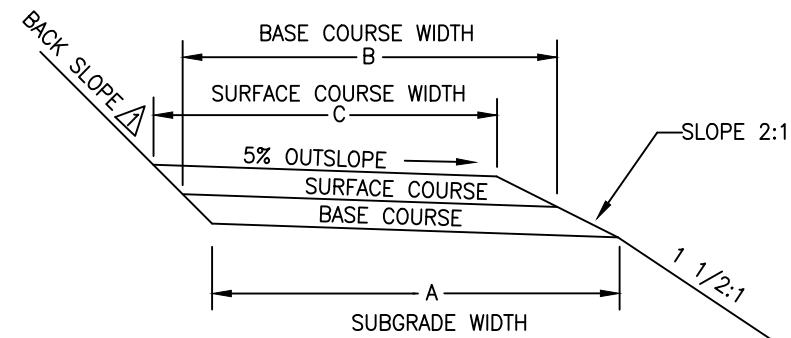
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
ROSEBURG DISTRICT
TIMBER SALE EXHIBIT C

CONTRACT NAME: HARVEST MOON
CONTRACT NO: ORR04-TS-2019.0006

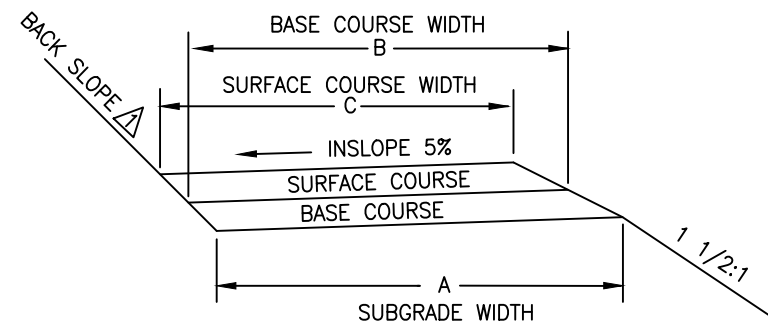
WORK SUMMARY															
ROAD NUMBER	STA/MP	TO	STA/MP	CONST.	RENOV.	EXISTING SURFACE TYPE	PROPOSED BASE COURSE		PROPOSED SURFACE COURSE		ROAD DIMENSIONS IN FEET			TYP. ROAD SECTION	SHEET NO.
							DEPTH IN INCHES	TYPE	DEPTH IN INCHES	TYPE	A	B	C		
22-6-15.0	0+00	-	64+45		X	ROCK	9"	1004I			16'	14'		3	4
22-6-21.0	0+00	-	98+20		X	ROCK					EXISTING			3	4
22-6-21.0	98+20		111+40		X	ROCK	9"	1004I			16'	14'		4	4
22-6-21.1	0+00	-	8+35		X	ROCK	9"	1004I			16'	14'		4	4
22-6-21.2	0+00	-	20+10		X	ROCK	9"	1004I			16'	14'		3	4
22-6-21.3	0+00	-	10+60		X	ROCK	9"	1004I			16'	14'		4	4
22-6-5.0	0+00	-	13+75		X	ROCK	9"	1004I			16'	14'		3	4
22-6-5.0	13+75		45+45		X	ROCK	9"	1004I			16'	14'		3	4
22-6-5.1	0+00	-	15+85		X	ROCK	9"	1004I			16'	14'		4	4
22-6-6.1	0+00	-	26+95		X	ROCK	9"	1004I			16'	14'		3	5
22-6-7.0	79+00	-	110+65		X	ROCK	9"	1004I			16'	14'		3	5
SPUR 1	0+00	-	1+00	X		NATIVE	9"	1004I				50'		5	6
SPUR 2	0+00	-	1+50	X		NATIVE	9"	1004I				50'		5	6
SPUR 3	0+00	-	1+50	X		NATIVE	9"	1004I				50'		5	6
SPUR 4	0+00	-	4+80	X		NATIVE	9"	1004I			16'	14'		5	8
SPUR 5	0+00	-	3+35	X		NATIVE	9"	1004I			16'	14'		1	8

INDEX OF SHEETS	
SHEET	DESCRIPTION
1	ROAD SUMMARY
2	TYPICAL SECTIONS
3	VICINITY MAP
4	RENOVATION NOTES
5	RENOVATION NOTES CONTINUED
6	CONSTRUCTION NOTES
7	22-6-21.1 SLIDE REPAIR
8	CONST. PLAN SPURS 4 AND 5
9	CULVERT SUMMARY
10	CULVERT INSTALLATION
11	BRUSHING DETAIL

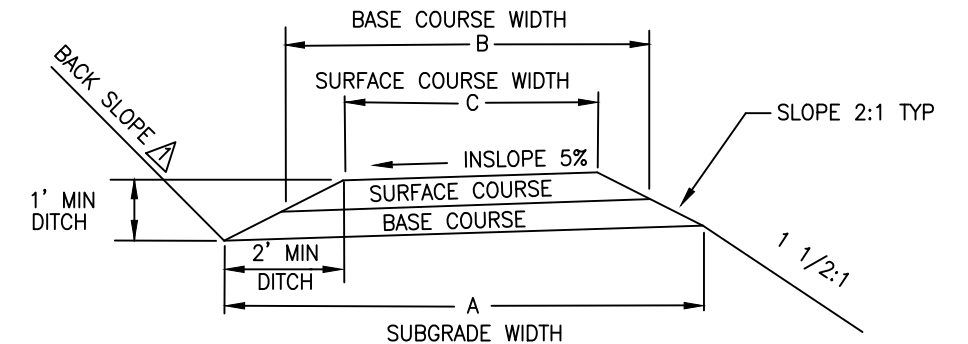




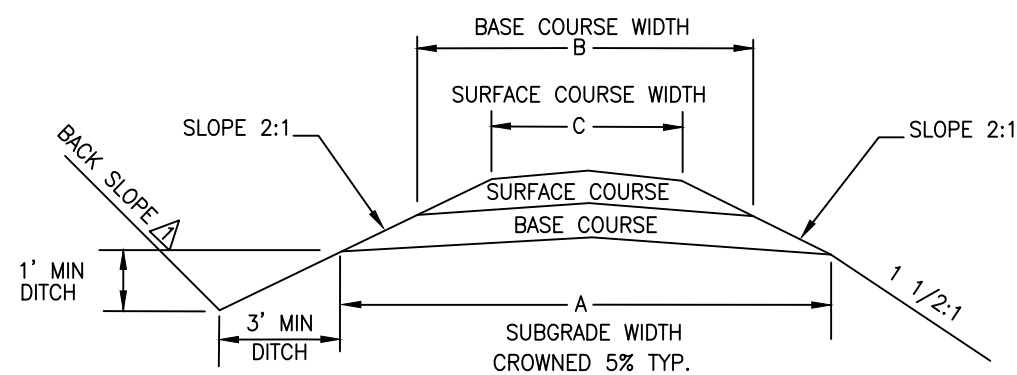
SECTION OUT SLOPE ROAD ①



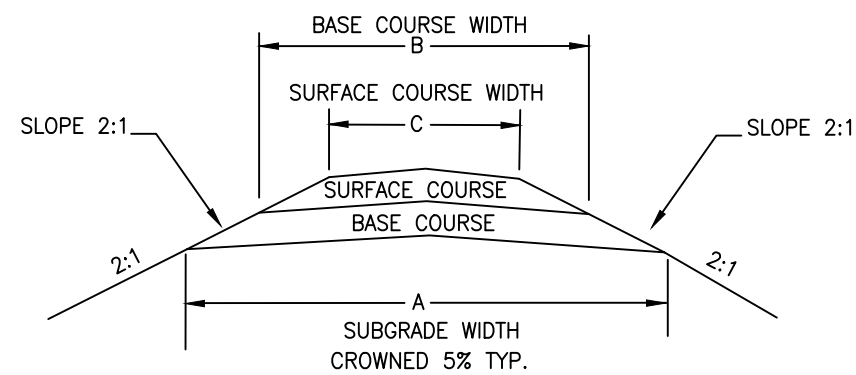
SECTION INSLOPE ROAD ②



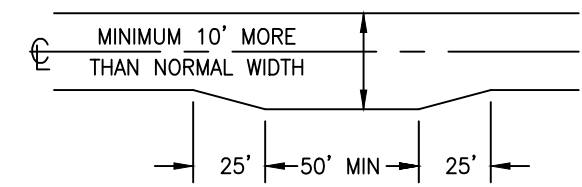
SECTION INSLOPE ROAD ③



SECTION ROAD ④



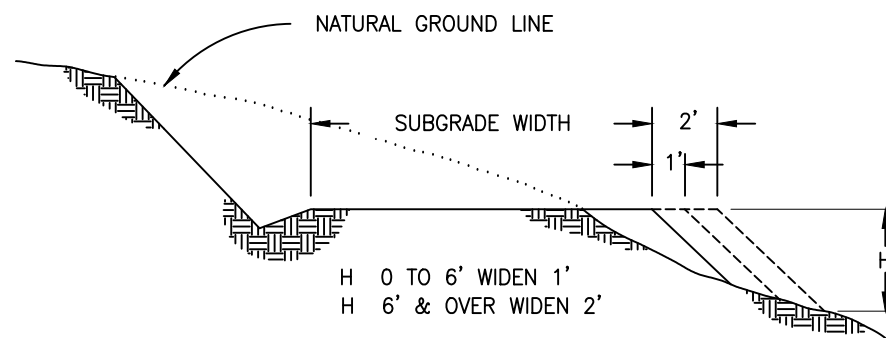
SECTION ROAD ⑤



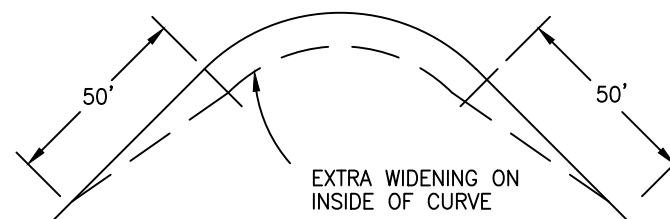
TYPICAL TURNOUT DIMENSIONS

NOTES:

1. Backslope to match existing backslope unless otherwise specified.
2. Backslope for Non-Design Roads:
Slopes under 50%, $\frac{3}{4}$:1
Slopes over 50%, $\frac{1}{2}$:1
Solid Rock $\frac{1}{4}$:1



SECTION FILL WIDENING



DEGREE OF CURVE	8-21	22-35	36-51	52-64	65-79	80-90
EXTRA WIDTH IN FEET	1	2	3	4	5	6

CURVE WIDENING TABLE FOR NON-DESIGN ROADS OR AS SHOWN ON PLANS. MAX 75° CURVE OR AS SHOWN ON PLANS.



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TYPICAL SECTIONS

SHEET 2 OF 11

ROAD RENOVATION

Notes:

- 1. All roads shall be renovated in accordance with attached specifications and the work items listed below. Renovation may include roadside brushing, installing culverts and splash pads, blading, shaping, cleaning ditches, removing slide material, and cleaning existing drainage structures. Features to construct are so noted. Existing features are noted at approximate station in the notes below. Place 20 cy of 1204C crushed rock at each culvert installation for surface replacement. The Purchaser shall dispose of all culvert pipe removed as a part of the work described in this contract at a legal site off of BLM land.
- 2. All renovation and construction shall be done and approved prior to any hauling activity.
- 3. Existing turnouts, on roads to be renovated, shall be surfaced to the same standard as newly constructed turnouts.
- 4. Back slopes shall be cut to match existing unless otherwise specified.
- 5. All work shall be performed according to OSHA safety requirements.

<u>STATION</u>	<u>DESCRIPTION</u>	<u>STATION</u>	<u>DESCRIPTION</u>
	<u>22-6-15.0</u>		<u>22-6-21.0 CONTINUED</u>
0+00	STATIONING BEGINS AT THE 22-6-15.0 AND 22-6-21.0. BLADE, COMPACT, BRUSH, PULL DITCHES, AND BEGIN SURFACING WITH 9" OF 1004I AGGREGATE BASE COURSE.	6+30	SPUR 5 CONSTRUCTION RIGHT
13+20	REPLACE EXISTING CULVERT WITH 66" X 70' CULVERT. USE EXISTING MATERIAL FOR BACKFILL AND INSTALL 9" OF 1004I AGGREGATE BASE COURSE AS SURFACING.	7+00	EXISTING STOCKPILE SITE. EXISTING STOCKPILE TO BE USED ON THE 22-6-15.0 ROAD AS SURFACE COURSE. WHEN LOGGING IS COMPLETE RESTOCKPILE 1000 CUBIC YARDS OF 1004B.
20+60	REPLACE EXISTING CULVERT WITH 60" X 44' CULVERT. USE EXISTING MATERIAL FOR BACKFILL AND INSTALL 9" OF 1004I AGGREGATE BASE COURSE AS SURFACING.	98+20	BEGIN RENOVATION AT THE JUNCTION OF THE 22-6-21.0 AND 22-6-21.1. BLADE, COMPACT, BRUSH, PULL DITCH, CLEAN CULVERTS, AND BEGIN SURFACING WITH 9" OF 1004I AGGREGATE BASE COURSE.
30+60	REPLACE EXISTING CULVERT WITH 18" X 30' CULVERT. USE EXISTING MATERIAL FOR BACKFILL AND INSTALL 9" OF 1004I AGGREGATE BASE COURSE AS SURFACING.	111+40	END RENOVATION
35+40	REPLACE EXISTING CULVERT WITH 24" X 40' CULVERT. USE EXISTING MATERIAL FOR BACKFILL AND INSTALL 9" OF 1004I AGGREGATE BASE COURSE AS SURFACING.		<u>22-6-21.1</u>
38+50	REPLACE EXISTING CULVERT WITH 30" X 68' CULVERT. USE EXISTING MATERIAL FOR BACKFILL AND INSTALL 9" OF 1004I AGGREGATE BASE COURSE AS SURFACING.	0+00	BEGIN RENOVATION AT THE JUNCTION OF THE 22-6-21.1 AND 22-6-21.4. BLADE, COMPACT, BRUSH, PULL DITCH, CLEAN CULVERTS, AND BEGIN SURFACING WITH 9" OF 1004I AGGREGATE BASE COURSE.
42+20	REPLACE EXISTING CULVERT WITH 48" X 40' CULVERT. USE EXISTING MATERIAL FOR BACKFILL AND INSTALL 9" OF 1004I AGGREGATE BASE COURSE AS SURFACING.	4+90	BEGIN SLIDE REPAIR. SEE SHEET 7
51+70	REPLACE EXISTING CULVERT WITH 24" X 50' CULVERT. USE EXISTING MATERIAL FOR BACKFILL AND INSTALL 9" OF 1004I AGGREGATE BASE COURSE AS SURFACING.	6+08	END SLIDE REPAIR
56+00	REPLACE EXISTING CULVERT WITH 18" X 30' CULVERT. USE EXISTING MATERIAL FOR BACKFILL AND INSTALL 9" OF 1004I AGGREGATE BASE COURSE AS SURFACING.	8+35	END RENOVATION
58+10	REPLACE EXISTING CULVERT WITH 18" X 30' CULVERT. USE EXISTING MATERIAL FOR BACKFILL AND INSTALL 9" OF 1004I AGGREGATE BASE COURSE AS SURFACING.		<u>22-6-21.2</u>
59+70	22-6-21.5 JUNCTION LEFT	0+00	BEGIN RENOVATION AT THE JUNCTION OF THE 22-6-21.2 AND 22-6-15.0. BLADE, COMPACT, BRUSH, PULL DITCH, CLEAN CULVERTS, AND BEGIN SURFACING WITH 9" OF 1004I AGGREGATE BASE COURSE.
64+45	END RENOVATION	20+10	END RENOVATION. BEGIN CONSTRUCTION SPUR 4
	<u>22-6-21.0</u>		<u>22-6-21.3</u>
0+00	STATIONING BEGINS AT THE JUNCTION OF THE 22-6-21.0 AND 22-6-15.0	0+00	BEGIN RENOVATION AT THE JUNCTION OF THE 22-6-21.3 AND 22-6-21.0. BLADE, COMPACT, BRUSH, PULL DITCH, CLEAN CULVERTS, AND BEGIN SURFACING WITH 9" OF 1004I AGGREGATE BASE COURSE.
5+30	REPLACE EXISTING CULVERT WITH 66" X 50' CULVERT. CULVERT SHALL BE INSTALLED TO ALLOW FOR NO PERCH AT THE OUTLET OF THE PIPE. USE EXISTING MATERIAL FOR BACKFILL AND INSTALL 9" OF 1004I AGGREGATE SURFACING.	10+60	END RENOVATION
			<u>22-6-5.0</u>
		0+00	BEGIN RENOVATION AT THE JUNCTION OF THE 22-6-5.0 AND 22-6-7.0. BRUSH, BLADE, COMPACT, PULL DITCH, CLEAN CULVERTS, AND BEGIN SURFACING WITH 9" OF 1004I AGGREGATE BASE COURSE.
		13+75	22-6-5.1 JUNCTION RIGHT. END SURFACING, CONTINUE RENOVATION
		45+45	END RENOVATION



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RENOVATION NOTES

SHEET 4 OF 11

ROAD RENOVATION CONTINUED

STATION	DESCRIPTION
	<u>22-6-5.1</u>
0+00	BEGIN RENOVATION AT THE JUNCTION OF THE 22-6-5.1 AND 22-6-5.0. BRUSH, BLADE, COMPACT, PULL DITCH, CLEAN CULVERTS, AND BEGIN SURFACING WITH 9" OF 1004I AGGREGATE BASE COURSE.
15+85	END RENOVATION
	<u>22-6-6.1</u>
0+00	BEGIN RENOVATION AT THE JUNCTION OF THE 22-6-6.1 AND 22-6-7.0. BRUSH, BLADE, COMPACT, PULL DITCH, CLEAN CULVERTS, AND BEGIN SURFACING WITH 9" OF 1004I AGGREGATE BASE COURSE.
5+30	ENTER BLM PROPERTY
26+95	END RENOVATION
	<u>22-6-7.0</u>
0+00	BEGIN STATIONING AT THE JUNCTION OF THE 22-6-7.0 AND COUNTY HIGHWAY 38
79+00	ENTER BLM PROPERTY. BEGIN RENOVATION. BRUSH, BLADE, COMPACT, PULL DITCHES, AND CLEAN CULVERTS, AND BEGIN SURFACING WITH 9" OF 1004I AGGREGATE BASE COURSE.
91+00	22-6-5.0 JUNCTION RIGHT
92+00	BEGIN SPUR 3 CONSTRUCTION LEFT
104+50	BEGIN SPUR 2 CONSTRUCTION LEFT
108+50	BEGIN SPUR 1 CONSTRUCTION LEFT
110+65	END RENOVATION



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RENOVATION NOTES SHEET 5 OF 11

ROAD CONSTRUCTION

Notes:

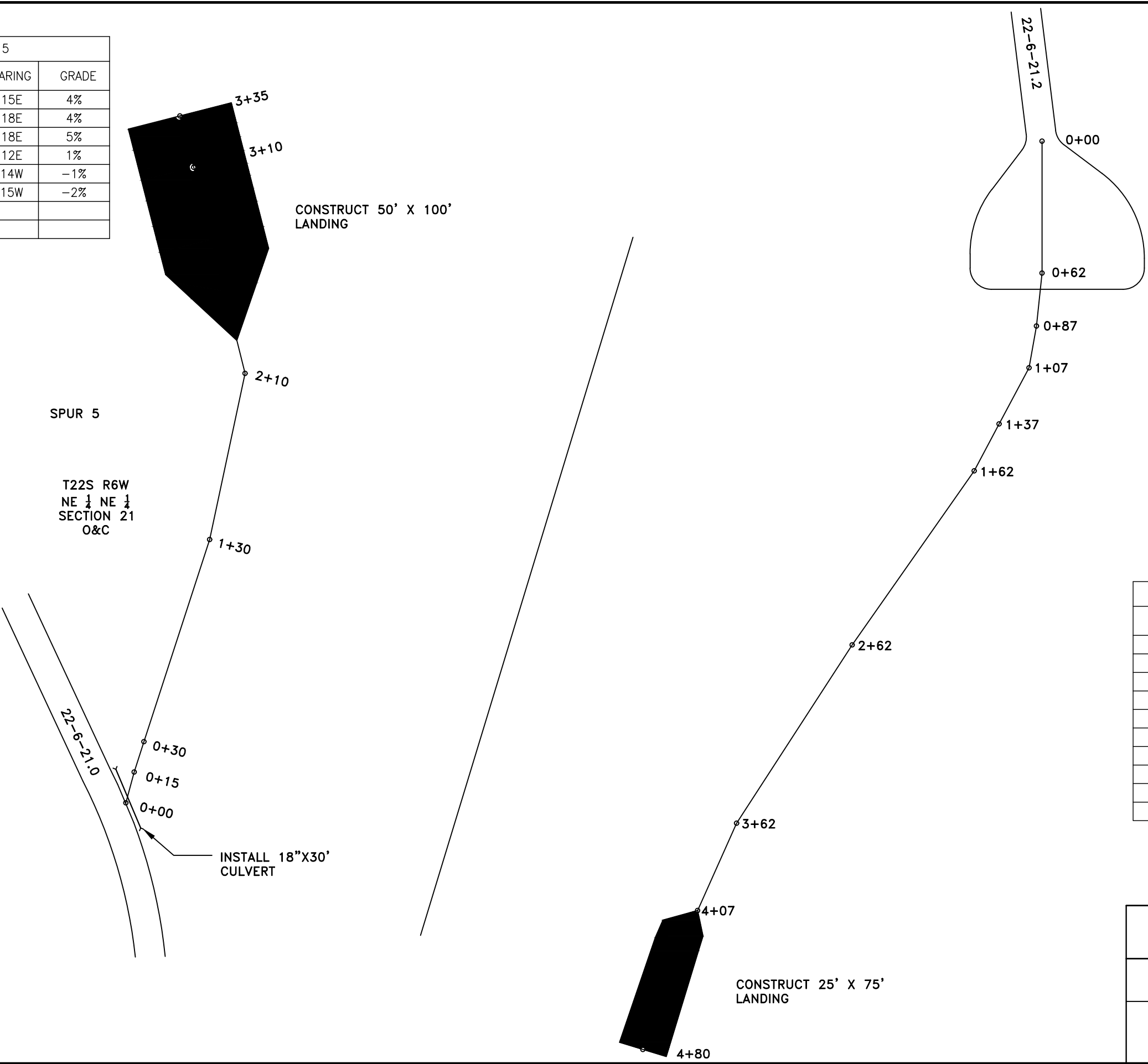
- 1. All roads shall be constructed between established clearing limits in accordance with attached specifications and the work items listed below.
- 2. All construction shall be done and approved prior to any hauling activity.
- 3. All work shall be performed according to OSHA safety requirements.

STA	DESCRIPTION
<u>SPUR 1</u>	
0+00	BEGIN CONSTRUCTION AT THE JUNCTION OF SPUR 1 AND 22-6-7.0 BEGIN CLEARING, GRUBBING, EXCAVATION, EMBANKMENT AND COMPACTION AND SURFACING WITH 9" OF 3" MINUS 1004A AGGREGATE BASE CONSTRUCTION 50' X 100' LANDING
1+00	END CONSTRUCTION
<u>SPUR 2</u>	
0+00	BEGIN CONSTRUCTION AT THE JUNCTION OF SPUR 2 AND 22-6-7.0 BEGIN CLEARING, GRUBBING, EXCAVATION, EMBANKMENT AND COMPACTION AND SURFACING WITH 9" OF 3" MINUS 1004A AGGREGATE BASE CONSTRUCTION 50' X 150' LANDING
1+50	END CONSTRUCTION
<u>SPUR 3</u>	
0+00	BEGIN CONSTRUCTION AT THE JUNCTION OF SPUR 3 AND 22-6-7.0 BEGIN CLEARING, GRUBBING, EXCAVATION, EMBANKMENT AND COMPACTION AND SURFACING WITH 9" OF 3" MINUS 1004A AGGREGATE BASE CONSTRUCTION 50' X 150' LANDING
1+50	END CONSTRUCTION



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CONSTRUCTION NOTES
SHEET 6 OF 11

SPUR # 5			
STA	DISTANCE FT	BEARING	GRADE
0+00	15	N15E	4%
0+15	15	N18E	4%
0+30	100	N18E	5%
1+30	80	N12E	1%
2+10	100	N14W	-1%
3+10	25	N15W	-2%
3+35			



SPUR # 4			
STA	DISTANCE FT	BEARING	GRADE
0+00	62	S0E	10%
0+62	25	S6W	10%
0+87	20	S10W	16%
1+07	30	S28W	16%
1+37	25	S28W	14%
1+62	100	S35W	14%
2+62	100	237	14
3+62	45	246	5
4+07	75	253	-1
4+82			

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SPURS 4 & 5

SHEET 8 OF 11

CULVERT LIST

CULVERT LOCATIONS											DOWNSPOUT (NOTE 4)				<div>ALWAYS THINK SAFETY</div>	
DESIGNED (NOTE 2)							AS BUILT									
ROAD NO. STATION OR M.P.	SIZE (IN)	GAGE	LENGTH (FT)	SKEW ANGLE	INSTALL TYPE (NOTE 3)	INSTALL SPLASH PAD	ROAD NO. STATION OR M.P.	SIZE (IN)	GAGE	LENGTH (FT)	TYPE	SIZE (IN)	LENGTH (FT)	ELBOW TYPE (NOTE 5)		
22-6-15.0																REMARKS (NOTE 6)
4+15	66"		70'	EXISTING	1	X										
6+46	60"		44'	EXISTING	1	X										
9+22	18"		30'	EXISTING	1	X										
10+58	24"		40'	EXISTING	1	X										
11+48	30"		68'	EXISTING	1	X										
12+89	48"		40'	EXISTING	1	X										
15+95	24"		50'	EXISTING	1	X										
17+22	18"		30'	EXISTING	1	X										
17+89	18"		30'	EXISTING	1	X										
22-6-21.0																
0+95	66"		50'	EXISTING	1	X										

- NOTES:
- DESIGNED CULVERT LENGTHS AND LOCATIONS ARE APPROXIMATE.
 - ALL CULVERTS HAVE 2 2/3" X 1/2" CORRUGATIONS UNLESS OTHERWISE SPECIFIED.
 - SEE CULVERT INSTALLATION SHEET.
 - DOWNSPOUT TYPES:
 - FULL
 - HALF
 - FLUME
 - ELBOW TYPES:
 - CONVENTIONAL OR FABRICATED
 - TURNER TYPE
 - SLIP JOINT
 - INCLUDE SPECIAL SECTIONS, STRUCTURES, HEADWALLS, FOOTINGS, AND OTHER DATA.
 - MATERIAL MAY BE ALUMINIZED STEEL OR POLYETHYLENE

GAGE CHART		
GAGE	DEC. EQUIV INCHES	
	STEEL	ALUM.
10	0.1380	0.1350
12	0.1090	0.1050
14	0.0790	0.0750
16	0.0640	0.0600

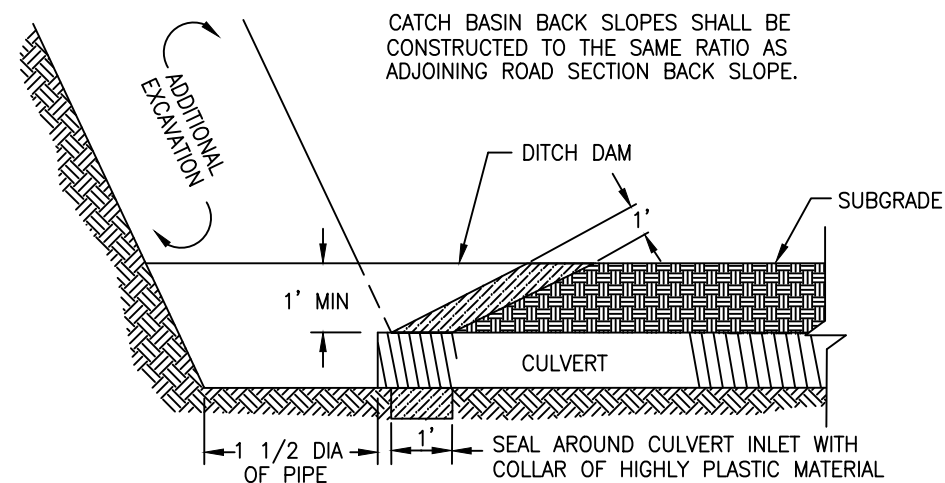
ROUND PIPE CULVERT			
MATERIAL	SIZE (IN)	CORRUGATIONS	LENGTH (FT)
SEE NOTE 7	18	SEE NOTE 2	
SEE NOTE 7	24	SEE NOTE 2	
SEE NOTE 7	36	SEE NOTE 2	

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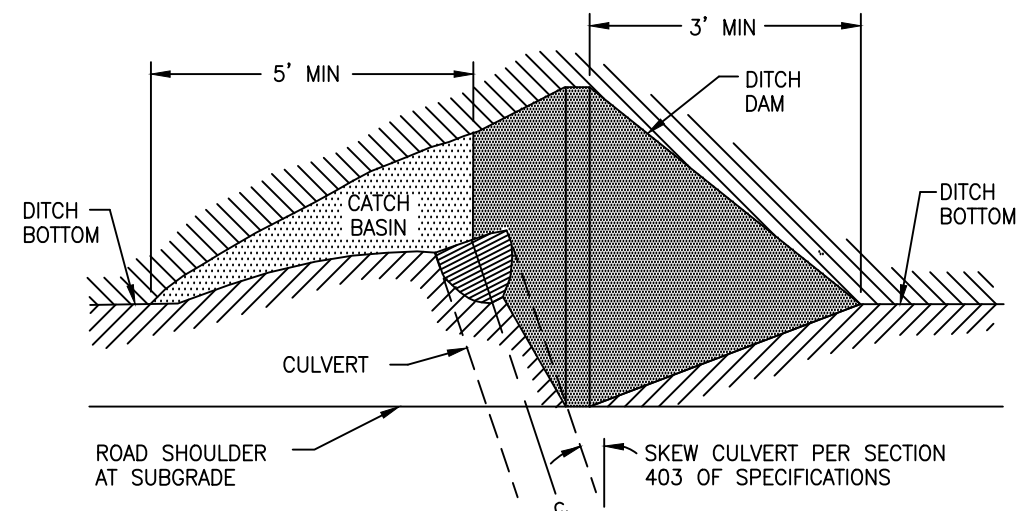
HARVEST MOON
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CULVERT SUMMARY

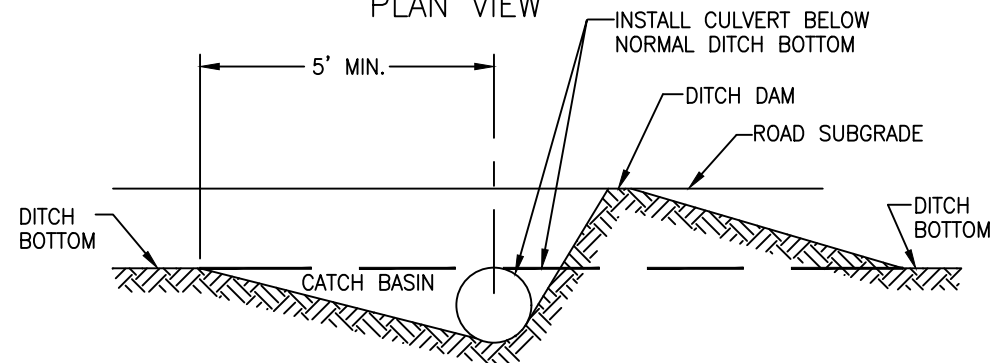
SHEET 9 OF 11



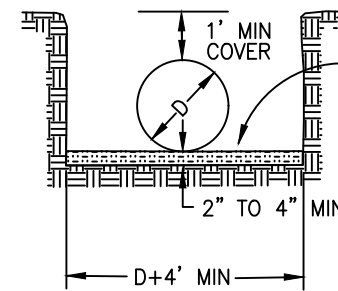
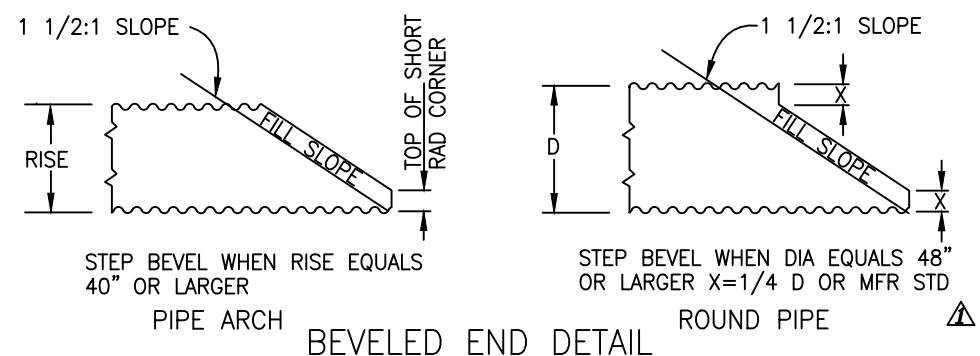
CROSS SECTION AT CATCH BASIN
CULVERT INSTALATION TYPE 2, 3, AND 4



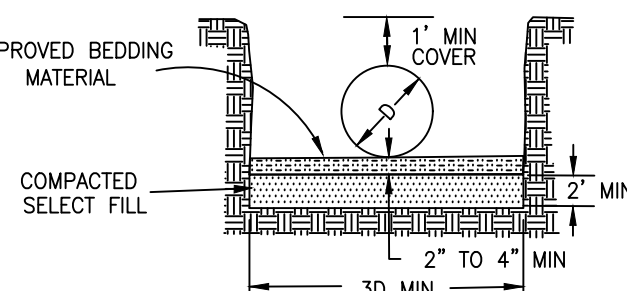
PLAN VIEW



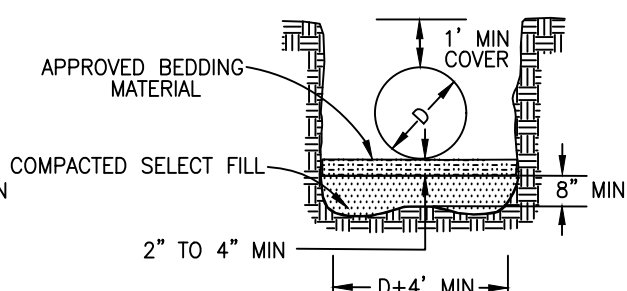
CATCH BASIN ELEVATION



BEDDING OF CULVERTS ON STABLE NATURAL GROUND FOUNDATION



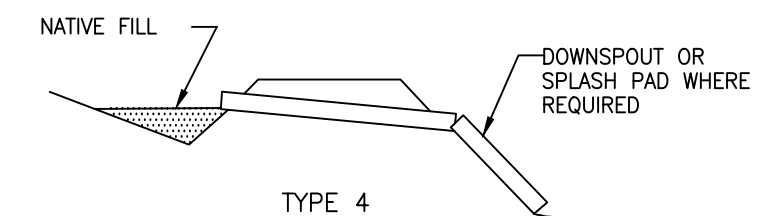
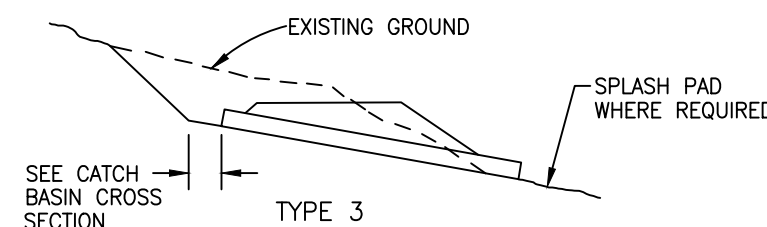
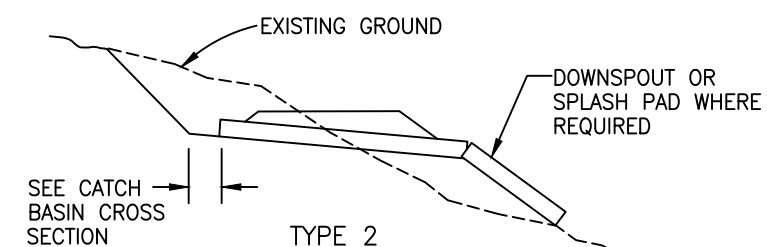
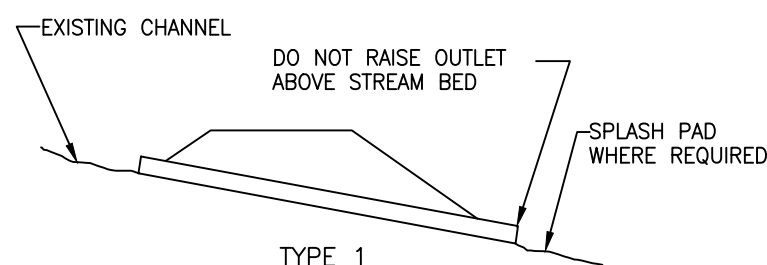
BEDDING OF CULVERTS ON SOFT SPONGY, UNSTABLE SOIL FOUNDATION OR COMPACTED EMBANKMENT



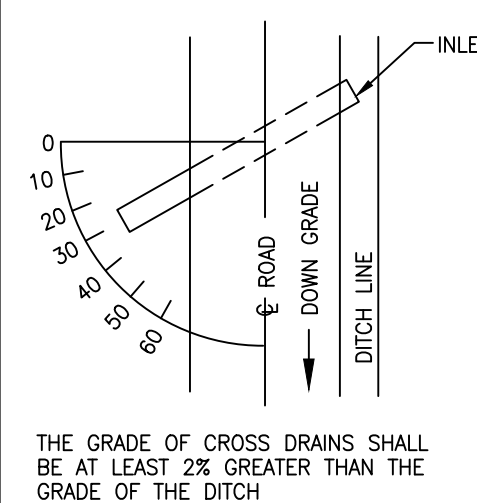
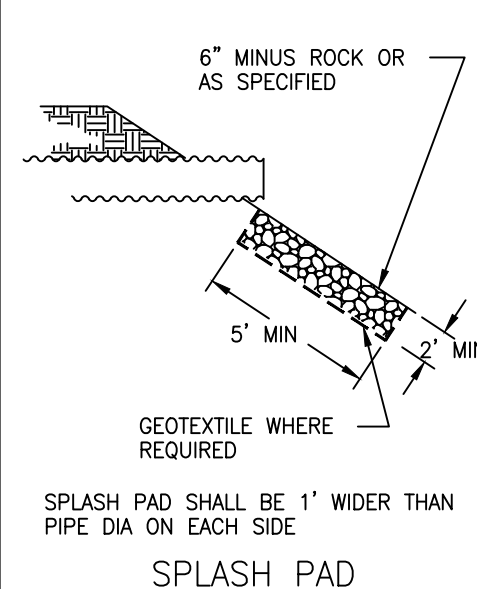
BEDDING OF CULVERTS IN SOLID ROCK OR BOULDER FOUNDATION

- NOTES:
1. BEDDING MATERIAL SHALL BE PLACED LOOSE AND SHAPED TO FIT THE BOTTOM OF THE CULVERT
 2. BACKFILL IN ACCORDANCE WITH SECTION 417 OF SPECIFICATIONS
 3. MAINTAIN 8" MIN DEPTH BETWEEN HIGH POINT OF ROCK AND/OR BOULDERS AND THE BOTTOM OF THE CULVERT BEDDING

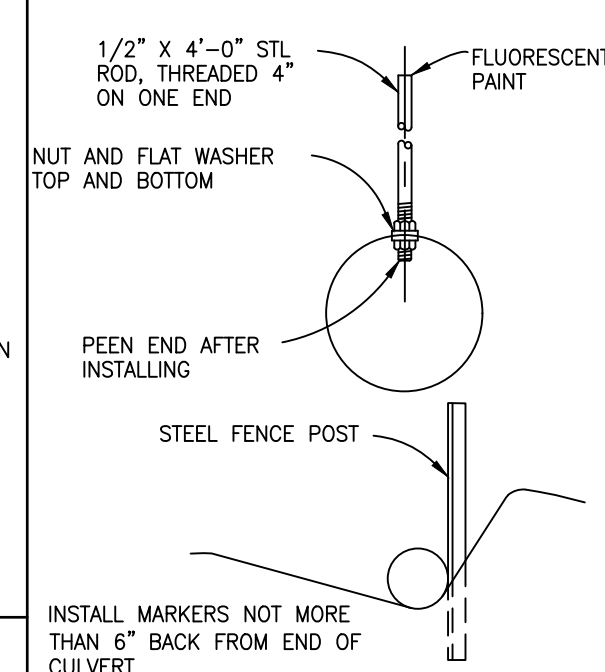
BEDDING OF CULVERTS



CULVERT INSTALLATION TYPES



SKUEW DIAGRAM



CULVERT MARKER INSTALLATION

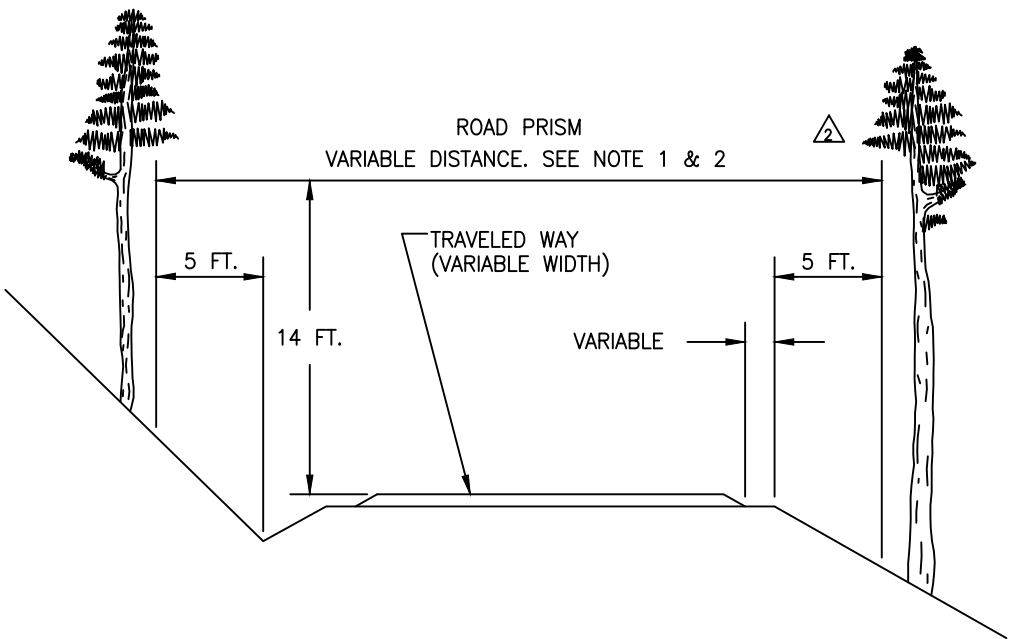
ALWAYS
THINK
SAFETY

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ROSEBURG DISTRICT OFFICE

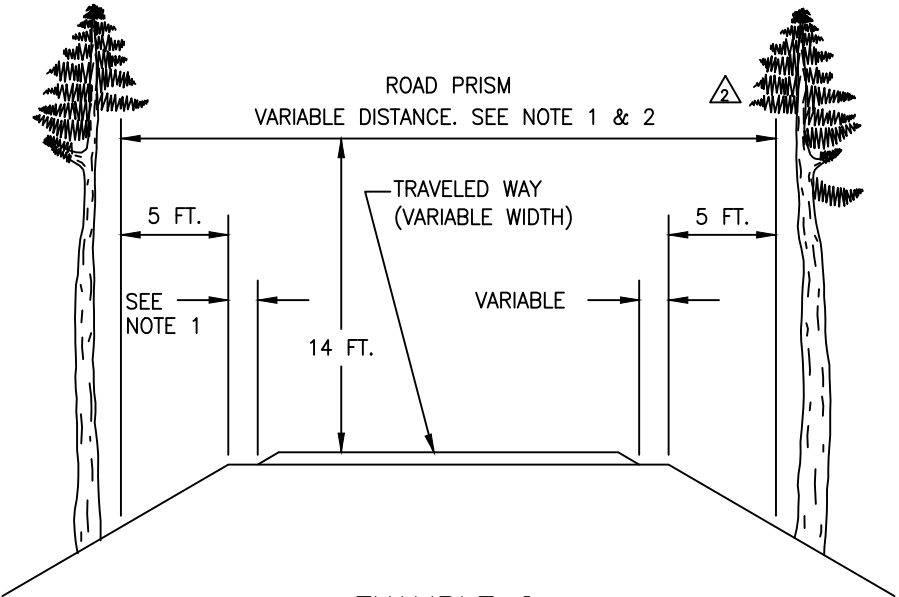
HARVEST MOON
ORR04-TS-2019.0006

CULVERT INSTALLATION

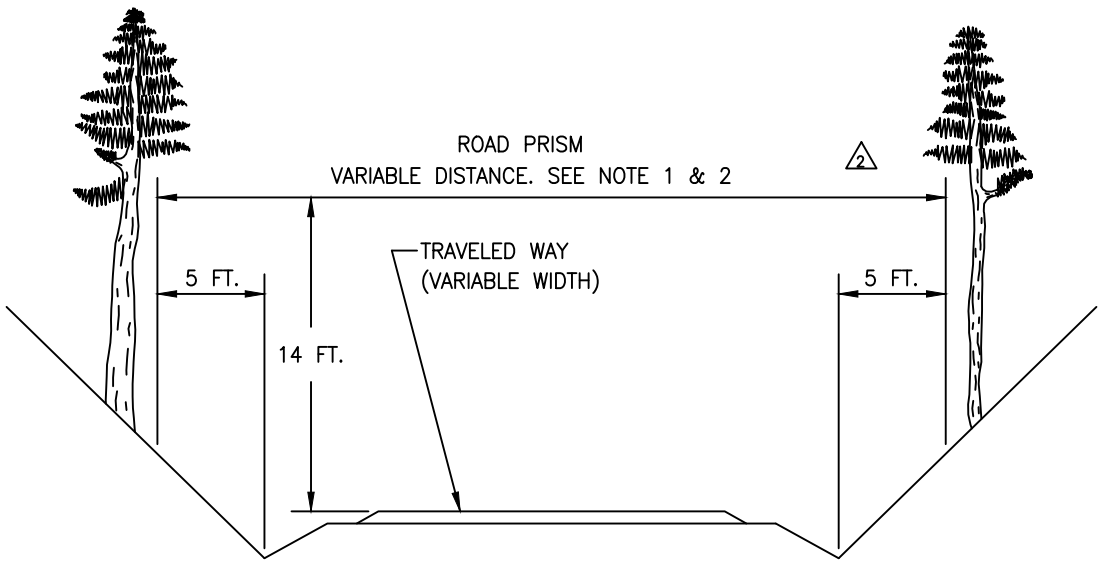
- NOTE:
- 1. ALL AREAS WITHIN THE VARIABLE DISTANCE SHALL BE CLEARED OF VEGETATION.
 - 2. ALL AREAS WITHIN THE VARIABLE DISTANCE SHALL BE FREE OF ALL OVERHANGING LIMBS AND BRANCHES WITHIN 14 FEET ELEVATION ABOVE RUNNING SURFACE. ⚠



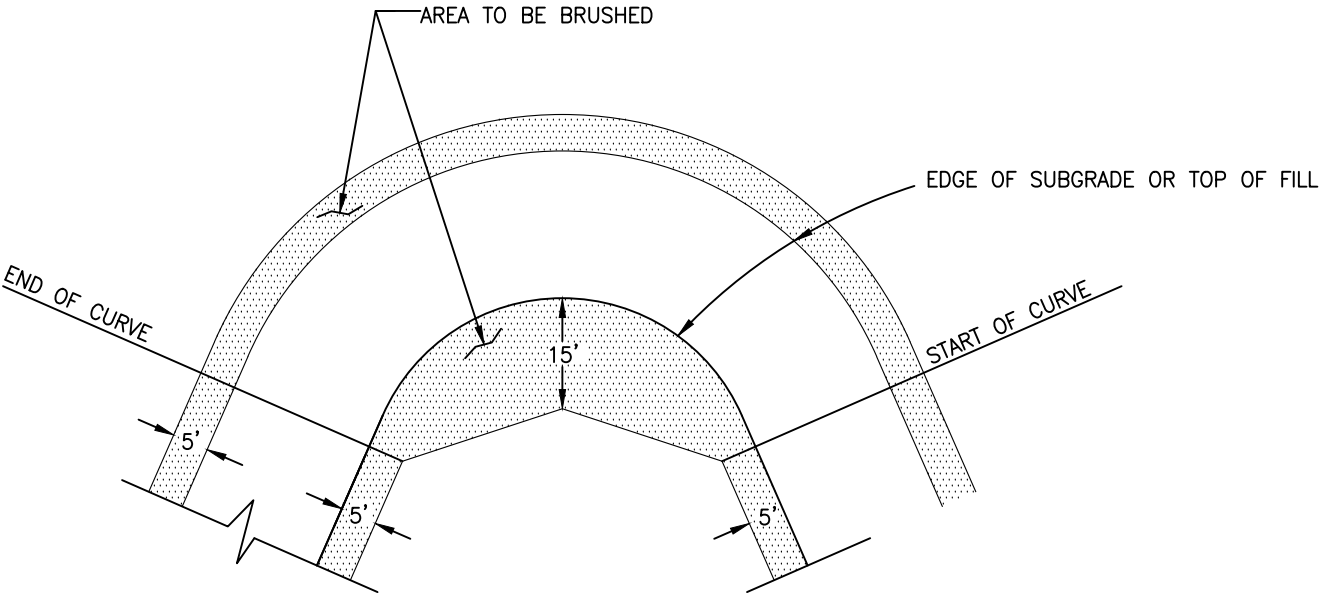
EXAMPLE 1



EXAMPLE 2



EXAMPLE 3



CURVE



UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT ROSEBURG DISTRICT OFFICE
HARVEST MOON ORR04-TS-2019.0006
BRUSHING DETAIL
SHEET 11 OF 11