COOS BAY SALE NO. 12-35
WAGON ROAD PILOT

COOS BAY DISTRICT OFFICE
MYRTLEWOOD RESOURCE AREA
SOUTH COAST

SALE DATE: March 30, 2012
SALE TIME: 10:00 a.m.

SALE NO. 12-35, WAGON ROAD PILOT

COOS COUNTY: OREGON: CBWR: ORAL AUCTION: Bid deposit required: $55,200.00
All timber designated for cutting on: T. 28 S., R. 10 W., Section 17, NE¼, N½NW¼, SE¼NW¼, NE¼SW¼, NW¼SE¼, Will. Mer.

Approx. No. Merch. Trees	Est. Vol. MBF 32' Log	Species	Est. Vol. MBF 16' Log	Appraised Price Per MBF	Estimated Vol. Times Appraised Price
7,098	2,823	Douglas-fir	3,409	$105.80	$360,672.20
6,249	1,530	western hemlock	1,840	$43.70	$80,408.00
5,321	665	red alder	838	$116.20	$97,375.60
904	45	Port-Orford-cedar	52	$237.20	$12,334.40
20	1	western redcedar	1	$291.80	$291.80
19,592	**5,064**	**Total**	**6,140**		**$551,082.00**

THIS TIMBER SALE HAS BEEN CRUISED, APPRAISED, AND ADVERTISED BASED UPON SCRIBNER BOARD FOOT MEASURE (16 FOOT LOG). THE MINIMUM BID FIGURES SHOWN BY SPECIES ARE DOLLARS PER THOUSAND BOARD FEET (MBF). THE MINIMUM BID INCREMENT WILL BE $0.10 PER MBF. SCRIBNER BOARD FOOT VOLUMES (32 FOOT LOG) BY SPECIES ARE DISPLAYED FOR INFORMATIONAL PURPOSES.

LOG EXPORT AND SUBSTITUTION: All timber sales, including timber from Federal rights-of-ways, shall be subject to the restrictions relating to the export and substitution of unprocessed timber from the United States in accordance with P.L. 94-165 and 43 CFR 5400 and 5424 as amended.

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

CRUISE INFORMATION: With respect to merchantable trees of all species in all cruise strata: the average DBHOB is 16.7 inches: the average gross merchantable log contains 81 bd. ft.; the total gross volume is approximately 6,566 thousand bd. ft.; and 94 % recovery is expected. The average DBHOB for Douglas-fir is 19.9 inches; and the average gross merchantable log contains 96 bd. ft. None of the total sale volume is salvage material. The following cruise method was used for volume determination:

3P: The Douglas-fir, western hemlock, red alder, Port-Orford-cedar and western redcedar trees have been cruised using the 3P system to select sample trees. The sample trees have been cruised and their volumes

computed using form class tables for estimating board foot volumes of trees in 16-foot logs. The volumes are then expanded to a total sale volume.

CUTTING AREA: One unit totaling approximately one hundred fourteen (114) acres of Variable Retention Harvest, four (4) acres of Density Management, and nine (9) acres of Alder Conversion/Density Management must be cut. Four (4) acres of right-of-way must be cut.

ACCESS: Access to the sale area is provided via: Oregon State highways, county roads, privately controlled roads and Government controlled roads.

DIRECTIONS TO SALE AREA: From Hwy 42 travelling east towards Coquille, OR, turn left onto W. Central Blvd. Travel 1 mile going past Coquille High School and turn left onto Coquille-Fairview Rd. Continue 8.7 miles to Fairview and turn right (east) onto the Coos Bay Wagon Rd. Travel east 15 miles to the BLM Road No. 28-10-9.4 (Weaver-Sitkum Tie Road). Turn right across the bridge and continue approximately 0.3 miles to BLM Road No. 28-10-9.0. Refer to Exhibits A and A-1 for unit locations.

ROAD USE & MAINTENANCE: Refer to Exhibit E Summary attached. Operator maintenance required on 5.3 miles of road.

Rockwear and Maintenance Fees Payable to BLM:	$11,166.30
Road Use Fees Payable to Menasha:	$736.80
Rockwear Fees Payable to Menasha	$11.84

ROAD CONSTRUCTION:

Road Construction and Maintenance estimates include the following:

New Construction:

44.56 stations

Road Renovation:

150.20 stations

Road Improvement:

75.71 stations

Roadside Brushing:

219.16 stations

Aggregate:

Maintenance & Spot Rock, 1 ½" minus hardrock: 770 C.Y. (Truck Measure)

Landing & Base Rock, 3" minus hardrock: 5,815 C.Y. (Compacted in Place)
Pipe & Top Rock, 1 ½" minus hardrock: 2,432 C.Y. (Compacted in Place)

Drainage:

18" CMP: 60'
24" CMP: 530'
Culvert Markers: 14

Soil Stabilization:

Dry Seed, fertilizer, & mulch: 4.4 acres (Pre Haul)
Dry Seed, fertilizer, & mulch: 1.5 acres (Post Haul)

Road Decommissioning:

Boulder Barriers: 8 (240 tons)

DURATION OF CONTRACT: Will be 36 months for cutting and removal of timber. The contract will contain special stipulations regarding logging, road construction, road use and maintenance, fire prevention, hazard reduction and logging residue reduction, log export and substitution, optional scale check of lump sum sales, equal opportunity in employment, cultural resource protection, and sensitive, threatened, or endangered plants or animals.

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SPECIAL PROVISIONS: This list is not comprehensive. Please review the entire contract.

1. A License Agreement is required with Menasha Forest Products Corporation.
2. All equipment must be washed prior to entry into the contract area to control the spread of noxious weeds.
3. A Timing Restriction affects the Alder Conversion/Density Management Area. Harvest activities are restricted to the period two hours after sunrise to two hours before sunset April 1 thought September 15.
4. No trees shall be felled into the Reserve or Aggregate Reserve Areas as shown on the Exhibit A. Line pulling, jacking, or other mechanical devices shall be used as necessary.
5. Damage shall affect less than 5% of reserve trees.
6. Lift trees and intermediate support trees may be necessary.
7. One-end suspension required in cable and ground base yarding areas.
8. A forwarder, log loader, tractor, or rubber tire skidder may be used to yard logs within the ground based yarding areas. Ground-based equipment is restricted to areas with slopes less than 35%. Areas suitable for ground based logging could be cable yarded to allow for winter operations.
9. Log lengths shall not exceed 41 feet in the Density Management and Alder Conversion/Density Management Areas.
10. Shape and restore all landings to a natural contour to prevent erosion.
11. Seed and fertilize all landings, road cuts and fills, and waste areas.
12. Soil stabilization, water bar construction, road decommissioning, and road barrier construction shall be conducted after the completion of harvest activities but no later than October 15th.
13. BLM will assume supervisory responsibility for disposal of logging slash.
14. Machine and/or hand piling of logging slash are required on approximately 123 acres.
15. Broadcast burning is required on approximately 4 acres.
16. Gross yarding of all cull material ≥4" in diameter and ≥6' in length is required in the Density Management Area.
17. Flaggers are required when logging operations are conducted along BLM Road No. 28-10-9.0.
18. After yarding and site preparation is complete the purchaser shall top 8 conifer trees and fall 12 conifer trees in the Density Management Area.
19. After yarding and site preparation is complete the purchaser shall fall 159 conifer trees marked with an orange painted "DW" or "D" in the Variable Retention Harvest Area.
20. This contract contains provisions (Sec. 41.b(12) and Sec. 41.b(13)) for the sale and removal of additional timber necessary to facilitate safe and efficient Purchaser operations in the Density Management and Alder Conversion/Density Management Areas. These provisions include:

    a. The designation and sale of additional timber, such as corridor and guyline trees, at contract price, as necessary to facilitate safe and efficient logging. Such trees may be felled and removed when they are painted by the Authorized Officer;

    b. Sale of additional timber volume at current fair market value where the species and/or size of trees are not representative of the forest stand(s) being thinned;

    c. Government reservation of trees previously marked for cutting replacement when the Authorized Officer determines that it is necessary in order to maintain stand densities consistent with objectives set forth in management prescriptions;

    d. The use of unilateral modifications executed by BLM for such additional and replacement timber;

e. Revocation of the Purchaser's right to cut additional timber if the Authorized Officer determines that trees have been cut and removed that were not previously marked and approved for cutting and removal by the Authorized Officer; and,

f. It is estimated that approximately 24 MBF of such additional timber may be removed under the contract, but is not included in the advertised sale volume nor was it included in the timber sale appraisal. This estimate is a net figure reduced by the estimate of the volume of trees previously marked for cutting, which the Authorized Officer may elect to reserve.

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Seasonal Restriction Matrix OR120-TS12-35 WAGON ROAD PILOT Timber Sale Prospectus

***Restricted periods are Shaded; Conditional periods are hatched; See Exhibit A for portions of units affected.**

		Jan		Feb		Mar		Apr		May		June		July		Aug		Sept		Oct		Nov		Dec	
	Activity	**1**	**15**	**1**	**15**	**1**	**15**	**1**	**15**	**1**	**15**	**1**	**15**	**1**	**15**	**1**	**15**	**1**	**15**	**1**	**15**	**1**	**15**	**1**	**15**
Unit 1	Road Construction, Renovation, or Improvement Work[1]																								
	Hauling[1,4]																								
	Timing Restricted Area[3]																								
	Ground Based Operations[2]											25%													

[1] Wet season restrictions may be shortened or extended depending on weather conditions.
[2] Ground based yarding or machine piling is restricted to periods when soil moisture levels are below 25% as determined by the Authorized Officer.
[3] Road construction and harvest activities are restricted to the period two hours after sunrise to two hours before sunset April 1 thought September 15.
[4] Wet season haul may be suspended during periods of heavy rain (>1" in 24 hours).

SCHEDULE I

Sec 41. TIMBER RESERVED FROM CUTTING. The following timber on the contract area is hereby reserved from cutting and removal under the terms of this contract and is retained as the property of the Government:

a. All timber in the Reserve and Aggregate Reserve Areas, shown on Exhibit A, which is attached hereto and made a part hereof, and all blazed, orange painted and/or posted trees which are on or mark the boundaries of the Reserve and Aggregate Reserve Areas, as shown on Exhibit A;

b. All timber marked, by the Government, with orange paint above and below stump height within the Density Management and Alder Conversion/Density Management Areas, as shown on the Exhibit A. All trees painted with blue paint above and below stump height are the property of the Purchaser;

c. All existing standing dead trees, except those snags that must be felled to permit safe working operation provided that all snags felled must be retained on site;

d. Fifty-four (54) trees marked with an orange "W" at breast height and an orange spot below stump height shown on Exhibit A. These trees are selected wildlife trees and are specially valued as a component of the Wildlife Habitat Management program. Selected wildlife trees damaged or destroyed by the Purchaser shall be valued for purposes of determining damages at current market value of the merchantable volume plus the cost to replace the damaged or destroyed trees. The Purchaser will be liable under applicable sections of this contract for the removal or destruction of these selected wildlife trees, except for such trees which the Authorized Officer determines to be a safety hazard as defined by applicable safety codes and regulations. When selected wildlife trees are determined to be danger trees, written approval to fell such trees shall be obtained from the Authorized Officer;

e. All existing downed wood in decay classes 3-5 and all existing downed wood twenty (20) inches or larger in diameter measured on the large end regardless of decay class;

f. One hundred fifty-nine (159) trees marked with an orange "DW" or “D” at breast height and an orange spot below stump height shall be felled, but not bucked into logs, following the completion of yarding and site preparation activities;

g. All non-alder hardwood trees greater than twelve (12) inches in diameter at breast height;

h. All Bearing Trees with metal tags that mark property corners, as shown on Exhibit A.

Sec 42. SPECIAL PROVISIONS. Purchaser shall comply with the special provisions which are attached hereto and made a part hereof unless otherwise authorized, in writing, by the Authorized Officer:

a. Periodic Payment and First Installment Adjustment

(1) Notwithstanding the provisions of Section 3(b), the amount of the first installment may be reduced by the Government when the Contracting Officer requests the Purchaser to interrupt or delay operations for a

period expected to last more than thirty (30) days during the operating season. Such interruption or delay must be beyond the Purchaser's control. Operating Season shall be defined, for this purpose, as the time of year in which operations of the type required are normally conducted and not specifically restricted under the contract. The first installment may be reduced to five (5) percent of the installment amount listed in Section 3(b), during the delay period. The Purchaser must request such a reduction in writing. When the Contracting Officer notifies the Purchaser that operations may proceed, the purchaser shall have fifteen (15) days after such notification to return the first installment to the full value specified in Section 3(b). Failure to return the first installment to the full value within the allotted time will be considered a material breach of contract. No timber shall be cut or removed from the contract area until the first installment is restored to the full amount.

(2) Notwithstanding the provisions of Section 3(b), adjustments in the due dates for periodic payments may be made by the Government if the Contracting Officer interrupts or delays contract operations for a period expected to last at least thirty (30) days, and the interruption or delay is beyond the Purchasers control. Any adjustment made shall provide the Purchaser with an equal amount of operating time as would have been available without the delay. The Purchaser shall request such adjustment in writing before the due date for a periodic payment contained in Section 3(b).

b. Logging

(1) Prior to commencement of operations, the Purchaser shall obtain from the Authorized Officer written approval of a written operations and logging plan commensurate with the terms and conditions of the contract which shall include measures needed to assure protection of the environment and watershed. A pre-work conference between the Purchaser's authorized representative and the Authorized Officer's representative must be held at a location designated by the Authorized Officer before the logging plan will be approved.

(2) Before beginning operations on the contract area for the first time, or after a shutdown of ten or more days, the Purchaser shall notify the Authorized Officer in writing of the date he plans to begin operations. He shall also notify the Authorized Officer in writing if he intends to cease operations for any period of ten or more days.

(3) In the Timing Restriction (MM) area, as shown on Exhibit A, falling, yarding, site preparation, and new road construction operations are confined to the period from two hours after sunrise to two hours before sunset between April 1 and September 15 both days inclusive.

(4) No trees may be felled into the Reserve or Aggregate Reserve Areas designated on the Exhibit A. Line pulling, jacking, or other mechanical devices shall be used as necessary to prevent trees from falling into these areas.

(5) All trees three (3) inches DBHOB or larger and/or twenty five (25) feet or taller designated for cutting shall be felled concurrently with all other trees designated for cutting in the Variable Retention Harvest and Alder Conversion/Density Management Areas.

(6) Damage to trees reserved under Sec. 41 shall affect less than 5% of reserve trees. Bark removed to cambium three inches wide or wider, top broken at three inches diameter or greater, root sprung trees, or any root collar damage shall constitute damage. Damage levels will be upon government sample of an affected

area. Failure to resolve excess damage to reserve trees may result in suspension of operations and recovery of the value of the damaged timber in accordance with Section 13.

(7) Conifer trees within the Density Management and Alder Conversion/Density Management Areas shall be felled, limbed, and bucked into lengths not to exceed forty one (41) feet prior to yarding.

(8) In the Density Management Area, all slash generated from harvesting operations to a minimum size of four (4) inches in diameter and six (6) feet in length shall be gross yarded to the landing and piled in accordance with the requirements in Sec.41.e(3).

(9) In the Variable Retention Harvest, Density Management and Alder Conversion/Density Management Areas, yarding (except for road rights-of-way and ground-based areas) shall be done with a skyline cable system according to the following:

(a) The skyline cable system shall be capable of being rigged in a multi-span configuration utilizing a carriage capable of yarding seventy five (75) feet laterally from the skyline. Skyline roads shall not be spaced closer than one hundred fifty (150) feet apart in the Density Management and Alder Conversion/Density Management Areas, unless approved by the Authorized Officer.

(b) One-end log suspension is required during yarding operations. Intermediate supports and/or lift trees may be required to obtain the required suspension. Full log suspension is required when yarding within the Full Suspension Yarding Area shown on the Exhibit A.

(c) If the placement of a yarding corridor requires the cutting of a reserve tree greater than twenty four (24) inches diameter at breast height in the Density Management Area, the tree shall be felled toward the stream and left on site.

(d) The Purchaser shall make all cable sky road changes by completely respooling cables and restringing the layout from head spar to tailhold.

(e) Where road locations allow, yarding in the Density Management and Alder Conversion/Density Management Areas shall be done so that corridors run parallel to each other rather than radiate from a central landing.

(10) In the Ground-Based Area, shown on Exhibit A and within road right-of-ways, cutting and yarding shall be done according to the following:

(a) In addition to the requirements set forth in Sec. 25 of this contract, no ground-based logging operations shall be conducted on the contract area between October 15 of one calendar year and June 1 of the following calendar year, both days inclusive.

(b) Ground-based operations shall be conducted when soil moisture content is below 25%, as determined by the Authorized Officer; unseasonably dry or wet weather may shorten or extend the operating season. The Purchaser shall be notified in writing when weather conditions extend the operating season. The Purchaser shall cease operations during periods of rain and shall be notified, after a soil-moisture assessment by the Authorized Officer, when operations may resume.

(c) Trees shall be felled manually or by a mechanized harvester.

(d) The yarding machine must be approved by the Authorized Officer. It must be equipped with a grapple or an extendable and retractable arch and fairlead that is an integral part of the machine that is capable of lifting the leading end of the turn clear of the ground. All logs in the Ground-Based Yarding areas shall be yarded with their leading end clear of the ground. A forwarder or tracked log loader may also be used to yard logs.

(e) Primary skid trails shall use existing trails wherever possible, be spaced at least ninety five (95) feet apart, and be no wider than twelve (12) feet.

(f) Primary skid trails shall be blocked with cull material after completion of harvest where the Authorized Officer determines vehicle access is possible.

(g) All ground-based equipment shall be restricted to operating on slopes less than 35%.

(h) Primary skid trails with a slope greater than 15% that are left with more than one hundred (100) feet of continuous bare ground shall have water bars installed and/or be covered with slash for erosion control prior to October 15.

(11) Sec 42.b(12) shall be the primary method for the identification, cutting, and removal of additional timber required for skyline corridors, yarding trails, and guy-line trees within the Density Management and Alder Conversion/Density Management Areas. Sec. 41.b(13) may be used at the discretion of the Authorized Officer. The purchaser shall be notified in writing when Sec. 41.b(13) is authorized for use.

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

(a) All cable yarding roads upon which timber is identified by the Purchaser to be cut and removed in accordance with this special provision must be necessary for the removal of timber sold under this contract and shall be limited to the minimum width necessary for yarding of logs with a minimum of damage to reserve trees, however, unless otherwise approved in writing by the Authorized Officer, the width of each cable yarding road shall be limited to twelve (12) feet.

(b) The Purchaser may immediately cut and remove additional timber to clear cable yarding roads; and provide tailhold, tieback, guyline, lift, and intermediate support trees; and 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 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.(b) of the contract or sufficient bonding has been provided in accordance with Section 3.(d) of the contract.

(c) The Purchaser agrees that sale of this additional timber shall be accomplished by a unilateral modification of the contract executed by the Contracting Officer and that such timber shall be sold at the unit prices shown in Exhibit B of this contract unless: the value of the timber must be reappraised

subject to the terms for contract extension set forth in Section 9 of the contract; or, the Authorized Officer determines that any tree that exceeds 24 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 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 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

(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 roads and/or cable yarding roads when the Authorized Officer determines such reservation is necessary to maintain stand densities consistent with objectives set forth in the management prescription. 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 shall be reduced accordingly through a unilateral modification to the contract executed by the Contracting Officer.

(13) In accordance with the requirements of Section 8 of the contract it has been determined that it is in the best interest of the Government and within the provisions of 43 CFR 5402.0-6 to sell additional timber located in the Density Management and Alder Conversion/Density Management Areas which is obstructing needed cable yarding roads, hazardous to workers, needed for guyline, tailhold, and/or tieback trees to meet all applicable State safety laws, codes or regulations. This timber must be cut or removed so that the Purchaser can continue active falling and yarding operations. The Purchaser is, therefore, authorized to cut and remove such additional timber in accordance with the provisions of Section 8 of the contract: provided, however, that:

(a) Seed trees, bearing trees, wildlife trees, trees larger than twenty four (24) inches diameter at breast height, and trees located within the Reserve or Aggregate Areas are not included in this authorization;

(b) the Purchaser shall identify each tree sold and cut in accordance with this provision by marking the surface of the stump immediately after cutting with a large "X", cut with a chain saw, and by painting the stump with florescent red paint so that the stump can be visually located from a distance of not less than 100 feet;

(c) concurrently with falling, paint the end of the butt log of each tree with florescent red paint. When butt logs are yarded, deck separately for inspection by Authorized Officer;

(d) the Purchaser conforms to all requirements of Section 8 of this contract; provided that (1) the unit prices for additional timber within unit boundaries shall be the unit prices shown in Exhibit B of this contract, or the reappraised unit prices arrived at in accordance with Section 9 of this contract, and (2) timber outside of unit boundaries shall be sold at fair market value;

(e) no timber may be cut or removed under the terms of this provision if all contract payments required by Section 3.(b) or 3.(d) have been made; and,

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

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

Failure to perform any of the conditions listed above may be considered a trespass.

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

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

All cable-yarding and/or ground based equipment yarding 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 contact and shall be limited to the narrowest width necessary for the yarding of logs with minimum damage to reserved trees.

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

(14) Prior to attaching any logging equipment to a tree within the Reserve Area, or any tree larger than twenty four (24) inches diameter at breast height within the Density Management and Alder Conversion/Density Management Areas, the Purchaser shall obtain written approval from the Authorized Officer, and shall take precautions to protect the trees from damage, as directed in writing by the Authorized Officer. No logging equipment may pass through or be attached to any tree within the Aggregate Reserve Areas.

(15) During logging operations, the Purchaser shall keep BLM Road Nos. 28-10-9.0 and 28-10-17.0, where they pass through the contract area, clear of trees, rock, dirt and other debris so far as is practicable. The roads shall not be blocked by such operations for more than twenty (20) minutes. Additionally, the Purchaser shall provide signs and flaggers to control traffic when conducting logging operations adjacent to the 28-10-9.0 road.

(16) To control the spread of noxious weeds and Port-Orford-cedar root disease, the purchaser shall conduct all operations involving the transportation and use of equipment and vehicles in strict accordance with the requirements shown on Exhibit F, which is attached hereto and made a part hereof. All road building and logging equipment shall be washed prior to moving in the Contract Area to minimize the spread of noxious weeds.

(17) After the completion of yarding and site preparation activities in Variable Retention Harvest Area, the Purchaser shall fall one hundred fifty nine (159) reserve trees designated with an orange painted “DW” or “D” in coordination with the Authorized Officer to contribute to post harvest down wood requirements.

(18) After the completion of yarding and site preparation activities, the Purchaser shall top eight (8) conifer trees and fell twelve (12) conifer trees in the Density Management Area as directed by the Authorized Officer.

The Purchaser shall top the trees above the third live whorl at a minimum height of forty (40) feet or at sixty (60) feet if no live limbs occur below sixty (60) feet. Trees selected for treatment shall be from the co-dominant tree class as directed by the Authorized Officer. Topped trees shall have a number painted at breast height with fluorescent paint such that they are visible from at least one hundred fifty (150) feet, felled trees shall have the butt ends painted. Number and location of treated trees shall be depicted on a map such that they may be easily verified.

c. Road Construction

(1) The Purchaser shall construct, improve, and renovate roads in strict accordance with the road plans and specifications, shown on Exhibit C, which is attached hereto and made a part hereof.

(2) Any required construction, improvement, or renovation of structures and roads shall be completed and accepted prior to the removal of any timber, except right-of-way timber, over that road. This requirement may be waived by the Authorized Officer.

(3) In addition to the requirements set forth in Section 25 of this contract, the Purchaser shall complete erosion control and soil stabilization measures on all cuts, fills, waste areas, and scarified areas, as designated by the Authorized Officer, along all sections of roadway disturbed during the year prior to October 15 of each year. The Authorized Officer may set time limits for the beginning and completion of erosion control and soil stabilization measures and modify seasonal dates to conform to existing weather conditions and changes in the construction schedule. Such work shall be accomplished in accordance with Erosion Control and Soil Stabilization, 1700 and 1800 Series, contained in Exhibit C, which is attached hereto and made a part hereof.

(4) The Purchaser, prior to construction of landings, shall stake all landing locations in accordance with the requirements set forth in Exhibit C. Concurrently with, or at the termination of logging operations, the Purchaser shall pull back and shape onto the landings all overhanging materials to prevent erosion in accordance with the requirements set forth in Exhibit C.

d. Road Use and Maintenance

(1) The Purchaser shall be required to secure written approval to use or haul equipment over Government owned or controlled structures when that equipment exceeds the maximum allowable weights or dimensions established by the State for vehicles operating without a permit.

(2) Tracked type equipment shall not be allowed to cross over concrete bridge decks, other concrete surfaced structures or asphalt surfaced roads without the proper protection of that surface. Prior approval shall be obtained from the Authorized Officer when crossing with protective devices. Details of such equipment shall be furnished to the Authorized Officer for evaluation of load characteristics, at least 15 days prior to proposed move in. Details shall include:

(a) Axle weights when fully loaded;
(b) Axle spacing;
(c) Transverse wheel spacing;
(d) Tire size;
(e) Outside width of vehicle;
(f) Operating speed;
(g) Frequency of use; and,
(h) Special features (e.g. running tracks, overhang loads, etc.).

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

(3) The Purchaser is authorized to use the roads shown on Exhibit E, attached hereto and made a part hereof, for the removal of Government timber sold under the terms of this contract and for haul of mineral material required under the terms of this contract; provided, that the Purchaser shall pay the road maintenance fees and rockwear fees totaling $11,166.30 as shown on Exhibit E. Unless the total maintenance and rockwear fees due BLM are paid prior to commencement of operations on the contract area, payments shall be made in

installments payable in the same manner as and together with payments required by Section 3 of this contract.

(4) The Purchaser shall perform maintenance and repair of such roads shown on Exhibit D in accordance with the maintenance specifications listed in Exhibit D, attached hereto and made a part hereof.

(5) At all times during the period of his operations on the contract area, and upon completion of said operations, the Purchaser shall be liable for maintenance and repair of such roads shown on Exhibit D resulting from wear or damage in accordance with the maintenance specifications as shown on Exhibit D.

(6) With the prior written approval of the Authorized Officer, the Purchaser may arrange for cooperative maintenance with other users of any BLM controlled road included in Section 41.c.(1) and 41.d.(3) of this contract; provided, that such cooperative arrangement shall not relieve the Purchaser of his liability for the maintenance and repair of such roads resulting from wear or damage, in accordance with this contract. The Purchaser shall furnish the Authorized Officer a copy of any cooperative maintenance agreements entered into with other users on these roads.

(7) The Authorized Officer may at any time, by written notice, terminate the Purchaser's operator road maintenance obligations and require instead payment of current Bureau of Land Management road maintenance fees for the particular surface type of the road(s) involved. These fees will be applied to the remaining contract volume on the sale area, as determined by the Authorized Officer, to be transported over the roads listed in Section 41.c.(1) and 41.d.(3). If the total road maintenance fee does not exceed $500.00, the Purchaser shall pay such amount in full prior to use of such roads. If the total road maintenance fee exceeds $500.00, the Authorized Officer shall establish an installment schedule of payments of the maintenance obligation.

(8) The following management practices shall be used to prevent delivery of haul-related sediment to the stream network during wet season haul:

Apply additional lift of rock to the area of road that can influence the stream if rill erosion is evident or likely in the road near a stream crossing. Hard rock shall be in place at the start of winter haul and additional rock shall be applied as necessary to maintain the stream crossing for the duration of wet season haul.

Contain offsite movement of sediment from the road or ditch flow near stream by installing a silt fence or other sediment-trapping device. Such control measures must allow for the free flow of water without detention or plugging. The control measure must receive frequent maintenance with accumulated sediment disposed of in accordance with Authorized Officer instructions. Silt fences or sediment traps shall be in place prior to the start of winter haul.

Hauling during the wet season may be suspended if more than one (1) inch of rain is expected in a twenty four (24) hour period and the Authorized Officer determines that the soils in the contract area are already saturated and the sediment prevention measures in described in this section would be ineffective at preventing sediment delivery to the stream network. The NOAA - National Weather Service - Hydrometeorological Prediction Center web site, http://www.hpc.ncep.noaa.gov/qpf/qpf2.shtml (Quantitative Precipitation Forecast) shall be used as the rainfall forecast tool unless otherwise directed by the Authorized Officer.

(9) In the use of required company roads shown on the Exhibit E, the Purchaser shall comply with the conditions of Right-of-Way and Road Use Agreements between the United States and Menasha Forest Productions Corporation RWA C-441A. The Agreement is available for inspection at the Bureau of Land Management, Coos Bay, Oregon.

Prior to commencement of operations, the Purchaser shall furnish to the Authorized Officer a copy of the executed License Agreements issued under the terms of the Right-of-Way Agreements.

Default by the Purchaser of said Right-of-Way and Road Use Agreements, of any License Agreements executed pursuant thereto, for failure to pay appropriate road use fees, rockwear, 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. Road maintenance fees may change during the course of the contract as determined by the Licensor. It is the responsibility of the Purchaser to pay fees current at time of haul. The fees used for the appraisal include:

Road Use Fees Payable to Menasha:	$736.80
Rockwear Fees Payable to Menasha:	$11.84

If a Licensor is the purchaser, allowances have been made for amortization of capital investment of the roads covered by the Licensor's Agreement in accordance with 43 CFR 2812.6, 2(a)(5); it is understood that the purchase price stated in Section 2 of this contract is the net price and that no deduction will be made from the contract price because of such allowance.

e. Fire Prevention, Hazard Reduction and Logging Residue Reduction

(1) The assumption by the Government of all obligations for the disposal or reduction of fire hazard under State law does not relieve the Purchaser of the obligations to perform the fire prevention, hazard reduction and logging residue reduction measures required by this contract.

(2) Fire Prevention and Hazard Reduction. Primarily for purposes of fire prevention and fire hazard reduction, the Purchaser shall comply with the following provisions:

(a) Prior to the operation of power driven equipment in construction or logging operations under this contract during the closed fire season or periods of fire danger, the Purchaser shall prepare a fire prevention and control plan to the satisfaction of the Authorized Officer.

(b) The Purchaser’s operation shall meet all applicable Oregon State Fire Laws as well as the Daily Industrial Fire Precaution Levels

(c) Slash shall be disposed of in accordance with the written instructions of the Authorized Officer.

(3) Logging Residue Reduction. Primarily for silvicultural purposes and watershed protection the Purchaser shall comply with the following provisions:

(a) Notwithstanding the provisions of Sec. 15 of this contract, the Government shall be responsible for

disposing of slash created by the Purchaser's operations on Government lands. In accordance with written instructions to be issued by the Authorized Officer at least ten days in advance of earliest date of required performance, the Purchaser shall, under supervision of the Authorized Officer or his designated representative, assist in preparing slash for burning, and in burning, fire control, mop-up and patrol by furnishing, at his own expense, the services of personnel and equipment as follows:

Specifications for Broadcast Burning:

1. 1 foreman to supervise crew and equipment operators.
2. 10 person burn crew
3. 1 tanker of 2500 gallons or more w/driver equipped with a pump or pumps, capable of filling the tank at a rate of 300 G.P.M. or more and discharging at 20.5 G.P.M. through a 1/4" tip on the end of 50' of 1 1/2" hose. Tanker must have a dump valve of at least 4" diameter or more for filling portable tanks. Tankers shall be filled with water.
4. 6 drip torches and fuel
5. 1 chain saw.
6. 1 portable pressure pumps (Mark III type).
7. 2 – 1500 gallon or larger, portable water tanks.
8. 2000 feet of 1 ½" cotton-jacket rubber-lined (CJRL) hose.
9. 2000 feet of 1" cotton-jacket rubber-lined (CJRL) hose
10. 20 hose lay fittings; 5 reducers, 5 – 1 1/2" gated wyes, 5 – 1" gated wyes, 5 forester nozzles.
11. 13 handtools; 5 shovels, 5 pulaskis, 3 hazel hoses.

MOP-UP – Broadcast Burning:

1. 1 foreman to supervise crew and equipment operators.
2. 6 person mop-up crew.
3. 1 tanker must meet same specifications as required on the burn day.
4. Hose, pumps, hand tools, etc., shall be the same amounts as required for burn day.

Specifications for Hand Fire Trail Construction:

1. Hand fire trail to mineral soil, minimum width of three (3) feet, shall be constructed and maintained as shown on Exhibit A, not to exceed fifteen hundred (1500) feet in length. The Authorized Officer shall designate the width, location, time and method of construction of the fire trails. Water bars shall be constructed on all fire trails. The water bar shall consist of a diagonal ditch across the cleared to mineral soil portion of the fire line. The water bar shall be six (6) inches deep and shall extend one (1) foot beyond the width of fire line.

2. Water bar spacing – Percent of Slope

   (a) 0% to 9% - None required
   (b) 10% to 29% - 1 Water bar every 150 feet.
   (c) 30% to 59% - 1 Water bar every 75 feet

(d) 60% + - 1 Water bar every 30 feet

Specifications for Road Side Hazard Reduction Piles and Landing Piles:

1. The Purchaser shall pile all logging residue one half (½) inch to six (6) inches in diameter (small end) which is greater than two (2) feet in length and is within twenty (20) feet slope distance of the outside edge of the road shoulder of BLM Road Nos. 28-10-9.0 and 28-10-17.0. Piling shall be accomplished by hand or with mechanized equipment capable of reaching the required twenty feet without leaving the road surface unless conducted in conjunction with machine piling operations.

2. All logging debris accumulated on the landing shall be piled. As much as possible, piling on landings shall be reduced to the least amount of piles necessary. All piles with pointed jagged tops shall be flattened to ensure a good surface for the polyethylene plastic covering.

3. Unless directed by the Authorized Officer, no landing or roadside hazard reduction piles shall be within 15 feet of any green trees, snags or marked wildlife trees.

Specifications for Landing Pile Covering:

1. The purchaser shall place polyethylene plastic, maximum 4 MIL thickness and black in color over the pile to provide a barrier from winter rains. Unless otherwise directed, the size of the plastic shall not exceed one hundred (100) square feet (10 X 10).

2. Larger piles may receive additional polyethylene plastic sheeting in excess of one hundred (100) square feet to adequately cover the pile. Piles within this size limit will be identified by the Authorized Officer before the landing pile covering begins.

3. In the piled debris being covered, material that extends beyond the general contour of the pile shall be cut off and placed on the pile to prevent tearing of the plastic during seasonal winds. Piles that have a pointed top shall be flattened or removed before plastic is applied to the pile

4. Plastic covering shall be placed on top of the pile to ensure the center of the pile remains dry and shall be weighted down with logging debris and shall be tied down with twine on all four corners.

5. All piles shall be covered by September 30 of the same year of piling.

6. Biomass Utilization Option:

   (a) If the Purchaser elects to remove biomass generated from harvest activities, the Purchaser shall notify the Authorized Officer in order to arrange for on-site inspections of the removal operations and shall provide information on the total tonnage of biomass material removed from

the sale area.

(b) Upon completion of the biomass removal, the Purchaser shall notify the Authorized Officer to arrange for a final inspection of the landing site.

Specification to Landing Pile Burning

1. The Purchaser shall begin landing pile burning within 14 hours of notification by the Authorized Officer.

2. The Purchaser shall remove and dispose of all plastic exceeding the one hundred (100) square foot limit in accordance with Federal, State and municipal laws. Removed polyethylene sheeting shall not be disposed of in the burn pile.

3. Manpower and Equipment Requirements for burning of piles are:

   (a) 1 English-speaking foreman for crew supervision
   (b) 3 person burn crew
   (c) 3 drip torches and a sufficient amount of fuel to complete all landing pile burning.

4. A minimum of 80% percent consumption of each pile is required.

5. No mop-up is required by the Purchaser.

Specification for Slashing:

1. Slashing for hand and machine piled areas shall be done concurrently with the hand and machine piling.

2. Slash all brush over one (1) foot in height including prostrate brush, all hardwoods not marked for retention and all prostrate and damaged conifer reproduction. Stumps heights of slashed vegetation shall not exceed six (6) inches measured on the uphill side.

Specification for Leave Tree Pull-back:

1. The purchaser shall complete the leave tree pullback during the same year of the logging operation.

2. All logging debris and slashed vegetation that exceeds one half (½) inch in diameter shall be pulled back to a distance of five (5) feet from around the bole of the leave tree.

3. All slash pulled back from a leave tree shall be distributed and scattered beyond the five (5) foot pullback distance to ensure no accumulation of material exists.

COOS BAY SALE NO. 12-35
WAGON ROAD PILOT

Specifications for Hand Piling:

1. The Purchaser shall hand pile slashed vegetation and logging debris one half (½) inch to six (6) inches and is greater than two (2) feet in length. Material exceeding the diameter limits specified may be left un-piled; however, attached limbs and/or tops falling within the diameter and length limits shall be cut off and piled. At the discretion of the Authorized Officer, damaged conifer reprod and all live and dead non-conifer brush species two (2) feet and taller shall also be cut and piled.

2. Piles shall have a solid base, constructed as upright as possible, and have a compacted core of smaller diameter woody material to aid in pile ignition. Material extending more than one (1) foot beyond the general contour of the pile shall be cut off and placed on the pile.

3. All piled material shall be laid perpendicular to the slope and will be constructed as compactly as possible.

4. Unless directed by the Authorized Officer, no hand piles shall be constructed within fifteen (15) feet of any green trees, snags, wildlife trees, or material identified as coarse woody debris.

5. Weather permitting, hand piling shall start and be completed within the same year the unit was harvested. Piling shall begin two weeks of the Purchasers notification by the Authorized Officer and be completed within 30 days of the hand piling start date.

Specifications for Hand Pile Covering:

1. The Purchaser shall be required to place black polyethylene plastic, minimum 4 MIL thickness, over the pile so as to provide maximum protection from fall/winter rains. Plastic shall extend down the side of the pile to the point where the natural ground level and the bottom of the pile intersect on the south and west sides and two thirds of the distance from the top of the pile to the natural ground level on the north and east sides.

2. All plastic shall be weighted down with logging debris in order to prevent blowing off or sliding. No more than 20% of the material to be piled may be placed on top of the plastic.

3. All piles shall be covered by September 30 of the same year of the piling.

4. In accordance with written instruction to be issued by the Authorized Officer at least 10 days in advance of the earliest date of required performance, the Purchaser shall, under supervision of the Authorized Officer or his designated representative, assist in burning and fire control, at his own expense, the services of personnel and equipment as follows;

Specifications for Machine Piling

1. Prior to the beginning of piling operations the Purchasers Representative, equipment operator and the Authorized Officers Representative shall meet on-site to develop a plan for machine piling.

2. The purchaser shall provide a hydraulic excavator with operator, equipped with a "BRUSH" type attachment for piling logging debris and slashed vegetation and will be approved by the Authorized Officer before piling begins. Equipment used for machine piling shall be restricted to operating on slopes less than 35%.

3. The piling equipment shall be washed prior to move-in and must be inspected by the Authorized Officer before any piling begins.

4. The Purchaser shall machine pile slashed vegetation and logging debris one half (½) to six (6) inches in diameter (measured on the small end). Material exceeding the diameter limits specified may be left un-piled; however, attached limbs and tops falling within the diameter limits shall be cut off and piled. Material sixteen (16) inches in diameter or larger (measured on the large end) shall not be piled.

5. Machine piling shall be conducted when soil moisture content is below 25% percent, as determined by the Authorized Officer.

6. Piles shall be kept as dirt free as possible. Re-piling will be required if piles contain too much dirt. In order to reduce the potential for soil compaction the operator shall operate the excavator on top of the logging debris as much as possible and shall avoid making repeated passes over an area.

7. Piles shall be constructed as upright as possible and have a solid base to prevent toppling. Material extending more than two (2) feet beyond the general contour of the pile shall flattened with the excavator or cut off and placed on the pile. All piled material shall be laid perpendicular to the slope. Unless directed by the Authorized Officer, no piled material shall be located closer then fifteen (15) feet from any snags, suitable down coarse woody debris or wildlife trees. The Purchaser may be required to relocate material identified as suitable coarse woody debris to other locations within the machine pile area.

<u>Specifications for Machine Pile Covering:</u>

1. The Purchaser shall place black polyethylene plastic, maximum 4 MIL thickness, over the pile to provide a barrier from winter rains. Unless otherwise directed, the size of plastic shall not exceed one hundred (100) square feet (10 X 10). Larger piles may receive additional polyethylene plastic sheeting in excess of one hundred (100) square feet to adequately cover the pile. Piles within this size limit will be identified by the Authorized Officer before the pile covering begins.

2. Before covering any piles, piles with pointed jagged tops shall be flattened or cut off to create a good surface for the polyethylene plastic covering.

3. Plastic covering shall be placed on top of the pile to ensure the center of the pile remains dry and shall be weighted down with logging debris and shall be tied down with twine on all four corners.

Specifications for Hand and Machine Pile Burning:

1. The purchaser shall begin pile burning within fourteen (14) hours of notification by the Authorized Officer.

2. A minimum of 80% consumption of each pile is required.

3. No mop-up is required within the machine pile area.

4. Manpower and Equipment Requirements:

   (a) 1 English-speaking foreman for crew supervision
   (b) 5 person burn crew
   (c) 5 drip torches and a sufficient amount of fuel and alumagel to complete all pile burning.

(b) The Purchaser's operation shall meet all applicable Oregon State Fire Laws as well as the Daily Fire Precaution Levels. A permit to operate power-driven machinery shall be obtained and all power saws shall comply with Oregon State Fire Laws.

(c) Piles will be burned only on the days permitted under the Oregon Smoke Management Plan. Purchaser shall obtain daily approval to burn from the Authorized Officer. Burning of hand piles will begin no earlier than October 1 and not later than December 31.

(d) All listed personnel shall be physically fit, experienced and fully capable of functioning as required. All personnel shall arrive at the project area(s) with the following personal safety equipment: Long sleeve natural fabric shirt, full length natural fabric trousers, minimum eight (8) inch top leather boots, hardhat, and leather gloves. 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.

(e) Except as provided hereafter for slash fire escapement, the Purchaser shall continue the required assistance in the broadcast burn treatment, shown in Exhibit A, for one hundred sixty eight (168) hours, as directed by the Authorized Officer within a seven (7) day period beginning 8:00 AM the day following completion of ignition in that unit or until released from such services by the Authorized Officer, whichever occurs first. The Purchaser shall begin mop-up on the day of ignition if possible and will continue mop-up following the ignition day for a three (3) day period (30 hours).

(f) In event of a slash fire escapement, the Purchaser's personnel and equipment shall, under supervision

of the Authorized Officer or his designated representative, take action to control, suppress, and mop-up the escaped fire until released from such service by the Government. If it becomes necessary to use furnished personnel and equipment for the suppression of a fire which escapes from the slash disposal area for a period beyond the remainder of the day in which the fire escapes, then the Government shall, at its option, either:

1. Reimburse the Purchaser for such additional use of personnel and equipment at wage rates set forth in the current Administratively Determined Pay Rates for the Western Area and at equipment rates set forth in the current Oregon-Washington Interagency Fire Fighting Equipment Rental Rates schedule until the Purchaser is released from such service by the Government or

2. Count the additional use of persons and equipment against the required assistance obligated time specified for that particular treatment.

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

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

f. Log Export and Substitution

(1) All timber sold to the Purchaser under the terms of this contract 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 (8-3/4) 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 timbers, regardless of size, manufactured to standards and specifications suitable for end-product uses; (2) chips, pulp and pulp products; (3) green or dry veneer and plywood; (4) poles and piling cut or treated for use as such; (5) cants, squares, and lumber cut for remanufacturing of eight and three-quarters (8-3/4) inches in thickness or less; (6) shakes and shingles.

(2) Substitution will be determined under the definition found in 43 CFR 5400.0-5(n).

(3) 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 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; and,
(f) volume of Federal timber purchased in succeeding twelve (12) months from date of last export sale.

(4) In the event the Purchaser elects to sell any or all of the timber sold under this contract in the form of unprocessed timber, the Purchaser shall require each party buying, exchanging, or receiving such timber to execute a "Certificate as to Nonsubstitution and the Domestic Processing of Timber" (Form 5460-16). 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.

(5) 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

(6) Prior to the termination of this contract, the Purchaser shall submit to the Authorized Officer a "Log Scale and Disposition of Timber Removed Report" (Form 5460-15) 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.

(7) Unless otherwise authorized in writing by the Contracting Officer, the Purchaser shall brand clearly and legibly one end of all logs with a scaling diameter (small end inside bark) of over ten (10) inches, prior to the removal of timber from the contract area. All loads of eleven (11) logs or more will have a minimum of ten (10) logs clearly and legibly branded on one end regardless of the diameter of the logs. All logs will be branded on loads of ten (10) logs or less. One end of all branded logs to be processed domestically will be marked with a three (3) square inch spot of highway yellow paint. The Purchaser will stop trucks for accountability monitoring at mutually agreed upon locations when notified by the Authorized Officer.

If multiple trailers (mule trains) are used, each bunked load shall be considered an individual load, and these guidelines will apply to each bunked load. If a flatbed stake trailer is used, each bundle will be treated as a separate load. At the discretion of the Contracting Officer, the Purchaser may be required to brand and paint all logs. Any increased costs for log branding and painting shall be the responsibility of the Purchaser.

(8) 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.

g. Optional Scale Check of Lump Sum Sales

(1) The Government, at its option, may administratively check scale any portion of the timber removed from the contract area, and if necessary, conduct check scaling of independent scalers contracted to BLM for

administrative check scaling purposes. The Purchaser hereby agrees to make such contract timber available for such scaling at a location or locations to be approved in writing by the Authorized Officer. At the approved location or locations, the Purchaser shall provide an area for logs to be safely rolled out for scaling, to unload logs from trucks, place logs in a manner so that both ends and three faces of each log are visible for scaling, and to reload or remove logs after scaling has been completed.

(2) In the event that BLM elects to administratively check scale and if such check scaling causes a delay in log transportation time, an adjustment will be made to the purchase price as follows. If the entire sale is check scaled by yard scale, the purchase price of this contract shall be reduced by $3,070.00. In the event only a portion of the contract timber is scaled, the purchase price shall be reduced by that portion of $3,070.00 which is equal to the percentage of timber sold which was actually scaled by the Government. For purposes of computing this price reduction, the percentage of timber sold which has been scaled shall be determined by the Government. Any reduction in purchase price under the terms of this provision shall be full compensation to the Purchaser for any expense or loss incurred as a result of such scaling. Scaling shall be conducted in accordance with the Eastside Scribner Scaling Rules by BLM scalers, and/or independent scalers contracted to BLM. A copy of the scale report will be made available to the Purchaser upon request.

h. Equal Opportunity in Employment

(1) Certification of Nonsegregated Facilities, Form 1140-3, is attached hereto and made a part hereof.

i. Cultural Resource Protection

(1) If in connection with operations under this contract, the Purchaser, his contractors, sub-contractors, or the employees of any of them, discovers, encounters or becomes aware of any objects or sites of cultural value on the contract area such as historical or prehistorical ruins, fossils, or artifacts, the Purchaser shall immediately suspend all operations in the vicinity of the cultural value and notify the Authorized Officer of the findings. Operations may resume at the discovery site upon receipt of written instructions and authorization by the Authorized Officer.

(2) Pursuant to 43 CFR 10.4(g) the holder of this authorization must notify the Authorized Officer, by telephone, with written confirmation, immediately upon discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the Authorized Officer.

j. Sensitive, Threatened, or Endangered Plants or Animals

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 protect occupied marbled murrelet sites in accordance with the Standards and Guidelines of the Coos Bay District Record of Decision

(ROD) and Resource Management Plan (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) other active raptor nests have been discovered, and a determination is made that continued operations under this contract would adversely affect the present use of the discovered nesting area by the raptor, or;

(e) 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;

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

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

(h) when, in order to protect species which were identified for protection through survey and manage and/or protection buffer standards and guidelines established in the ROD and

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

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

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

The Contracting Officer may determine that it is necessary to terminate the cutting and removal rights under the contract in order to comply with the Endangered Species Act, protect occupied marbled murrelet sites in accordance with the ROD and RMP, protect species that have been discovered which were identified for protection through survey and manage and/or protection buffer standards and guidelines established in the ROD and RMP, or comply with a court order. Following the issuance of a written notice that cutting and removal rights will be terminated, the Purchaser will be permitted to remove timber cut under the contract, if allowed by the Endangered Species Act, marbled murrelet occupied site protection in accordance with the ROD and RMP, survey and manage and/or protection buffer standards and guidelines established in the ROD and RMP, or court order requirements necessitating the modification or termination.

In the event 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.

Exhibit F
Sheet 1 of 1

SPECIAL PROVISIONS TO CONTROL THE SPREAD OF NOXIOUS WEEDS

Vehicle and Equipment Cleaning

1. Cleaning shall consist of the removal of soil and debris by washing with a high pressure hose or steam cleaning. Cleaning and inspection sites will be agreed to by Purchaser and BLM. All petroleum product residues shall be contained at wash sites and dealt with in accordance to DEQ standards. Contractor shall provide an approved plan for the cleaning station that demonstrates that the station meets all DEQ and water quality regulations. All necessary permits shall be obtained by the contractor.

2. All equipment parts shall be cleaned as designated by the Authorized Officer, including removal of tractor belly plates, in accordance with Section 1 above.

All construction, logging and slash disposal equipment shall be cleaned prior to entering the contract area. The Authorized Officer will determine if log trucks and vehicles used for transportation of personnel shall be cleaned, based upon the location of use immediately prior to current timber sale. If the vehicles have been in a weed-infested area, they shall be washed before entering Contract Area, as shown on Exhibit A.

TIMBER SALE CONTRACT MAP
USDI–BLM COOS BAY DISTRICT
T. 28 S., R. 10 W., Sec. 17, Will. Mer.

SALE NO. 12–35
EXHIBIT A

Wagon Road Pilot

Unit 1

Variable Retention Harvest Area ..... 110 ac.
Alder Conversion/Density Management Area ... 9 ac.
Density Management Area ..... 4 ac.
Aggregate Reserve Area .....32 ac.
R/w ..... 4 ac.

Total ..... 159 ac.

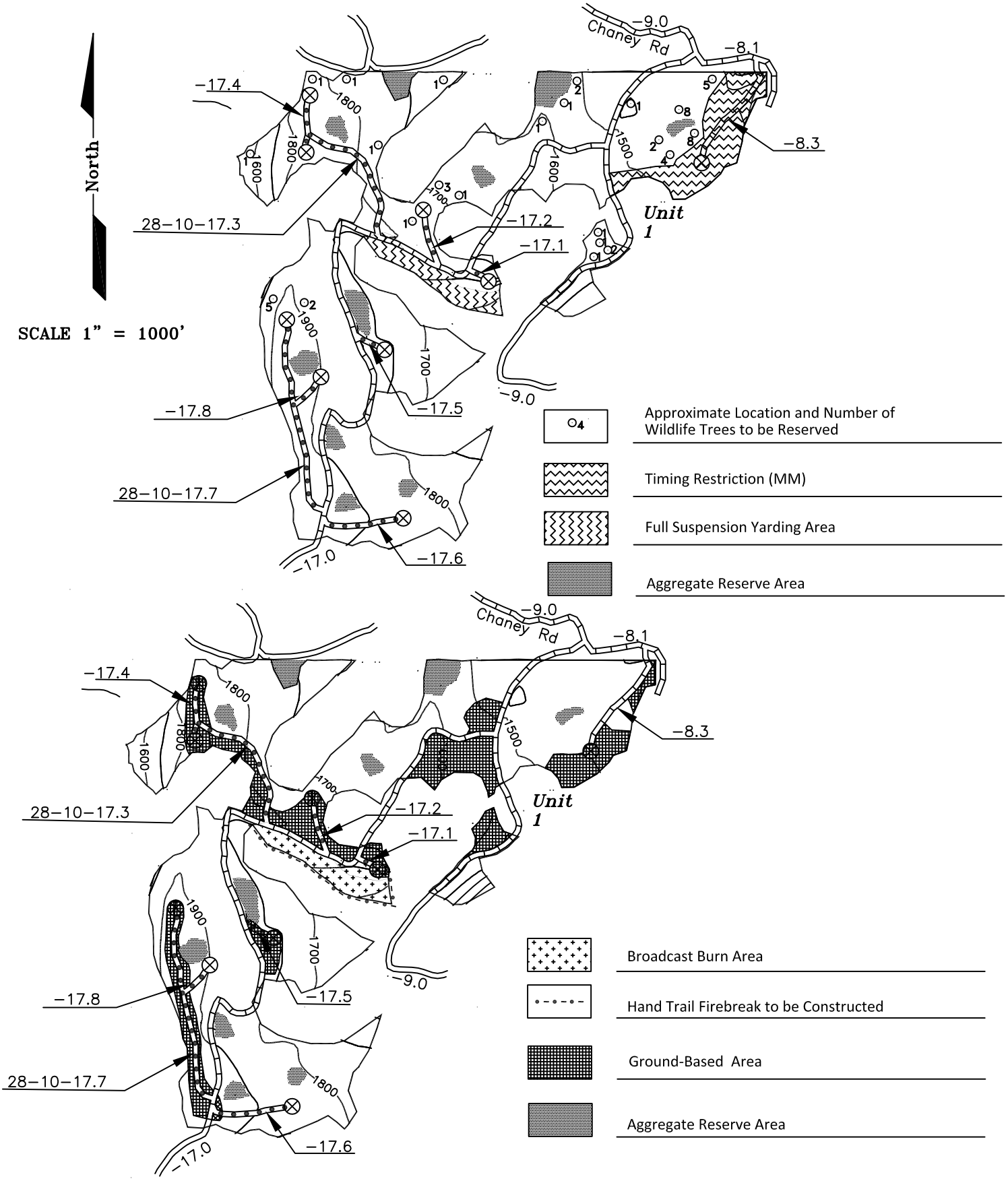
Total Reserve Area ..... 201 acres
Total Contract Area ..... 360 acres

SCALE 1" = 1000'

- Variable Retention Harvest Area
- Alder Conversion/Density Management Area
- Density Management Area
- Aggregate Reserve Area
- Reserve Area
- Boundary of Cutting Area, Blazed, Posted and Painted
- Boundary of Contract Area
- Existing Road
- Road to be Constructed
- Road to be Renovated
- Proposed Landing
- Stream Channel
- Corner Found

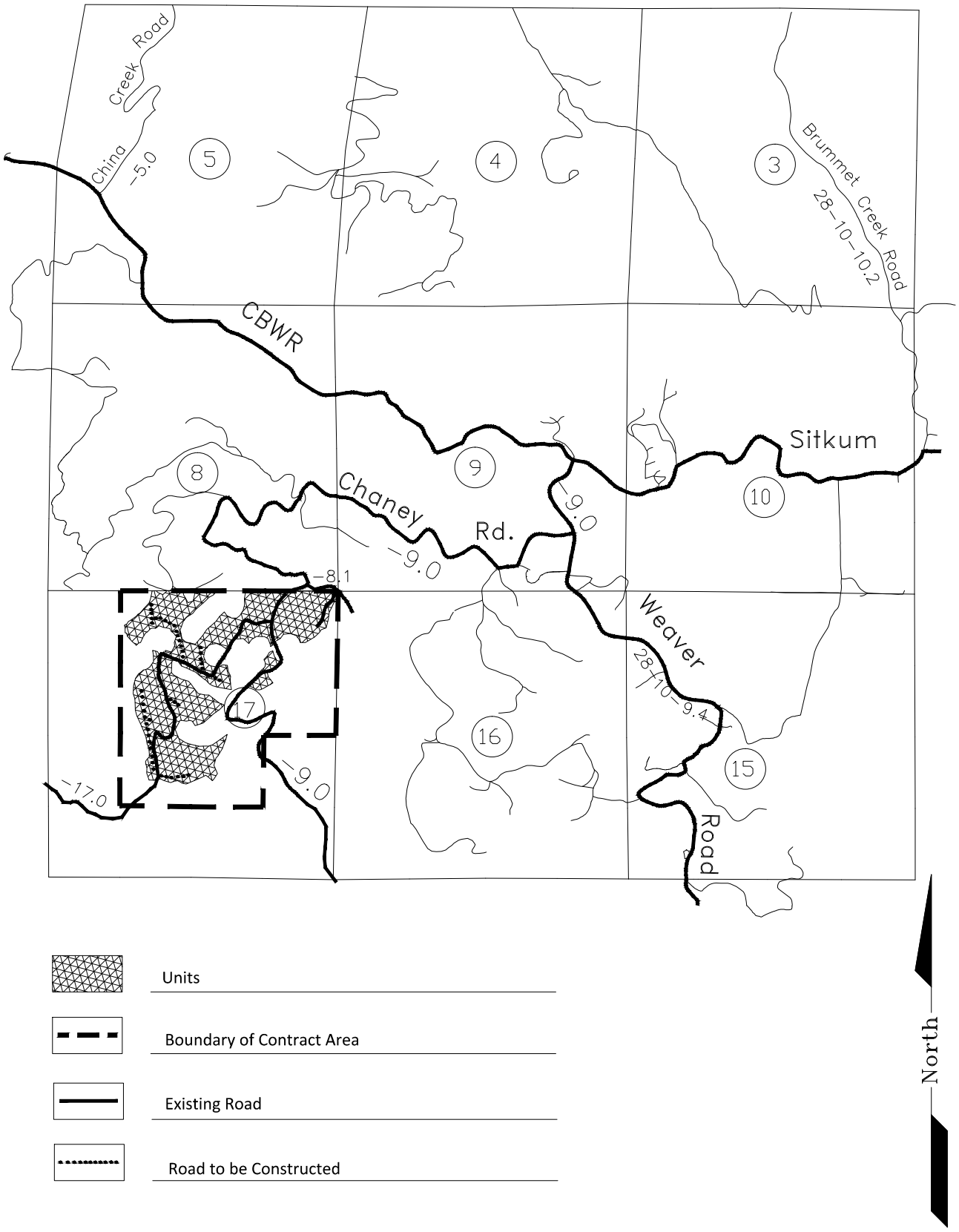
TIMBER SALE CONTRACT MAP
USDI–BLM COOS BAY DISTRICT
T. 28 S., R. 10 W., Sec. 17, Will. Mer.

SALE NO. 12–35
EXHIBIT A
Page 2 of 2
Wagon Road Pilot



TIMBER SALE CONTRACT MAP
USDI–BLM COOS BAY DISTRICT
T. 28 S., R. 10 W., Sec. 17, Will. Mer.

SALE NO. 12–35
EXHIBIT A–1
Page 1 of 1
Wagon Road Pilot



SCALE 2" = 1 mile

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Exhibit B

The following estimates and calculations of timber sold are made solely as an administrative aid for determining: (1) Adjustments made or credits given in accordance with Sections 6, 9, or 11; (2) When payments are due; and (3) Value of timber subject to any special bonding provisions. The value of timber will be determined by multiplying the value per acre as shown below, times the amount of acreage as determined by the authorized officer, which has been cut or removed or designated for taking.

Except provided in Section 2, Purchaser shall be liable for the total purchase price even though the quantity of timber actually cut or removed or designated for taking is less than the estimated volume or quantity shown. Cutting areas are shown on the Exhibit A.

Sale Totals (16' MBF)

Species	Net Volume	Bid Price	Sale SubTotal
Douglas-fir	3,409		
Western Hemlock	1,840		
Red Alder	838		
Port-Orford-cedar	52		
Western red-cedar	1		
Sale Totals	**6,140**		

Unit Details (16' MB)

Unit 1 A **110 Acres** **Value per Acre : $0.00**

Species	Net Volume	Bid Price	Species Value
Douglas-fir	3,194		
Port-Orford-cedar	46		
Red Alder	682		
Western Hemlock	1,767		
Western red-cedar	1		
Unit Totals	**5,690**		

Unit 1 B **9 Acres** **Value per Acre : $0.00**

Species	Net Volume	Bid Price	Species Value
Douglas-fir	4		
Red Alder	122		
Western Hemlock	30		
Unit Totals	**156**		

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Unit 1 C **4 Acres** **Value per Acre : $0.00**

Species	Net Volume	Bid Price	Species Value
Douglas-fir	63		
Port-Orford-cedar	3		
Red Alder	8		
Western Hemlock	14		
Unit Totals	**88**		

Unit RW **4 Acres** **Value per Acre : $0.00**

Species	Net Volume	Bid Price	Species Value
Douglas-fir	148		
Port-Orford-cedar	3		
Red Alder	26		
Western Hemlock	29		
Unit Totals	**206**		

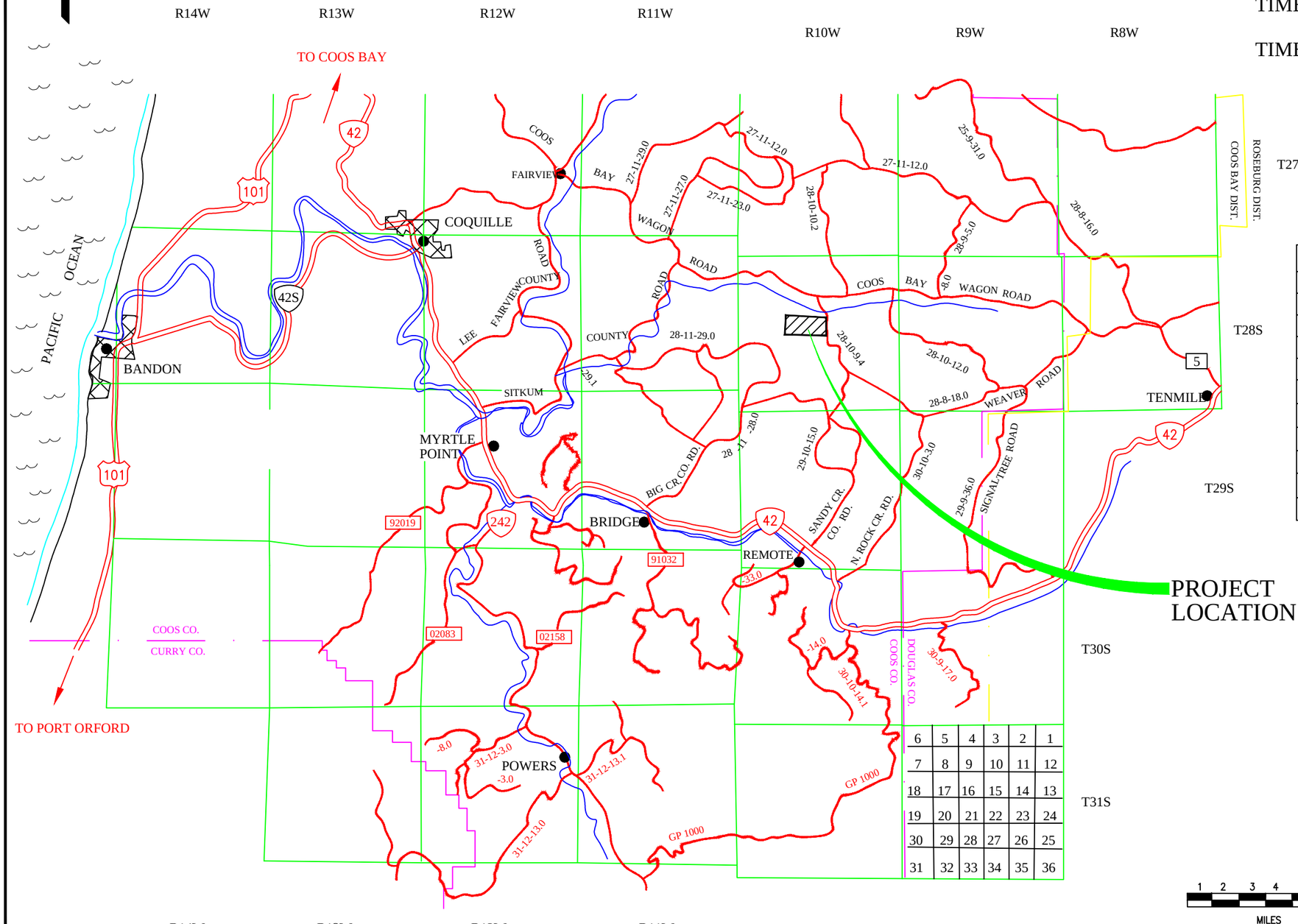
BUREAU OF LAND MANAGEMENT
UNITED STATES DEPARTMENT OF THE INTERIOR
COOS BAY DISTRICT OFFICE

EXHIBIT C

MYRTLEWOOD FIELD OFFICE

TIMBER SALE NAME: Wagon Road Pilot TS

TIMBER SALE NO.: 12-35



SHEET	CONTENTS
1	TITLE SHEET
2	WORK LOCATION MAP
3-4	ESTIMATE OF QUANTITIES
5-6	CULVERT INSTALLATION DETAILS
7	TYPICAL CROSS SECTION DETAILS
8	ROADSIDE BRUSHING DETAILS
9	LANDING DETAILS
10-20	SPECIAL DETAILS
21-42	ROAD CONSTRUCTION SPECIFICATIONS

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
COOS BAY DISTRICT OREGON

TITLE SHEET

DESIGNED	Ronald Shipp
REVIEWED	Joy Menquita
APPROVED	Kathy Hoffine
DRAWN RCS	SCALE AS SHOWN
DATE 11/11	SHEET 1 OF 42
DRAWING NO.	OR 120-5400-2

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CBWR

Chaney Rd.

North

T 28 S

R 10 W

-9.0A

-9.0B1

-9.0B2

-9.0C

-9.0D

-9.2A

-9.2B

-9.3

-9.4

-9.7

-8.1

-8.3

-17.0

-17.1

-17.2

-17.4

-17.5

-17.6

-17.8

28-10-17.3

28-10-17.7

28-10-9.4

8

9

16

17

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Road Renovation

Road Improvement

New Construction

Water Source (W)

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
COOS BAY DISTRICT OREGON

Wagon Road Pilot TS

Location Map

DESIGNED Ronald Shipp
REVIEWED Joy Menguita
APPROVED Kathy Hoffine

DRAWN: RCS	SCALE: None
DATE: 6/11	SHEET 2 OF 42
DRAWING NO: NONE	

ROAD NUMBER	NEW CONSTRUCTION	RENOVATION	IMPROVEMENT	CLEARING	SLASH TREATMENT	GRUBBING	ROADSIDE BRUSHING	EARTHWORK						CPE (DW)		ALUMINIZED				DOWNSPOUTS		
																				FULL ROUND		
								COMMON (Embankment)	RIPPABLE ROCK	ROCK CUT	FILL (Embankment)	SHORT HAUL 200-5000' (Swelled)	LONG HAUL 5000'+	24"	36"	18"	24"	36"	48"	18" CPE (SW)	24" CPE (SW)	MARKERS
SPEC. NO.		500	500	200	200	200	2100	300	300	300	300	300	300	400	400	400	400	400	400	400	400	400
UNITS	STA.	STA.	STA.	STA.	ACRES	ACRES	STA.	C.Y.	C.Y.	C.Y.	YDS.	STA.YD.	YD.MI.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	EA.
28-10-8.1		5.00					5.00															
28-10-8.3			9.46			0.4	9.46									30						
28-10-9.0 B1-D		145.20					145.20															
28-10-17.0			59.50				59.50										530					14
28-10-17.1	1.95			1.95	0.2	0.1		Cat Time														
28-10-17.2	4.60			4.60	0.4	0.2		Cat Time														
28-10-17.3	12.60			12.60	1.2	0.7		Cat Time								30						
28-10-17.4	3.10			3.10	0.3	0.2		Cat Time														
28-10-17.5	3.16			3.16	0.3	0.2		Cat Time														
28-10-17.6			6.75	6.75	0.7	0.4		Cat Time														
28-10-17.7	16.45			16.45	1.6	0.9		Cat Time														
28-10-17.8	2.70			2.70	0.3	0.2		Cat Time														
Subtotal	44.56	150.20	75.71	51.31	5.0	3.3	219.16									60	530					14

ESTIMATE OF QUANTITIES *

CPE (DW) - DOUBLE WALL CORRUGATED POLYETHYLENE PIPE
CPE (SW) - SINGLE WALL CORRUGATED POLYETHYLENE PIPE
CMP - CORRUGATED METAL PIPE

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

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U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
COOS BAY DISTRICT OREGON

ESTIMATE OF QUANTITIES 1

DESIGNED Ronald Shipp
REVIEWED Joy Menguita
APPROVED Kathy Hoffine

DRAWN RCS | SCALE NONE
DATE 8/11 | SHEET 3 OF 42

ESTIMATE OF QUANTITIES*

ROAD NUMBER	SURFACING: MAINT. ROCK **	SURFACING: LANDING	SURFACING: BASE ROCK	SURFACING: PIPE ROCK	SURFACING: TOP ROCK	SURFACING: SPOT ROCK **	SURFACING: AC PAVING	BOULDERS	RIPRAP	SEEDING: DRY Pre Haul	SEEDING: DRY Post Haul
SPEC. NO.	1200	1000	1000	1200	1200	1200			Class 5	1800	1800
UNITS	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	TON	TON	C.Y.	ACRES	ACRES
28-10-8.1					76 (C)						
28-10-8.3		80 (F)	423 (F)	8 (C)	148 (C)			30		0.4	0.2
28-10-9.0 B1-D		160 (F)			164 (C)	100 (C)		30		0.3	0.2
28-10-17.0		160 (F)	2,475 (F)	105 (C)	1,072 (C)					0.6	0.3
28-10-17.1		50 (F)	69 (F)					30		0.2	0.1
28-10-17.2		50 (F)	191 (F)		83 (C)			30		0.3	0.1
28-10-17.3		50 (F)	524 (F)	8 (C)	227 (C)			30		0.7	0.1
28-10-17.4		50 (F)	117 (F)		50 (C)					0.2	0.1
28-10-17.5		50 (F)	136 (F)		59 (C)			30		0.2	0.1
28-10-17.6		50 (F)	287 (F)		125 (C)			30		0.4	0.1
28-10-17.7		50 (F)	705 (F)		307 (C)			30		0.9	0.1
28-10-17.8		50 (F)	88 (F)							0.2	0.1
TOTALS	670	800	5,015	121	2,311	100		240		4.4	1.5

ALL ROCK QUANTIES SHOWN ARE IN PLACE UNLESS OTHERWISE NOTED.

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

** QUANTITIES SHOWN ARE TRUCK MEASURE.

ITEM	SIZE	GRADE
1000	3"	A
	2"	B
	3"	C
	2"	D
	3"	F
1100	6"	A
SANDSTONE	4"	B
1200	1 1/2 "	C
	1"	D
	3/4"	E

GRADE INDICATED IN CIRCLE ○

DESCRIPTION OF PIT LOCATION AND MINERAL ROUTE:

Kincheloe Quarry: 3 miles east of Bridge on Highway 42.

ALWAYS THINK SAFETY

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
COOS BAY DISTRICT OREGON

ESTIMATE OF QUANTITIES 2

DESIGNED Ronald Shipp
REVIEWED Joy Menguita
APPROVED Kathy Hoffine

DRAWN RCS | SCALE None
DATE 10/11 | SHEET 4 OF 42
DRAWING NO.

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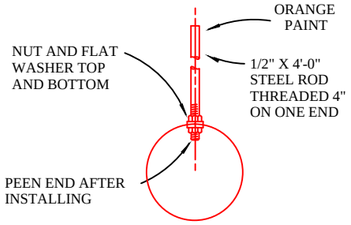
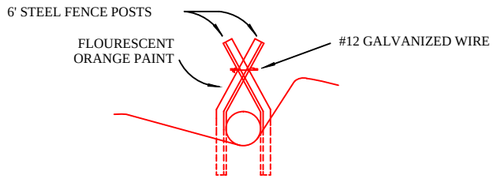


CMP CULVERT MARKERS

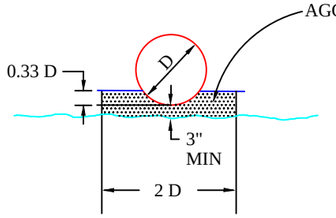


INSTALL MARKERS NOT MORE THAN 6" BACK FROM END OF CULVERT

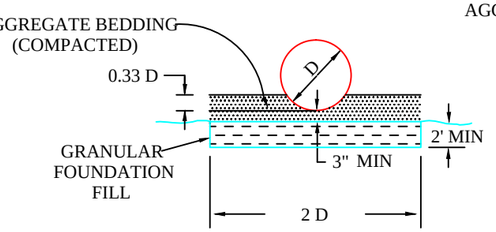
CPE CULVERT MARKERS

BEDDING OF CULVERTS

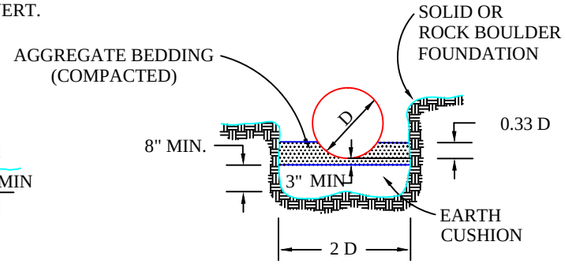
BEDDING MATERIAL SHALL BE SHAPED TO FIT THE BOTTOM OF THE CULVERT.



BEDDING OF CULVERTS ON STABLE, NATURAL GROUND FOUNDATION, OR COMPACTED EMBANKMENT

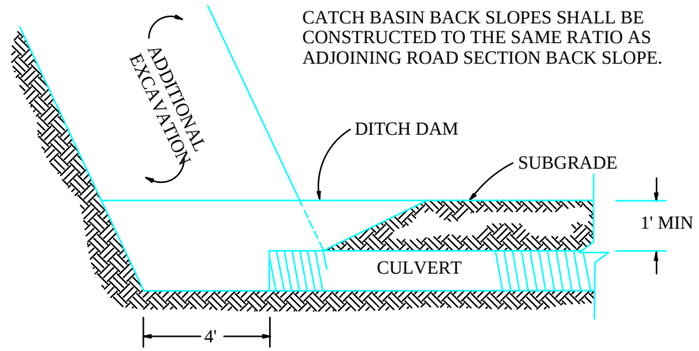


BEDDING OF CULVERTS ON SOFT, SPONGY, OR UNSTABLE SOIL FOUNDATION

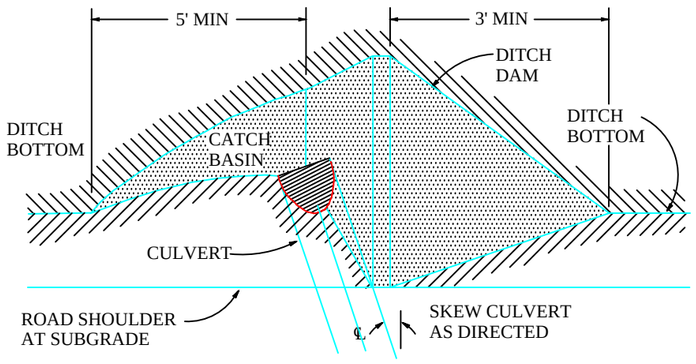


8" MIN. CUSHION BETWEEN HIGH POINTS OF ROCKS AND/OR BOULDERS AND THE BOTTOM OF THE CULVERT.

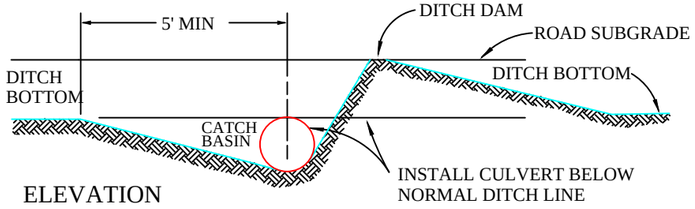
BEDDING OF CULVERT IN SOLID ROCK OR BOULDER FOUNDATION



CROSS SECTION AT CATCH BASIN

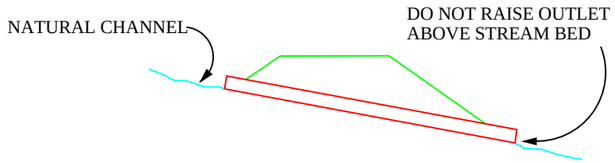


PLAN VIEW

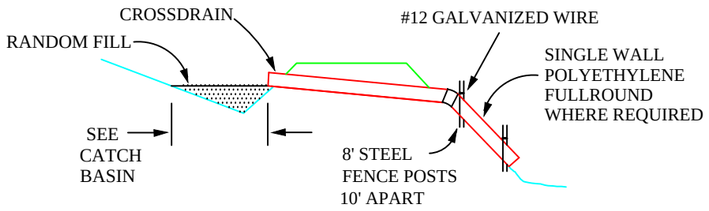


ELEVATION

CATCH BASIN



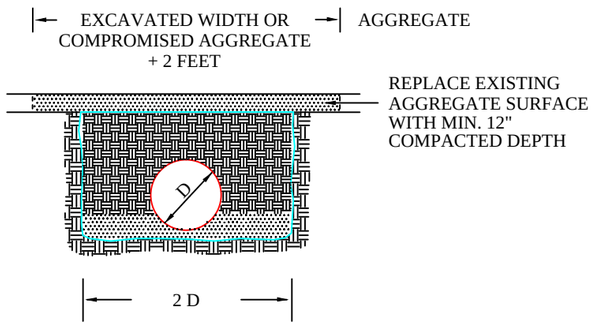
TYPE 1

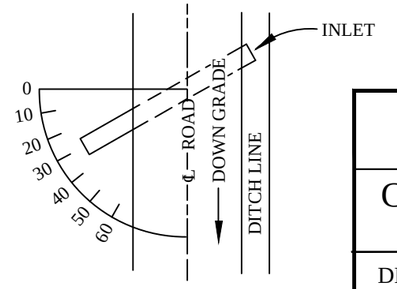


TYPE 2

CULVERT INSTALLATION TYPES

AGGREGATE SURFACE REPLACEMENT OVER CULVERTS ON EXISTING SURFACED ROADS





SKEW DIAGRAM

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

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
COOS BAY DISTRICT OREGON

CULVERT INSTALLATION DETAILS

DESIGNED	Ronald Shipp		
REVIEWED	Joy Menguita		
APPROVED	Kathy Hoffine		
DRAWN	RCS	SCALE	NONE
DATE	11/11	SHEET	5 OF 42

ALWAYS THINK *SAFETY*

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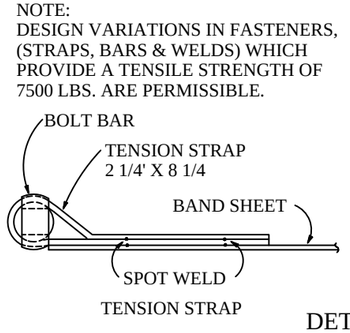
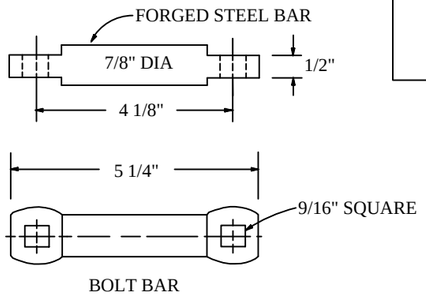
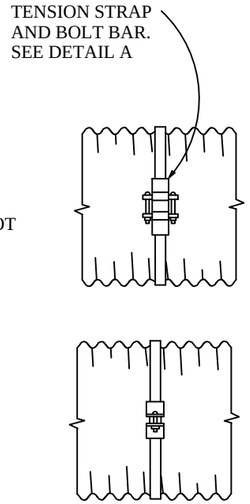
ALL BANDS SHALL MEET MANUFACTURER'S SPECIFICATIONS

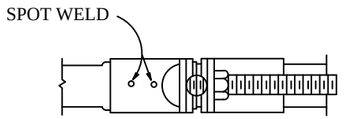
NOTE:
DESIGN VARIATIONS IN FASTENERS, (STRAPS, BARS & WELDS) WHICH PROVIDE A TENSILE STRENGTH OF 7500 LBS. ARE PERMISSIBLE.

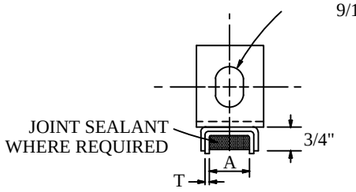


DETAIL A





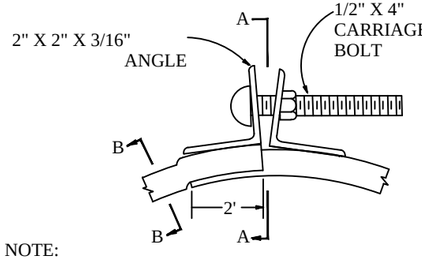




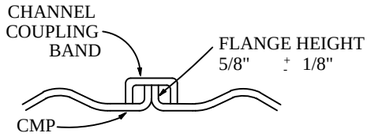
DIMENSIONS IN INCHES

T	A	PIPE WALL THICKNESS
.079	3/4	.109 OR LIGHTER
.109	1	.138 OR HEAVIER

SECTION A-A

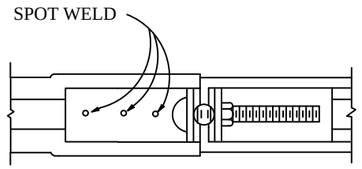


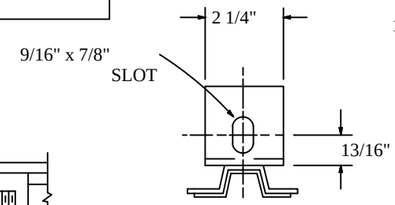
NOTE:
AS AN ALTERNATE TO SWEDGE, AN OVERSIZE BRIDGE CLIP MAY BE USED.



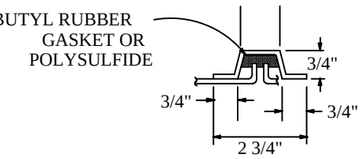
SECTION B-B

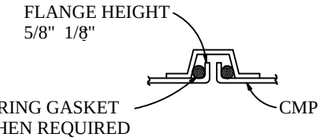
CHANNEL BAND COUPLER





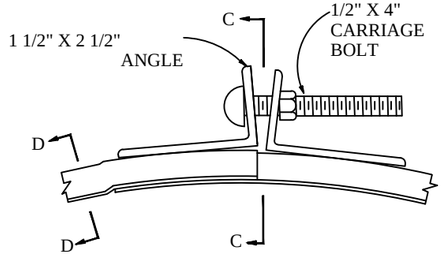
SECTION C-C

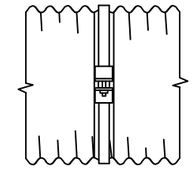




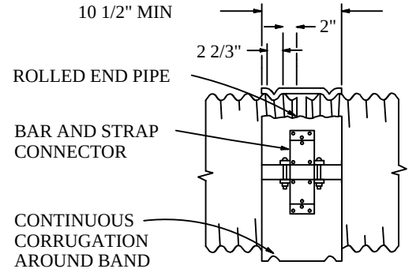
SECTION D-D

SHOWN WITH ALTERNATE TYPES OF JOINT SEALERS





FLANGED END COUPLER



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

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

WHEN DESIGNATED ON THE PLANS OR ON THE SPECIAL PROVISIONS, GASKETS SHALL BE INSTALLED WHEN THE "HUGGER" TYPE, OR AN APPROVED EQUIVALENT COUPLER BAND IS INSTALLED ON SPILLWAY, OVERSIDE OR DOWN DRAINS.

"HUGGER" COUPLER BANDS

STANDARD COUPLER BANDS

CULVERT SIZE INCHES	CORRUGATED								FLAT-DIMPLED			
	STD. ANNULAR		HELICAL		3" X 1"		6" X 1"		WIDTH	NO. OF ROWS OF DIMPLES	NO. OF BOLTS	
	WIDTH	NO. OF BOLTS	WIDTH	NO. OF BOLTS	WIDTH	NO. OF BOLTS	WIDTH	NO. OF BOLTS			Ⓐ	Ⓑ
UNDER 18	7	2	7	2					10 1/2	2	2	2
18 TO 54	12	3	12	3	14	3	18	3	10 1/2	2	3	2
OVER 54	24	5	24	5	24	5	24	4	16 1/2	4	5	4

Ⓐ BANDS WITH ANGLES

Ⓑ BANDS WITH TENSION TYPE CONNECTIONS

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

ALWAYS THINK *SAFETY*

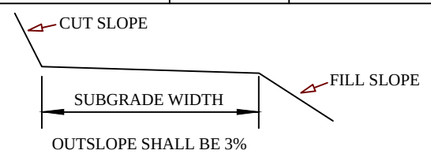
U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
COOS BAY DISTRICT OREGON

CULVERT BAND DETAIL

DESIGNED Ronald Shipp
REVIEWED Joy Menguita
APPROVED Kathy Hoffine

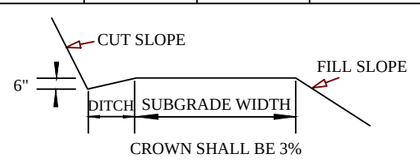
DRAWN RCS | SCALE NONE
DATE 10/11 | SHEET 6 OF 42

ROAD NUMBER	FROM STATION or MILE POST	TO STATION or MILE POST	LENGTH MILE or STATION	TYPICAL SECTION TYPE	ROAD WIDTH[1]		CLEARING WIDTH				SURFACING										REMARKS
							BEYOND TOP CUT	BEYOND TOE FILL	EXISTING ROADS[5] L	EXISTING ROADS[5] R	BASE COURSE					SURFACE COURSE					
					Subgrade	Ditch					Minimum Width	Comp. Depth	Type[2]	Grading		Minimum Width	Comp. Depth	Type[2]	Grading		
28-10-8.1	0+00	5+00	5.00	3	16	2			10	10						12	4	D	C		
28-10-8.3	0+00	9+46	9.46	4	16	2			10	10	13.3	8	D	F		12	4	D	C		
28-10-9.0 B1-D	0+00	62+00	62.00	3	16	2			10	10											
28-10-9.0 B1-D	62+00	69+70	7.70	3	16	2			10	10						12	4	D	C		
28-10-9.0 B1-D	69+70	80+80	11.10	3	16	2			10	10											
28-10-9.0 B1-D	80+80	82+30	1.50	3	16	2			10	10						12	4	D	C		
28-10-9.0 B1-D	82+30	107+95	25.65	3	16	2			10	10											
28-10-9.0 B1-D	107+95	108+95	1.00	3	16	2			10	10						12	4	D	C		
28-10-9.0 B1-D	108+95	145+20	36.25	3	16	2			10	10											
28-10-17.0	0+00	59+50	59.50	4	16	2			10	10	13.3	8	D	F		12	4	D	C		
28-10-17.1	0+00	1+95	1.95	4	15	2/0	5	5			12	8	D	F							
28-10-17.2	0+00	4+60	4.60	4	16	2/0	5	5			13.3	8	D	F		12	4	D	C		
28-10-17.3	0+00	12+60	12.60	4	16	2/0	5	5			13.3	8	D	F		12	4	D	C		
28-10-17.4	0+00	3+10	3.10	4	16	2/0	5	5			13.3	8	D	F		12	4	D	C		
28-10-17.5	0+00	3+16	3.16	4	16	2/0	5	5			13.3	8	D	F		12	4	D	C		
28-10-17.6	0+00	6+75	6.75	4	16	2/0	5	5			13.3	8	D	F		12	4	D	C		
28-10-17.7	0+00	16+45	16.45	4	16	2/0	5	5			13.3	8	D	F		12	4	D	C		
28-10-17.8	0+00	2+70	2.70	4	15	2/0	5	5			12	8	D	F							



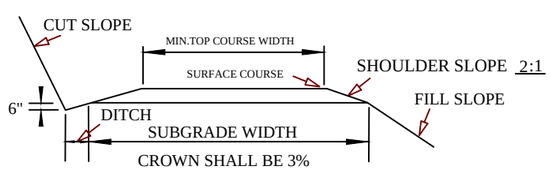
TYPICAL OUTSLOPE SECTION

TYPE 1



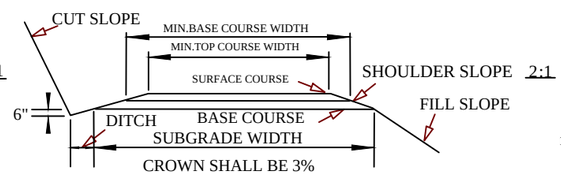
TYPICAL GRADING SECTION

TYPE 2



TYPICAL SURFACING SECTION

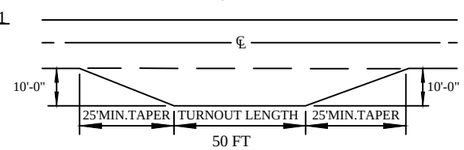
TYPE 3



TYPICAL SURFACING SECTION

TYPE 4

DITCHES - 4:1 SLOPE FROM SUBGRADE DEPTH MAY BE EXCEEDED TO OBTAIN REQUIRED DRAINAGE.



PLAN

TYPICAL TURNOUT

NOTES

1. EXTRA SUBGRADE WIDTHS
   ADD TO EACH FILL SHOULDER 1 FT. FOR FILLS OF 1-6 FT. AND 2 FT. FOR FILLS OVER 6 FT. WIDEN THE INSIDE SHOULDER OF ALL CURVES AS FOLLOWS:

DEGREE OF CURVE	CURVE RADIUS	ADDITIONAL WIDTH
0 - 40°	> 143'	0
41 - 64°	142' - 90'	2
65 - 79°	89' - 73'	3
80 - 89°	72' - 64'	4
90 - 96°	63' - 60'	5

   OR AS SHOWN ON PLANS.

MATERIALS	CUT SLOPES	FILL SLOPES
COMMON	1/2:1	1 1/2:1
SOFT ROCK & SHALE	1/2:1	1 1/2:1
SOLID ROCK	1/4:1	

   FULL BENCH CONSTRUCTION IS REQUIRED ON SIDE SLOPES EXCEEDING 60%.

2. SURFACING TYPE
   A. PIT RUN ROCK MATERIAL.
   B. GRID ROLLED ROCK MATERIAL
   C. SCREENED ROCK MATERIAL.
   D. CRUSHED ROCK MATERIAL.

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

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

5. CLEARING WIDTH
   SEE SUBSECTION 200 OR 2100.

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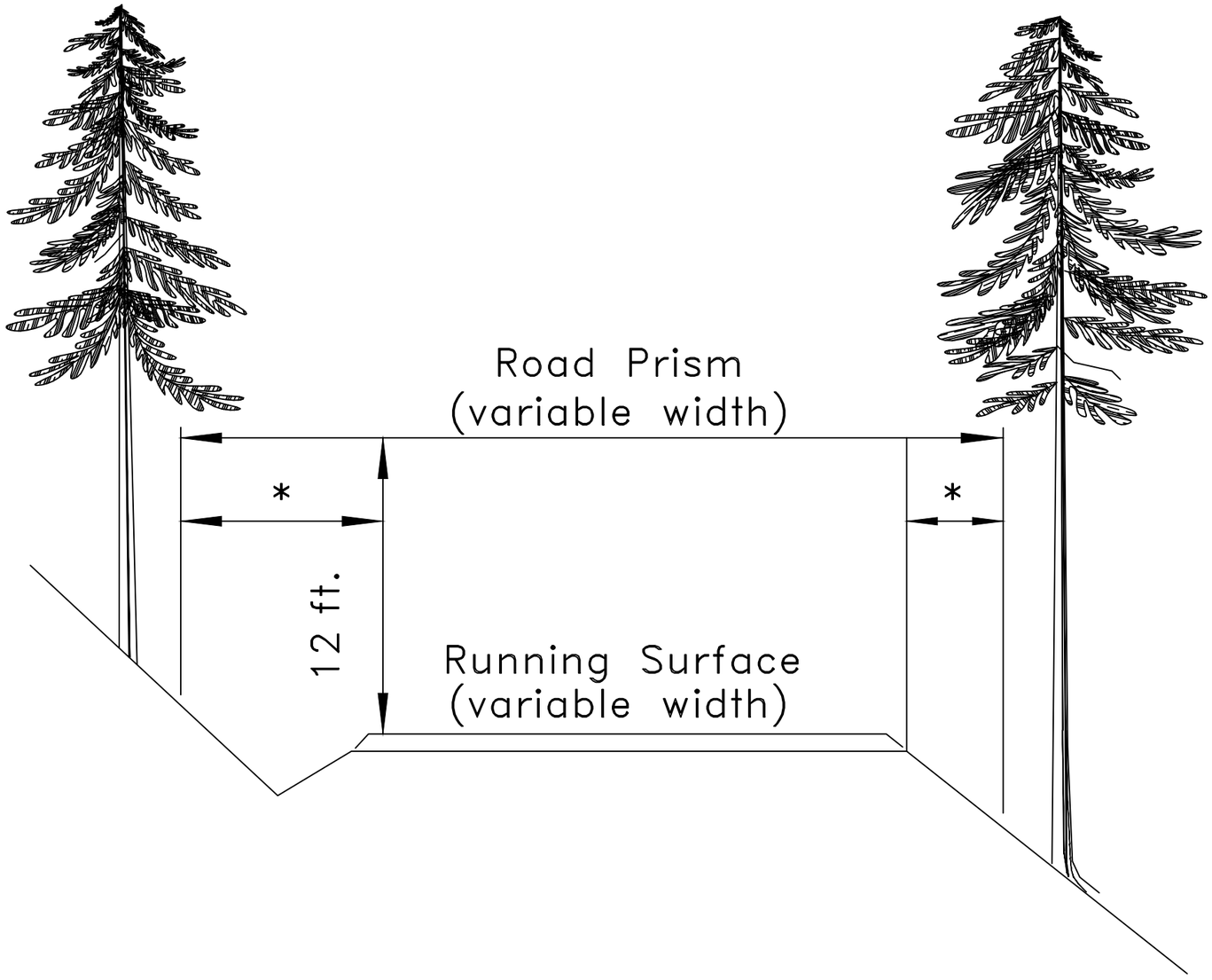
U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
COOS BAY DISTRICT OREGON

TYPICAL CROSS SECTION DETA

DESIGNED	Ronald Shipp
REVIEWED	Joy Menguita
APPROVED	Kathy Hoffine
DRAWN	RCS
DATE	10/11
SCALE	NONE
SHEET	7 OF 42



* Road specific variable distance (see Typical Cross Section Detail).

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U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
COOS BAY DISTRICT OREGON

ROADSIDE BRUSHING DETAIL

DESIGNED	Ronald Shipp
REVIEWED	Joy Menguita
APPROVED	Kathy Hoffine
DRAWN JB/RCS	SCALE NONE
DATE 10/11	SHEET 8 OF 42

PRE–LOGGING

STAKING APPROVAL: Purchaser shall stake landing locations/limits, and request approval, a minimum of five (5) days in advance of construction, unless otherwise agreed. Landings shall be located in conjunction with the logger. Locations/limits shall be approved by the Authorized Officer prior to construction.

DISTURBANCE LIMITS: The landing perimeter at final grade elevation ("daylight"), top of back slope, and toe of fill, shall be delineated by a series of intervisible stakes or ribbons. The entire construction area shall be located within the approved stakes/ribbons.

END HAUL: Disposal area limits shall be staked by Purchaser, and approved by the Authorized Officer, prior to end–haul activity.

SLOPES: The 300 Series of Road Specifications applies for the construction of landings.

(a) The fill slope ratio shall not be steeper than 1 1/2:1.

(b) The cut slope ratio shall be 1/2:1 for common and 1/4:1 for rock.

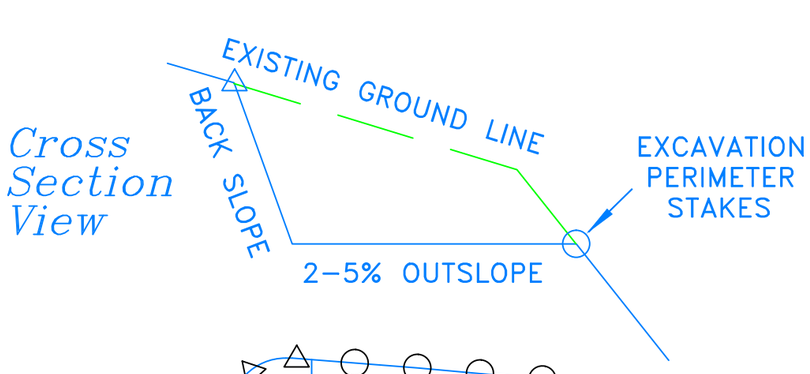
GRADE: Landings shall be constructed with a 2–5% slope for drainage. Ditches and ditchouts shall have a minimum 2% grade.

POST–LOGGING

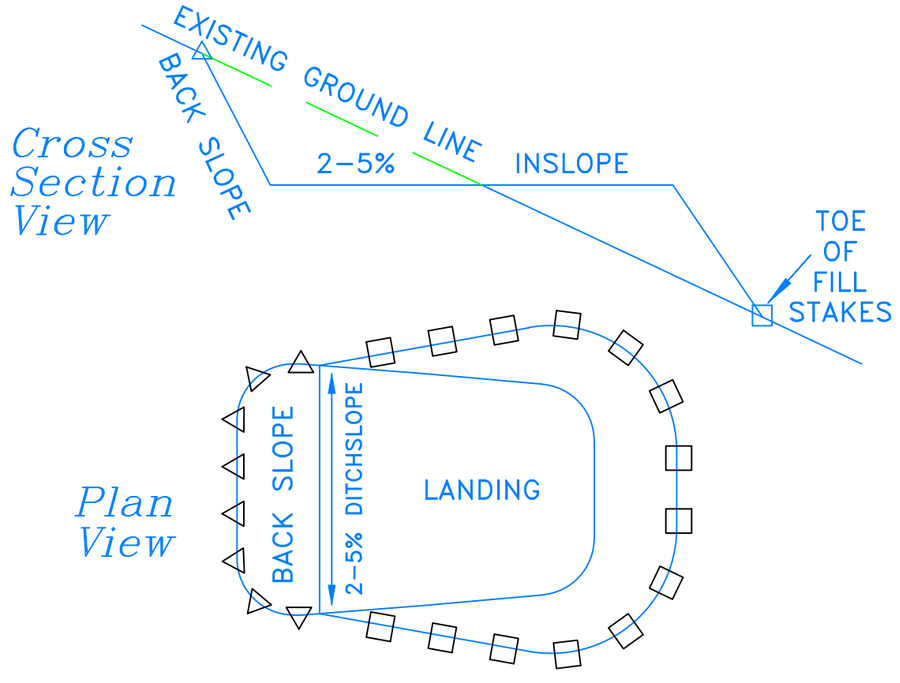
END HAUL: Purchaser shall remove and dispose of debris from the perimeter of landings. Debris is considered unclassified excavation and shall include any woody material such as log ends, cull chunks, stumps, bark, limbs, etc., and any common soil that is mixed in, perched, or overhanging. All excavated material, shall be disposed of/end hauled to, areas specified by the Authorized Officer.

DRAINAGE: All natural water courses, ditches, and ditchouts, shall be opened to prevent erosion. Landings shall be graded, crowned, and shaped to facilitate drainage.

DECOMMISSIONING: Landings shall be treated in accordance with the Exhibit D, which may include pullback, subsoiling, water barring, blocking, and soil stabilization.



TYPICAL LANDING CUT ONLY



TYPICAL LANDING CUT AND FILL

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
COOS BAY DISTRICT OREGON

LANDING DETAILS

DESIGNED Ronald Shipp
REVIEWED Joy Menguita
APPROVED Kathy Hoffine

DRAWN JB/RCS	SCALE NONE
DATE 10/11	SHEET 9 OF 42

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SPECIAL DETAILS

Clearing Limits

Maximum clearing widths for new construction are 5' from top of cuts and toe of fills. Clearing debris must be removed from areas of excavation and embankment.

The limits of disturbance for all landings shall be designated by the Purchaser with stakes or flags and approved by the Authorized Officer, prior to clearing or construction (see Landing Details Sheet). Landings shall not be constructed until the Purchaser has verified landing size, shape, and location with the logger. The entire landing rock quantities listed shall be placed, either on designated landings or on haul routes, at the direction of the Authorized Officer.

Excavated Material/Compaction

Excavated material shall not be wasted as sidecast or perched. All material perched or lost over the side will be retrieved and disposed of at the Purchaser's expense and at the direction of the Authorized Officer. All fillslopes shall be compacted equal to 85% of maximum density, either by walking with cat/excavator tracks or by pressing with excavator bucket, to prevent surface erosion and raveling.

Drainage Ditches

Existing drainage ditches that are functioning and have a protective layer of nonwoody vegetation shall not be disturbed.

Minimum Quantities

At a minimum, all estimated aggregate quantities shall be applied, either at the specified sites, or at adjacent locations designated by the Authorized Officer.

Purchaser Responsibility

The Purchaser shall avoid damaging any gravel or bituminous surfaced roads, and will be responsible for the repair of any road damaged as a result of his activity. Gravel or bituminous roads shall be left in the same condition that they were prior to logging operations. Care shall be taken during road/landing work operations to avoid damaging adjacent reproduction. Any damaged trees shall be brought to the attention of the contract administrator.

Spill Containment

Spill containment kit is required on-site during work. Kit contents shall include absorbent booms (two bales, four 8” x 10” booms/bale), absorbent pads (two bales, one hundred 17” x 19” x ¼” pads/bale), heavy duty garbage bags, gloves (PVC and latex), and goggles.

Equipment Washing

The Purchaser is responsible for vehicle/equipment entrance cleaning in accordance with the Exhibit F.

Road Decommissioning

Road decommissioning shall be performed as specified in the Exhibit D Special Details.

Over-wintering

All natural-surfaced new construction shall not over-winter without being either decommissioned, as specified in the Exhibit D, or winterized, in accordance with the 1700 Erosion Control specifications, prior to the first rains of the wet season, but no later than October 15 in the year of construction.

Seasonal Restrictions

All road construction, renovation, and decommissioning work shall be done during the dry construction season, avoiding precipitation periods, between June 1 and October 15.

Soil Stabilization

All disturbed or exposed soil, within the spur/landing right-of-way, or connected with the road construction, renovation, or decommissioning of this sale, shall be seeded, fertilized, and mulched in accordance with Section 1800 and the following:

The Government will furnish native seed mix, when available, to be used by the Purchaser. Contact Jennifer Sperling at the BLM Coos Bay District Office. Give a minimum of three days notice. Seed shall be picked-up at the Coos Bay BLM District Office warehouse. Total area for seeding is approximately 4.4 acres.

The native seed mix shall be applied at the rate of 60 pounds per acre (or one pound per 1,000 square feet). Sand can be mixed with the native seed to aid broadcast seeding.

Renovation of 28-10-8.1
Station 0+00 to Station 5+00 (Rocked Surface – All Season Haul)

Station	Remarks
0+00	Junction with Road No. 28-10-9.0C. Begin brushing, grading, pull ditches, and clean culverts. Apply a 4" lift of 1½"(-) crushed aggregate in accordance with Section 1200.
5+00	End renovation. Junction with 29-10-8.3, right. End 4" lift of crushed aggregate.

Improvement of 28-10-8.3
Station 0+00 to Station 9+46 (Rocked Surface – All Season Haul)

Station	Remarks
0+00	Junction with Road No. 28-10-8.1. Reconstruct roadway approach. Install a 24" x 30' culvert in ditch. Begin brushing, grading, and compacting. Apply an 8" lift of base rock, then a 4" lift of surface rock.
1+00	End reconstruction of the roadway approach.
1+17	Section Corner approximately 50' left of existing road centerline. Do not disturb.

3+50 Construct roadside landing. Apply 30 CY of landing rock.

9+10 Construct truck turn-around.

9+46 Construct end landing. Apply 50 CY of landing rock. End 8" lift of base rock and 4" lift of top rock. End improvement.

Renovation of 28-10-9.0B1-D

Station 0+00 to Station 145+20 (Rocked Surface – All Season Haul)

Station	Remarks
0+00	Junction with Road No. 28-10-9.0A. Begin brushing, grading, scarifying and compacting as needed-including all potholes, pulling or re-establishing ditches, and cleaning culverts. Place a total of 100 CY of spot rock between station 0+00 and 145+20 on the travelway.
17+70	Junction with Road No. 28-10-9.2, left.
21+10	Re-establish 50' TOR. Add 10 CY of spot rock to the turn-out.
37+00	Re-establish 50' TOR. Add 10 CY of spot rock to the turn-out.
52+80	Re-establish 50' TOR. Add 15 CY of spot rock to the turn-out.
60+70	Property Line. Begin Segment C.
62+00	Begin scarifying, shaping, and compacting entire traveled way. Do not disturb base rock. Apply a 4" lift of 1½"(-) crushed aggregate in accordance with Section 1200. Construct mini ditch-outs from edge of road, to drain water, approximately every 75 to 100 feet.
67+20	Ditch out, left. Construct a waterdip across the existing road to drain the water from the ditch out.
69+20	Junction with road, right.
69+70	End scarification and the 4" lift of crushed aggregate on the entire traveled way.
80+80	Begin scarifying, shaping, and compacting entire traveled way. Do not disturb base rock. Apply a 4" lift of 1½"(-) crushed aggregate in accordance with Section 1200.
82+30	End scarification and the 4" lift of crushed aggregate on the entire traveled way.
90+30	Junction with road, right.
107+95	Begin 4" lift of 1½"(-) crushed aggregate on the entire traveled way in accordance with Section 1200.
108+25	Install 40' silt fence between the traveled way and the top of bank on the outlet side as designated by the Authorized Officer.
108+95	End 4" lift of crushed aggregate. End mini ditch-outs.

120+60	Junction with Road No. 28-10-8.1, left.
125+60	Construct roadside landing with approach. Apply 80 CY of 3"(-) crushed rock.
128+30	Construct roadside landing, right. Apply 50 CY of 3"(-) crushed rock.
133+80	Junction with Road No. 28-10-17.0, right.
135+70	Construct roadside landing. Add 30 CY of 3"(-) crushed rock.
145+20	End renovation.

Improvement of 28-10-17.0

Station 0+00 to Station 59+50 (Rocked Surface – All Season Haul)

Station	Remarks
0+00	Junction with Road No.28-10-9.0D. Begin brushing, grading, compacting, pulling ditches, and cleaning culverts. Widen the subgrade width in places where subgrade is narrow to get 16' plus 2' for each ditch. Excavate additional subgrade width in such a manner as to minimize the removal of trees along the cutbanks. Do not disturb any trees in the designated red tree vole areas. Apply a 8" lift of 3"(-) crushed base rock and then a 4" lift of 1 ½"(-) crushed surface rock to the subgrade surface including turn-outs.
1+50	Install 24" x 60' Corrugated Culvert.
3+35	Install 24" x 40' Corrugated Culvert.
4+30	Install 24" x 40' Corrugated Culvert.
5+30	Install 24" x 40' Corrugated Culvert. Construct 20' outlet channel.
5+90	Construct roadside landing, right. Place 50 CY of landing rock.
7+00	Construct ditch-out, right.
9+60	Install 24" x 30' Corrugated Culvert.
9+90	Construct roadside landing, right. Place 40 CY of landing rock.
13+20	Install 24" x 40' Corrugated Culvert.
13+50	Construct ditch-out, left.
15+60	Construct ditch-out, left.
16+90	Junction with Road No. 28-10-17.1, left.
19+30	Install 24" x 30' Corrugated Culvert.

19+80 Junction with Road No. 28-10-17.2, right.

21+00 Construct 50’ TOL.

21+35 Construct ditch-out, left.

25+20 Install 24” x 40’ Corrugated Culvert.

25+50 Junction with Road No. 28-10-17.3, right.

28+40 Existing PE Culvert.

30+30 Ditch-out, left.

31+35 Construct 50’ TOL.

32+45 Install 24” x 30’ Corrugated Culvert.

33+70 Do Not Disturb old growth Cedar tree, left.

35+90 Install 24” x 30’ Corrugated Culvert.

36+95 Junction with Road No. 28-10-17.5, left.

39+60 Install 24” x 30’ Corrugated Culvert.

40+00 Construct Roadside Landing, left. Apply 40 CY of 3”(-) crushed rock.

44+15 Existing PE Culvert. Install two fence post markers.

45+70 Construct ditch-out, left.

47+65 Construct 50’ TOR.

48+70 Construct ditch-out, left.

50+00 Install 24” x 40’ Corrugated Culvert.

52+20 Install 24” x 40’ Corrugated Culvert.

53+10 Construct roadside landing, left. Place 30 CY of landing rock.

54+45 Construct 50’ TOL.

54+90 Install 24” x 40’ Corrugated Culvert. Construct ditch-out, left.

55+60 Junction with Road No. 28-10-17.7, right.

56+65 Junction with Road No. 28-10-17.6, left.

58+50 Construct 50' TOL.

59+50 End Improvement. End 8" lift of base rock and 4" lift of top rock.

28-10-17.1
Control Point
Station P0+00 to Station P1+95(Rocked Surface – All Season Haul)

GENERAL
Purchaser shall construct this road from P0+00 to P1+95 in accordance with the specifications which follow:

CLEARING
Maximum clearing limits shall be 5' beyond the top of cuts, and 5' below bottom of fills.

SHAPING
The roadway shall be constructed and shaped to conform to the standards shown on the Typical Cross Section Detail.

ALIGNMENT
The roadway shall be constructed in close proximity to the stakes on the ground. Minimum curve radius shall be sixty (60) feet.

GRADES
Grade shall not exceed 16%.

SUBGRADE
The subgrade shall be excavated and compacted in accordance with Sections 200 and 300 of the Road Specifications.

EXCAVATION/EMBANKMENT
Excavation and embankment are required in the construction of this road.

DRAINAGE FEATURES
Outslope where feasible.

Turn Outs
None

LANDING
Construct landing at sta. 1+95. Apply 50 CY of landing rock.

SURFACING
Apply an 8" lift of base rock.

28-10-17.2
Control Point
Station P0+00 to Station P4+60 (Rocked Surface – All Season Haul)

GENERAL

+Purchaser shall construct this road from P0+00 to P4+60 in accordance with the specifications which follow:

CLEARING
Maximum clearing limits shall be 5' beyond the top of cuts, and 5' below bottom of fills.

SHAPING
The roadway shall be constructed and shaped to conform to the standards shown on the Typical Cross Section Detail.

ALIGNMENT
The roadway shall be constructed in close proximity to the stakes on the ground. Minimum curve radius shall be sixty (60) feet.

GRADES
Grade shall not exceed 16%.

SUBGRADE
The subgrade shall be excavated and compacted in accordance with Sections 200 and 300 of the Road Specifications.

EXCAVATION/EMBANKMENT
Excavation and embankment are required in the construction of this road.

DRAINAGE FEATURES
Outslope where feasible.

TRUCK-TURNAROUND
Construct truck-turnaround at sta. 4+20. Apply an 8" depth of base rock, then a 4" lift of surface rock.

LANDING
Construct landing at sta. 4+60. Apply 50 CY of landing rock.

SURFACING
Apply an 8" depth of base rock, then a 4" lift of surface rock.

28-10-17.3
Control Point
Station P0+00 to Station P12+60 (Rocked Surface – All Season Haul)

GENERAL
Purchaser shall construct this road from P0+00 to P12+60 in accordance with the specifications which follow:

CLEARING
Maximum clearing limits shall be 5' beyond the top of cuts, and 5' below bottom of fills.

SHAPING
The roadway shall be constructed and shaped to conform to the standards shown on the Typical Cross Section Detail.

ALIGNMENT
The roadway shall be constructed in close proximity to the stakes on the ground. Minimum curve radius shall be sixty (60) feet.

GRADES
Grade shall not exceed 18%.

SUBGRADE
The subgrade shall be excavated and compacted in accordance with Sections 200 and 300 of the Road Specifications.

EXCAVATION/EMBANKMENT
Excavation and embankment are required in the construction of this road.

DRAINAGE FEATURES
Outslope where feasible. Install 18" x 30' CMP in ditch line of -17.0 road.

TURN-OUT
Construct 50' TOL at sta. 7+30. Apply an 8" lift of base rock, then a 4" lift of surface rock.

LANDING
Construct landing at sta. 12+60. Apply 50 CY of landing rock.

SURFACING
Apply an 8" depth of base rock, then a 4" lift of surface rock.

28-10-17.4
Control Point
Station P0+00 to Station P3+10 (Rocked Surface – All Season Haul)

GENERAL
Purchaser shall construct this road from P0+00 to P3+10 in accordance with the specifications which follow:

CLEARING
Maximum clearing limits shall be 5' beyond the top of cuts, and 5' below bottom of fills.

SHAPING
The roadway shall be constructed and shaped to conform to the standards shown on the Typical Cross Section Detail.

ALIGNMENT
The roadway shall be constructed in close proximity to the stakes on the ground. Minimum curve radius shall be sixty (60) feet.

GRADES
Grade shall not exceed 10%.

SUBGRADE
The subgrade shall be excavated and compacted in accordance with Sections 200 and 300 of the Road Specifications.

EXCAVATION/EMBANKMENT
Excavation and embankment are required in the construction of this road.

DRAINAGE FEATURES
Outslope where feasible.

TURN-OUT
None

LANDING
Construct landing at sta. 3+10. Apply 50 CY of landing rock.

SURFACING
Apply an 8" depth of base rock, then a 4" lift of surface rock.

28-10-17.5
Control Point
Station P0+00 to Station P3+16 (Rocked Surface – All Season Haul)

GENERAL
Purchaser shall construct this road from P0+00 to P3+16 in accordance with the specifications which follow:

CLEARING
Maximum clearing limits shall be 5' beyond the top of cuts, and 5' below bottom of fills.

SHAPING
The roadway shall be constructed and shaped to conform to the standards shown on the Typical Cross Section Detail.

ALIGNMENT
The roadway shall be constructed in close proximity to the stakes on the ground. Minimum curve radius shall be sixty (60) feet.

GRADES
Grade shall not exceed 15%.

SUBGRADE
The subgrade shall be excavated and compacted in accordance with Sections 200 and 300 of the Road Specifications.

EXCAVATION/EMBANKMENT
Excavation and embankment are required in the construction of this road.

DRAINAGE FEATURES
Outslope where feasible.

TURN-OUT
None

LANDING
Construct landing at sta. 3+16. Apply 50 CY of landing rock.

SURFACING
Apply an 8" depth of base rock, then 4" lift of surface rock.

Improvement of 28-10-17.6
Station 0+00 to Station 6+75 (Rocked Surface – All Season Haul)

Station	Remarks
0+00	Junction with Road No. 28-10-17.0. Begin clearing and grubbing, grading, compacting, and pull ditches. Apply an 8" lift of base rock, then a 4" lift of surface rock.
5+93	Construct Truck Turn-around. Apply an 8" lift of base rock, then a 4" lift of surface rock.
6+75	Construct end landing. Apply 50 CY of landing rock. End improvement. End 8" lift of base rock and 4" lift of top rock.

28-10-17.7
Control Point
Station P0+00 to Station P16+45 (Rocked Surface – All Season Haul)

GENERAL
Purchaser shall construct this road from P0+00 to P16+45 in accordance with the specifications which follow:

CLEARING
Maximum clearing limits shall be 5' beyond the top of cuts, and 5' below bottom of fills.

SHAPING
The roadway shall be constructed and shaped to conform to the standards shown on the Typical Cross Section Detail.

ALIGNMENT
The roadway shall be constructed in close proximity to the stakes on the ground. Minimum curve radius shall be sixty (60) feet.

GRADES
Grade shall not exceed 15%.

SUBGRADE
The subgrade shall be excavated and compacted in accordance with Sections 200 and 300 of the Road Specifications.

EXCAVATION/EMBANKMENT
Excavation and embankment are required in the construction of this road.

DRAINAGE FEATURES

Outslope where feasible.

TRUCK TURN-AROUND
Construct truck turn-around at sta. 15+50. Apply an 8" depth of base rock, then 4" lift of surface rock.

TURN-OUT
Construct 50' TOR at sta. 3+80. Apply an 8" depth of base rock, then 4" lift of surface rock.
Construct 50' TOR at sta. 8+05. Apply an 8" depth of base rock, then 4" lift of surface rock.

LANDING
Construct landing at sta. 16+45. Apply 50 CY of landing rock.

SURFACING
Apply an 8" depth of base rock, then 4" lift of surface rock.

28-10-17.8
Control Point
Station P0+00 to Station P2+70 (Rocked Surface – All Season Haul)

GENERAL
Purchaser shall construct this road from P0+00 to P2+70 in accordance with the specifications which follow:

CLEARING
Maximum clearing limits shall be 5' beyond the top of cuts, and 5' below bottom of fills.

SHAPING
The roadway shall be constructed and shaped to conform to the standards shown on the Typical Cross Section Detail.

ALIGNMENT
The roadway shall be constructed in close proximity to the stakes on the ground. Minimum curve radius shall be sixty (60) feet.

GRADES
Grade shall not exceed 10%.

SUBGRADE
The subgrade shall be excavated and compacted in accordance with Sections 200 and 300 of the Road Specifications.

EXCAVATION/EMBANKMENT
Excavation and embankment are required in the construction of this road.

DRAINAGE FEATURES
Outslope where feasible.

LANDING
Construct landing at sta. 2+70. Apply 50 CY of landing rock.

SURFACING
Apply an 8" depth of base rock.

ROAD CONSTRUCTION SPECIFICATIONS

Section	
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 & BEDDING – CRUSHED ROCK MATERIAL
1200	AGGREGATE SURFACE COURSE – CRUSHED ROCK MATERIAL
1700	EROSION CONTROL
1800	SOIL STABILIZATION
2100	ROADSIDE BRUSHING

GENERAL - 100

101 - Prework Conference(s):

A prework conference will be held prior to the start of 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 representative(s), subcontractor(s) and/or his or their representative(s) and the Authorized Officer and/or his representative(s).

The purpose will be to review the required work, exhibits and specifications, and to establish a work schedule and a list of the Purchaser's representatives and subcontractor(s).

102 - Definitions:

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

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

ACI - American Concrete Institute

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

ASTM - American Society for Testing and Materials.

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

BLM - Bureau of Land Management

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Road Centerline - The longitudinal center of a roadbed.

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

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

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

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

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

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

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

Spalls - Flakes or chips of stone.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

102a - Tests Used in These Specifications:

AASHTO T 11 Quantity of rock finer than No. 200 sieve.

AASHTO T 27 Sieve analysis of fine and coarse aggregate using sieves with square openings; gradation.

AASHTO T 89 Liquid limit of material passing the No. 40 sieve. Water content at which the soil passes from a plastic to a liquid state.

AASHTO T 90 Plastic limits and plasticity index of soil.

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

AASHTO T 96 Resistance to abrasion of small size coarse aggregate by use of the Los Angeles machine.

AASHTO T 99 Relationship between soil moisture and maximum density of soil.

Method A - 4" mold, soil passing a No. 4 Sieve.
25 blows/layer & 3 layers.
Method D - 6" mold, soil passing a 19.00mm (3/4 inches) sieve. 56 blows/layer & 5 layers.

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

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

AASHTO T 191 Sand Cone. Density of soil in place: For subgrade use 6-inch or 12-inch cone. For rock surfacing for 1-1/2-inch minus to 3-inch minus use 12-inch cone.

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

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

AASHTO T 224 Correction for coarse particles in the soil.

AASHTO T 310 Determination of density of soil and soil-aggregates 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 cohensionless soils.

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

103 - Compaction equipment shall meet the following requirements:

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.

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

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 as shown on the plans and as staked on the ground.

202 - Where clearing limits have not been staked, established by these specifications, or shown on the plans, the limits shall extend 5 feet beyond 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 5 feet out from the outside edge of the structure.

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

203b - Standing trees and snags to be cleared shall be felled within the limits established for clearing unless otherwise authorized.

204 - Grubbing shall consist of the removal and disposal of stumps, roots, and other wood material embedded in the ground and protruding obstacles remaining as a result of the clearing operation in accordance with Subsections 204a and 204c between the top of the cut slope and the toe of the fill slope.

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

204c - On excavated areas, roots and embedded wood shall be removed to a depth 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, stumps and cull logs, shall be by scattering over government owned lands outside of established clearing limits in a manner acceptable to the Authorized Officer. The areas for such scattering shall have the prior approval of the Authorized Officer.

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

EXCAVATION AND EMBANKMENT - 300

301 - This work shall consist of excavating, overhaul, placement of embankments, backfilling, borrowing, leveling, ditching, grading, insloping, outsloping, crowning and scarification of the subgrade, compaction, disposal of excess and unsuitable materials, and other earth-moving work in accordance with these specifications and conforming to the lines, grades, dimensions, and typical cross sections shown on the plans.

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

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 and as marked on the ground with stakes.

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

305b - Embankment materials shall be placed in successive, horizontal, 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.

306 - Layers of final subgrade material as specified under Subsections 305a and 305b shall be moistened or dried to an uniform optimum moisture content suitable for maximum density and compacted to full width with compacting equipment conforming to requirements of Subsection 103.

306a - Minimum compaction for each layer of material placed shall be 1 hour of continuous compacting for each 150 cubic yards in place.

306e - The final subgrade shall be compacted to full width with compacting equipment conforming to the requirements of Subsection 103. Minimum compaction shall be 1 hour of continuous compacting for each 4 stations of road or a fraction of as measured along the center line of the constructed road.

306g - All fill slopes shall be compacted to 85% of maximum density, either by walking with cat/excavator or by pressing with excavator bucket, to prevent surface erosion and raveling.

311 - In solid rock cuts where pockets that will not drain are formed by blasting below the subgrade elevation, drainage shall be provided by ditching to the edge of the subgrade and backfilling to grade and compacting both the pockets and the ditch with rock fragments, gravel, or other suitable porous material.

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

313 - In cut areas where solid rock is encountered at or near subgrade, the rock shall be excavated to a minimum depth of 6 inches below subgrade elevation and the excavated area backfilled with suitable material. The backfill material shall be processed to the optimum moisture content suitable for maximum density and compacted to full width in accordance with the requirements of Subsection 306.

314 - When heavy clays, muck, clay shale, or other deleterious material for forming the roadbed is encountered in cuts at subgrade, it shall be excavated to a minimum depth of 2 feet below the subgrade elevation and the excavated area backfilled with a selected borrow material approved by the Authorized Officer. The backfill material shall be uniformly moistened or dried to the optimum moisture content suitable for maximum density in accordance with the requirements of Subsection 306. Unsuitable material shall be disposed of as directed by the Authorized Officer.

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 in conformance with Subsection 321, in designated disposal areas, or within approved areas. Watering, rolling, and placement in layers is not required. Materials placed shall be sloped and shaped to facilitate drainage, as approved by the Authorized Officer.

324 - Excavated material shall not be placed so as to cover boles of standing trees to a depth in excess of ½ foot 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 final inspection of the grading operations and start of surfacing operations.

PIPE CULVERTS - 400

401 - This work shall consist of furnishing and installing pipe culverts and downspouts in accordance with these specifications and conforming to the lines, grades, dimensions, and typical cross sections shown on the plans. Individual lengths and locations are approximate; final lengths and locations will be determined by the Authorized Officer upon installation of the appurtenance structures. Additional pipe and erosion control devices may be required at the option of the Authorized Officer, in which case a reduction in the total purchase price shall be made to offset the cost of furnishing and installing such items. Costs will be based upon the unit prices set forth in the current BLM Timber Appraisal Production Cost Schedule.

403 - Grade culverts shall have a gradient of from 2 percent to 4 percent greater than the adjacent road grade, and except grades shall not exceed 10 percent. 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.

405a - Corrugated-aluminized steel-welded pipe culverts and pipe-arch culverts and special sections shall conform to the requirements of AASHTO M 36 and AASHTO M 218, AASHTO M 274, or AASHTO M 289 as specified on the plans.

405e - Corrugated-polyethylene pipe for culverts 12-inch through 36-inch diameter shall meet the requirements of AASHTO M 294.

Corrugated-polyethylene pipe for culverts to be used for downspouts 12-inch through 60-inch diameter shall meet the requirements of AASHTO M 294-03, Type C.

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

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

406a - "Hugger"-type coupling bands shall only be used with annular corrugated pipe and pipe-arch culverts, or helically corrugated pipe and pipe-arch culverts having annular reformed ends. Annular reformed ends shall consist of 2 annular corrugations.

406b - Coupling bands produced from flat galvanized steel sheets with impressed dimples will be permitted only for connecting annular corrugated steel pipe to helically corrugated steel pipe. Such coupling bands shall conform to the width requirements shown on the plans.

406f - Channel-type or flanged-end coupling bands may be used on helical pipe with reformed rolled ends and flanged specifically to receive these bands. Such coupling bands shall conform to the requirements shown on the plans.

407 - Special sections, such as elbows, branch connections, and flared-end sections, shall be of the same gauge as the pipe to which they are joined, and shall conform to the requirements of AASHTO M 36 and AASHTO M 218 or AASHTO M 274.

407b - Full round culvert downspouts conforming to the material and construction requirements as shown on Exhibit C shall be constructed for culverts as shown on the plans.

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.

411 - Trenches necessary for the installation of pipe culverts and/or pipe-arch culverts shall conform to the lines, grades, dimensions, and typical diagram included in the plans, and shown on the Exhibit C and the Culvert Installation Detail Sheet.

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

413 - Pipe culverts and pipe-arch culverts shall be bedded on a maximum 1 ½-inch crushed rock material having a depth of not less than 33 percent of the diameter or height of the drainage structure concerned or a minimum depth of:

Pipe Corrugation Depth	Minimum Bedding Depth
1/2 inch	1 inch
1 inch	2 inches
2 inches	3 inches

Foundation material shall be of uniform density throughout the length of the structure and shall be shaped to fit the pipe.

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

416 - Side-fill material for pipe culverts shall be placed within 1 pipe diameter, or a minimum of 2 feet, of the sides of the pipe barrel, and to 1 foot over the pipe with fine, readily compactable soil, crushed rock or granular fill material free of excess moisture, muck, frozen material, roots, sod, or other deleterious or caustic material and devoid of rocks or stones of sizes which may impinge upon and damage the pipe or otherwise interfere with proper compaction.

417 - For pipe culverts side-fill material conforming to the requirements of Subsection 416 shall be placed and compacted under the haunches of the pipe, and shall be brought up evenly and simultaneously on both sides of the pipe to 1 foot above the pipe, in layers not exceeding 6 inches in depth and 1 pipe diameter/span, or a minimum of 2 feet in width each side of, and adjacent to, the full length of the pipe barrel. Each layer shall be moistened or dried to a uniform moisture content suitable for maximum compaction and immediately compacted by approved hand or pneumatic tampers until a uniform density of 85 percent of the maximum density, is attained as determined by AASHTO T 99, Method C.

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

419 - The pipe culverts after being bedded and backfilled as required by these specifications shall be protected by a (2)-foot cover of fill before heavy equipment is permitted to cross the drainage structure(s). Removal of the protection fill shall be as directed by the Authorized Officer.

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

424 - Construction of splash pads and energy dissipaters conforming to lines, grades, dimensions and typical diagram shown on Exhibit C, included in the plans, shall be required for grade culverts and culverts as stated in the Special Details.

425 - Where pervious materials are used for backfill and bedding, collars consisting of selected impervious material shall be placed at the inlet and at 6 feet intervals along the pipe barrel as directed by the Authorized Officer.

426 - Culvert markers, consisting of ½-inch round steel rods, 4 feet in length, bolted to culvert inlets, and painted orange, shall be fabricated, furnished, and installed by the Purchaser, as shown on the plans and as directed by the Authorized Officer

427 - The Purchaser shall record culvert sizes, lengths and location actually installed where they vary from the plans on a copy of the culvert list. This culvert list shall be furnished to the Authorized Officer.

428 - The Purchaser shall be responsible for removal and disposal of the old culverts in a legal manner, and for any fees required. The Purchaser shall remove the old culverts from the work site prior to acceptance of road construction for each road renovation and improvement.

429 - Dewatering: Keep excavation site dewatered so that installation of culverts are completed under dry conditions. Dispose of excess water by using pumping or natural drainage ways near the site in a manner that will avoid damage to adjacent property. Provide for downstream waterflow with no more that 10% increase in natural stream turbidity due to transport of excavated material or sediment during construction. Diversion streams shall not be returned to the natural channel until all instream work has been completed.

RENOVATION & IMPROVEMENT OF EXISTING ROADS - 500

501 - This work shall consist of reconditioning and preparing the roadbed and shoulders, cleaning and shaping drainage ditches, trimming vegetation from ditches, cut, and embankment slopes, and cleaning, repairing, and replacing drainage structures of existing roads in accordance with these specifications and as marked on the ground with stakes or tags.

502 - Where specified, the existing road surfaces shall be scarified to its full width and to a sufficient depth to eliminate surface irregularities, and bladed and shaped to the lines, grades, dimensions, and typical cross sections shown on the plans.

502a - Rocks larger than 4 inches in maximum dimension shall be removed from the scarified layers of the roadbed. Material so removed will not be permitted to remain on road shoulders or in ditches.

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

504 - Scarified material 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 Subsection 103f and 103i.

504a - Minimum compaction required is 1 hour of continuous rolling for each 4 stations of road, or fraction thereof, as measured along the centerline, per layer of material.

506 - Culverts shall be cleaned on any road to be renovated or improved, as listed in the Special Details. The inlet end of existing drainage structures shall be cleared of vegetative debris and boulders that are of sufficient size to obstruct normal flow. Pipe inverts shall be cleared of sediment and other debris lodged in the barrel of the pipe. The outflow area of pipe structures shall be cleared of rock and vegetative obstructions which will impede the structure's designed discharge configuration. Catch basins shall conform to the lines, grade, dimensions, and culvert details shown on the plans.

509 - The finished grading shall be approved by the Authorized Officer. The Purchaser shall give the Authorized Officer 3 days notice prior to final inspection of the grading operations.

WATERING - 600

601 - This work shall consist of furnishing and applying water required for the compaction of embankments, roadbeds, backfills, base courses, surface courses, finishing and reconditioning of existing roadbeds, laying dust, or for other uses in accordance with these specifications.

602 - Water, when needed for compaction or laying dust, shall be applied at the locations in the amounts and during the hours as directed by the Authorized Officer. Amounts of water to be provided will be the minimum needed to properly execute the compaction requirements in conformance with these specifications, and for laying dust during work periods where the road crosses private property.

603 - Water trucks used in this work shall be equipped with a distributing device of ample capacity and of such design as to ensure uniform application of water on the road bed.

AGGREGATE BASE & BEDDING - 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.

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 3 manufactured fractured faces on 75 percent, by weight, of the material retained on the No. 4 sieve. If necessary to meet the above requirement or to eliminate an excess of filler, the gravel shall be screened before crushing.

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	**F**
4-inch	-
3-inch	**100**
2-inch	**65-95**
1½-inch	-
1-inch	-
3/4-inch	**28-70**
½-inch	-
3/8-inch	-
No. 4	**10-35**
No. 8	-
No. 10	-
No. 30	**5-22**
No. 40	-
No. 200	**3-10**

1004a - The Purchaser shall be required to take one (1) sample of each 1,000 cubic yards of crushed rock material produced, using approved AASHTO sampling procedures. The Purchaser shall submit samples to a certified lab or shall perform testing for gradation requirements using ASHTO T 11 and AASHTO T 27 testing procedures (and also perform testing for sand equivalency requirements using AASHTO T 176 testing procedures). Prior to testing, each sample shall be split, making one-half of the sample with proper identification available for testing by the Authorized Officer. Each sample and the results of Purchaser testing shall be made available to the Authorized Officer within twenty-four (24) hours of sampling. The Purchaser shall provide test results for the first five hundred 500 cubic yards produced prior to commencing production crushing and hauling.

1005 - Crushed rock material retained on the No. 4 sieve shall have a percentage of loss of not more than 35 at 500 revolutions, as determined by AASHTO T 96.

1006 - Crushed rock material shall show durability value of not less than 35 as determined by AASHTO T 210.

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

1007a - That portion of crushed rock material passing No. 4 sieve, including blending filler, shall have a sand equivalent of not less than 35 as determined by AASHTO T 176, except where that portion exhibits a sand equivalent of less than 35, the aggregate will be accepted if it complies with the additional requirement as follows:

Sand Equivalent AASHTO T 176 Maximum	Liquid Limit AASHTO T 89 Maximum	Plasticity Index AASHTO T 90 Maximum	Percentage Passing No. 200 Sieve AASHTO T 27 Maximum
34	25	9	9
33	25	8	8
32	25	7	7
31	25	6	6
30	25	5	5
29 or less	25	4	4

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

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 72 hours prior to that inspection and shall be 5 days prior to start of rocking operations.

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 an uniform moisture content suitable for maximum compaction, and compacted to full width by compaction equipment conforming to the requirements of Subsections 103 f and 103i. Minimum compaction shall be one 1 hour of continuous compacting for each 150 cubic yards, or fraction thereof, of crushed rock material placed per layer.

AGGREGATE SURFACE COURSE – 1200
CRUSHED ROCK MATERIAL

1201 - This work shall consist of furnishing, hauling, and placing crushed rock material as culvert bedding, as surfacing over replaced culverts, and as maintenance rock. Aggregate application shall be 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.

1202a - Crushed rock materials used in this work may be obtained from commercial sources selected by the Purchaser at his option and expense, providing the rock materials furnished comply with the specifications in this section.

1203 - When crushed rock material is produced from gravel, not less than 75 percent by weight of the particles retained on the No. 4 sieve will have 3 manufactured fractured faces. If necessary to meet the above requirements or to eliminate an excess of filler, the gravel shall be screened before crushing.

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

TABLE 1204

AGGREGATE SURFACE COURSE
CRUSHED ROCK MATERIAL

Percentage by weight passing square mesh sieves
AASHTO T 11 & T 27

GRADATION

Sieve Designation	C
1-1/2-inch	100
1-inch	-
3/4-inch	50-90
½-inch	-
No. 4	25-50
No. 8	-
No. 30	-
No. 40	5-25
No. 200	2-15

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

1206 - Crushed rock material shall show a durability value of not less than 35 as determined by AASHTO T 210.

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

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

Sand Equivalent AASHTO T 176 Maximum	Liquid Limit AASHTO T 89 Maximum	Plasticity Index AASHTO T 90 Maximum	Percentage Passing No. 200 Sieve AASHTO T 27 Maximum
34	25	9	9
33	25	8	8
32	25	7	7
31	25	6	6
30	25	5	5
29 or less	25	4	4

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

1208a - Each layer of crushed rock material shall be thoroughly mixed on the roadbed by alternately blading, to full depth, until a uniform mixture has been obtained. The mixture shall then be spread to full width. When completed, the spreading shall produce a surface which is smooth, presents uniform shoulder lines, and conforms to the specified cross section.

1209 - Shaping and compacting of roadbed or base course shall be completed and approved in writing, prior to placing crushed rock material, in accordance to the requirements of Subsections 300 and 500 for placing on the roadbed and Subsection 1000 for placing on the base course. Notification for final inspection prior to rocking shall be 72 hours prior to the inspection and shall be 5 days prior to start of surfacing operations.

1210 - Crushed rock material conforming to the requirements of these specifications shall be placed on the approved roadbed , landings , and base course in accordance with these specifications and conforming to the lines, grades, dimensions, and typical cross sections shown on the plans. Compacted layers shall not exceed 4 inches in depth. When more than one layer is required, each shall be shaped, processed, compacted, and approved in writing by the Authorized Officer before the succeeding layer is placed. Irregularities or depressions that develop during compaction of the top layer shall be corrected by loosening the material at these places and then adding or removing crushed rock material until the surface is smooth and uniform.

1210a - Crushed rock material used to repair or reinforce soft, muddy, frozen, yielding, or rutted roadbed shall not be construed as surfacing required by this specification unless approved by the Authorized Officer.

1212 - Each layer of crushed rock material shall be placed, processed, shaped, moistened, or dried to a uniform moisture content suitable for maximum compaction, and compacted to full width by compaction equipment conforming to the requirements of Subsection 103. Minimum compaction shall be 1 hour of continuous compacting for each 150 cubic yards or fraction thereof, of crushed rock material placed per layer.

EROSION CONTROL - 1700

1701 - This work shall consist of measures to control soil erosion or water pollution during the construction operation through the use of berms, dikes dams, sediment basins, fiber mats, netting, gravel, mulches, grasses, slope drains, and other erosion control devices or methods in accordance with these specifications and conforming to the lines, grades, dimensions, and typical cross sections shown on the plans.

1705 - The surface area of erodible earth material exposed at any one time by clearing and grubbing shall not exceed 25,000 square feet after October 1 without prior approval by the Authorized Officer.

1706 - The surface area of erodible earth material exposed at one time by excavation, borrow, or fill within the right-of-way shall not exceed 25,000 square feet after October 1 without prior approval by the Authorized Officer.

1706a - The Purchaser shall perform, during the same construction season, erosion control measures specified in this Exhibit C, on all exposed excavation, borrow, and embankment areas.

1707 - Completed and partially completed portions of unsurfaced roads/landings to be carried over the winter and early spring periods shall be stabilized by mulching in accordance with Section 1800 at a 2" depth.

1708 - Newly constructed unsurfaced roads/landings to be carried over the winter period, shall be blocked to vehicular traffic.

1708a - Road segments/landings not completed during dry weather periods shall be winterized, by providing a well-drained roadway by water barring, 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/landings not having surface rock in place will be blocked or barricaded to prevent vehicular traffic.

SOIL STABILIZATION - 1800

1801 - This work consists of seed, fertilizer, and mulch application on designated cut, fill, borrow, disposal, and all other contract-disturbed areas in accordance with these specifications and as shown on the plans. This work is not required for road acceptance under Section 18 of this contract.

1802a - Soil stabilization work consisting of seeding, fertilizing, and mulching shall be performed on new road and landing construction, culvert replacement sites, and areas where vegetative cover has been disturbed, in accordance with these specifications and as shown on the plans.

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

From:	March 15	To:	April 30
From:	September 1	To:	October 15

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

1804 - The BLM shall provide native grass/forb seed or other plant materials (plugs, waddles, bulbs, etc.) for this project.

1806a - Additional soil stabilization work consisting of seeding , fertilizing, and mulching, may be required at the option of the Authorized Officer. Providing the additional stabilization is not due to Purchaser negligence as specified in Sec. 12 of the contract, a reduction in the total purchased price shall be made to offset the cost of furnishing and applying such additional stabilization material. Cost shall be based upon the unit price set forth in the current BLM Timber Appraisal Production Cost Schedule.

1807 - Fertilizer shall be a standard, water soluble, commercial grade of fertilizer conforming to all State and Federal regulations and to the standards of the Association of Official Agricultural Chemists. Fertilizer furnished shall provide the minimum percentage of available nutrients as specified below:

Available nitrogen	16%
Available phosphoric acid	20%
Potassium	0%

The Authorized Officer will take samples as necessary for the determination of compliance with the above requirements. Fertilizer shall be furnished in new, sealed, and properly labeled containers with name, weight, and guaranteed analysis of contents clearly marked. Material failing to meet these requirements, or that which has become wet or otherwise damaged in transit or storage, will be subject to rejection by the Authorized Officer.

1808 - Mulch materials conforming to the requirements of Subsections 1809a, 1809b, and 1809c shall be furnished by the Purchaser in the amounts specified under Subsection 1811.

1808a - Straw mulch shall be certified weed free from commercial grain fields and native grass fields. Straw mulch shall be from oats, wheat, rye, or other approved grain crops and shall be free from, mold, or other objectionable material. Straw mulch shall be in an air-dry condition and suitable for placement.

1808b - Wood cellulose fiber shall have the property of dispersing readily in water and shall have no toxic effect when combined with seed or other materials. The homogeneous slurry or mixture shall be capable of application with power spray equipment. A green-colored dye which is noninjurious to plant growth shall be used. Processed wood cellulose fiber shall be packaged in new, labeled containers in an air dry condition.

The Purchaser shall furnish a sample and descriptive literature to the Authorized Officer for approval prior to application. Processed wood cellulose fiber furnished by the Purchaser which has become wet or otherwise damaged in transit or storage will not be accepted.

1808c - Wood chips shall be 1/8-inch nominal thickness, with 50 percent having an area of not less than 1 square inch, nor more than 6 square inches. Wood chip mulch material shall be free from leaves, twigs, shavings, bark, or materials injurious to plant growth.

1809 - Mulch material shall be delivered to the work area in a dry state. Wet material will not be accepted. Material to be used in the mulching operation may be stockpiled along the road designated for treatment provided that it is maintained in a dry state, and has the approval of the Authorized Officer.

1811 - The Purchaser shall furnish materials and apply treatment to approximately 4.4 acres, which are an estimate of the area of ground to be disturbed. All disturbed ground shall be treated with a mixture of grass seed, fertilizer, and mulch material shall be applied at the following application rate:

Dry Application:

Grass Seed	60 lbs./acre
Fertilizer	200 lbs./acre
Mulch/Straw	2 inch cover depth

The above proportion and application rate are subject to adjustment by the Authorized Officer during the application operation. Additional post-haul treatment acres specified in the Exhibit D include approximately 1.5 acres.

1815 - The seed, fertilizer, and mulch materials shall be placed by the dry method in accordance with the requirements set forth in Subsection 1816b.

1815b - Dry Method - Blowers, mechanical seeders, seed drills, landscape seeders, cultipaker seeders, fertilizer spreaders, or other approved mechanical seeding equipment may be used when seed and fertilizer are to be applied in dry form.

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

1820 - When sprayed, the mix or slurry must overlap on the ground uniformly so that there will be no voids in the treated areas.

1821 - Mulch that collects at the end of culverts or accumulates to excessive depths on the slopes shall be evenly spread by hand methods, as directed by the Authorized Officer.

1822 - No materials shall be applied when wind velocities would prevent a uniform application of the mix or slurry or when winds would drift the mix or slurry spray outside of the designated treatment area.

1824 - Twine, rope, sacks, and other debris resulting from the soil-stabilization operation shall be picked up and disposed of to the satisfaction of the Authorized Officer.

ROADSIDE BRUSHING - 2100

2101 - This work shall consist of cutting and removal of vegetation from the road prism in accordance with these specifications. This work shall conform to the dimensions shown on the Typical Cross Section and Roadside Brushing Detail sheets, at designated locations.

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

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 sloped and all limbs will be severed from the trunk.

2104 - Trees in excess of 6 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 12 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 12 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 100 feet chord distance. 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 roadside brushing shall be scattered downslope from the roadway. Debris shall not be accumulated 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.

2113 - Roadside brushing shall be accomplished as specified on the Typical Cross Section Detail Sheets.

2116 - Mechanical brush cutters shall not be operated when there are people and occupied vehicles within 400 feet of the immediate operating area.

2117 - 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

Summary of All Roads and Projects T.S. Update 04/15/10

T.S. Contract Name: Wagon Rd Pilot Sale Date: 2/12/2012
Prepared by: R. Shipp Ph: 751-0100 Print Date: 1/25/2012 9:18:31 AM
Construction: 44.56 sta (Surfaced 44.56 sta Natural 0.00 sta)
Improve: 75.71 sta Renov: 150.20 sta Decom: 0.00 sta Temp: 0.00 sta

200 Clearing and Grubbing: 5.0 acres $10,172.76
Clearing: 51.3 sta Grubbing: 3.3 acres
Slash Treatment: 5.0 acres

300 Excavation: $13,426.98
Haul: 0 sta-yds

400 Drainage: $22,057.70
Culvert: 590 lf wt = 14,160 lbs factor = 1.0
DownSpout: 0 lf
PolyPipe: 0 lf

500 Renovation: $6,815.11
Blading 4.15 mi

Surfacing: $383,759.58
1200 Quarry Name: Kincheloe 1-1/2"(-) 2,507 cy
Quarry Name: Kincheloe 3"(-) 5,815 cy

1300 Geotextiles: $0.00

1400 Slope Protection: $0.00

1800 Soil Stabilization: 4.4 acres $2,194.66
Includes Small Quantity Factor of 1.34

1900 Cattleguards: $0.00

2100 RoadSide Brushing: 10.0 acres $3,246.26

2200 Surface Treatment: 0.0 tons $0.00

2300 Engineering: 0.00 sta. $0.00

2400 Minor Concrete: $0.00

2500 Gabions: $0.00

8000 Miscellaneous: $0.00

Mobilization: Const. $5,021.00 Surf. $3,285.00..... $8,306.00

Quarry Development: $0.00

Total: 6,140 mbf @ $73.29/mbf = $449,979.05

Notes:
Quantities shown are estimates only and not pay items.
Surfacing Quantities are COMPACTED in place cubic yards.
File Q:\eng\MYRTLE\TS\Wagon Road Pilot Project\Appraisal\Wagon Road Pilot Project.mdb

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Mobilization Costs - Construction and Surfacing

T.S. Contract Name: Wagon Rd Pilot Sale Date: 2/12/2012

Average Mobilization distance = 50 miles Factor = 1.00

Mobilization: Construction
Comment: Lump Sum = Equipment Washing
Fire Equipment: 1 ea x (1.00 x $126.00/ea + 0 mi x $3.36/mi)= $126.00
Graders-all: 1 ea x (1.00 x $335.00/ea + 0 mi x $11.99/mi)= $335.00
Brush Cutter: 1 ea x (1.00 x $335.00/ea) = $335.00
Loaders < 3cy: 1 ea x (1.00 x $335.00/ea + 0 mi x $7.10/mi)= $335.00
Rollers & Comp: 1 ea x (1.00 x $335.00/ea + 0 mi x $19.20/mi)= $335.00
Excavators: 1 ea x (1.00 x $648.00/ea + 0 mi x $21.65/mi)= $648.00
RTBackhoes 24/30: 1 ea x (1.00 x $335.00/ea + 0 mi x $5.58/mi)= $335.00
Tractors <= D7: 1 ea x (1.00 x $492.00/ea + 0 mi x $30.48/mi)= $492.00
Dump Truck<=10cy: 2 ea x (1.00 x $187.00/ea + 0 mi x $3.74/mi)= $374.00
Water Truck: 1 ea x (1.00 x $206.00/ea + 0 mi x $4.12/mi)= $206.00
Lump Sum: $1,500.00

Subtotal: $5,021.00

Mobilization: Surfacing
Comment: LS = Equipment Washing
Fire Equipment: 1ea x (1.00 x $126.00/ea + 0 mi x $3.36/mi)= $126.00
Graders-all: 1ea x (1.00 x $335.00/ea + 0 mi x $11.99/mi)= $335.00
Loaders < 3cy: 1ea x (1.00 x $335.00/ea + 0 mi x $7.10/mi)= $335.00
Rollers & Comp: 1ea x (1.00 x $335.00/ea + 0 mi x $19.20/mi)= $335.00
Dump Truck<=10cy: 4ea x (1.00 x $187.00/ea + 0 mi x $3.74/mi)= $748.00
Water Truck: 1ea x (1.00 x $206.00/ea + 0 mi x $4.12/mi)= $206.00
Lump Sum: $1,200.00

Subtotal: $3,285.00

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Wagon Rd Pilot Sale Date: 2/12/2012
Road Number: 28-10-17.0 Road Name:
Road Improvement: 1.13 mi 16 ft Subgrade 2 ft ditch T.S. Update 04/15/10

200 Clearing and Grubbing: 0.0 acres $0.00
Clearing:0.0 sta Grubbing:0.0 acres
Slash Treatment:0.0 acres

300 Excavation: $463.98

400 Drainage: $19,835.90
Culvert: 530 lf wt = 12,720 lbs factor = 1.0
DownSpout: 0 lf
PolyPipe: 0 lf

500 Renovation: $2,601.87
Blading 1.13 mi

Surfacing: $175,262.52
1200 Quarry Name: Kincheloe 1-1/2"(-) 1,177 cy
Quarry Name: Kincheloe 3"(-) 2,635 cy

1300 Geotextiles: $0.00

1400 Slope Protection: $0.00

1800 Soil Stabilization: 0.6 acres $272.00
Includes Small Quantity Factor of 1.34

1900 Cattleguards: $0.00

2100 RoadSide Brushing: 2.7 acres $842.78

2200 Surface Treatment: 0.0 tons $0.00

2300 Engineering: 0.00 sta. $0.00

2400 Minor Concrete: $0.00

2500 Gabions: $0.00

8000 Miscellaneous: $0.00

Mobilization: Const. $2,265.43 Surf. $1,504.74..... $3,770.17

Quarry Development: $0.00

Total: $203,049.21

Notes:
Quantities shown are estimates only and not pay items.
Surfacing Quantities shown are COMPACTED in place cubic yards.

Road Construction Worksheet

Road Number: 28-10-17.0 Road Name:

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:
  Roadway Widening
   Tractor: D7 with rippers 3 hr x $154.66/hr = $463.98

Subtotal: $463.98

Section 400 Drainage:
  Aluminized 24 inch 14 ga 530 lf x $37.03/lf x 1 = $19,625.90
  Culvert Markers
   Culvert Marker 14 EA x $15.00/EA = $210.00

Subtotal: $19,835.90

Section 500 Renovation:
  Blading: $459.60/mi x 1.13 mi = $519.35
  Pull Ditches: $153.20/mi x 1.13 mi = $173.12
  Compaction: $1689.74/mi x 1.13 mi = $1,909.41

Subtotal: $2,601.87

Section 1200 Crushed under 1 1/2 Quarry Name: Kincheloe 1-1/2"(-)
 Comment: Top Rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
1.13mi	12ft	13.33ft	4in	10%	5	10ft	50ft	25ft	

  Rock Volume = 1,072cy
  Production: $9.08/cy x 1,072cy = $9,733.76
  Royalty: $9.25/cy x 1,072cy = $9,916.00
  Processing: $1.23/cy x 1,072cy = $1,318.56
  Compaction: $1.00/cy x 1,072cy = $1,072.00
  T11 Testing: $0.07/cy x 1,072cy = $75.04
  T27 Testing: $0.05/cy x 1,072cy = $53.60
  Basic Rock Haul cost: $0.87/cy x 1,072cy = $932.64
  Rock Haul +15% grades: $2.62/cy-mi x 1,072cy x 0.30 mi= $842.59
  Rock Haul -15% grades: $1.31/cy-mi x 1,072cy x 13.90 mi= $19,520.05
  Rock Haul St& Co Roads: $0.58/cy-mi x 1,072cy x 8.10 mi= $5,036.26
  Basic Water Haul cost: $0.57/cy x 1,072cy = $611.04
  Water Haul +15% grades: $0.25/cy-mi x 1,072cy x 0.30 mi= $80.40
  Water Haul -15% grades: $0.13/cy-mi x 1,072cy x 1.00 mi= $139.36

Section 1200 Crushed under 1 1/2 Quarry Name: Kincheloe 1-1/2"(-)
 Comment: Pipe Rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
									105cy

  Rock Volume = 105cy
  Production: $9.08/cy x 105cy = $953.40
  Royalty: $9.25/cy x 105cy = $971.25
  Processing: $1.23/cy x 105cy = $129.15
  Compaction: $1.00/cy x 105cy = $105.00
  T11 Testing: $0.07/cy x 105cy = $7.35
  T27 Testing: $0.05/cy x 105cy = $5.25
  Basic Rock Haul cost: $0.87/cy x 105cy = $91.35
  Rock Haul +15% grades: $2.62/cy-mi x 105cy x 0.30 mi= $82.53
  Rock Haul -15% grades: $1.31/cy-mi x 105cy x 13.90 mi= $1,911.95
  Rock Haul St& Co Roads: $0.58/cy-mi x 105cy x 8.10 mi= $493.29
  Basic Water Haul cost: $0.57/cy x 105cy = $59.85
  Water Haul +15% grades: $0.25/cy-mi x 105cy x 0.30 mi= $7.88
  Water Haul -15% grades: $0.13/cy-mi x 105cy x 1.00 mi= $13.65

Section 1000 Crushed 1 1/2 to 3 in Quarry Name: Kincheloe 3"(-)
Comment: Base Course

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
1.13mi	13.33ft								
		16ft	8in	10%	5	10.67ft			
								50ft	25ft

Rock Volume = 2,475cy
Production: $8.02/cy x 2,475cy = $19,849.50
Royalty: $10.25/cy x 2,475cy = $25,368.75
Processing: $1.23/cy x 2,475cy = $3,044.25
Compaction: $1.00/cy x 2,475cy = $2,475.00
T11 Testing: $0.07/cy x 2,475cy = $173.25
T27 Testing: $0.05/cy x 2,475cy = $123.75
Basic Rock Haul cost: $0.87/cy x 2,475cy = $2,153.25
Rock Haul +15% grades: $2.62/cy-mi x 2,475cy x 0.30 mi= $1,945.35
Rock Haul -15% grades: $1.31/cy-mi x 2,475cy x 13.90 mi= $45,067.28
Rock Haul St& Co Roads: $0.58/cy-mi x 2,475cy x 8.10 mi= $11,627.55
Basic Water Haul cost: $0.57/cy x 2,475cy = $1,410.75
Water Haul +15% grades: $0.25/cy-mi x 2,475cy x 0.30 mi= $185.63
Water Haul -15% grades: $0.13/cy-mi x 2,475cy x 1.00 mi= $321.75

Section 1000 Crushed 1 1/2 to 3 in Quarry Name: Kincheloe 3"(-)
Comment: Landing Rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
									160cy

Rock Volume = 160cy
Production: $8.02/cy x 160cy = $1,283.20
Royalty: $10.25/cy x 160cy = $1,640.00
Processing: $1.23/cy x 160cy = $196.80
Compaction: $1.00/cy x 160cy = $160.00
T11 Testing: $0.07/cy x 160cy = $11.20
T27 Testing: $0.05/cy x 160cy = $8.00
Basic Rock Haul cost: $0.87/cy x 160cy = $139.20
Rock Haul +15% grades: $2.62/cy-mi x 160cy x 0.30 mi= $125.76
Rock Haul -15% grades: $1.31/cy-mi x 160cy x 13.90 mi= $2,913.44
Rock Haul St& Co Roads: $0.58/cy-mi x 160cy x 8.10 mi= $751.68
Basic Water Haul cost: $0.57/cy x 160cy = $91.20
Water Haul +15% grades: $0.25/cy-mi x 160cy x 0.30 mi= $12.00
Water Haul -15% grades: $0.13/cy-mi x 160cy x 1.00 mi= $20.80

Subtotal:$175,262.52

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:
Dry Method with Mulch: $453.33/acre x 0.60 acres = $272.00
Includes Small Quantity Factor of 1.34

Subtotal: $272.00

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:
Brushing width Left: 10ft. Right: 10ft.
RoadSide Brushing Medium: $312.14/acre x 2.70 acres = $842.78

Subtotal: $842.78

Section 2200 Surface Treatment:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
Construction - 45.12% of total Costs = $2,265.43
Surfacing - 45.81% by rock volume = $1,504.74

Subtotal: $3,770.17

Quarry Development:
Based on 45.81% of total rock volume

Subtotal: $0.00

Total: $203,049.21

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Wagon Rd Pilot Sale Date: 2/12/2012
Road Number: 28-10-17.1 Road Name:
Road Construction: 0.04 mi 15 ft Subgrade ft ditch T.S. Update 04/15/10

200 Clearing and Grubbing: 0.2 acres	$373.42
Clearing:2.0 sta Grubbing:0.1 acres	
Slash Treatment:0.2 acres	
300 Excavation:	$743.38
400 Drainage:	$0.00
Culvert: 0 lf wt = 0 lbs factor = 1.0	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$0.00
Surfacing:	$5,422.24
Quarry Name: Kincheloe 3"(-) 119 cy	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.2 acres	$90.67
Includes Small Quantity Factor of 1.34	
1900 Cattleguards:	$0.00
2100 RoadSide Brushing: 0.0 acres	$0.00
2200 Surface Treatment: 0.0 tons	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $75.37 Surf. $46.97	$122.34
Quarry Development:	$0.00
Total:	$6,752.04

Notes:
Quantities shown are estimates only and not pay items.
Surfacing Quantities shown are COMPACTED in place cubic yards.

Road Construction Worksheet

Road Number: 28-10-17.1 Road Name:

Section 200 Clearing and Grubbing:
  Clearing - Heavy: $43.68/sta x 1.95 sta = $85.18
  Grubbing - Heavy: $1490.99/acre x 0.10 acres = $149.10
  Scatter: $695.70/acre x 0.20 acres = $139.14

Subtotal: $373.42

Section 300 Excavation:
  Subgrade Compaction: 4 Sta/hr $24.00/sta. x 2.0 sta = $46.80
  Blading: $39.97/station x 1.95 stations = $77.94
  Excavation & Embankment
   Tractor: D7 with rippers 2 hr x $154.66/hr = $309.32
  Landing Construction
   Tractor: D7 with rippers 2 hr x $154.66/hr = $309.32

Subtotal: $743.38

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:

Subtotal: $0.00

Section 1000 Crushed 1 1/2 to 3 in Quarry Name: Kincheloe 3"(-)
 Comment: Base Course

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.04mi	12ft	14.67ft	8in						

  Rock Volume = 69cy
  Production: $8.02/cy x 69cy = $553.38
  Royalty: $10.25/cy x 69cy = $707.25
  Processing: $1.23/cy x 69cy = $84.87
  Compaction: $1.00/cy x 69cy = $69.00
  T11 Testing: $0.07/cy x 69cy = $4.83
  T27 Testing: $0.05/cy x 69cy = $3.45
  Basic Rock Haul cost: $0.87/cy x 69cy = $60.03
  Rock Haul +15% grades: $2.62/cy-mi x 69cy x 0.30 mi= $54.23
  Rock Haul -15% grades: $1.31/cy-mi x 69cy x 13.60 mi= $1,229.30
  Rock Haul St& Co Roads: $0.58/cy-mi x 69cy x 8.10 mi= $324.16
  Basic Water Haul cost: $0.57/cy x 69cy = $39.33
  Water Haul +15% grades: $0.25/cy-mi x 69cy x 0.30 mi= $5.18
  Water Haul -15% grades: $0.13/cy-mi x 69cy x 1.00 mi= $8.97

Section 1000 Crushed 1 1/2 to 3 in Quarry Name: Kincheloe 3"(-)
 Comment: Landing Rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
									50cy

  Rock Volume = 50cy
  Production: $8.02/cy x 50cy = $401.00
  Royalty: $10.25/cy x 50cy = $512.50
  Processing: $1.23/cy x 50cy = $61.50
  Compaction: $1.00/cy x 50cy = $50.00
  T11 Testing: $0.07/cy x 50cy = $3.50
  T27 Testing: $0.05/cy x 50cy = $2.50
  Basic Rock Haul cost: $0.87/cy x 50cy = $43.50
  Rock Haul +15% grades: $2.62/cy-mi x 50cy x 0.30 mi= $39.30
  Rock Haul -15% grades: $1.31/cy-mi x 50cy x 13.60 mi= $890.80
  Rock Haul St& Co Roads: $0.58/cy-mi x 50cy x 8.10 mi= $234.90
  Basic Water Haul cost: $0.57/cy x 50cy = $28.50
  Water Haul +15% grades: $0.25/cy-mi x 50cy x 0.30 mi= $3.75

Road Number: 28-10-17.1 Continued

Water Haul -15% grades: $0.13/cy-mi x 50cy x 1.00 mi= $6.50

Subtotal: $5,422.24

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:
Dry Method with Mulch: $453.33/acre x 0.20 acres = $90.67
Includes Small Quantity Factor of 1.34

Subtotal: $90.67

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:

Subtotal: $0.00

Section 2200 Surface Treatment:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
Construction - 1.50% of total Costs = $75.37
Surfacing - 1.43% by rock volume = $46.97

Subtotal: $122.34

Quarry Development:
Based on 1.43% of total rock volume

Subtotal: $0.00

Total: $6,752.04

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Wagon Rd Pilot Sale Date: 2/12/2012
Road Number: 28-10-17.2 Road Name:
Road Construction: 0.09 mi 16 ft Subgrade 2 ft ditch T.S. Update 04/15/10

200 Clearing and Grubbing: 0.4 acres	$777.41
Clearing:4.6 sta Grubbing:0.2 acres	
Slash Treatment:0.4 acres	
300 Excavation:	$1,376.88
400 Drainage:	$0.00
Culvert: 0 lf wt = 0 lbs factor = 1.0	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$0.00
Surfacing:	$14,818.91
1200 Quarry Name: Kincheloe 1-1/2"(-) 83 cy	
Quarry Name: Kincheloe 3"(-) 241 cy	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.3 acres	$136.00
Includes Small Quantity Factor of 1.34	
1900 Cattleguards:	$0.00
2100 RoadSide Brushing: 0.0 acres	$0.00
2200 Surface Treatment: 0.0 tons	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $194.50 Surf. $127.89	$322.39
Quarry Development:	$0.00
Total:	$17,431.59

Notes:
Quantities shown are estimates only and not pay items.
Surfacing Quantities shown are COMPACTED in place cubic yards.

Road Construction Worksheet

Road Number: 28-10-17.2 Road Name:

Section 200 Clearing and Grubbing:
  Clearing - Heavy: $43.68/sta x 4.60 sta = $200.93
  Grubbing - Heavy: $1490.99/acre x 0.20 acres = $298.20
  Scatter: $695.70/acre x 0.40 acres = $278.28

Subtotal: $777.41

Section 300 Excavation:
  Subgrade Compaction: 4 Sta/hr $24.00/sta. x 4.6 sta = $110.40
  Blading: $39.97/station x 4.60 stations = $183.86
  Excavation & Embankment
   Tractor: D7 with rippers 5 hr x $154.66/hr = $773.30
  Landing Construction
   Tractor: D7 with rippers 2 hr x $154.66/hr = $309.32

Subtotal: $1,376.88

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:

Subtotal: $0.00

Section 1200 Crushed under 1 1/2 Quarry Name: Kincheloe 1-1/2"(-)
 Comment: Top Course

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.09mi	12ft	13.33ft	4in	3%					7cy

  Rock Volume = 83cy
  Production: $9.08/cy x 83cy = $753.64
  Royalty: $9.25/cy x 83cy = $767.75
  Processing: $1.23/cy x 83cy = $102.09
  Compaction: $1.00/cy x 83cy = $83.00
  T11 Testing: $0.07/cy x 83cy = $5.81
  T27 Testing: $0.05/cy x 83cy = $4.15
  Basic Rock Haul cost: $0.87/cy x 83cy = $72.21
  Rock Haul +15% grades: $2.62/cy-mi x 83cy x 0.30 mi= $65.24
  Rock Haul -15% grades: $1.31/cy-mi x 83cy x 13.70 mi= $1,489.60
  Rock Haul St& Co Roads: $0.58/cy-mi x 83cy x 8.10 mi= $389.93
  Basic Water Haul cost: $0.57/cy x 83cy = $47.31
  Water Haul +15% grades: $0.25/cy-mi x 83cy x 0.30 mi= $6.23
  Water Haul -15% grades: $0.13/cy-mi x 83cy x 1.20 mi= $12.95

Section 1000 Crushed 1 1/2 to 3 in Quarry Name: Kincheloe 3"(-)
 Comment: Base Rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.09mi	13.33ft	16ft 8in	3%						14cy

  Rock Volume = 191cy
  Production: $8.02/cy x 191cy = $1,531.82
  Royalty: $10.25/cy x 191cy = $1,957.75
  Processing: $1.23/cy x 191cy = $234.93
  Compaction: $1.00/cy x 191cy = $191.00
  T11 Testing: $0.07/cy x 191cy = $13.37
  T27 Testing: $0.05/cy x 191cy = $9.55
  Basic Rock Haul cost: $0.87/cy x 191cy = $166.17
  Rock Haul +15% grades: $2.62/cy-mi x 191cy x 0.30 mi= $150.13
  Rock Haul -15% grades: $1.31/cy-mi x 191cy x 13.70 mi= $3,427.88
  Rock Haul St& Co Roads: $0.58/cy-mi x 191cy x 8.10 mi= $897.32
  Basic Water Haul cost: $0.57/cy x 191cy = $108.87
  Water Haul +15% grades: $0.25/cy-mi x 191cy x 0.30 mi= $14.33

Road Number: 28-10-17.2 Continued

Water Haul -15% grades: $0.13/cy-mi x 191cy x 1.20 mi= $29.80

Section 1000 Crushed 1 1/2 to 3 in Quarry Name: Kincheloe 3"(-)
Comment: Landing Rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
									50cy

Rock Volume = 50cy
Production: $8.02/cy x 50cy = $401.00
Royalty: $10.25/cy x 50cy = $512.50
Processing: $1.23/cy x 50cy = $61.50
Compaction: $1.00/cy x 50cy = $50.00
T11 Testing: $0.07/cy x 50cy = $3.50
T27 Testing: $0.05/cy x 50cy = $2.50
Basic Rock Haul cost: $0.87/cy x 50cy = $43.50
Rock Haul +15% grades: $2.62/cy-mi x 50cy x 0.30 mi= $39.30
Rock Haul -15% grades: $1.31/cy-mi x 50cy x 13.70 mi= $897.35
Rock Haul St& Co Roads: $0.58/cy-mi x 50cy x 8.10 mi= $234.90
Basic Water Haul cost: $0.57/cy x 50cy = $28.50
Water Haul +15% grades: $0.25/cy-mi x 50cy x 0.30 mi= $3.75
Water Haul -15% grades: $0.13/cy-mi x 50cy x 1.20 mi= $7.80

Subtotal: $14,818.91

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:
Dry Method with Mulch: $453.33/acre x 0.30 acres = $136.00
Includes Small Quantity Factor of 1.34

Subtotal: $136.00

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:

Subtotal: $0.00

Section 2200 Surface Treatment:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
Construction - 3.87% of total Costs = $194.50
Surfacing - 3.89% by rock volume = $127.89

Subtotal: $322.39

Quarry Development:
Based on 3.89% of total rock volume

Subtotal:	$0.00
Total:	$17,431.59

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Wagon Rd Pilot Sale Date: 2/12/2012
Road Number: 28-10-17.3 Road Name:
Road Construction: 0.24 mi 16 ft Subgrade 2 ft ditch T.S. Update 04/15/10

200 Clearing and Grubbing: 1.2 acres	$2,428.90
Clearing:12.6 sta Grubbing:0.7 acres	
Slash Treatment:1.2 acres	
300 Excavation:	$2,971.26
400 Drainage:	$1,110.90
Culvert: 30 lf wt = 720 lbs factor = 1.0	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$0.00
Surfacing:	$37,468.37
1200 Quarry Name: Kincheloe 1-1/2"(-) 235 cy	
Quarry Name: Kincheloe 3"(-) 574 cy	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.7 acres	$317.33
Includes Small Quantity Factor of 1.34	
1900 Cattleguards:	$0.00
2100 RoadSide Brushing: 0.0 acres	$0.00
2200 Surface Treatment: 0.0 tons	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $503.57 Surf. $319.34	$822.91
Quarry Development:	$0.00
Total:	$45,119.68

Notes:
Quantities shown are estimates only and not pay items.
Surfacing Quantities shown are COMPACTED in place cubic yards.

Road Construction Worksheet

Road Number: 28-10-17.3 Road Name:

Section 200 Clearing and Grubbing:
  Clearing - Heavy: $43.68/sta x 12.60 sta = $550.37
  Grubbing - Heavy: $1490.99/acre x 0.70 acres = $1,043.69
  Scatter: $695.70/acre x 1.20 acres = $834.84
Subtotal: $2,428.90

Section 300 Excavation:
  Subgrade Compaction: 4 Sta/hr $24.00/sta. x 12.6 sta = $302.40
  Blading: $39.97/station x 12.60 stations = $503.62
  Excavation & Embankment
   Tractor: D7 with rippers 13 hr x $154.66/hr = $2,010.58
  Landing Construction
   Tractor: D7 with rippers 1 hr x $154.66/hr = $154.66
Subtotal: $2,971.26

Section 400 Drainage:
  Aluminized 24 inch 14 ga 30 lf x $37.03/lf x 1 = $1,110.90
Subtotal: $1,110.90

Section 500 Renovation:
Subtotal: $0.00

Section 1200 Crushed under 1 1/2 Quarry Name: Kincheloe 1-1/2"(-)
 Comment: Top Rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.24mi	12ft	13.33ft	4in	10%	1	10ft	50ft	25ft	

  Rock Volume = 227cy
  Production: $9.08/cy x 227cy = $2,061.16
  Royalty: $9.25/cy x 227cy = $2,099.75
  Processing: $1.23/cy x 227cy = $279.21
  Compaction: $1.00/cy x 227cy = $227.00
  T11 Testing: $0.07/cy x 227cy = $15.89
  T27 Testing: $0.05/cy x 227cy = $11.35
  Basic Rock Haul cost: $0.87/cy x 227cy = $197.49
  Rock Haul +15% grades: $2.62/cy-mi x 227cy x 0.40 mi= $237.90
  Rock Haul -15% grades: $1.31/cy-mi x 227cy x 13.90 mi= $4,133.44
  Rock Haul St& Co Roads: $0.58/cy-mi x 227cy x 8.10 mi= $1,066.45
  Basic Water Haul cost: $0.57/cy x 227cy = $129.39
  Water Haul +15% grades: $0.25/cy-mi x 227cy x 0.40 mi= $22.70
  Water Haul -15% grades: $0.13/cy-mi x 227cy x 1.40 mi= $41.31

Section 1200 Crushed under 1 1/2 Quarry Name: Kincheloe 1-1/2"(-)
 Comment: Pipe Rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.00mi									8cy

  Rock Volume = 8cy
  Production: $9.08/cy x 8cy = $72.64
  Royalty: $9.25/cy x 8cy = $74.00
  Processing: $1.23/cy x 8cy = $9.84
  Compaction: $1.00/cy x 8cy = $8.00
  T11 Testing: $0.07/cy x 8cy = $0.56
  T27 Testing: $0.05/cy x 8cy = $0.40
  Basic Rock Haul cost: $0.87/cy x 8cy = $6.96
  Rock Haul +15% grades: $2.62/cy-mi x 8cy x 0.40 mi= $8.38
  Rock Haul -15% grades: $1.31/cy-mi x 8cy x 13.90 mi= $145.67
  Rock Haul St& Co Roads: $0.58/cy-mi x 8cy x 8.10 mi= $37.58
  Basic Water Haul cost: $0.57/cy x 8cy = $4.56

Road Number: 28-10-17.3 Continued

Water Haul +15% grades: $0.25/cy-mi x 8cy x 0.40 mi= $0.80
Water Haul -15% grades: $0.13/cy-mi x 8cy x 1.40 mi= $1.46

Section 1000 Crushed 1 1/2 to 3 in Quarry Name: Kincheloe 3"(-)
Comment: Base Rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.24mi	13.33ft								
		16ft	8in	10%	1	10.67ft			
							50ft	25ft	

Rock Volume = 524cy
Production: $8.02/cy x 524cy = $4,202.48
Royalty: $10.25/cy x 524cy = $5,371.00
Processing: $1.23/cy x 524cy = $644.52
Compaction: $1.00/cy x 524cy = $524.00
T11 Testing: $0.07/cy x 524cy = $36.68
T27 Testing: $0.05/cy x 524cy = $26.20
Basic Rock Haul cost: $0.87/cy x 524cy = $455.88
Rock Haul +15% grades: $2.62/cy-mi x 524cy x 0.40 mi= $549.15
Rock Haul -15% grades: $1.31/cy-mi x 524cy x 13.90 mi= $9,541.52
Rock Haul St& Co Roads: $0.58/cy-mi x 524cy x 8.10 mi= $2,461.75
Basic Water Haul cost: $0.57/cy x 524cy = $298.68
Water Haul +15% grades: $0.25/cy-mi x 524cy x 0.40 mi= $52.40
Water Haul -15% grades: $0.13/cy-mi x 524cy x 1.40 mi= $95.37

Section 1000 Crushed 1 1/2 to 3 in Quarry Name: Kincheloe 3"(-)
Comment: Landing Rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.00mi									50cy

Rock Volume = 50cy
Production: $8.02/cy x 50cy = $401.00
Royalty: $10.25/cy x 50cy = $512.50
Processing: $1.23/cy x 50cy = $61.50
Compaction: $1.00/cy x 50cy = $50.00
T11 Testing: $0.07/cy x 50cy = $3.50
T27 Testing: $0.05/cy x 50cy = $2.50
Basic Rock Haul cost: $0.87/cy x 50cy = $43.50
Rock Haul +15% grades: $2.62/cy-mi x 50cy x 0.40 mi= $52.40
Rock Haul -15% grades: $1.31/cy-mi x 50cy x 13.90 mi= $910.45
Rock Haul St& Co Roads: $0.58/cy-mi x 50cy x 8.10 mi= $234.90
Basic Water Haul cost: $0.57/cy x 50cy = $28.50
Water Haul +15% grades: $0.25/cy-mi x 50cy x 0.40 mi= $5.00
Water Haul -15% grades: $0.13/cy-mi x 50cy x 1.40 mi= $9.10

Subtotal: $37,468.37

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:
Dry Method with Mulch: $453.33/acre x 0.70 acres = $317.33
Includes Small Quantity Factor of 1.34

Subtotal: $317.33

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:

Subtotal: $0.00

Section 2200 Surface Treatment:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
Construction - 10.03% of total Costs = $503.57
Surfacing - 9.72% by rock volume = $319.34

Subtotal: $822.91

Quarry Development:
Based on 9.72% of total rock volume

Subtotal: $0.00

Total: $45,119.68

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Wagon Rd Pilot Sale Date: 2/12/2012
Road Number: 28-10-17.4 Road Name:
Road Construction: 0.06 mi 16 ft Subgrade ft ditch T.S. Update 04/15/10

200 Clearing and Grubbing: 0.3 acres	$642.32
Clearing:3.1 sta Grubbing:0.2 acres	
Slash Treatment:0.3 acres	
300 Excavation:	$832.41
400 Drainage:	$0.00
Culvert: 0 lf wt = 0 lbs factor = 1.0	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$0.00
Surfacing:	$10,049.45
1200 Quarry Name: Kincheloe 1-1/2"(-) 50 cy	
Quarry Name: Kincheloe 3"(-) 167 cy	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.2 acres	$90.67
Includes Small Quantity Factor of 1.34	
1900 Cattleguards:	$0.00
2100 RoadSide Brushing: 0.0 acres	$0.00
2200 Surface Treatment: 0.0 tons	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $132.04 Surf. $85.66	$217.70
Quarry Development:	$0.00
Total:	$11,832.54

Notes:
Quantities shown are estimates only and not pay items.
Surfacing Quantities shown are COMPACTED in place cubic yards.

Road Construction Worksheet

Road Number: 28-10-17.4 Road Name:

Section 200 Clearing and Grubbing:
  Clearing - Heavy: $43.68/sta x 3.10 sta = $135.41
  Grubbing - Heavy: $1490.99/acre x 0.20 acres = $298.20
  Scatter: $695.70/acre x 0.30 acres = $208.71

Subtotal: $642.32

Section 300 Excavation:
  Subgrade Compaction: 4 Sta/hr $24.00/sta. x 3.1 sta = $74.40
  Blading: $39.97/station x 3.10 stations = $123.91
  Excavation & Embankment
   Tractor: D7 with rippers 3.1 hr x $154.66/hr = $479.45
  Landing Construction
   Tractor: D7 with rippers 1 hr x $154.66/hr = $154.66

Subtotal: $832.41

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:

Subtotal: $0.00

Section 1200 Crushed under 1 1/2 Quarry Name: Kincheloe 1-1/2"(-)
 Comment: Top Rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.06mi	12ft	13.33ft	4in	2%					

  Rock Volume = 50cy
  Production: $9.08/cy x 50cy = $454.00
  Royalty: $9.25/cy x 50cy = $462.50
  Processing: $1.23/cy x 50cy = $61.50
  Compaction: $1.00/cy x 50cy = $50.00
  T11 Testing: $0.07/cy x 50cy = $3.50
  T27 Testing: $0.05/cy x 50cy = $2.50
  Basic Rock Haul cost: $0.87/cy x 50cy = $43.50
  Rock Haul +15% grades: $2.62/cy-mi x 50cy x 0.40 mi= $52.40
  Rock Haul -15% grades: $1.31/cy-mi x 50cy x 13.90 mi= $910.45
  Rock Haul St& Co Roads: $0.58/cy-mi x 50cy x 8.10 mi= $234.90
  Basic Water Haul cost: $0.57/cy x 50cy = $28.50
  Water Haul +15% grades: $0.25/cy-mi x 50cy x 0.40 mi= $5.00
  Water Haul -15% grades: $0.13/cy-mi x 50cy x 1.40 mi= $9.10

Section 1000 Crushed 1 1/2 to 3 in Quarry Name: Kincheloe 3"(-)
 Comment: Base Rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.06mi	13.33ft	16ft 8in		2%					

  Rock Volume = 117cy
  Production: $8.02/cy x 117cy = $938.34
  Royalty: $10.25/cy x 117cy = $1,199.25
  Processing: $1.23/cy x 117cy = $143.91
  Compaction: $1.00/cy x 117cy = $117.00
  T11 Testing: $0.07/cy x 117cy = $8.19
  T27 Testing: $0.05/cy x 117cy = $5.85
  Basic Rock Haul cost: $0.87/cy x 117cy = $101.79
  Rock Haul +15% grades: $2.62/cy-mi x 117cy x 0.40 mi= $122.62
  Rock Haul -15% grades: $1.31/cy-mi x 117cy x 13.90 mi= $2,130.45
  Rock Haul St& Co Roads: $0.58/cy-mi x 117cy x 8.10 mi= $549.67
  Basic Water Haul cost: $0.57/cy x 117cy = $66.69
  Water Haul +15% grades: $0.25/cy-mi x 117cy x 0.40 mi= $11.70

Road Number: 28-10-17.4 Continued

Water Haul -15% grades: $0.13/cy-mi x 117cy x 1.40 mi= $21.29

Section 1000 Crushed 1 1/2 to 3 in Quarry Name: Kincheloe 3"(-)
Comment: Landing Rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.00mi									50cy

Rock Volume = 50cy
Production: $8.02/cy x 50cy = $401.00
Royalty: $10.25/cy x 50cy = $512.50
Processing: $1.23/cy x 50cy = $61.50
Compaction: $1.00/cy x 50cy = $50.00
T11 Testing: $0.07/cy x 50cy = $3.50
T27 Testing: $0.05/cy x 50cy = $2.50
Basic Rock Haul cost: $0.87/cy x 50cy = $43.50
Rock Haul +15% grades: $2.62/cy-mi x 50cy x 0.40 mi= $52.40
Rock Haul -15% grades: $1.31/cy-mi x 50cy x 13.90 mi= $910.45
Rock Haul St& Co Roads: $0.58/cy-mi x 50cy x 8.10 mi= $234.90
Basic Water Haul cost: $0.57/cy x 50cy = $28.50
Water Haul +15% grades: $0.25/cy-mi x 50cy x 0.40 mi= $5.00
Water Haul -15% grades: $0.13/cy-mi x 50cy x 1.40 mi= $9.10

Subtotal: $10,049.45

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:
Dry Method with Mulch: $453.33/acre x 0.20 acres = $90.67
Includes Small Quantity Factor of 1.34

Subtotal: $90.67

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:

Subtotal: $0.00

Section 2200 Surface Treatment:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
Construction - 2.63% of total Costs = $132.04
Surfacing - 2.61% by rock volume = $85.66

Subtotal: $217.70

Quarry Development:
Based on 2.61% of total rock volume

Subtotal:	$0.00
Total:	$11,832.54

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Wagon Rd Pilot Sale Date: 2/12/2012
Road Number: 28-10-17.5 Road Name:
Road Construction: 0.06 mi 16 ft Subgrade ft ditch T.S. Update 04/15/10

200 Clearing and Grubbing: 0.3 acres	$644.94
Clearing:3.2 sta Grubbing:0.2 acres	
Slash Treatment:0.3 acres	
300 Excavation:	$1,006.38
400 Drainage:	$0.00
Culvert: 0 lf wt = 0 lbs factor = 1.0	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$0.00
Surfacing:	$11,390.90
1200 Quarry Name: Kincheloe 1-1/2"(-) 59 cy	
Quarry Name: Kincheloe 3"(-) 186 cy	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.2 acres	$90.67
Includes Small Quantity Factor of 1.34	
1900 Cattleguards:	$0.00
2100 RoadSide Brushing: 0.0 acres	$0.00
2200 Surface Treatment: 0.0 tons	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $149.30 Surf. $96.71	$246.01
Quarry Development:	$0.00
Total:	$13,378.88

Notes:
Quantities shown are estimates only and not pay items.
Surfacing Quantities shown are COMPACTED in place cubic yards.

Road Construction Worksheet

Road Number: 28-10-17.5 Road Name:

Section 200 Clearing and Grubbing:
  Clearing - Heavy: $43.68/sta x 3.16 sta = $138.03
  Grubbing - Heavy: $1490.99/acre x 0.20 acres = $298.20
  Scatter: $695.70/acre x 0.30 acres = $208.71

Subtotal: $644.94

Section 300 Excavation:
  Subgrade Compaction: 4 Sta/hr $24.00/sta. x 3.2 sta = $75.84
  Blading: $39.97/station x 3.16 stations = $126.31
  Excavation & Embankment
   Tractor: D7 with rippers 3.2 hr x $154.66/hr = $494.91
  Landing Construction
   Tractor: D7 with rippers 2 hr x $154.66/hr = $309.32

Subtotal: $1,006.38

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:

Subtotal: $0.00

Section 1200 Crushed under 1 1/2 Quarry Name: Kincheloe 1-1/2"(-)
 Comment: Top Rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.06mi	12ft	13.33ft	4in	2%	1	10ft	50ft	25ft	

  Rock Volume = 59cy
  Production: $9.08/cy x 59cy = $535.72
  Royalty: $9.25/cy x 59cy = $545.75
  Processing: $1.23/cy x 59cy = $72.57
  Compaction: $1.00/cy x 59cy = $59.00
  T11 Testing: $0.07/cy x 59cy = $4.13
  T27 Testing: $0.05/cy x 59cy = $2.95
  Basic Rock Haul cost: $0.87/cy x 59cy = $51.33
  Rock Haul +15% grades: $2.62/cy-mi x 59cy x 0.50 mi= $77.29
  Rock Haul -15% grades: $1.31/cy-mi x 59cy x 13.80 mi= $1,066.60
  Rock Haul St& Co Roads: $0.58/cy-mi x 59cy x 8.10 mi= $277.18
  Basic Water Haul cost: $0.57/cy x 59cy = $33.63
  Water Haul +15% grades: $0.25/cy-mi x 59cy x 0.50 mi= $7.38
  Water Haul -15% grades: $0.13/cy-mi x 59cy x 1.60 mi= $12.27

Section 1000 Crushed 1 1/2 to 3 in Quarry Name: Kincheloe 3"(-)
 Comment: Base Rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.06mi	13.33ft	16ft 8in	2%		1	10.67ft	50ft	25ft	

  Rock Volume = 136cy
  Production: $8.02/cy x 136cy = $1,090.72
  Royalty: $10.25/cy x 136cy = $1,394.00
  Processing: $1.23/cy x 136cy = $167.28
  Compaction: $1.00/cy x 136cy = $136.00
  T11 Testing: $0.07/cy x 136cy = $9.52
  T27 Testing: $0.05/cy x 136cy = $6.80
  Basic Rock Haul cost: $0.87/cy x 136cy = $118.32
  Rock Haul +15% grades: $2.62/cy-mi x 136cy x 0.50 mi= $178.16
  Rock Haul -15% grades: $1.31/cy-mi x 136cy x 13.80 mi= $2,458.61
  Rock Haul St& Co Roads: $0.58/cy-mi x 136cy x 8.10 mi= $638.93
  Basic Water Haul cost: $0.57/cy x 136cy = $77.52
  Water Haul +15% grades: $0.25/cy-mi x 136cy x 0.50 mi= $17.00

Road Number: 28-10-17.5 Continued

Water Haul -15% grades: $0.13/cy-mi x 136cy x 1.60 mi= $28.29

Section 1000 Crushed 1 1/2 to 3 in Quarry Name: Kincheloe 3"(-)
Comment: Landing Rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
									50cy

Rock Volume = 50cy
Production: $8.02/cy x 50cy = $401.00
Royalty: $10.25/cy x 50cy = $512.50
Processing: $1.23/cy x 50cy = $61.50
Compaction: $1.00/cy x 50cy = $50.00
T11 Testing: $0.07/cy x 50cy = $3.50
T27 Testing: $0.05/cy x 50cy = $2.50
Basic Rock Haul cost: $0.87/cy x 50cy = $43.50
Rock Haul +15% grades: $2.62/cy-mi x 50cy x 0.50 mi= $65.50
Rock Haul -15% grades: $1.31/cy-mi x 50cy x 13.80 mi= $903.90
Rock Haul St& Co Roads: $0.58/cy-mi x 50cy x 8.10 mi= $234.90
Basic Water Haul cost: $0.57/cy x 50cy = $28.50
Water Haul +15% grades: $0.25/cy-mi x 50cy x 0.50 mi= $6.25
Water Haul -15% grades: $0.13/cy-mi x 50cy x 1.60 mi= $10.40

Subtotal: $11,390.90

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:
Dry Method with Mulch: $453.33/acre x 0.20 acres = $90.67
Includes Small Quantity Factor of 1.34

Subtotal: $90.67

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:

Subtotal: $0.00

Section 2200 Surface Treatment:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
Construction - 2.97% of total Costs = $149.30
Surfacing - 2.94% by rock volume = $96.71

Subtotal: $246.01

Quarry Development:
Based on 2.94% of total rock volume

Subtotal:	$0.00
Total:	$13,378.88

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Wagon Rd Pilot Sale Date: 2/12/2012
Road Number: 28-10-17.6 Road Name:
Road Improvement: 0.13 mi 16 ft Subgrade 2 ft ditch T.S. Update 04/15/10

200 Clearing and Grubbing: 0.7 acres $1,378.23
Clearing:6.8 sta Grubbing:0.4 acres
Slash Treatment:0.7 acres

300 Excavation: $1,050.44

400 Drainage: $0.00
Culvert: 0 lf wt = 0 lbs factor = 1.0
DownSpout: 0 lf
PolyPipe: 0 lf

500 Renovation: $0.00

Surfacing: $21,806.97
1200 Quarry Name: Kincheloe 1-1/2"(-) 125 cy
Quarry Name: Kincheloe 3"(-) 337 cy

1300 Geotextiles: $0.00

1400 Slope Protection: $0.00

1800 Soil Stabilization: 0.4 acres $181.33
Includes Small Quantity Factor of 1.34

1900 Cattleguards: $0.00

2100 RoadSide Brushing: 0.0 acres $0.00

2200 Surface Treatment: 0.0 tons $0.00

2300 Engineering: 0.00 sta. $0.00

2400 Minor Concrete: $0.00

2500 Gabions: $0.00

8000 Miscellaneous: $0.00

Mobilization: Const. $277.58 Surf. $182.37..... $459.94

Quarry Development: $0.00

Total: $24,876.91

Notes:
Quantities shown are estimates only and not pay items.
Surfacing Quantities shown are COMPACTED in place cubic yards.

Road Construction Worksheet

Road Number: 28-10-17.6 Road Name:

Section 200 Clearing and Grubbing:
  Clearing - Heavy: $43.68/sta x 6.75 sta = $294.84
  Grubbing - Heavy: $1490.99/acre x 0.40 acres = $596.40
  Scatter: $695.70/acre x 0.70 acres = $486.99
Subtotal: $1,378.23

Section 300 Excavation:
  Subgrade Compaction: 4 Sta/hr $24.00/sta. x 6.8 sta = $162.00
  Blading: $39.97/station x 6.75 stations = $269.80
  Excavation
   Tractor: D7 with rippers 3 hr x $154.66/hr = $463.98
  Landing Construction
   Tractor: D7 with rippers 1 hr x $154.66/hr = $154.66
Subtotal: $1,050.44

Section 400 Drainage:
Subtotal: $0.00

Section 500 Renovation:
Subtotal: $0.00

Section 1200 Crushed under 1 1/2 Quarry Name: Kincheloe 1-1/2"(-)
 Comment: Top Rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.13mi	12ft	13.33ft	4in	10%					7cy

  Rock Volume = 125cy
  Production: $9.08/cy x 125cy = $1,135.00
  Royalty: $9.25/cy x 125cy = $1,156.25
  Processing: $1.23/cy x 125cy = $153.75
  Compaction: $1.00/cy x 125cy = $125.00
  T11 Testing: $0.07/cy x 125cy = $8.75
  T27 Testing: $0.05/cy x 125cy = $6.25
  Basic Rock Haul cost: $0.87/cy x 125cy = $108.75
  Rock Haul +15% grades: $2.62/cy-mi x 125cy x 0.60 mi= $196.50
  Rock Haul -15% grades: $1.31/cy-mi x 125cy x 14.10 mi= $2,308.88
  Rock Haul St& Co Roads: $0.58/cy-mi x 125cy x 8.10 mi= $587.25
  Basic Water Haul cost: $0.57/cy x 125cy = $71.25
  Water Haul +15% grades: $0.25/cy-mi x 125cy x 0.60 mi= $18.75
  Water Haul -15% grades: $0.13/cy-mi x 125cy x 1.80 mi= $29.25

Section 1000 Crushed 1 1/2 to 3 in Quarry Name: Kincheloe 3"(-)
 Comment: Base Rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.13mi	13.33ft	16ft 8in		10%					14cy

  Rock Volume = 287cy
  Production: $8.02/cy x 287cy = $2,301.74
  Royalty: $10.25/cy x 287cy = $2,941.75
  Processing: $1.23/cy x 287cy = $353.01
  Compaction: $1.00/cy x 287cy = $287.00
  T11 Testing: $0.07/cy x 287cy = $20.09
  T27 Testing: $0.05/cy x 287cy = $14.35
  Basic Rock Haul cost: $0.87/cy x 287cy = $249.69
  Rock Haul +15% grades: $2.62/cy-mi x 287cy x 0.60 mi= $451.16
  Rock Haul -15% grades: $1.31/cy-mi x 287cy x 14.10 mi= $5,301.18
  Rock Haul St& Co Roads: $0.58/cy-mi x 287cy x 8.10 mi= $1,348.33
  Basic Water Haul cost: $0.57/cy x 287cy = $163.59
  Water Haul +15% grades: $0.25/cy-mi x 287cy x 0.60 mi= $43.05

Road Number: 28-10-17.6 Continued

Water Haul -15% grades: $0.13/cy-mi x 287cy x 1.80 mi= $67.16

Section 1000 Crushed 1 1/2 to 3 in Quarry Name: Kincheloe 3"(-)
Comment: Landing Rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
									50cy

Rock Volume = 50cy
Production: $8.02/cy x 50cy = $401.00
Royalty: $10.25/cy x 50cy = $512.50
Processing: $1.23/cy x 50cy = $61.50
Compaction: $1.00/cy x 50cy = $50.00
T11 Testing: $0.07/cy x 50cy = $3.50
T27 Testing: $0.05/cy x 50cy = $2.50
Basic Rock Haul cost: $0.87/cy x 50cy = $43.50
Rock Haul +15% grades: $2.62/cy-mi x 50cy x 0.60 mi= $78.60
Rock Haul -15% grades: $1.31/cy-mi x 50cy x 14.10 mi= $923.55
Rock Haul St& Co Roads: $0.58/cy-mi x 50cy x 8.10 mi= $234.90
Basic Water Haul cost: $0.57/cy x 50cy = $28.50
Water Haul +15% grades: $0.25/cy-mi x 50cy x 0.60 mi= $7.50
Water Haul -15% grades: $0.13/cy-mi x 50cy x 1.80 mi= $11.70

Subtotal: $21,806.97

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:
Dry Method with Mulch: $453.33/acre x 0.40 acres = $181.33
Includes Small Quantity Factor of 1.34

Subtotal: $181.33

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:

Subtotal: $0.00

Section 2200 Surface Treatment:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
Construction - 5.53% of total Costs = $277.58
Surfacing - 5.55% by rock volume = $182.37

Subtotal: $459.94

Quarry Development:
Based on 5.55% of total rock volume

Subtotal:	$0.00
Total:	$24,876.91

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Wagon Rd Pilot Sale Date: 2/12/2012
Road Number: 28-10-17.7 Road Name:
Road Construction: 0.31 mi 16 ft Subgrade 2 ft ditch T.S. Update 04/15/10

200 Clearing and Grubbing: 1.6 acres	$3,173.55
Clearing:16.5 sta Grubbing:0.9 acres	
Slash Treatment:1.6 acres	
300 Excavation:	$3,913.52
400 Drainage:	$0.00
Culvert: 0 lf wt = 0 lbs factor = 1.0	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$0.00
Surfacing:	$50,281.82
1200 Quarry Name: Kincheloe 1-1/2"(-) 307 cy	
Quarry Name: Kincheloe 3"(-) 755 cy	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.9 acres	$408.00
Includes Small Quantity Factor of 1.34	
1900 Cattleguards:	$0.00
2100 RoadSide Brushing: 0.0 acres	$0.00
2200 Surface Treatment: 0.0 tons	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $656.82 Surf. $419.21	$1,076.03
Quarry Development:	$0.00
Total:	$58,852.91

Notes:
Quantities shown are estimates only and not pay items.
Surfacing Quantities shown are COMPACTED in place cubic yards.

Road Construction Worksheet

Road Number: 28-10-17.7 Road Name:

Section 200 Clearing and Grubbing:
  Clearing - Heavy: $43.68/sta x 16.45 sta = $718.54
  Grubbing - Heavy: $1490.99/acre x 0.90 acres = $1,341.89
  Scatter: $695.70/acre x 1.60 acres = $1,113.12

Subtotal: $3,173.55

Section 300 Excavation:
  Subgrade Compaction: 4 Sta/hr $24.00/sta. x 16.5 sta = $394.80
  Blading: $39.97/station x 16.45 stations = $657.51
  Excavation & Embankment
   Tractor: D7 with rippers 16.5 hr x $154.66/hr = $2,551.89
  Landing Construction
   Tractor: D7 with rippers 2 hr x $154.66/hr = $309.32

Subtotal: $3,913.52

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:

Subtotal: $0.00

Section 1200 Crushed under 1 1/2 Quarry Name: Kincheloe 1-1/2"(-)
 Comment: Top Rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.31mi	12ft	13.33ft	4in	10%	2	10ft	50ft	25ft	7cy

  Rock Volume = 307cy
  Production: $9.08/cy x 307cy = $2,787.56
  Royalty: $9.25/cy x 307cy = $2,839.75
  Processing: $1.23/cy x 307cy = $377.61
  Compaction: $1.00/cy x 307cy = $307.00
  T11 Testing: $0.07/cy x 307cy = $21.49
  T27 Testing: $0.05/cy x 307cy = $15.35
  Basic Rock Haul cost: $0.87/cy x 307cy = $267.09
  Rock Haul +15% grades: $2.62/cy-mi x 307cy x 0.60 mi= $482.60
  Rock Haul -15% grades: $1.31/cy-mi x 307cy x 14.20 mi= $5,710.81
  Rock Haul St& Co Roads: $0.58/cy-mi x 307cy x 8.10 mi= $1,442.29
  Basic Water Haul cost: $0.57/cy x 307cy = $174.99
  Water Haul +15% grades: $0.25/cy-mi x 307cy x 0.60 mi= $46.05
  Water Haul -15% grades: $0.13/cy-mi x 307cy x 1.90 mi= $75.83

Section 1000 Crushed 1 1/2 to 3 in Quarry Name: Kincheloe 3"(-)
 Comment: Base Rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.31mi	13.33ft	16ft 8in	10%		2	10.67ft	50ft	25ft	14cy

  Rock Volume = 705cy
  Production: $8.02/cy x 705cy = $5,654.10
  Royalty: $10.25/cy x 705cy = $7,226.25
  Processing: $1.23/cy x 705cy = $867.15
  Compaction: $1.00/cy x 705cy = $705.00
  T11 Testing: $0.07/cy x 705cy = $49.35
  T27 Testing: $0.05/cy x 705cy = $35.25
  Basic Rock Haul cost: $0.87/cy x 705cy = $613.35
  Rock Haul +15% grades: $2.62/cy-mi x 705cy x 0.60 mi= $1,108.26
  Rock Haul -15% grades: $1.31/cy-mi x 705cy x 14.20 mi= $13,114.41
  Rock Haul St& Co Roads: $0.58/cy-mi x 705cy x 8.10 mi= $3,312.09
  Basic Water Haul cost: $0.57/cy x 705cy = $401.85
  Water Haul +15% grades: $0.25/cy-mi x 705cy x 0.60 mi= $105.75

Road Number: 28-10-17.7 Continued

Water Haul -15% grades: $0.13/cy-mi x 705cy x 1.90 mi= $174.14

Section 1000 Crushed 1 1/2 to 3 in Quarry Name: Kincheloe 3"(-)
Comment: Landing Rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
									50cy

Rock Volume = 50cy
Production: $8.02/cy x 50cy = $401.00
Royalty: $10.25/cy x 50cy = $512.50
Processing: $1.23/cy x 50cy = $61.50
Compaction: $1.00/cy x 50cy = $50.00
T11 Testing: $0.07/cy x 50cy = $3.50
T27 Testing: $0.05/cy x 50cy = $2.50
Basic Rock Haul cost: $0.87/cy x 50cy = $43.50
Rock Haul +15% grades: $2.62/cy-mi x 50cy x 0.60 mi= $78.60
Rock Haul -15% grades: $1.31/cy-mi x 50cy x 14.20 mi= $930.10
Rock Haul St& Co Roads: $0.58/cy-mi x 50cy x 8.10 mi= $234.90
Basic Water Haul cost: $0.57/cy x 50cy = $28.50
Water Haul +15% grades: $0.25/cy-mi x 50cy x 0.60 mi= $7.50
Water Haul -15% grades: $0.13/cy-mi x 50cy x 1.90 mi= $12.35

Subtotal: $50,281.82

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:
Dry Method with Mulch: $453.33/acre x 0.90 acres = $408.00
Includes Small Quantity Factor of 1.34

Subtotal: $408.00

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:

Subtotal: $0.00

Section 2200 Surface Treatment:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
Construction - 13.08% of total Costs = $656.82
Surfacing - 12.76% by rock volume = $419.21

Subtotal: $1,076.03

Quarry Development:
Based on 12.76% of total rock volume

Subtotal:	$0.00
Total:	$58,852.91

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Wagon Rd Pilot Sale Date: 2/12/2012
Road Number: 28-10-17.8 Road Name:
Road Construction: 0.05 mi 15 ft Subgrade ft ditch T.S. Update 04/15/10

200 Clearing and Grubbing: 0.3 acres	$624.84
Clearing:2.7 sta Grubbing:0.2 acres	
Slash Treatment:0.3 acres	
300 Excavation:	$791.36
400 Drainage:	$0.00
Culvert: 0 lf wt = 0 lbs factor = 1.0	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$0.00
Surfacing:	$6,513.32
Quarry Name: Kincheloe 3"(-) 138 cy	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.2 acres	$90.67
Includes Small Quantity Factor of 1.34	
1900 Cattleguards:	$0.00
2100 RoadSide Brushing: 0.0 acres	$0.00
2200 Surface Treatment: 0.0 tons	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $91.17 Surf. $54.47	$145.65
Quarry Development:	$0.00
Total:	$8,165.84

Notes:
Quantities shown are estimates only and not pay items.
Surfacing Quantities shown are COMPACTED in place cubic yards.

Road Construction Worksheet

Road Number: 28-10-17.8 Road Name:

Section 200 Clearing and Grubbing:
  Clearing - Heavy: $43.68/sta x 2.70 sta = $117.94
  Grubbing - Heavy: $1490.99/acre x 0.20 acres = $298.20
  Scatter: $695.70/acre x 0.30 acres = $208.71

Subtotal: $624.84

Section 300 Excavation:
  Subgrade Compaction: 4 Sta/hr $24.00/sta. x 2.7 sta = $64.80
  Blading: $39.97/station x 2.70 stations = $107.92
  Excavation & Embankment
   Tractor: D7 with rippers 3 hr x $154.66/hr = $463.98
  Landing Construction
   Tractor: D7 with rippers 1 hr x $154.66/hr = $154.66

Subtotal: $791.36

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:

Subtotal: $0.00

Section 1000 Crushed 1 1/2 to 3 in Quarry Name: Kincheloe 3"(-)
 Comment: Base Rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.05mi	12ft	14.67ft	8in	2%					

  Rock Volume = 88cy
  Production: $8.02/cy x 88cy = $705.76
  Royalty: $10.25/cy x 88cy = $902.00
  Processing: $1.23/cy x 88cy = $108.24
  Compaction: $1.00/cy x 88cy = $88.00
  T11 Testing: $0.07/cy x 88cy = $6.16
  T27 Testing: $0.05/cy x 88cy = $4.40
  Basic Rock Haul cost: $0.87/cy x 88cy = $76.56
  Rock Haul +15% grades: $2.62/cy-mi x 88cy x 0.60 mi= $138.34
  Rock Haul -15% grades: $1.31/cy-mi x 88cy x 14.10 mi= $1,625.45
  Rock Haul St& Co Roads: $0.58/cy-mi x 88cy x 8.10 mi= $413.42
  Basic Water Haul cost: $0.57/cy x 88cy = $50.16
  Water Haul +15% grades: $0.25/cy-mi x 88cy x 0.60 mi= $13.20
  Water Haul -15% grades: $0.13/cy-mi x 88cy x 1.90 mi= $21.74

Section 1000 Crushed 1 1/2 to 3 in Quarry Name: Kincheloe 3"(-)
 Comment: Landing Rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
									50cy

  Rock Volume = 50cy
  Production: $8.02/cy x 50cy = $401.00
  Royalty: $10.25/cy x 50cy = $512.50
  Processing: $1.23/cy x 50cy = $61.50
  Compaction: $1.00/cy x 50cy = $50.00
  T11 Testing: $0.07/cy x 50cy = $3.50
  T27 Testing: $0.05/cy x 50cy = $2.50
  Basic Rock Haul cost: $0.87/cy x 50cy = $43.50
  Rock Haul +15% grades: $2.62/cy-mi x 50cy x 0.60 mi= $78.60
  Rock Haul -15% grades: $1.31/cy-mi x 50cy x 14.10 mi= $923.55
  Rock Haul St& Co Roads: $0.58/cy-mi x 50cy x 8.10 mi= $234.90
  Basic Water Haul cost: $0.57/cy x 50cy = $28.50
  Water Haul +15% grades: $0.25/cy-mi x 50cy x 0.60 mi= $7.50

Road Number: 28-10-17.8 Continued

Water Haul -15% grades: $0.13/cy-mi x 50cy x 1.90 mi= $12.35

Subtotal: $6,513.32

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:
Dry Method with Mulch: $453.33/acre x 0.20 acres = $90.67
Includes Small Quantity Factor of 1.34

Subtotal: $90.67

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:

Subtotal: $0.00

Section 2200 Surface Treatment:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
Construction - 1.82% of total Costs = $91.17
Surfacing - 1.66% by rock volume = $54.47

Subtotal: $145.65

Quarry Development:
Based on 1.66% of total rock volume

Subtotal: $0.00

Total: $8,165.84

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Wagon Rd Pilot Sale Date: 2/12/2012
Road Number: 28-10-8.1 Road Name:
Road Renovation: 0.09 mi 16 ft Subgrade 2 ft ditch T.S. Update 04/15/10

200 Clearing and Grubbing: 0.0 acres	$0.00
Clearing:0.0 sta Grubbing:0.0 acres	
Slash Treatment:0.0 acres	
300 Excavation:	$0.00
400 Drainage:	$0.00
Culvert: 0 lf wt = 0 lbs factor = 1.0	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$81.47
Blading 0.09 mi	
Surfacing:	$3,395.07
1200 Quarry Name: Kincheloe 1-1/2"(-) 76 cy	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.0 acres	$0.00
1900 Cattleguards:	$0.00
2100 RoadSide Brushing: 0.2 acres	$62.43
2200 Surface Treatment: 0.0 tons	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $40.23 Surf. $30.00	$70.23
Quarry Development:	$0.00
Total:	$3,609.20

Notes:
Quantities shown are estimates only and not pay items.
Surfacing Quantities shown are COMPACTED in place cubic yards.

Road Construction Worksheet

Road Number: 28-10-8.1 Road Name:

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:

Subtotal: $0.00

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:
  Blading: $459.60/mi x 0.09 mi = $41.36
  Pull Ditches: $153.20/mi x 0.09 mi = $13.79
  Clean Culverts: $292.45/mi x 0.09 mi = $26.32

Subtotal: $81.47

Section 1200 Crushed under 1 1/2 Quarry Name: Kincheloe 1-1/2"(-)

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.09mi	12ft	13.33ft	4in	3%					

  Rock Volume = 76cy
  Production: $9.08/cy x 76cy = $690.08
  Royalty: $9.25/cy x 76cy = $703.00
  Processing: $1.23/cy x 76cy = $93.48
  Compaction: $1.00/cy x 76cy = $76.00
  T11 Testing: $0.07/cy x 76cy = $5.32
  T27 Testing: $0.05/cy x 76cy = $3.80
  Basic Rock Haul cost: $0.87/cy x 76cy = $66.12
  Rock Haul -15% grades: $1.31/cy-mi x 76cy x 13.50 mi= $1,344.06
  Rock Haul St& Co Roads: $0.58/cy-mi x 76cy x 8.10 mi= $357.05
  Basic Water Haul cost: $0.57/cy x 76cy = $43.32
  Water Haul -15% grades: $0.13/cy-mi x 76cy x 1.30 mi= $12.84

Subtotal: $3,395.07

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:

Subtotal: $0.00

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:
  Brushing width Left: 10ft. Right: 10ft.
  RoadSide Brushing Medium: $312.14/acre x 0.20 acres = $62.43

Subtotal: $62.43

Section 2200 Surface Treatment:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
Construction - 0.80% of total Costs = $40.23
Surfacing - 0.91% by rock volume = $30.00

Subtotal: $70.23

Quarry Development:
Based on 0.91% of total rock volume

Subtotal: $0.00

Total: $3,609.20

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Wagon Rd Pilot Sale Date: 2/12/2012
Road Number: 28-10-8.3 Road Name:
Road Improvement: 0.18 mi 16 ft Subgrade 2 ft ditch T.S. Update 04/15/10

200 Clearing and Grubbing: 0.0 acres	$129.17
Clearing:0.0 sta Grubbing:0.4 acres	
Slash Treatment:0.0 acres	
300 Excavation:	$277.37
400 Drainage:	$1,110.90
Culvert: 30 lf wt = 720 lbs factor = 1.0	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$414.46
Blading 0.18 mi	
Surfacing:	$29,771.12
1200 Quarry Name: Kincheloe 1-1/2"(-) 156 cy	
Quarry Name: Kincheloe 3"(-) 503 cy	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.4 acres	$181.33
Includes Small Quantity Factor of 1.34	
1900 Cattleguards:	$0.00
2100 RoadSide Brushing: 0.4 acres	$249.72
2200 Surface Treatment: 0.0 tons	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $365.30 Surf. $260.13	$625.44
Quarry Development:	$0.00
Total:	$32,759.50

Notes:
Quantities shown are estimates only and not pay items.
Surfacing Quantities shown are COMPACTED in place cubic yards.

Road Construction Worksheet

Road Number: 28-10-8.3 Road Name:

Section 200 Clearing and Grubbing:
  Grubbing - Light: $369.06/acre x 0.35 acres = $129.17
Subtotal: $129.17

Section 300 Excavation:
  Rebuild Road Approach
   Excavator 225 (1.5cy) 2 hr x $90.68/hr = $181.36
   Vib roller: Steel drum 1 hr x $96.01/hr = $96.01
Subtotal: $277.37

Section 400 Drainage:
  Aluminized 24 inch 14 ga 30 lf x $37.03/lf x 1 = $1,110.90
Subtotal: $1,110.90

Section 500 Renovation:
  Blading: $459.60/mi x 0.18 mi = $82.73
  Pull Ditches: $153.20/mi x 0.18 mi = $27.58
  Compaction: $1689.74/mi x 0.18 mi = $304.15
Subtotal: $414.46

Section 1200 Crushed under 1 1/2 Quarry Name: Kincheloe 1-1/2"(-)
 Comment: Top Rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.18mi	12ft	13.25ft	4in						

  Rock Volume = 148cy
  Production: $9.08/cy x 148cy = $1,343.84
  Royalty: $9.25/cy x 148cy = $1,369.00
  Processing: $1.23/cy x 148cy = $182.04
  Compaction: $1.00/cy x 148cy = $148.00
  T11 Testing: $0.07/cy x 148cy = $10.36
  T27 Testing: $0.05/cy x 148cy = $7.40
  Basic Rock Haul cost: $0.87/cy x 148cy = $128.76
  Rock Haul -15% grades: $1.31/cy-mi x 148cy x 13.90 mi= $2,694.93
  Rock Haul St& Co Roads: $0.58/cy-mi x 148cy x 8.10 mi= $695.30
  Basic Water Haul cost: $0.57/cy x 148cy = $84.36
  Water Haul -15% grades: $0.13/cy-mi x 148cy x 1.50 mi= $28.86

Section 1200 Crushed under 1 1/2 Quarry Name: Kincheloe 1-1/2"(-)
 Comment: Pipe Rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
									8cy

  Rock Volume = 8cy
  Production: $9.08/cy x 8cy = $72.64
  Royalty: $9.25/cy x 8cy = $74.00
  Processing: $1.23/cy x 8cy = $9.84
  Compaction: $1.00/cy x 8cy = $8.00
  T11 Testing: $0.07/cy x 8cy = $0.56
  T27 Testing: $0.05/cy x 8cy = $0.40
  Basic Rock Haul cost: $0.87/cy x 8cy = $6.96
  Rock Haul -15% grades: $1.31/cy-mi x 8cy x 13.90 mi= $145.67
  Rock Haul St& Co Roads: $0.58/cy-mi x 8cy x 8.10 mi= $37.58
  Basic Water Haul cost: $0.57/cy x 8cy = $4.56
  Water Haul -15% grades: $0.13/cy-mi x 8cy x 1.50 mi= $1.56

Section 1000 Crushed 1 1/2 to 3 in Quarry Name: Kincheloe 3"(-)

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.18mi	13.25ft	16ft 8in							80cy

Rock Volume = 423cy
Production: $8.02/cy x 423cy = $3,392.46
Royalty: $10.25/cy x 423cy = $4,335.75
Processing: $1.23/cy x 423cy = $520.29
Compaction: $1.00/cy x 423cy = $423.00
T11 Testing: $0.07/cy x 423cy = $29.61
T27 Testing: $0.05/cy x 423cy = $21.15
Basic Rock Haul cost: $0.87/cy x 423cy = $368.01
Rock Haul -15% grades: $1.31/cy-mi x 423cy x 13.90 mi= $7,702.41
Rock Haul St& Co Roads: $0.58/cy-mi x 423cy x 8.10 mi= $1,987.25
Basic Water Haul cost: $0.57/cy x 423cy = $241.11
Water Haul -15% grades: $0.13/cy-mi x 423cy x 1.50 mi= $82.49

Section 1000 Crushed 1 1/2 to 3 in Quarry Name: Kincheloe 3"(-)
Comment: Landing Rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
									80cy

Rock Volume = 80cy
Production: $8.02/cy x 80cy = $641.60
Royalty: $10.25/cy x 80cy = $820.00
Processing: $1.23/cy x 80cy = $98.40
Compaction: $1.00/cy x 80cy = $80.00
T11 Testing: $0.07/cy x 80cy = $5.60
T27 Testing: $0.05/cy x 80cy = $4.00
Basic Rock Haul cost: $0.87/cy x 80cy = $69.60
Rock Haul -15% grades: $1.31/cy-mi x 80cy x 13.90 mi= $1,456.72
Rock Haul St& Co Roads: $0.58/cy-mi x 80cy x 8.10 mi= $375.84
Basic Water Haul cost: $0.57/cy x 80cy = $45.60
Water Haul -15% grades: $0.13/cy-mi x 80cy x 1.50 mi= $15.60

Subtotal: $29,771.12

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:
Dry Method with Mulch: $453.33/acre x 0.40 acres = $181.33
Includes Small Quantity Factor of 1.34

Subtotal: $181.33

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:
Brushing width Left: 10ft. Right: 10ft.
RoadSide Brushing Heavy: $624.29/acre x 0.40 acres = $249.72

Subtotal: $249.72

Section 2200 Surface Treatment:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
Construction - 7.28% of total Costs = $365.30
Surfacing - 7.92% by rock volume = $260.13

Subtotal: $625.44

Quarry Development:
Based on 7.92% of total rock volume

Subtotal: $0.00

Total: $32,759.50

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Wagon Rd Pilot Sale Date: 2/12/2012
Road Number: 28-10-9.0 Road Name: Channey Road
Road Renovation: 2.75 mi 16 ft Subgrade 2 ft ditch T.S. Update 04/15/10

200 Clearing and Grubbing: 0.0 acres	$0.00
Clearing:0.0 sta Grubbing:0.0 acres	
Slash Treatment:0.0 acres	
300 Excavation:	$0.00
400 Drainage:	$0.00
Culvert: 0 lf wt = 0 lbs factor = 1.0	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$3,717.31
Blading 2.75 mi	
Surfacing:	$17,578.90
1200 Quarry Name: Kincheloe 1-1/2"(-) 239 cy	
Quarry Name: Kincheloe 3"(-) 160 cy	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.3 acres	$336.00
Includes Small Quantity Factor of 1.34	
1900 Cattleguards:	$0.00
2100 RoadSide Brushing: 6.7 acres	$2,091.34
2200 Surface Treatment: 0.0 tons	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $269.69 Surf. $157.50	$427.19
Quarry Development:	$0.00
Total:	$24,150.75

Notes:
Quantities shown are estimates only and not pay items.
Surfacing Quantities shown are COMPACTED in place cubic yards.

Road Construction Worksheet

Road Number: 28-10-9.0 Road Name: Channey Road

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:

Subtotal: $0.00

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:
- Blading: $459.60/mi x 2.75 mi = $1,263.90
- Scarification: $766.01/mi x 0.50 mi = $383.01
- Pull Ditches: $153.20/mi x 2.75 mi = $421.30
- Compaction: $1689.74/mi x 0.50 mi = $844.87
- Clean Culverts: $292.45/mi x 2.75 mi = $804.24

Subtotal: $3,717.31

Section 1200 Crushed under 1 1/2 Quarry Name: Kincheloe 1-1/2"(-)
Comment: Top Rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.19mi	12ft	13.33ft	4in	5%					

- Rock Volume = 164cy
- Production: $9.08/cy x 164cy = $1,489.12
- Royalty: $9.25/cy x 164cy = $1,517.00
- Processing: $1.23/cy x 164cy = $201.72
- Compaction: $1.00/cy x 164cy = $164.00
- T11 Testing: $0.07/cy x 164cy = $11.48
- T27 Testing: $0.05/cy x 164cy = $8.20
- Basic Rock Haul cost: $0.87/cy x 164cy = $142.68
- Rock Haul -15% grades: $1.31/cy-mi x 164cy x 12.30 mi= $2,642.53
- Rock Haul St& Co Roads: $0.58/cy-mi x 164cy x 8.10 mi= $770.47
- Basic Water Haul cost: $0.57/cy x 164cy = $93.48
- Water Haul -15% grades: $0.13/cy-mi x 164cy x 0.20 mi= $4.26

Section 1200 Crushed under 1 1/2 Quarry Name: Kincheloe 1-1/2"(-)
Comment: Spot Rock (100 CY Truck Measure)

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
									75cy

- Rock Volume = 75cy
- Production: $9.08/cy x 75cy = $681.00
- Royalty: $9.25/cy x 75cy = $693.75
- Processing: $1.23/cy x 75cy = $92.25
- Compaction: $1.00/cy x 75cy = $75.00
- T11 Testing: $0.07/cy x 75cy = $5.25
- T27 Testing: $0.05/cy x 75cy = $3.75
- Basic Rock Haul cost: $0.87/cy x 75cy = $65.25
- Rock Haul -15% grades: $1.31/cy-mi x 75cy x 13.60 mi= $1,336.20
- Rock Haul St& Co Roads: $0.58/cy-mi x 75cy x 8.10 mi= $352.35
- Basic Water Haul cost: $0.57/cy x 75cy = $42.75
- Water Haul -15% grades: $0.13/cy-mi x 75cy x 1.10 mi= $10.73

Section 1000 Crushed 1 1/2 to 3 in Quarry Name: Kincheloe 3"(-)

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
									160cy

- Rock Volume = 160cy
- Production: $8.02/cy x 160cy = $1,283.20
- Royalty: $10.25/cy x 160cy = $1,640.00

Road Number: 28-10-9.0 Channey Road Continued

Processing: $1.23/cy x 160cy = $196.80
Compaction: $1.00/cy x 160cy = $160.00
T11 Testing: $0.07/cy x 160cy = $11.20
T27 Testing: $0.05/cy x 160cy = $8.00
Basic Rock Haul cost: $0.87/cy x 160cy = $139.20
Rock Haul -15% grades: $1.31/cy-mi x 160cy x 13.70 mi= $2,871.52
Rock Haul St& Co Roads: $0.58/cy-mi x 160cy x 8.10 mi= $751.68
Basic Water Haul cost: $0.57/cy x 160cy = $91.20
Water Haul -15% grades: $0.13/cy-mi x 160cy x 1.10 mi= $22.88

Subtotal: $17,578.90

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:
Dry Method with Mulch: $453.33/acre x 0.30 acres = $136.00
Includes Small Quantity Factor of 1.34
Sediment Delivery Prevention
Silt Fence Barrier 40 LF x $5.00/LF = $200.00

Subtotal: $336.00

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:
Brushing width Left: 10ft. Right: 10ft.
RoadSide Brushing Medium: $312.14/acre x 6.70 acres = $2,091.34

Subtotal: $2,091.34

Section 2200 Surface Treatment:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
Construction - 5.37% of total Costs = $269.69
Surfacing - 4.79% by rock volume = $157.50

Subtotal: $427.19

Quarry Development:
Based on 4.79% of total rock volume

Subtotal: $0.00

Total: $24,150.75

670 CY Maintenance Rock
240 Tons of Boulders for 8 Barriers

EXHIBIT

North

8

9

16

17

CBWR

Chaney Rd.

-9.0A

-9.0B1

-9.0B2

-9.0C

-9.0D

-9.2A

-9.2B

-9.3

-9.4

-9.7

28-10-9.4

Boulder Barrier

-8.1

-8.3

-17.0

-17.1

-17.2

-17.4

-17.5

-17.6

-17.8

28-10-17.3

28-10-17.7

T 28 S

R 10 W

BLM Fee Maintained

Operator Maintained

Boulder Barriers

Road Segment Break

UNITED STATES DEPARTMENT OF THE INTERIO
BUREAU OF LAND MANAGEMENT
COOS BAY DISTRICT OREGON

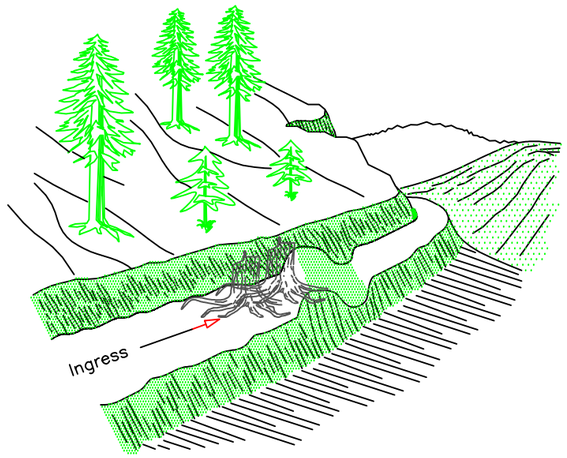
Wagon Road Pilot TS

Maintenance Detail

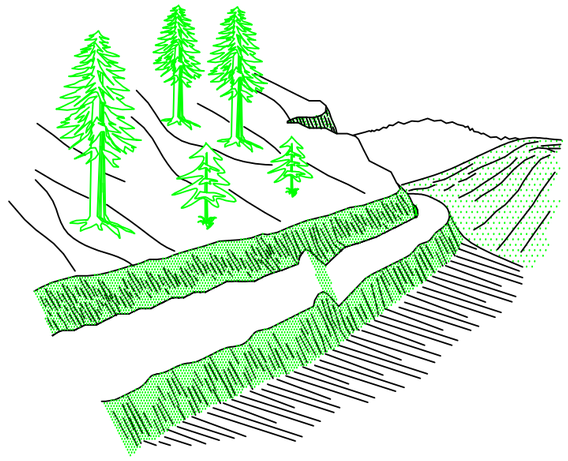
DESIGNED Ronald Shipp
REVIEWED Joy Menguita
APPROVED Kathy Hoffine

DRAWN: RCS	SCALE: None
DATE: 6/11	SHEET 1 OF 10
DRAWING NO: NONE	

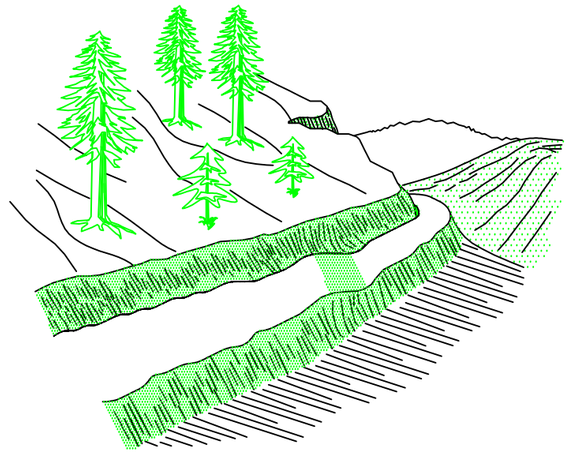
EXHIBIT D



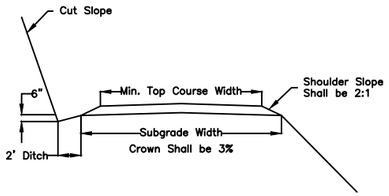
EARTH BERM BARRIER



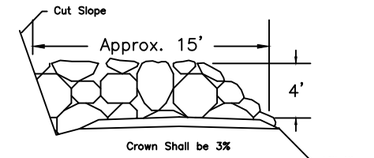
WATER BAR



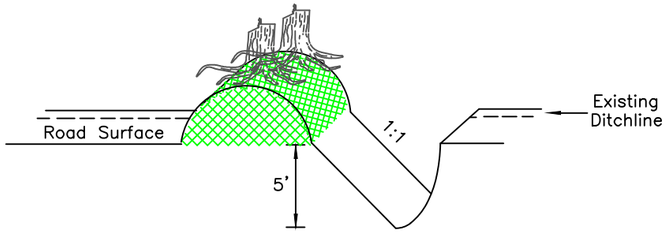
WATER DIP

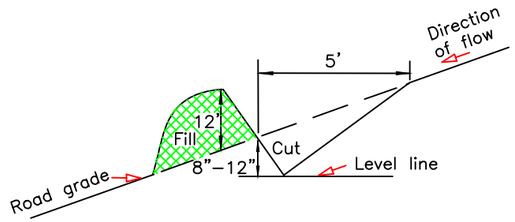


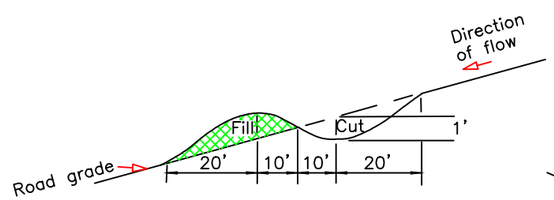
Typical Surfacing Section

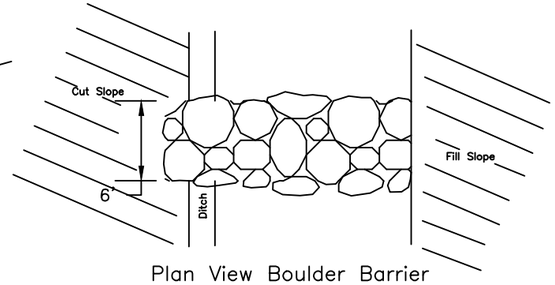


Typical Boulder Barrier







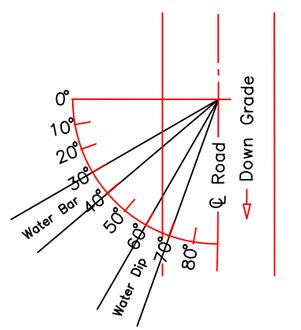


Plan View Boulder Barrier

NOTES

1. All barriers, water bars, and water dips, shall be constructed as shown above, prior to October 1.
2. Exact structure locations will be agreed upon with the Authorized Officer prior to construction.
3. All water bars and water dips shall be cut into the roadbed from the ditchline, using ditchline as starting elevation for structure invert.
4. Ditchlines shall be blocked with excavated material (ditch dam) downgrade from all water bars and water dips, to deflect water flow into road-crossing trench.
5. The invert grade of water bars and water dips shall be outsloped a minimum of 5%, or 2% more than road grade, whichever is greater.
6. All water bars shall be skewed 30°-40° downhill (from perpendicular). All water dips shall be skewed 60°-70° downhill (from perpendicular). See skew diagram.
7. All water bar and water dip berms (fills) shall be compacted to 85% of maximum density. Water dips shall be built for vehicle passage without degradation.
8. Additional rip rap barrier width is required on flat areas (adjacent to road surface) to achieve road blockage. Barrier height shall be a minimum of 4'.
9. Minimum of 30 tons of boulders shall be used per boulder barrier.
10. Boulders shall be hard rock, open graded from to 28" to 36" equivalent diameter.

SKEW DIAGRAM



WATER DIP/BAR SPACING

ROAD GRADE	Erosion Class		
	Maximum Spacing (in feet)		
%	High	Moderate	Low
3-5	500	500	500
6-10	400	400	400
11-15	300	300	300
16-20	100	100	100
21-25	50	50	50

* ON GRADES IN EXCESS OF 14% CONSTRUCT WATER BARS.

ALWAYS THINK SAFETY

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
COOS BAY DISTRICT OREGON

BARRIER AND EROSION CONTROL DETAIL

DESIGNED Ronald Shipp
REVIEWED Joy Menguita
APPROVED Kathy Hoffine

DRAWN JB/RCS	SCALE NONE
DATE 10/11	SHEET 2 OF 10

Q:\ENG\MYRTLE\TS\Wagon Road Pilot Project\Drawings\Wagon Road Pilot New Barrier.dwg

SPECIAL DETAILS

Seasonal Restrictions

Exhibit D work shall coincide with the Seasonal Restrictions specified in the Special Details of the Exhibit C. In addition, specified roads, spurs, and landings shall be decommissioned after hauling is complete, and prior to the first rains of the wet season, but no later than October 15. Coordination with the BLM Area Fuels Management Specialist and the Silviculturalist, for the purposes of facilitating access to areas that require burning and/or planting, is the responsibility of the Purchaser.

Equipment Washing & Spill Containment

Equipment usage to accomplish the work specified in this Exhibit D shall be in accordance with the Equipment Washing and Spill Containment kit specifications located in the Special Details of the Exhibit C.

Soil Stabilization

All disturbed or exposed soil, within the spur/landing right-of-way, or connected with the road construction, renovation, improvement, or decommissioning of this sale, shall have seed, fertilizer, and mulch applied in accordance with the 1800 series of the Exhibit C.

Waterbars & Waterdips

Waterbars and waterdips shall be constructed in accordance with the Barrier and Erosion Control Detail, sheet 2.

Road Barriers

Earth Berm Barriers and Boulder Barriers shall be constructed at specified locations, and in accordance with the Barrier and Erosion Control Details, and shall facilitate drainage. Additional barrier lengths are required when adjacent flat areas exist at barrier locations, to achieve effective road blockage. Single components of the boulder barrier shall be of sufficient size to prevent pickup-assisted movement. Boulders shall have a minimum durability of 35, as determined by AASHTO T210. Load tickets are required. Seed, fertilizer, and mulch shall be applied to all exposed soil after construction.

Road Decommissioning Narratives

The following roads and landings shall be decommissioned in strict accordance with this Exhibit D, and the narratives below. Spurs and landings shall be decommissioned after hauling is complete, and before the first rains of the wet season, but no later than October 15.

28-10-8.3

Access to this road shall be blocked with a boulder barrier, at the junction with Road No. 28-10-8.1. Waterbars shall be constructed along the entire length of the road. Seed, fertilizer, and mulch shall be applied to all disturbed/bare areas, including the landing areas.

28-10-9.0

Seed, fertilize, and mulch any disturbed/bare areas, including the landing area.

28-10-17.0

Waterdips shall be constructed along the entire length of the road. Seed, fertilizer, and mulch shall be applied to all disturbed/bare areas, including the landing areas. A boulder barrier shall be constructed at sta. 59+50 – at the end of the rocked surface, to block access to the natural surfaced portion of the road.

28-10-17.1

Access to this road shall be blocked with a boulder barrier, at the junction with Road No. 28-10-17.0. Waterbars shall be constructed along the entire length of the road. Seed, fertilizer, and mulch shall be applied to all disturbed/bare areas, including the landing area.

28-10-17.2

Access to this road shall be blocked with a boulder barrier, at the junction with Road No. 28-10-17.0. Waterbars shall be constructed along the entire length of the road. Seed, fertilizer, and mulch shall be applied to all disturbed/bare areas, including the landing area.

28-10-17.3

Access to this road shall be blocked with a boulder barrier, at the junction with Road No. 28-10-17.0. Waterbars shall be constructed along the entire length of the road. Seed, fertilizer, and mulch shall be applied to all disturbed/bare areas, including the landing area.

28-10-17.4

Waterbars shall be constructed along the entire length of the road. Seed, fertilizer, and mulch shall be applied to all disturbed/bare areas, including the landing area.

28-10-17.5

Access to this road shall be blocked with a boulder barrier, at the junction with Road No. 28-10-17.0. Waterbars shall be constructed along the entire length of the road. Seed, fertilizer, and mulch shall be applied to all disturbed/bare areas, including the landing area.

28-10-17.6

Access to this road shall be blocked with a boulder barrier, at the junction with Road No. 28-10-17.0. Waterbars shall be constructed along the entire length of the road. Seed, fertilizer, and mulch shall be applied to all disturbed/bare areas, including the landing area.

28-10-17.7

Access to this road shall be blocked with a boulder barrier, at the junction with Road No. 28-10-17.0. Waterbars shall be constructed along the entire length of the road. Seed, fertilizer, and mulch shall be applied to all disturbed/bare areas, including the landing area.

28-10-17.8

Waterbars shall be constructed along the entire length of the road. Seed, fertilizer, and mulch shall be applied to all disturbed/bare areas, including the landing area.

ROAD MAINTENANCE SPECIFICATIONS

General road maintenance specifications are designated numerically according to the type of road work to be performed, as follows:

Section	
3000	GENERAL
3100	OPERATIONAL MAINTENANCE
3200	SEASONAL MAINTENANCE
3300	FINAL MAINTENANCE
3400	OTHER MAINTENANCE

GENERAL - 3000

3001 - The Purchaser shall be required to maintain all roads as shown on the Exhibit D maps of this contract in accordance with Sections 3000, 3100, 3200, 3300, and 3400 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 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. 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 patrol 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 670 cu. yds. of aggregate conforming to the requirements in Section 1200 of Exhibit C of this contract on the roadway and landings at locations and in the amounts designated by the Authorized Officer.

This aggregate shall be used to repair surface failures, landings, 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 patrol grader, rubber-tired front-end bucket loader, rubber-tired backhoe or comparable equipment, and by the use of hand tools.

3104a - Removal of bank slough and slide material includes placement of material at the nearest suitable turnout or 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.

3104b - The Purchaser shall be responsible for removal of all slides or slough, up to fifteen (15) 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 (15) 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 work, based on current BLM Timber Appraisal Production Cost Schedules. 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 (15) station yards in quantity, at any one site. The 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 (15) 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 Timber Sale Appraisal Production Cost Schedules. 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.

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 by such skidding activity is not considered maintenance and shall be performed at the Purchaser's expense.

3108a - The Purchaser shall perform logging operations on gravel and/or bituminous roadways only where the locations have been marked on the ground or approved by the Authorized Officer. Repair of the road shall be as specified in Subsection 3401.

SEASONAL MAINTENANCE - 3200

3201 - The Purchaser shall perform preventive maintenance at the end of Purchaser's hauling each season, and during nonhauling periods which occur between other operations on the contract area. This includes cross ditching, road blockage, removing ruts or other surface irregularities, and all other 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 15 of 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 designated as Operator Maintenance on Sheet 1 of the Exhibit D, both used and not used during the preceding operating seasons.

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

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

FINAL MAINTENANCE - 3300

3301 - The Purchaser shall complete final maintenance and/or damage repairs on all roads used under terms of their contract within 30 calendar days following the expiration of Purchaser's right to cut and remove timber (Sec. 4), and in accordance with Sec. 16(b) of this contract. This work shall include any maintenance and/or damage repairs specified in Sections 3000, 3100, and 3200 necessary to meet the conditions specified in Subsection 3002, and shall be executed in accordance with Subsection 3302 of this section.

The Authorized Officer may grant acceptance of Purchaser's maintenance responsibility in part where certain individual roads or road segments are no longer of any use to the Purchaser's remaining removal operations, providing that all contract requirements as specified under Section 16(b), and 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, due to 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 10 days.

OTHER MAINTENANCE - 3400

3401 - The Purchaser shall repair any damage to road surfaces that was specified under Subsections 3108 and 3108a. This repair includes restoring the roadway to the designed standard, including the 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 and snow removal, the Purchaser will perform the work according to the conditions and equipment requirements set forth in the Authorization.

EXHIBIT D
ROAD MAINTENANCE APPRAISAL

SALE NO. 12-35 SALE NAME: Wagon Road Pilot TS

ROAD NUMBERS	MILES
28-10-8.1	0.1
28-10-8.3	0.2
28-10-9.0	2.8
28-10-17.0	1.1
28-10-17.1	0.1
28-10-17.2	0.1
28-10-17.3	0.2
28-10-17.4	0.1
28-10-17.5	0.1
28-10-17.6	0.1
28-10-17.7	0.3
28-10-17.8	0.1

TOTAL MILES = 5.3

EXHIBIT D
ROAD MAINTENANCE APPRAISAL

SALE NO. 12-35 SALE NAME: Wagon Road Pilot TS

-APPRAISAL WORKSHEET-

-SUMMARY-

1.	MOVE IN	$2,318.80
2.	CULVERTS, SLOUGH, SLUMPS, & MISC	$1,060.00
3.	GRADING FOR TIMBER HAUL	$3,551.00
4.	GRADING FOR AGGREGATE HAUL	$0.00
5.	MAINTENANCE ROCK	$20,652.12
6.	NOXIOUS WEED EQUIPMENT WASHING	$1,000.00
7.	DECOMMISSIONING	$8,050.00
	MAINTENANCE TOTAL:	$36,631.92

1. MOVE-IN:

EQUIPMENT	MOVE-INS	COST/MOVE	= TOTAL
GRADER	3	$335.30	$1,005.90
EXCAVATOR/LOG LOADER	0	$744.60	$0.00
TRACTOR/D7 w/rippers	0	$579.00	$0.00
BACKHOE	2	$286.20	$572.40
DUMP TRUCK	3	$147.00	$441.00
MULCHING EQUIPMENT	1	$299.50	$299.50
		TOTAL =	$2,318.80

2. CULVERT MAINT., SLOUGH REMOVAL, SLUMP REPAIRS, ETC.

MAINT. OBLIGATION		AVE. COST		= TOTAL
5.3	MILES @	$200.00	/ MILE =	$1,060.00

3. GRADING FOR TIMBER HAUL

UNIT #	GRADINGS	X MILES	ACC. MILES
ALL UNITS	2.0	5.3	10.6
		TOTAL MILES	10.6

10.6	MILES @	$335.00	/ MILE =	$3,551.00

4. GRADING FOR AGGREGATE HAUL:

	MILES @	$182.00	/ MILE =	$0.00

EXHIBIT D
ROAD MAINTENANCE APPRAISAL

SALE NO. 12-35 SALE NAME: Wagon Road Pilot TS

5. MAINTENANCE & LANDING ROCK:

ROYALTY	SIZE:	1 1/2"-	SOURCE:	Kincheloe Quarry	
BASE COSTS	670	CU. YDS. @	$13.65	=	$9,145.50
SLOW HAUL	200	CU. YDS. @	$1.93	0.5	193.00
MED. HAUL	670	CU. YDS. @	$0.97	13.0	8,448.70
FAST HAUL	670	CU. YDS. @	$0.43	8.1	2,333.61
WATER	670	CU. YDS. @	$0.61	1.3	531.31
MED. HAUL	0	CU. YDS. @	$0.06	0.0	
				TOTAL =	$20,652.12

6. NOXIOUS WEED EQUIPMENT WASHING $1,000.00
(Entrance Only)

7. DECOMMISSIONING:

28-10-8.3				
Boulder Barrier	1.0	LS	$600.00	
Waterbar construction	1.5	hours	$126.00	
Soil stabilization	0.2	acres	$68.00	$794.00
28-10-9.0				
Soil stabilization	0.2	acres	$68.00	
				$68.00
28-10-17.0				
Boulder Barrier	1.0	LS	$600.00	
Waterdips construction	20.0	hours	$1,680.00	
Soil stabilization	0.3	acres	$102.00	$2,382.00
28-10-17.1				
Boulder Barrier	1.0	LS	$600.00	
Waterbar Construction	0.5	hours	$42.00	
Soil stabilization	0.1	acres	$34.00	$676.00
28-10-17.2				
Boulder Barrier	1.0	LS	$600.00	
Soil stabilization	0.1	acres	$34.00	
Waterbar Construction	1.0	hours	$84.00	$718.00
28-10-17.3				
Boulder Barrier	1.0	LS	$600.00	
Soil stabilization	0.5	acres	$170.00	
Waterbar Construction	2.5	hours	$210.00	$980.00

EXHIBIT D
ROAD MAINTENANCE APPRAISAL

SALE NO. 12-35 SALE NAME: Wagon Road Pilot TS

28-10-17.4			
Soil stabilization	0.1 acres	$34.00	
Waterbar Construction	0.5 hours	$42.00	$76.00
28-10-17.5			
Boulder Barrier	1.0 LS	$600.00	
Soil stabilization	0.1 acres	$34.00	
Waterbar Construction	0.5 hours	$42.00	$676.00
28-10-17.6			
Boulder Barrier	1.0 LS	$600.00	
Soil stabilization	0.1 acres	$34.00	
Waterbar Construction	1.0 hours	$84.00	$718.00
28-10-17.7			
Boulder Barrier	1.0 LS	$600.00	
Soil stabilization	0.1 acres	$34.00	
Waterbar Construction	3.0 hours	$252.00	$886.00
28-10-17.8			
Soil stabilization	0.1 acres	$34.00	
Waterbar Construction	0.5 hours	$42.00	$76.00
		DECOM. TOTAL =	$8,050.00

EXHIBIT E

SALE NAME: Wagon Road Pilot | ROAD USE AND MAINTENANCE FEES | SALE NUMBER: 12-35

MBF NET VOLUME: 6140

1. Maintenance and Rockwear Fees Payable to the U.S. (BLM Maintained Roads)
Timber Haul

ROAD NUMBER	VOLUME in MBF	ROAD MILES	ROCKWEAR MBF MILE	ROCKWEAR SUBTOTAL	MAINTENANCE MBF MILE	MAINTENANCE SUBTOTAL	TOTAL
28-10-9.0A	6140	0.30			$0.65	$1,197.30	$1,197.30
		0.30				$1,197.30	$1,197.30

2. Rockwear Fees Payable to the U.S. (Operator Maintained Roads)
Timber Haul

ROAD NUMBER	VOLUME in MBF	ROAD MILES	ROCKWEAR MBF MILE	COMMENTS	TOTAL
28-10-17.6	310	0.06	$0.51		$9.49
28-10-17.6	569	0.07	$0.51		$20.31
28-10-17.0	569	0.02	$0.51		$5.80
28-10-17.7	466	0.06	$0.51		$14.26
28-10-17.7	621	0.07	$0.51		$22.17
28-10-17.8	259	0.05	$0.51		$6.60
28-10-17.7	880	0.06	$0.51		$26.93
28-10-17.7	1211	0.12	$0.51		$74.11
28-10-17.0	1780	0.05	$0.51		$45.39
28-10-17.0	2090	0.25	$0.51		$266.48
28-10-17.0	2245	0.06	$0.51		$68.70
28-10-17.5	376	0.06	$0.51		$11.51
28-10-17.0	2621	0.10	$0.51		$133.67
28-10-17.0	2724	0.12	$0.51		$166.71
28-10-17.4	310	0.06	$0.51		$9.49
28-10-17.3	259	0.03	$0.51		$3.96
28-10-17.3	569	0.09	$0.51		$26.12
28-10-17.3	993	0.12	$0.51		$60.77
28-10-17.0	3717	0.06	$0.51		$113.74
28-10-17.0	3916	0.05	$0.51		$99.86
28-10-17.2	207	0.09	$0.51		$9.50
28-10-17.0	4123	0.05	$0.51		$105.14
28-10-17.1	172	0.04	$0.51		$3.51
28-10-17.0	4295	0.13	$0.51		$284.76
28-10-17.0	4554	0.08	$0.51		$185.80
28-10-17.0	5123	0.11	$0.51		$287.40
28-10-9.0D	207	0.12	$0.51		$12.67
28-10-9.0D	397	0.04	$0.51		$8.10
28-10-9.0D	5520	0.10	$0.51		$281.52
28-10-9.0D	5675	0.03	$0.51		$86.83
28-10-8.3	173	0.11	$0.51		$9.71
28-10-8.3	258	0.07	$0.51		$9.21
28-10-9.0C	5675	0.02	$0.51		$57.89
28-10-9.0C	5882	0.09	$0.51		$269.98
28-10-9.0C	6140	1.14	$0.51		$3,569.80
28-10-9.0B1/B2	6140	1.15	$0.51		$3,601.11
		4.93			$9,969.00

EXHIBIT E

SALE NAME: Wagon Road Pilot | ROAD USE AND MAINTENANCE FEES | SALE NUMBER: 12-35

3. Maintenance and Rockwear Fees Payable to Private Companies
Timber Haul

COMPANY NAME	AGREEMENT NUMBER	ROAD NUMBER	VOLUME in MBF	ROAD MILES	ROCKWEAR MBF MILE	MAINTENANCE MBF MILE	COMMENTS	TOTAL
Menasha	RWA C-441A	28-10-8.1	258	0.09	$0.51	$0.00		$11.84
				0.09				$11.84

4. Road Use Fees Payable to Private Companies:
Timber Haul

COMPANY NAME	AGREEMENT NUMBER	ROAD NUMBER	VOLUME in MBF	USE FEE $/MBF	TOTAL FEES
Menasha	RWA C-441A	28-10-9.0C	6140	$0.12	$736.80
					$736.80

OPERATOR MAINTENANCE WILL BE REQUIRED ON APPROXIMATELY: 5.3 MILES OF ROAD (SEE EXHIBIT "D")

SUMMARY OF ROAD USE, ROCKWEAR, & MAINTENANCE FEES:

		ROAD USE FEES TOTAL	$/MBF	ROCKWEAR FEES TOTAL	$/MBF	MAINTENANCE FEES TOTAL	$/MBF
1. BLM-MAINTAINED ROADS	Timber Haul					$1,197.30	$0.20
2. OPERATOR-MAINT. ROADS	Timber Haul			$9,969.00	$1.62		
3. COMPANY-OWNED ROADS	Timber Haul			$11.84	$0.00		
4. COMPANY-OWNED ROADS	Timber Haul	$736.80	$0.12				
		$736.80	$0.12	$9,980.84	$1.63	$1,197.30	$0.20

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Timber - Sale - Summary

Coos Bay
Wagon Road Pilot
TS 12-35

Legal Description

Forest Type	Township	Range	Section	Subdivision
CBWR	28 S	10 W	17	NE1/4,N1/2NW1/4,SE1/4NW1/4,NE1/4SW1/4,NW1/4SE1/4

Cutting Volume (16' MBF)

Unit	DF	WH	RA	POC	WRC				Total	Regen	Partial	ROW
1 A	3,194	1,767	682	46	1				5,690	110	0	0
1 B	4	30	122						156	0	9	0
1 C	63	14	8	3					88	0	4	0
RW	148	29	26	3					206	0	0	4
Totals	**3,409**	**1,840**	**838**	**52**	**1**				**6,140**	**110**	**13**	**4**

Logging Costs per 16' MBF

Stump to Truck	$	96.46
Transportation	$	49.33
Road Construction	$	73.29
Road Amortization	$	0.12
Road Maintenance	$	7.79

Other Allowances :

Gross Yarding	$ 0.06
Habitat Creation	$ 0.47
Landing pullback	$ 0.23
Misc	$ 0.82
Slash Disposal	$ 19.20
Vehicle Washing	$ 0.42
Total Other Allowances :	**$ 21.20**

Total Logging Costs per 16' MBF $ **248.18**

Utilization Centers

Center #1 : Coquille	28	Miles
Center #1 : Norway	28	Miles
Weighted distance to Utilization Centers	28	

Length of Contract

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

Profit & Risk

Total Profit & Risk		10 %
Basic Profit & Risk	7 % + Additional Risk	3 %
Back Off		0 %

Tract Features

Avg Log	Douglas-fir : 96 bf	All : 81 bf
Recovery	Douglas-fir : 95 %	All : 94 %
Salvage	Douglas-fir : 0 %	All : 0 %

Avg Volume (16' MBF per Acre)	48
Avg Yarding Slope	35 %
Avg Yarding Distance (feet)	259
Avg Age	70
Volume Cable	80 %
Volume Ground	20 %
Volume Aerial	0 %
Road Construction Stations	44.56
Road Improvement Stations	75.71
Road Renovation Stations	150.20
Road Decomission Stations	60.77

Cruise

Cruised By	oley,Davis,Kirkland,Wells,Morgan
Date	11/28/2011
Type of Cruise	3P, BLM 100
County, State	Coos, OR

Net Volume

Green (16' MBF)	6,140
Salvage (16' MBF)	0
Douglas-fir Peeler	0
Export Volume	0
Scaling Allowance ($0.50 per 16' MBF)	$3,070.00

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Coos Bay
Wagon Road Pilot
TS 12-35

Prospectus

Appraisal Method : (16' MBF)

Species	Trees	Net Volume 16' MBF	Net Volume 32' MBF	Net Volume CCF
Douglas-fir	7,098	3,409	2,823	5,553
Western Hemlock	6,249	1,840	1,530	3,013
Red Alder	5,321	838	665	1,571
Port-Orford-cedar	904	52	45	100
Western red-cedar	20	1	1	3
Total	**19,592**	**6,140**	**5,064**	**10,240**

All Species

Gross Volume	Number Trees	Avg bf Volume Per Tree	DBH	Gross Merch Volume	Merch Logs	Avg bf Gross Merch Log
6,566	19,592	335	16.7	6,485	79,939	81

Merch Logs	Cull Logs	Total Logs	Logs per Tree	Net Volume	Gross Volume	Recovery
79,939	2,148	82,087	4.2	6,140	6,566	94 %

Douglas-fir

Gross Volume	Number Trees	Avg bf Volume Per Tree	DBH	Gross Merch Volume	Merch Logs	Avg bf Gross Merch Log
3,607	7,098	508	19.9	3,555	36,845	96

Merch Logs	Cull Logs	Total Logs	Logs per Tree	Net Volume	Gross Volume	Recovery
36,845	1,557	38,402	5.4	3,409	3,607	95 %

Cutting Areas

Unit	Regen Acres	Partial Cut Acres	Right Of Way Acres	Total Acres
1 A	110			110
1 B		9		9
1 C		4		4
RW			4	4
Totals :	**110**	**13**	**4**	**127**

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Coos Bay
Wagon Road Pilot
TS 12-35

Stumpage Summary

Stumpage Computation (16' MBF)

Species	Trees	Net Volume	Pond Value	(-) Profit & Risk	(-) Logging Cost	(+) Marginal Log Value	(-) Back Off	Appraised Price	Appraised Value
DF	7,098	3,409	$ 393.35	$ 39.33	$ 248.18			$ 105.80	$ 360,672.20
WH	6,249	1,840	$ 324.35	$ 32.44	$ 248.18			$ 43.70	$ 80,408.00
RA	5,321	838	$ 404.82	$ 40.48	$ 248.18			$ 116.20	$ 97,375.60
POC	904	52	$ 539.36	$ 53.94	$ 248.18			$ 237.20	$ 12,334.40
WRC	20	1	$ 600.00	$ 60.00	$ 248.18			$ 291.80	$ 291.80
Totals	**19,592**	**6,140**							**$ 551,082.00**

Log Code by Percent

Species	Code #1	Code #2	Code #3	Code #4	Code #5	Code #6
Port-Orford-cedar				27.0	44.0	29.0
Douglas-fir				80.0	19.0	1.0
Western red-cedar			50.0	50.0		
Western Hemlock				64.0	32.0	4.0
Red Alder		30.0	44.0	26.0		

Marginal Log Volume

Species	Grade #7	Grade #8
Port-Orford-cedar		
Douglas-fir		
Western red-cedar		
Western Hemlock		
Red Alder		

Appraised By : Sill, Tom **Date :** 12/22/2011

Area Approval By : Wooley, Michael **Date :** 12/22/2011

District Approval By : Morgan, Estella **Date :** 02/22/2012