

COOS BAY SALE NO. ORC04-TS-2019.0030
GLIDE PATH

COOS BAY DISTRICT OFFICE
MYRTLEWOOD RESOURCE AREA

SALE DATE: MAY 17, 2019
SALE TIME: 10:00 a.m.

SALE NO.: ORC04-TS-2019.0030, GLIDE PATH

COOS COUNTY: OREGON: O&C: ORAL AUCTION: Bid deposit required: \$67,200

All timber designated for cutting on: T. 29 S., R. 9 W., Sec. 21, S1/2NW1/4, SW1/4, W1/2SE1/4, 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
6,390	2,548	Douglas- Fir	3,255	\$164.50	\$535,447.50
3,653	1,257	Western Hemlock	1,614	\$82.50	\$133,155.00
158	18	Port-Orford cedar	26	\$102.50	\$2,665.00
10,201	3,823	Total	4,895		\$671,267.50

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 \$0.50 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: Except 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 19.9 inches; the average gross merchantable log contains 101 bd. ft.; the total gross volume is approximately 5,214 thousand bd. ft.; and 94% recovery is expected. The average DBHOB for Douglas-fir is 20.2 inches; and the average gross merchantable log contains 100 bd. ft.; and 95% recovery is expected. None of the total sale volume is salvage material. The following cruise methods were used for volume determination.

VP: Timber volumes in the Unit were calculated using the variable plot (VP) system to select sample trees. Using a 20 BAF (Basal Area Factor), 187 plots were measured and 198 trees were randomly selected to be sampled. The sample trees were 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.

COOS BAY SALE NO. ORC04-TS-2019.0030
GLIDE PATH

CUTTING AREA: One unit totaling approximately 141 acres must be regeneration cut. Acreage data was collected using a Trimble R1 Global Positioning System receiver. Acreage was calculated based on Global Positioning System traverse procedures including differential correction.

ACCESS: Access to the sale area is provided via: United States highways, Coos County roads, privately controlled roads, and Government controlled roads.

DIRECTIONS TO SALE AREA: From Coos Bay, Oregon, travel south on Highway 101 for approximately five miles. Take slight left onto OR-42 E and travel 48.8 miles. Turn left onto Lower Signal Tree Road (29-9-36.0). Travel approximately 9 miles to the sale area. Refer to Exhibits A and A-1 for unit locations.

ROAD USE, ROCKWEAR & MAINTENANCE: Refer to Exhibit E Summary attached. Operator maintenance required on 1.4 miles of road.

Rockwear Fees Payable to BLM:

\$ 55,046.06

ROAD CONSTRUCTION: Road Construction estimates include the following:

New Construction:

4.32 stations

Road Renovation:

16.08 stations

Road Improvement:

42.40 stations

Aggregate (All quantities are truck measurement):

3" minus hardrock: 3,592 L.C.Y.

1 ½" minus hardrock: 1,327 L.C.Y.

1 ½" minus bedding: 80 L.C.Y.

¾ minus bedding: 170 L.C.Y.

6" minus: 280 L.C.Y.

Riprap Energy Dissipater: 50 L.C.Y.

Asphalt: 75 tons (Exhibit C)

175 tons (Exhibit D)

Drainage:

18" CPP double wall: 280' feet

12" CMP single wall: 60' feet

18" CMP single wall: 448' feet

24" CMP single wall: 220' feet

Culvert Markers: 29

Soil Stabilization:

Dry Seed, fertilizer, & mulch: 3.50 acres (Pre-haul)

Dry Seed, fertilizer, & mulch: 1.8 acres (Post-haul)

Road Decommissioning:

Normal Decommissioning: 14.50 stations

DURATION OF CONTRACT: Shall 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.

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

1. Tramway agreement with WEYERHAEUSER CO. is required for the use of existing stumps as skyline tail hold anchors.
2. All equipment must be washed prior to entry into the contract area to control the spread of noxious weeds.
3. All roads are approved for all-season haul except for the 29-9-21.5 road.
4. No trees shall be felled into Reserve Areas or Basal Area Retention Areas, as shown on the Exhibit A. Line pulling, jacking, or other mechanical devices shall be used as necessary.
5. Lift trees and intermediate support trees may be necessary.
6. One-end suspension required in cable and ground-based yarding areas.
7. A forwarder, log loader, tractor, or rubber tire skidder may be used to yard logs within the Ground-Based Yarding areas. Ground-based equipment are generally restricted to areas with slopes less than 35% and soil moistures less than 25%.
8. Purchaser shall verify all landing locations with the Authorized Officer, not previously identified on Exhibit A.
9. Shape and restore all landings to a natural contour to prevent erosion.
10. Seed and fertilize all landings, road cuts and fills, and waste areas.
11. 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 15 of same calendar year.
12. BLM will assume supervisory responsibility for disposal of logging slash.
13. Machine piling, hand piling or scattering of logging slash are required at all landing areas, along all roads, and all areas within sale area found to have excessive slash. Areas to be piled will be identified by the Authorized Officer.
14. Personnel supplied by the Purchaser for landing pile burning shall include four (4) people qualified at a minimum, as Type-II Firefighters (FFT2). Personnel provided by the Purchaser for machine or hand pile burning shall include six (6) Type-II Firefighters, (National Wildfire Coordinating Group (NWCG) Wildland Fire Qualifications System guide, PMS 310-1).
15. The Purchaser shall provide signage and flaggers to control traffic when conducting logging and road construction operations adjacent to and/or on the 29-9-36.0 road.
16. After yarding is complete the purchaser shall top or girdle 142 conifer trees located throughout the unit.
17. The replacement of culverts at MP 6.08 and 6.16, along Signal Tree Road, are subject to daily time restrictions; 2 hours after sunrise and 2 hours before sunset (per Exhibit C).
18. The Purchaser shall replace asphalt surfacing of 3.5 Sta. of Lower Signal Tree Road at MP 7.61, MP 7.77, and MP 7.92 or in lieu thereof, may make a contribution to the Bureau of Land Management (at the rate of \$215.00 per ton) (in the amount of \$ 45,526.25), and upon making such contribution, the Purchaser shall be relieved of the obligations set out in this subsection.
19. To minimize the risk of attracting predators to activity areas, all garbage (especially food products) will be contained and removed daily from the contract area pursuant to Section 27 of the contract.
20. Spill kits will be required to be on site during road construction and logging.

COOS BAY SALE NO. ORC04-TS-2019.0030
GLIDE PATH

Seasonal Restriction Matrix ORC04-TS-2019.0030 GLIDE PATH Timber Sale Prospectus

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

	Activity	Jan		Feb		Mar		Apr		May		June		July		Aug		Sept		Oct		Nov		Dec	
		1	15	1	15	1	15	1	15	1	15	1	15	1	15	1	15	1	15	1	15	1	15	1	15
General All Units	Road Construction, Renovation, or Improvement Work ¹																								
	Hauling ¹																								
	Hauling on approved rocked roads ⁴																								
	Ground based yarding ³											25 %													

¹ Wet season restrictions may be shortened or extended depending on weather conditions.

² Bark slip seasonal restrictions may be conditionally waived upon written request and Authorized Officer approval. Strict compliance with damage provision required for continued operations.

³ Ground based yarding restricted to periods when soil moisture levels are below 25% as determined by the Authorized Officer.

⁴ Wet season haul on rocked roads 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, shown on Exhibit A, which is attached hereto and made a part hereof, 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 Areas, as shown on Exhibit A, and all blazed, orange painted and/or posted trees which are on or mark the boundaries of the Reserve Area.
- b. Approximately 753 individual trees are painted orange within the harvest unit; 142 are marked for snag creation and 611 are marked for reserved trees. Approximately 187 Western hemlock, 337 Douglas fir, 84 Port-Orford cedar, and 3 Pacific Yew trees are each marked with an orange painted "W" above stump height and orange painted below stump height as shown on Exhibit A. Trees marked with an orange painted "S" above stump height and orange painted below stump height are proposed for snag creation. These individually selected trees are specially valued as a component of the Wildlife Habitat Management program. Reserve trees damaged or destroyed by the Purchaser shall be valued for purposes of determining damages at either current market value, or contract price, whichever is greater, 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 reserve trees, except for such trees determined to be a safety hazard as defined by applicable safety codes and regulations. When selected reserve trees are determined to be danger trees, written approval to cut such trees shall be obtained from the Authorized Officer conforming to all requirements of Section 8 of this contract. The Authorized Officer can reserve trees previously designated for cutting and removal by applying orange paint as replacements for previously selected reserve and snag trees damaged or cut and removed due to harvest operations.
- c. All existing standing dead trees within the harvest area except those trees, which must be felled to permit safe working operations. Snags felled for safety reasons shall be left on site.
- d. All existing downed wood in decay classes 3-5 and all existing downed wood 20 inches or larger in diameter measured on the large end regardless of decay class.
- e. All Bearing Trees with metal tags that mark property corners.

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 Sec. 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 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 5% of the installment amount listed in Sec. 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 15 days after such notification to return the first installment to the full value specified in Sec. 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 Sec. 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 30 days, and the interruption or delay is beyond the Purchaser's 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 Sec. 3(b).

b. Logging

(1) 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 they plan to begin operations. The Purchaser shall also notify the Authorized Officer in writing if they intend to cease operations for any period of ten or more days.

(2) 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.

(3) No trees may be felled into the Reserve Area or Green Tree Retention Area as shown on the Exhibit A. Line pulling, jacking, or other mechanical devices shall be used as necessary to prevent trees from falling into these areas.

(4) 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.

(5) In the harvest unit, all trees shall be whole tree yarded to the landing area as shown on the Exhibit A.

(6) In all Units, yarding (except for road rights of-way and Ground Based Yarding Area), as shown on Exhibit A shall be done with a skyline cable system according to the following:

- a. One- ended log suspension is required during yarding operations. Intermediate supports and/or lift trees may be required to obtain the required suspension.
- b. The Purchaser shall make all cable sky road changes by completely re-spooling cables and restringing

the layout from head spar to tail hold.

(7) All landings in the harvest unit shall be placed at the approximate locations shown on the Exhibit A. Any alternative landing sites must be approved by the Contracting Officer in the written operations and logging plan.

(8) In the Ground-based Yarding Area 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. 26 of this contract, ground-based operations shall be restricted to the dry season, which is typically May 15 to October 15 as determined by the Authorized Officer.
- 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. Ground-based operations may be conducted when ground is frozen or adequate snow cover exists, with the approval of the Authorized Officer.
- c. Trees shall be felled manually or by a mechanized harvester utilizing a “cut-to-length” system capable of directionally felling, cutting to length, and deposition slash along the harvesting path to minimize soil exposure and compaction.
- 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-Base Area 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 roads/trails shall use existing trails wherever possible, designate skid trails with the objective of having less than 12 percent of a harvest area affected by compaction. Skid trails should generally be spaced 95 feet apart, and be no wider than 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% unless operating on previously constructed trails or accessing isolated ground-based harvest areas requiring short trails over steeper pitches. Also, limit the use of this equipment when surface displacement creates trenches, depressions, excessive removal of organic horizons, or when disturbance would channel water and sediment as overland flow.
- h. Primary skid trails with a slope greater than 15% and/or are left with more than 100 feet of continuous bare ground shall have water bars installed and/or be covered with slash for erosion

control prior to October 15 as directed by the Authorized Officer.

(9) Prior to attaching any logging equipment to any tree within the Reserve Area, or Green Tree Retention Area, 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.

(10) During logging operations, the Purchaser shall keep BLM Road No. 29-9-36.0, where they pass through the contract area, clear of trees, rock, dirt and other debris so far as is practicable. These roads shall not be blocked by such operations for more than 20 minutes. The Purchaser shall provide signage and flaggers to control traffic when conducting operations adjacent to any road as directed by the Authorized Officer and in accordance with Sec. 29 of the timber sale contract.

(11) 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.

(12) After completion of yarding activities, the Purchaser shall top or girdle 142 conifer trees (marked with "S") in the harvest unit according to the following:

The Purchaser shall top or girdle trees above the third live whorl of limbs at a minimum height of 40 feet or at 60 feet if no live limbs occur below 60 feet. Girdling will consist of removing a four inch band of bark (all sapwood shall remain intact) completely around the bole of the tree. Tops and limbs resulting from topping or girdling will be left on site. Girdling will not be permitted on trees less than 100 feet from roads. Number and location of existing or treated trees shall be depicted on a map such that they may be easily verified by the BLM.

(13) To minimize the risk of attracting predators to activity areas, all garbage (especially food products) will be contained and removed daily from the contract area pursuant to Section 27 of the contract.

(14) Spill kits are required to be on site during road construction and logging operations pursuant to Section 27 of the contract.

c. Road Construction

(1) The Purchaser shall construct, renovate, and improve 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, renovation, or improvement of structures and roads shall be completed and accepted, in accordance with Section 18, prior to the removal of any timber, except right-of-way timber, over that road.

(3) During road construction operations, the Purchaser shall keep BLM Road No. 29-9-36.0 clear of trees, rock,

dirt and other debris so far as is practicable. This road shall not be blocked by road operations for more than 20 minutes. The Purchaser shall provide signage and flaggers to control traffic when conducting operations as directed by the Authorized Officer and in accordance with Sec. 29 of the timber sale contract.

(4) With the approval of the Authorized Officer and if the Purchaser deems it necessary to renovate existing Road No. 29-9-21.7, all roadworks will be at the Purchaser's expense and shall be completed in strict accordance with the plans and specifications shown on Exhibit C and D, which is attached hereto and made a part of hereof.

(5) In addition to the requirements set forth in Sec. 26 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.

(6) 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 \$55,046.06 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 Sec. 3 of this contract.

(4) The Purchaser shall perform maintenance and repair of any required 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) In addition to the requirements set forth in Section 26 of this contract, the Purchaser shall clean road surfaces, cut banks, landings, ditch lines and culverts of all debris created by logging operations.

(7) 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 Sec. 42.c.(1) and 42.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.

(8) 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 Sec. 42.c.(1) and 42.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.

(9) The Purchaser shall cease winter log hauling if the ground is already saturated from winter rains and more than 1 inch of precipitation is predicted over the next 24 hours or as determined by the Authorized Officer.

(10) The Purchaser agrees that if they elect to use any other private road, which is the subject of a right-of-way agreement with the Government for the removal of Government timber sold under the terms of this contract, Purchaser shall request and agree to the modifications of this contract to provide for such use and for allowances for amortization of the Government's share of the capital investment of any such road.

e. Fire Prevention and Control

Primarily for purposes of fire prevention and control, the Purchaser shall comply with the following provisions:

- (1) At least three (3) days prior to the operation of power-driven equipment during any operations under this contract during the closed fire season or periods of fire danger, prepare a fire prevention and control plan to the satisfaction of the Authorized Officer.
- (2) Provide and maintain on the contract area in good working order, and immediately available, the following equipment for use during the closed fire season or periods of fire danger:
 - a. Fire fighting tools shall be kept at each landing or at such other place as the Authorized Officer shall designate whenever employees are working on the contract area. All fire fighting tools shall be kept in a sturdily constructed box which shall be painted red and lettered on the front or top in large letters, "For Fire Only." The box shall have a hinged lid and a hasp by which the lid can be sealed. One box may serve two (2) landings not over six hundred (600) feet apart. When filled, the box shall not weigh over two hundred (200) pounds. The fire tools shall be in good condition, be tight on strong handles, and have sharp cutting edges. There shall be not less than four (4) tools in each box nor less than one (1) tool for each employee working on the contract area. Three-fourths (3/4) of all fire tools shall be shovels, hazel hoes, or other scraping tools. The fire tools shall be used only for fighting fire. Operations with four or fewer workers are not required to provide a fire tool box for the operation as long as each worker is equipped with a shovel suitable for fire suppression.
 - b. At each landing during periods of operation one (1) tank truck of three thousand (3,000) gallons or more capacity with enough one and one-half (1 ½) inch hose to reach from the water supply to any location in the operation area affected by power driven machinery, or one thousand (1,000) feet, whichever is greater, is required. Two (2) nozzles and a gated-wye are also required for the hose lay. Two (2) fifteen hundred (1,500) gallon tank trucks or portable tanks may be substituted for each required three thousand (3,000) gallon tank truck, provided that the total capability to pump and deliver water remains unchanged. Each tank truck shall be equipped with a pump capable of delivering a minimum of twenty (20) gallons per minute (gpm) water flow at one hundred ten (110) pounds per square inch (psi) engine pressure through fifty (50) feet of 1 ½ inch fire hose. The pump may be either power take-off driven or a truck-mounted auxiliary engine, or portable. All equipment shall be acceptable to and approved by the Authorized Officer and shall conform to the standards set forth in Oregon Revised Statutes 477.645 through 477.670. All hose couplings shall have the standard thread adopted by the BLM (1 ½ inches National Hose Thread (NH), 1 inch National Pipe Straight Hose Thread (NPSH) or be provided with suitable adapters. All tank trucks shall be filled with water and made available for immediate use.

f. Logging Residue Reduction

Site preparation activities are required in order to provide adequate planting spaces within the unit. These actions will also reduce hazardous fuel loading. The desired end state has slash less than 1 foot in height and unevenly distributed throughout the unit such that planting spaces are available on a 10' x 10' grid (approximate).

In addition to the requirements of Sections 15 and 25 of this contract, and notwithstanding the Purchaser's satisfactory compliance with State laws and regulations regarding offsetting or abating the additional fire hazard created by this operation and the State's willingness to release Purchaser for such hazard, the Purchaser shall remain responsible to the Government for performance of the following hazard reduction and logging residue reduction measures required of them by this contract:

(1) Landing pile construction and covering: Within thirty (30) feet of the edge of each landing, all tops, broken pieces, limbs and debris between two (2) and nine (9) inches in diameter at the large end and longer than three (3) feet in length shall be piled within fifteen (15) days of completion of hauling logs from that landing. Landing piles shall be kept free of dirt and located adjacent to roads at least twenty (20) feet from any Reserve Tree and/or as directed by the Authorized Officer.

Upon completion of landing piling, and no later than September 30 of the same year of piling, the Purchaser shall prepare the landing piles for burning by securely covering each pile with a 10-foot by 10-foot cover of four (4) MIL polyethylene or alternate material as set forth in OAR 629-048-0210 shall cap each landing pile to maintain a dry ignition point. The cover shall be firmly fixed to each pile to hold it in place. To meet ignition and combustion needs, larger piles may require additional PE sheeting. The Purchaser shall contact the Authorized Officer before any pile covering begins. At that time, the Authorized Officer will identify all piles that are approved for covering in excess of the one-hundred (100) square foot maximum size. Piles with material extending more than two (2) feet beyond the general contour of the pile shall be flattened or trimmed to allow for covering in a manner that permits the piles to shed water and to prevent tearing during wind events. Pile trimming or flattening shall be done prior to pile covering. Pieces of burnable material shall be placed on top of the plastic to secure it from moving and to prevent it from blowing off during strong winds. The Purchaser is required to furnish the covering materials. The timing of this covering work shall be in accordance with instructions from the Authorized Officer. If the structure of the landing piles will not permit adequate consumption of piled debris by burning, the Purchaser shall re-pile them at the direction of the Authorized Officer.

(2) As directed by Authorized Officer, for a distance of 100 feet from the perimeter of each landing, all logs more than eight (8) inches diameter at the large end and longer than eight (8) feet in length shall be decked or windrowed at the location designated by the Authorized Officer except logs removed from the contract area. If a log or a piece of a log meeting or exceeding the above specifications is bucked, all portions of that log shall be yarded and decked at the above-described location. Logging residue meeting this requirement shall not be piled for burning but shall be segregated into separate piles that are no closer than twenty (20) feet from residue piles that will be burned.

(3) Slashing: In preparation for piling and as directed by the Authorized Officer, slash all brush species one foot (1) or greater in height, damaged residual conifers, hardwoods not reserved from cutting, and activity slash. All top and side branches must be cut free of the central stem such that the stem is no more than twelve (12) inches from the ground at all points. Slash shall be lopped to facilitate piling. In areas with low slash loads, slash shall be lopped and scattered so that it does not exceed twelve (12) inches in depth and is discontinuous enough to provide clear planting spots at ten (10) foot spacing. Activity slash includes all woody material (brush, limbs, tops, un-merchantable stems, or chunks) severed, uprooted, or broken from live plants as a result of Purchaser's operations under the terms of this contract. All slashing, piling and covering work must be

completed by October 15 for all areas where logging was completed on August 1 of each year.

(4) Machine pile construction and covering: Ground based harvest areas that are found to have excessive residual slash will require additional piling to prepare the site for planting. Areas to be treated will be designated by the Authorized Officer. All tops, broken pieces, limbs and debris between two (2) and nine (9) inches in diameter and longer than three (3) feet in length will be piled. Piles will be kept free of dirt and located at least twenty (20) feet from any reserve tree or snag and as far as possible from culverts and unit boundaries.

- a. 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.
- b. Piles shall be constructed as upright as possible and have a solid base to prevent toppling. Piles shall be no smaller than eight (8) feet in diameter and six (6) feet in height.
- c. All piled material shall be laid perpendicular to the slope. There shall be an adequate supply of finer fuels located within the interior of the pile to ensure ignition of the larger fuels.
- d. The Purchaser shall place black polyethylene plastic, four (4) MIL thickness, over the pile to provide a barrier from winter rains. Unless otherwise directed, the size of plastic shall not exceed 100 square feet (10 X 10).
- e. Material extending more than 2 feet beyond the general contour of the pile shall be flattened with the excavator or cut off to allow for covering in a manner that permits the piles to shed water.
- f. Plastic covering shall be placed on top of the pile to ensure the center of the pile remains dry, shall be weighted down with logging debris and shall be tied down with combustible cord on all four corners.

(5) Hand pile construction and covering: Skyline harvest areas that are found to have excessive residual slash will require hand piling to prepare the site for planting. Areas to be treated will be designated by the Authorized Officer. All tops, broken pieces, limbs and debris between two (2) and six (6) inches in diameter and longer than three (3) feet in length will be piled. Piles will be located at least fifteen (15) feet from any reserve tree or snag and as far as possible from culverts and unit boundaries.

- a. 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 nine (9) inches in diameter or larger (measured on the large end) shall not be piled.
- b. Piles shall be constructed as upright as possible and have a solid base to prevent toppling. Piles shall be no smaller than six (6) feet in diameter and five (5) feet in height.
- c. All piled material shall be laid perpendicular to the slope. There shall be an adequate supply of finer fuels located within the interior of the pile to ensure ignition of the larger fuels.

- d. 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 100 square feet (10 X 10).
- e. 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 tied down with combustible cord on all four corners.

(6) 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 except for assistance as required herein. In accordance with written instructions to be issued by the Authorized Officer at least ten (10) days in advance of earliest date of required performance, the Purchaser shall, under supervision of the Authorized Officer, assist with landing pile burning, machine pile burning and hand pile burning by furnishing, at their own expense, the services of personnel and equipment as follows:

- a. The purchaser shall begin burning within fourteen hours (14) of notification by the Authorized Officer.
- b. For each entry, the Purchaser may provide more personnel, equipment and materials than indicated, but no less than the minimum requirements listed below. Minimum personnel, equipment and materials requirements are:

1) Landing Pile Burning:

- a. One (1) English-speaking crew supervisor (minimum FFT2)
- b. Three (3) person burn crew (minimum FFT2)
- c. Three (3) drip torches and sufficient fuel to complete all pile burning

2) Machine and/or Hand Pile Burning:

- a. One (1) English-speaking supervisor for crew and equipment operators (minimum FFT1).
- b. 6-person burn crew (minimum FFT2).
- c. 6 drip torches and sufficient fuel to complete all burning.
- d. 1 chain saw.
- e. 1 backpack pump (5-gallon).
- f. 7 hand tools; 1 shovel, 2 pulaskis, 4 hazel hoes (or equivalent).

All listed personnel shall be qualified as a Type-II Firefighter (FFT2) or higher (National Wildfire Coordinating Group (NWCG) Wildland Fire Qualifications System guide, (PMS 310-1). All personnel shall be physically fit, experienced and fully capable of functioning as required. All personnel shall arrive at the project area with the following personal safety equipment: Lug-soled leather boots with a minimum of eight (8) inch uppers that provide ankle support; an approved hard hat; leather gloves; long-sleeve shirt and full-length trousers made of approved aramid fabric (Nomex or equivalent) and an approved fire shelter. All tools and equipment shall be in good 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.

- c. At the direction of the Authorized Officer, the Purchaser shall remove and dispose of all PE sheeting on landing piles exceeding the one-hundred (100) square foot maximum size. The Purchaser shall dispose of removed PE sheeting in accordance with applicable Federal, State and municipal laws. Removed PE sheeting shall not be disposed of in burn piles.
- d. A minimum of eighty (80) percent consumption of landing piles is required. A minimum of ninety (90) percent consumption of hand piles is required.
- e. No mop-up of piles is required of the Purchaser.
- f. Based on the time of year and sequence in which harvest and treatment of the units is completed, burning may be required over multiple seasons.

Time is of the essence in complying with burning provisions. In the event the Purchaser fails to provide the personnel, equipment and materials required herein, the Purchaser shall be responsible for all additional costs incurred by the Government in completing the logging residue reduction. Additional costs may include, but are not limited to, wages and associated expenses of providing federal employees or others as a 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.

g. Contributions

The Purchaser shall replace asphalt surfacing of 3.5 Sta. (as per Exhibit D) of Lower Signal Tree Road @ MP 7.61, MP 7.77, and MP 7.92 or in lieu thereof, may make a contribution to the Bureau of Land Management (at the rate of \$215.00 per ton) (in the amount of \$ 45,526.25), and upon making such contribution, the Purchaser shall be relieved of the obligations set out in this subsection. The Purchaser shall notify the Authorized Officer of their intention to make this contribution prior to the date of execution of this contract.

The total amount was calculated as follows: $(175 \text{ tons} \times \$215.00/\text{ton}) = \$37,625.00$. A 21% administrative fee of \$7,901.25 was added for a total of \$45,526.25.

h. 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. 94165 and 43 CFR 5400 and 5424 as amended.

(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

round wood 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.

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

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

- a. date of last export sale;
- b. volume of timber contained in last export sale;
- c. volume of timber exported in the past 12 months from the date of last export sale;
- d. volume of Federal timber purchased in the past 12 months from the date of last export sale;
- e. volume of timber exported in succeeding 12 months from date of last export sale; and,
- f. volume of Federal timber purchased in succeeding 12 months from date of last export sale.

(2) 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.

(3) In the event an affiliate of the Purchaser has exported private timber within 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

(4) 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.

(5) 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 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 logs clearly and legibly branded on one end regardless of the diameter of the logs. All logs will be branded on loads of ten logs or less. One end of all branded logs to be processed domestically will be marked with a three 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.

(6) 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 Sec. 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.

i. 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 \$3,671.25. In the event only a portion of the contract timber is scaled, the purchase price shall be reduced by that portion of \$3,671.25 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.

j. 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.

k. 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 reinitiating consultation is required concerning the species prior to continuing operation, or;
- b. When, in order to comply with the Endangered Species Act, or to prevent incidental take of northern spotted owls in accordance with management direction in the Record of Decision (ROD) and Resource Management Plan (RMP), or to protect occupied marbled murrelet sites in accordance with the Standards and Guidelines or management direction of the ROD and RMP, the Contracting Officer determines it may be necessary to modify or terminate the contract, or;
- 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 an IBLA or court order, the Contracting Officer determines it may be necessary to modify or terminate the contract.
- g. When, in order to comply with a stay or other remedy issued by the Interior Board of Land Appeals (IBLA), the Contracting Officer determines it may be necessary to modify or terminate the contract, or;
- h. Species have been discovered which were identified for protection through survey and manage and/or protection buffer standards and guidelines or management direction established in the ROD and RMP, and the Contracting Officer determines that continued operations would affect the species or its habitat, or;
- i. When, in order to protect species, which were identified for protection through survey and manage and/or protection buffer standards and guidelines established, or management direction established in the ROD and RMP, the Contracting Officer determines it may be necessary to modify or terminate the contract.

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

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

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

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

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

The Contracting Officer may determine that it is necessary to modify the contract or terminate the cutting and removal rights under the contract in order to comply with the Endangered Species Act, prevent incidental take of northern spotted owls in accordance with the ROD and RMP, protect occupied marbled murrelet sites in accordance with the ROD and RMP, protect species that have been discovered which were identified for protection through survey and manage and/or protection buffer standards and guidelines or management direction established in the ROD and RMP, or to comply with a court order or an IBLA issued stay or remedy. Following the issuance of a written notice that cutting and removal rights will be terminated, the Purchaser will be permitted to remove timber cut under the contract, if allowed by the Endangered Species Act, if able to proceed without causing incidental take of northern spotted owls in accordance with the ROD and RMP, if consistent with marbled murrelet occupied site protection in accordance with ROD and RMP, if consistent with

survey and manage and/or protection buffer standards and guidelines or management direction established in the ROD and RMP, or if consistent with a court order or an IBLA issued stay or remedy. .

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 Contracting 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.

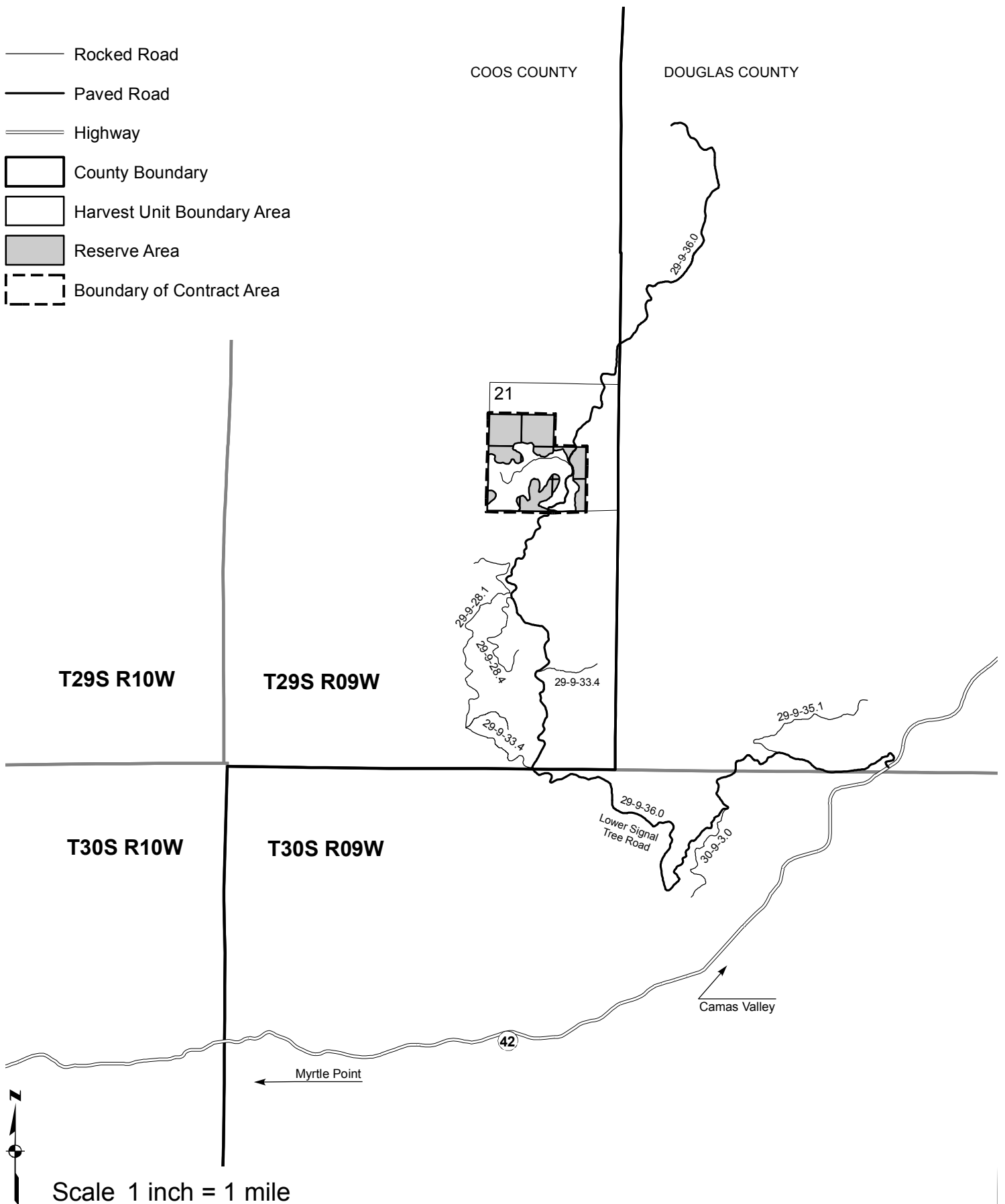
The Purchaser specifically and expressly waives any right to claim damages, other than those described in the preceding paragraph, based on an alleged breach of any duty to the Purchaser, whether express or implied, in regard to the manner in which the Government defended the litigation which resulted 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.

I. Safety

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

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

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



















TIMBER SALE CONTRACT MAP
USDI-BLM COOS BAY DISTRICT
T. 29 S., R. 9 W., Sec. 21 Will. Mer.

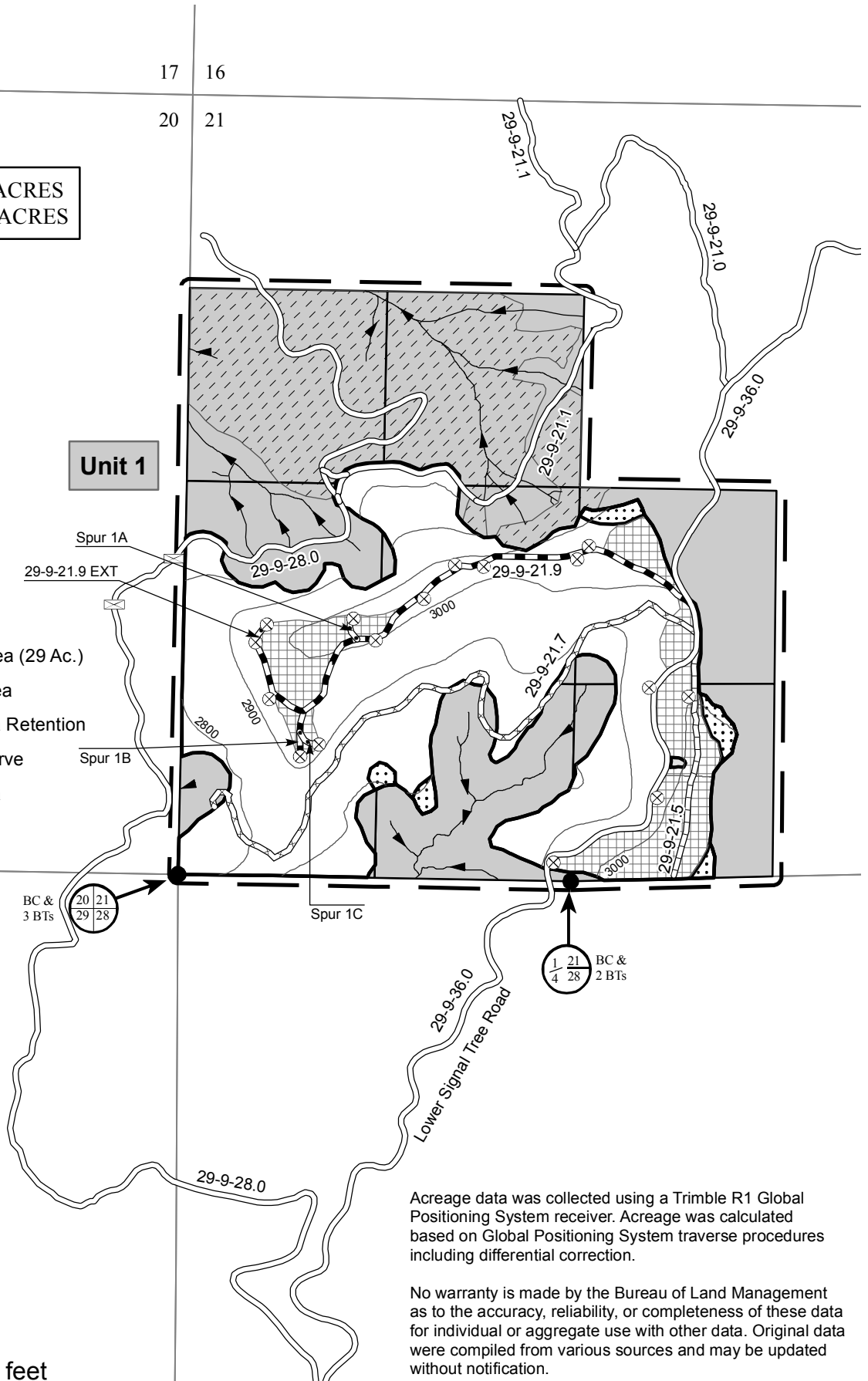
SALE NO. ORC04-TS-2019.0030
EXHIBIT A
Page 1 of 2
GLIDE PATH

HARVEST AREA
UNIT 1 ____ 141 ACRES

Total ____ 141 ACRES

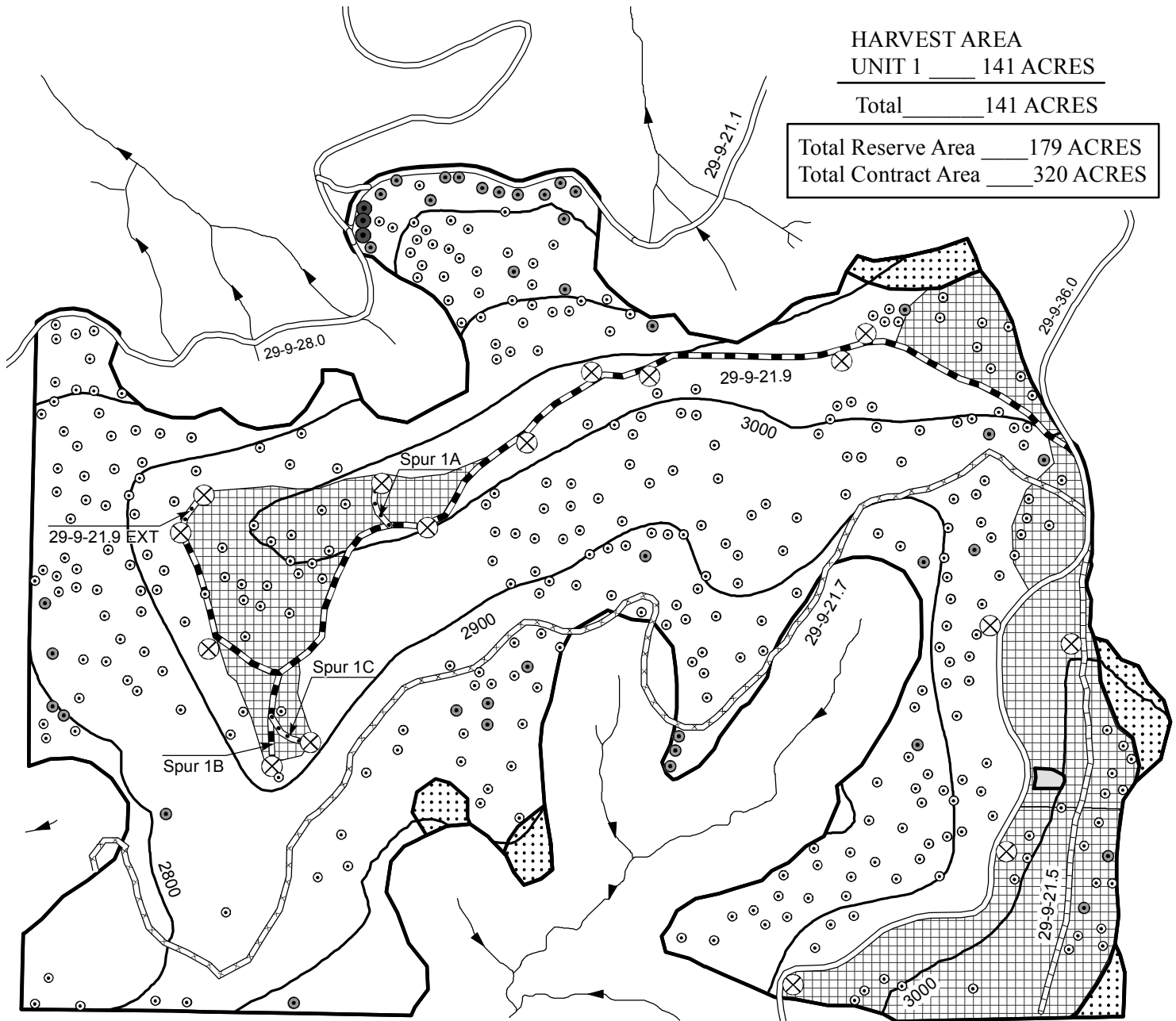
Total Reserve Area ____ 179 ACRES
Total Contract Area ____ 320 ACRES

-  Construct Barrier
-  Proposed Landing
-  Corner Found
-  Stream Channel
-  100' Contour
-  Existing Road
-  Road to be Improved
-  Road to be Constructed
-  Road to be Renovated
-  Closed Road
-  Ground-Based Yarding Area (29 Ac.)
-  Harvest Unit Boundary Area
-  Reserve Area - Basal Area Retention
-  Previous Sale Area - Reserve
-  Boundary of Contract Area
-  Reserve Area



Acreage data was collected using a Trimble R1 Global Positioning System receiver. Acreage was calculated based on Global Positioning System traverse procedures including differential correction.

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.



HARVEST AREA

UNIT 1 141 ACRES

Total 141 ACRES

Total Reserve Area 179 ACRES

Total Contract Area 320 ACRES

1 inch = 500 feet

- | | |
|--------------------------|--|
| ⊗ Proposed Landing | Seep - 30' buffer |
| → Stream Channel | Ground - Based Yarding Area (29 Ac.) |
| — 100' Contour | Reserve Area - Basal Area Retention |
| — Existing Road | Harvest Unit Boundary Area |
| ⊢ Road to be Improved | ○ 1-2 |
| ⊢ Road to be Constructed | ● 3-5 |
| ⊢ Road to be Renovated | ● 6-9 |
| ⊢ Decommissioned Road | Approximate Location and Number of Individual Trees to be Reserved |

Acresage data was collected using a Trimble R1 Global Positioning System receiver. Acresage was calculated based on Global Positioning System traverse procedures including differential correction.

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.

**UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT**

**EXHIBIT B
LUMP SUM SALE**

page 1
Contract No: ORC04-TS-2019.0030
SALE NAME Glide Path

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

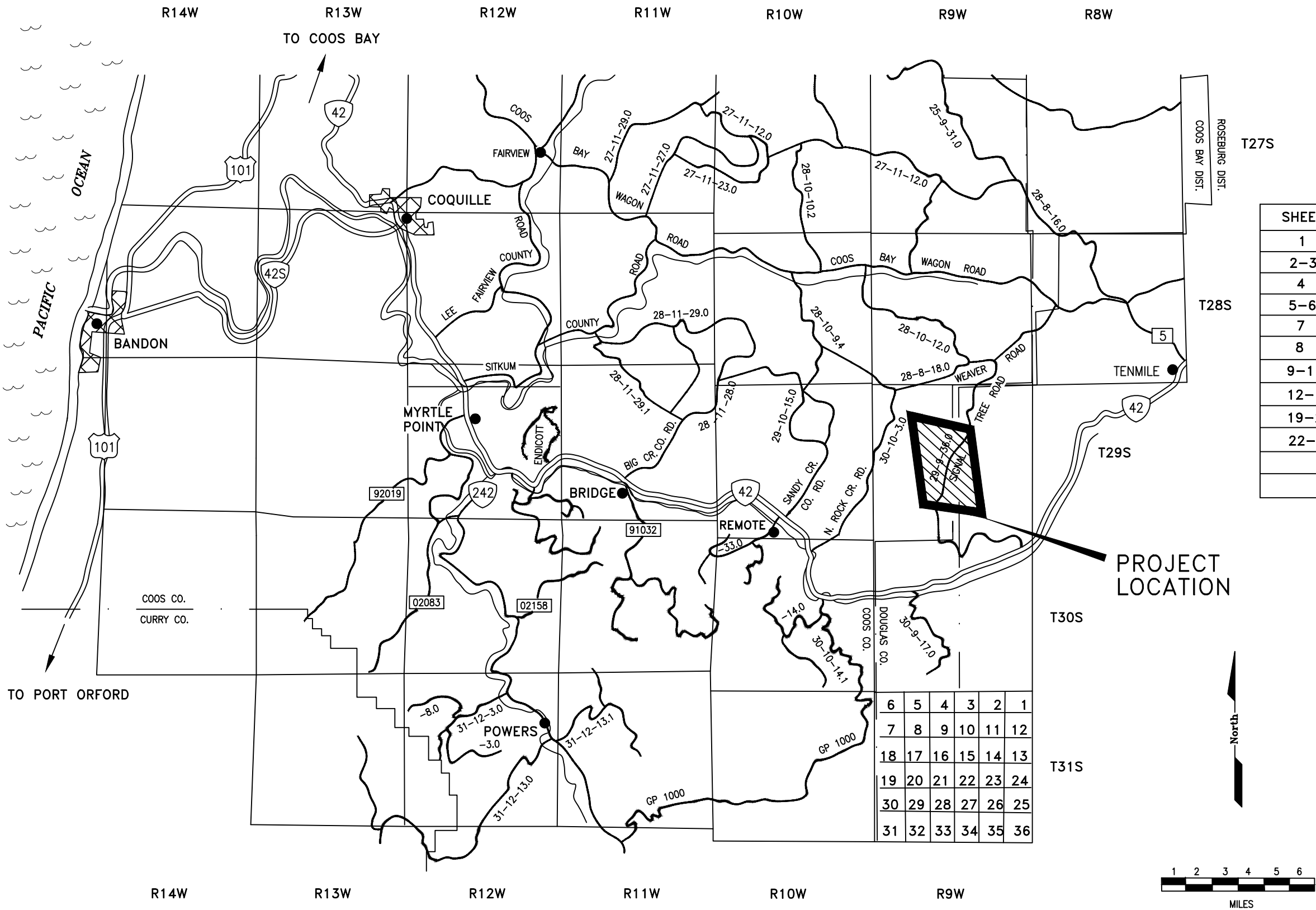
SPECIES	ESTIMATED VOLUME in MBF	PRICE PER UNIT	AMOUNT OF ESTIMATED VOLUME OR QUANTITY x UNIT PRICE
Douglas-fir	3255 MBF	\$164.50	\$535,447.50
grand fir	0 MBF	\$0.00	\$0.00
western hemlock	1614 MBF	\$82.50	\$133,155.00
Port-Orford-cedar	26 MBF	\$102.50	\$2,665.00
incense cedar	0 MBF	\$0.00	\$0.00
western redcedar	0 MBF	\$0.00	\$0.00
red alder	0 MBF	\$0.00	\$0.00
bigleaf maple	0 MBF	\$0.00	\$0.00
Oregon myrtle	0 MBF	\$0.00	\$0.00
tanoak	0 MBF	\$0.00	\$0.00
Totals	4895 MBF		\$671,267.50

The apportionment of the total purchase price is as follows:

Approx. No. of Trees	UNIT NO. 1	EST. NET MBF VOL.		
6390	Douglas-fir	3255	\$164.50	\$535,447.50
0	grand fir	0	\$0.00	\$0.00
3653	western hemlock	1614	\$82.50	\$133,155.00
158	Port-Orford-cedar	26	\$102.50	\$2,665.00
0	incense cedar	0	\$0.00	\$0.00
0	western redcedar	0	\$0.00	\$0.00
0	red alder	0	\$0.00	\$0.00
0	bigleaf maple	0	\$0.00	\$0.00
0	Oregon myrtle	0	\$0.00	\$0.00
0	tanoak	0	\$0.00	\$0.00
10201	TOTALS	4895		
			141 Acres =	\$4,760.76 /Ac.
				Unit Total \$671,267.50

EXHIBIT C
GLIDE PATH
ORC04-TS-2019.0030

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



SHEET	CONTENTS
1	TITLE SHEET
2-3	WORK LOCATION MAP
4	TYPICAL CROSS SECTION DETAILS
5-6	ESTIMATE OF QUANTITIES
7	CULVERT INSTALLATION DETAILS
8	ROADSIDE BRUSHING DETAILS
9-11	SPECIAL PROVISIONS
12-18	SPECIAL DETAILS
19-21	CONSTRUCTION DETAILS
22-65	ROAD CONSTRUCTION SPECIFICATIONS

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

TITLE SHEET

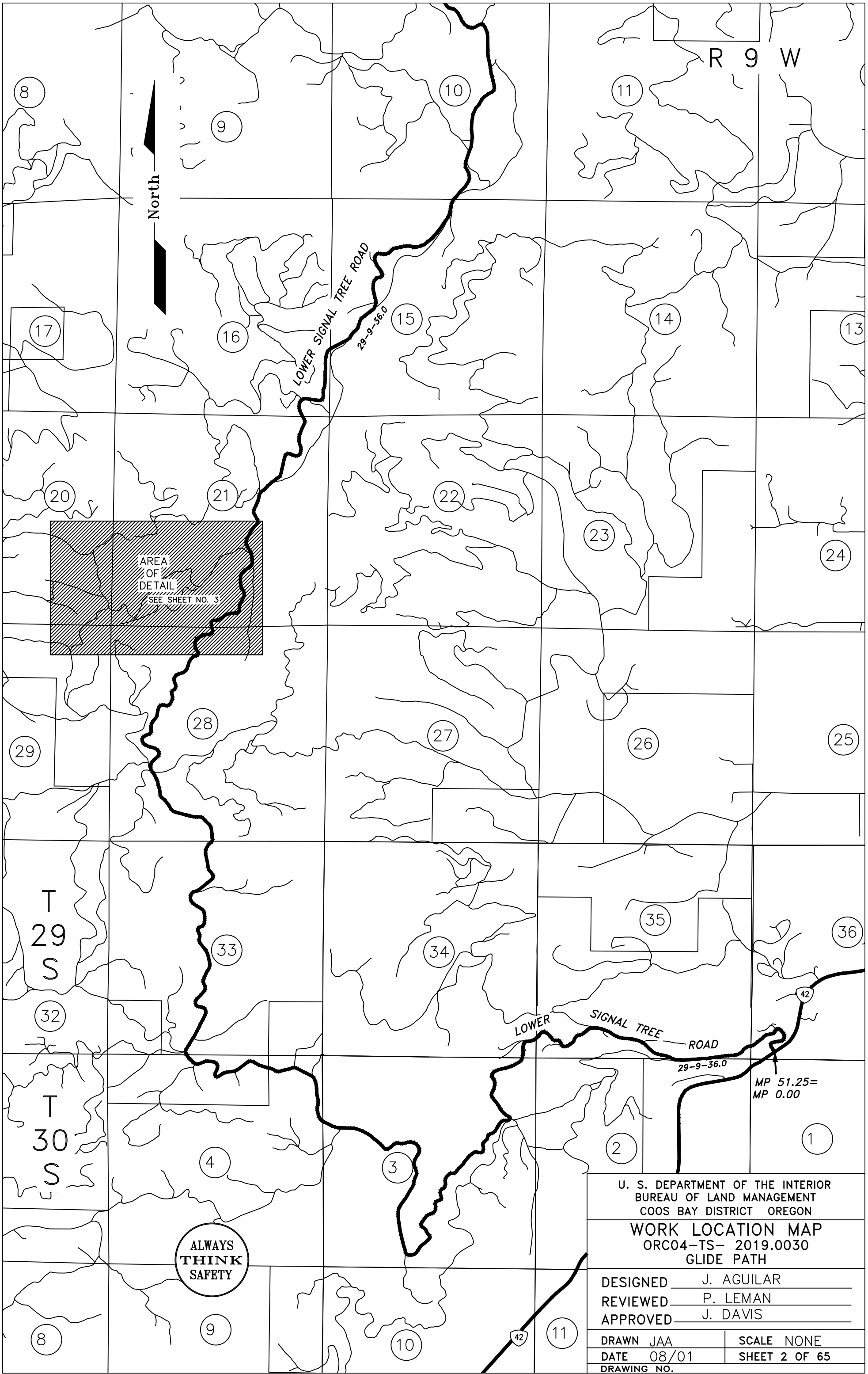
DESIGNED J. AGUILAR
REVIEWED P. LEMAN
APPROVED J. DAVIS

DRAWN JAA

DATE 08/01/2018

SCALE AS SHOWN

SHEET 1 OF 65



U. S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT COOS BAY DISTRICT OREGON	
WORK LOCATION MAP ORC04-TS- 2019.0030 GLIDE PATH	
DESIGNED J. AGUILAR	
REVIEWED P. LEMAN	
APPROVED J. DAVIS	
DRAWN JAA	SCALE NONE
DATE 08/01	SHEET 2 OF 65
DRAWING NO.	

EXHIBIT C

LEGEND

NEW CONSTRUCTION	○—○—○—○—○
RENOVATION	□—□—□—□—□
IMPROVEMENT	△—△—△—△—△
EXISTING ROAD	———
PAVED ROAD	—————
EXISTING DECOMM'D. ROAD
LANDING	⊗
BORROW SITE	Ⓟ
WASTE SITE	Ⓢ

R 9 W

North

T
29
S

20

WEYERHAEUSER
CO.

BLM

WEYERHAEUSER
CO.

BLM

29

21

28

29-9-21.9 EXT
1+36

39+25
39+25=0+00

35+20

33+20=0+00

1+50=0+00

Spur 1B
3+15

Spur 1A
1+49

26+85=0+00

25+55

Spur 1C
1+47

18+10

16+50

20+75

8+55

29-9-21.9

MP 8.15=0+00

MP 8.11

MP 8.08=0+00

MP 7.92

3+00

29-9-21.5

MP 7.77

29-9-36.0

MP 7.61

Lower Signal Tree Road

14+50

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

WORK LOCATION MAP
ORC04-TS-2019.0030
GLIDE PATH

DESIGNED J. AGUILAR
REVIEWED P. LEMAN
APPROVED J. DAVIS

DRAWN JAA
DATE 08/01
DRAWING NO.
SCALE NONE
SHEET 3 OF 65

ALWAYS
THINK
SAFETY

SILVER BUTTE
TIMBER CO.

ROAD NUMBER **	FROM MILEPOST/S TATION	TO MILEPOST/S TATION	LENGTH MILES/ STATIONS	TYPICAL SECTION TYPE	ROAD WIDTH'		CLEARING WIDTH		BRUSHING WIDTH		SURFACING										REMARKS
					SUBGRADE	DITCH	BEYOND		EXISTING ROADS		BASE COURSE					SURFACE COURSE					
							TOP CUT	TOE FILL	L	R	Min Top Width	Comp. Depth	Type²	Grading		Min Top Width	Comp. Depth	Type²	Grading		
29-9-21.5 R	0+00	14+50	14.50	1	14'	0'			10	10										3% OUTSLOPE W/ NO DITCH	
29-9-21.9 I	0+00	35+55	35.55	4	16'	2'			10	10	13' 4"	8"	D	3-0"		12'	4"	D	1.5-0"	3% CROWNED W/ DITCH	
29-9-21.9 I	35+55	39+25	3.70	5	16'	0'			10	10	13' 4"	8"	D	3-0"		12'	4"	D	1.5-0"	3% OUTSLOPE W/ NO DITCH	
29-9-21.9 ext. C	0+00	1+36	1.36	5	16'	0'	10	5								12'	12"	D	3-0"	3% OUTSLOPE W/ NO DITCH	
29-9-36.0 R	CULVERT SITES		1.53	4	20'	2'			NA	NA						18'	4"	HMAC*		16 SITES-CULVERT REPLACE	
29-9-36.0 R	6.23	6.28	0.05	4	20'	2'			NA	NA						18'	12"	D	1.5-0"	1 SITE-FILL REPAIR+XDRAIN	
Spur 1A C	0+00	1+49	1.49	5	16'	0'	10	5								12'	12"	D	3-0"	3% OUTSLOPE W/ NO DITCH	
Spur 1B I	0+00	3+15	3.15	4	16'	2'			10	10	13' 4"	8"	D	3-0"		12'	4"	D	1.5-0"	3% CROWNED W/ DITCH	
Spur 1C C	0+00	1+47	1.47	5	16'	0'	10	5								12'	12"	D	3-0"	3% OUTSLOPE W/ NO DITCH	

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:
WHEN THE RADIUS OF CURVE EQUALS
270-800 ADD 1FT.
165-270 ADD 2FT.
120-165 ADD 3FT.
90-120 ADD 4FT.
60-90 ADD 5FT.
OR AS SHOWN ON PLANS.

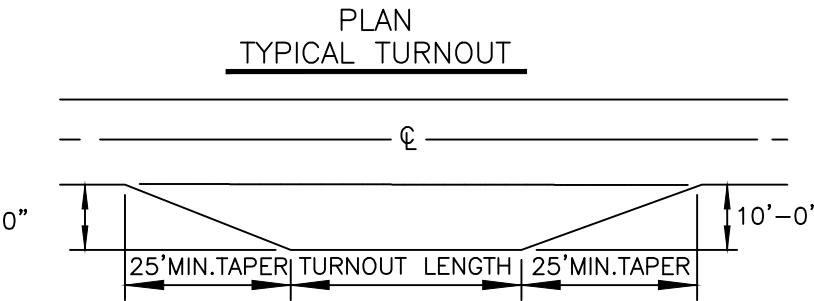
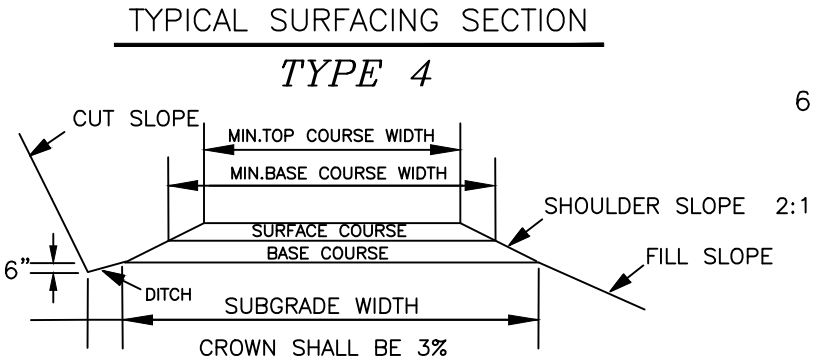
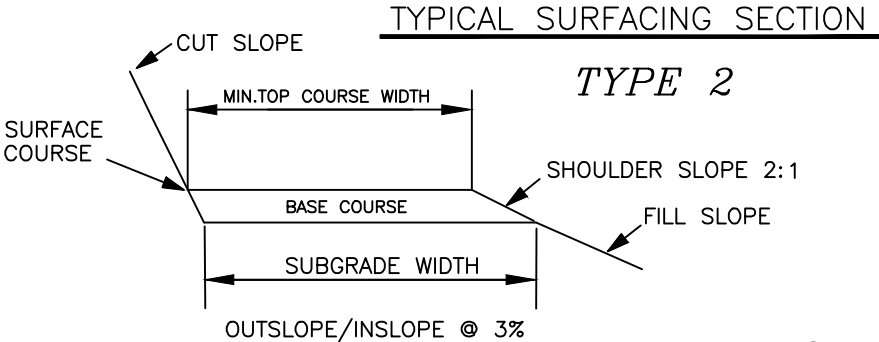
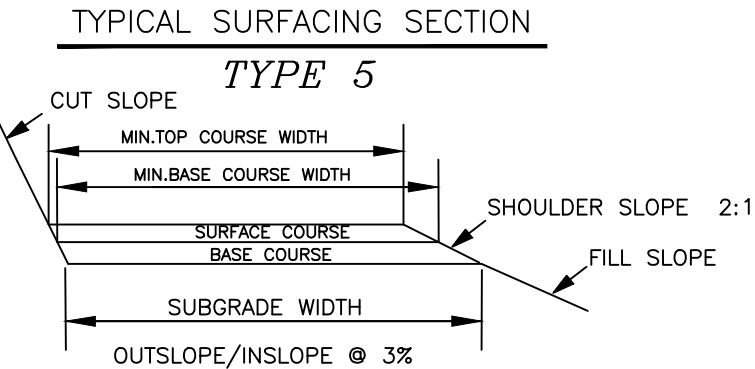
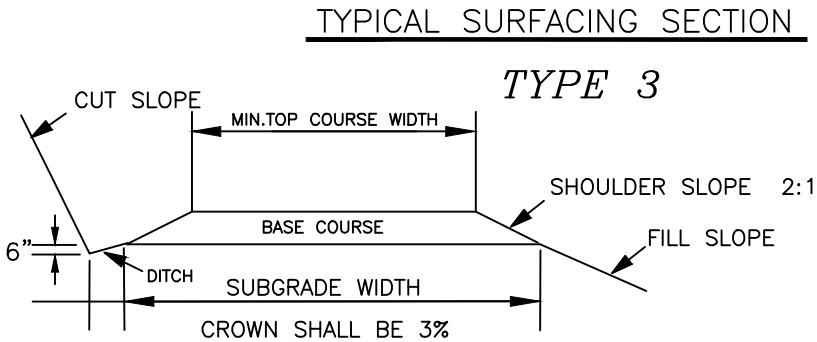
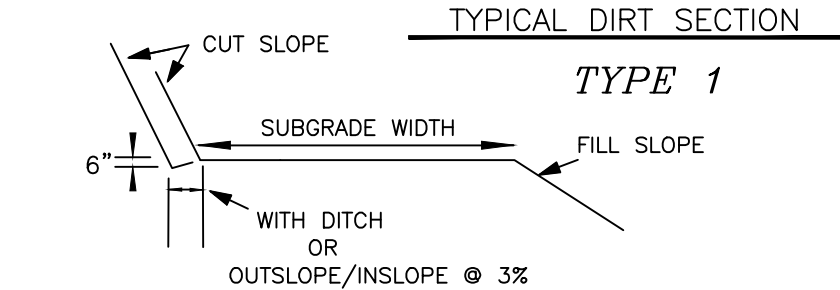
MATERIALS	CUT SLOPES	FILL SLOPES
COMMON	1/2:1	1 1/2:1
SOFT ROCK & SHALE	1/2:1	1 1/2:1
SOLID ROCK	1/4:1	REPOSE

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

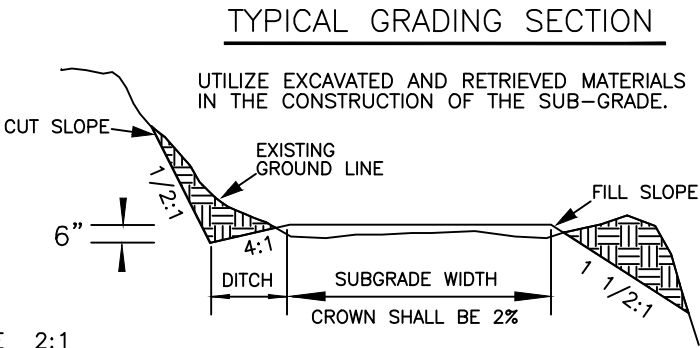
2. SURFACING TYPE
A. PIT RUN ROCK MATERIAL.
B. GRID ROLLED ROCK MATERIAL.
C. SCREENED ROCK MATERIAL.
D. CRUSHED ROCK MATERIAL.
E. CLASS 'C' ASPHALT MIX.
3. SURFACING
A. TURNOUTS, CURVE WIDENING AND ROAD APPROACH APRONS SHALL BE SURFACED.

4. DITCHES
A. 4:1 SLOPE FROM SUBGRADE, OR AS OTHERWISE NOTED. DEPTH MAY BE EXCEEDED TO OBTAIN REQUIRED DRAINAGE.

5. 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.



*HMAC = HOT MIX ASPHALT CONCRETE
** RENOVATION = R
IMPROVEMENT = I
CONSTRUCTION = C



U. S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT COOS BAY DISTRICT OREGON	
TYPICAL CROSS SECTION DETAIL	
DESIGNED	J. AGUILAR
REVIEWED	P. LEMAN
APPROVED	J. DAVIS
DRAWN	JAA
DATE	08/18
DRAWING NO.	SHEET 4 OF 65

ROAD NUMBER	NEW CONSTRUCTION	RENOVATION	IMPROVEMENT	SLASH TREATMENT	GRUBBING	ROADSIDE BRUSHING	SLOPE STAKING	EARTHWORK						CPP #1	CMP #2				DOWNSPOUTS #3				MARKERS
								COMMON	RIPPABLE ROCK	ROCK CUT	FILL	SHORT HAUL 200-5000'	LONG HAUL 5000'+	18"	12"	18"	24"	FULL ROUND		FULL ROUND			
																		18" CPP	24" CPP	24" CMP	36" CMP		
SECTION NO.	300	500	500	200	200	2100	2300	300	300	300	300	300	300	400	400	400	400	400	400	400	400	400	
UNITS	STA.	STA.	STA.	ACRES	ACRES	STA.	SIDES	C.Y.	C.Y.	C.Y.	YDS.	YD.MI.	YD.MI.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	EA.	
29-9-21.5		14.50		0.5	0.5																		
29-9-21.9	1.36		39.25	3.7	3.7									240								6	
29-9-36.0		1.58													60	448	220					22	
SPUR 1A	1.49			0.1	0.1																		
SPUR 1B			3.15	0.1	0.1																		
SPUR 1C	1.47			0.1	0.1									40									
																						1	

ESTIMATE OF QUANTITIES *

*1 CPE - CORRUGATED POLYETHYLENE PIPE
*2 CMP - CORRUGATED METAL PIPE
*3 SEE DOWNSPOUT INSTALLATION SHEET

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



U. S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT COOS BAY DISTRICT OREGON	
ESTIMATE OF QUANTITIES	
DESIGNED	J. AGUILAR
REVIEWED	P. LEMAN
APPROVED	J. DAVIS
DRAWN JAA	SCALE NONE
DATE 08/18	SHEET 5 OF 65
DRAWING NO.	

ESTIMATE OF QUANTITIES*

ROAD NUMBER	SURFACING					OTHER			SEEDING		OTHER (SEDIMENT CONTROL DEVICES)
	6-0" ROCK	3-0" ROCK	3-0" SPOT ROCK	1.5-0" SURFACE ROCK	1.5-0" CULVERT BEDDING	¾-0" CULVERT BEDDING	RIPRAP (CLASS 3)	CLASS C ASPHALT	SEED, FERTILIZE AND MULCH		
SECTION NO.	1000	1000	1000	1200	1200	1200	1400	2600	DRY	HYDRO	
UNITS	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	TONS	ACRES	ACRES	EACH
29-9-21.5									0.7		
29-9-21.9		2994		856	70		25		1.9		
29-9-36.0	280			202		170	25	75	0.5		
SPUR 1A		180							0.1		
SPUR 1B		239		69					0.2		
SPUR 1C		179			10				0.1		
TOTALS	280	3592		1127	80	170	50	75	3.5		

SECTION	GRADE	SIZE
1000	(A)	3"
	(I)	6"
1200	(C)	1 ½"
1200	(E)	¾"
1400	(A)	27"-8"
2600	CLASS C ASPHALT	

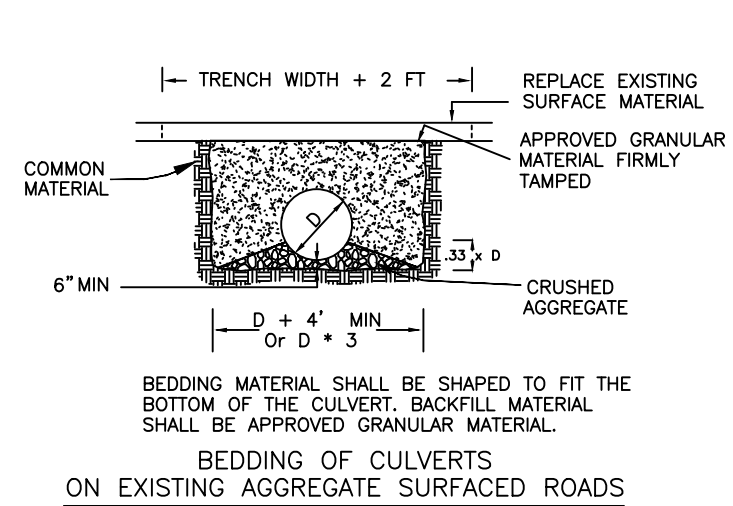
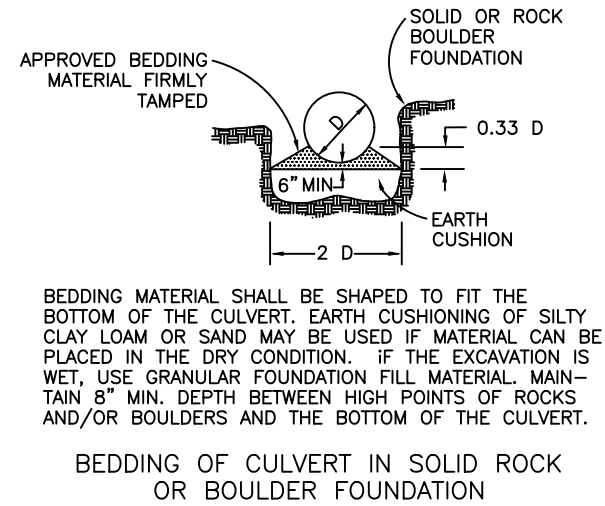
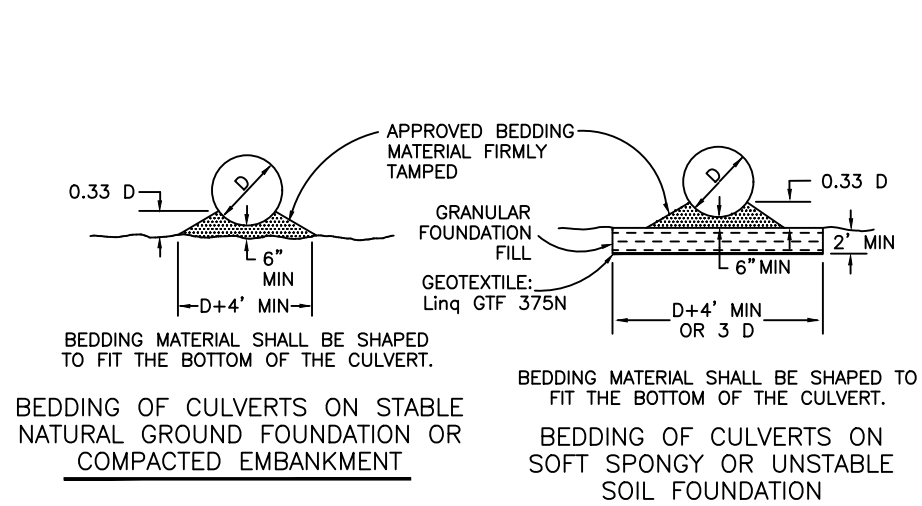
GRADE INDICATED IN CIRCLE ○



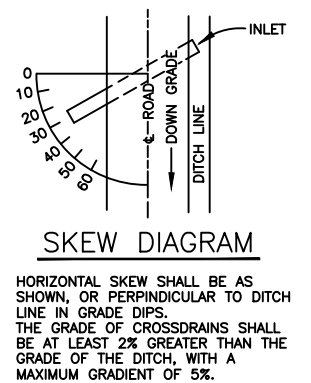
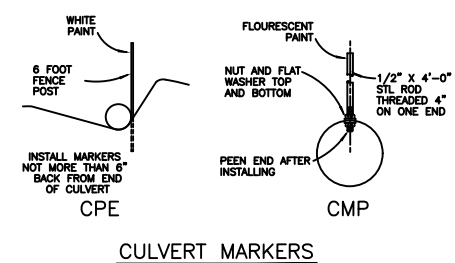
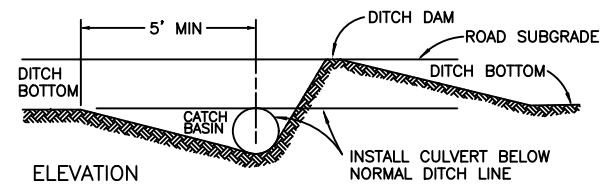
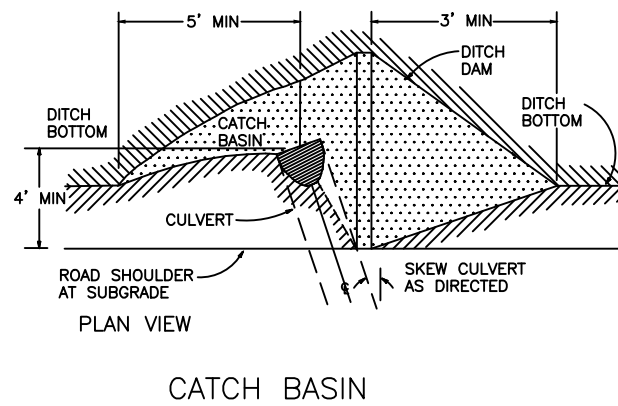
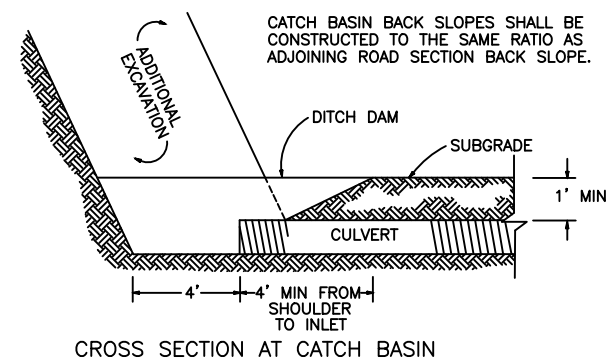
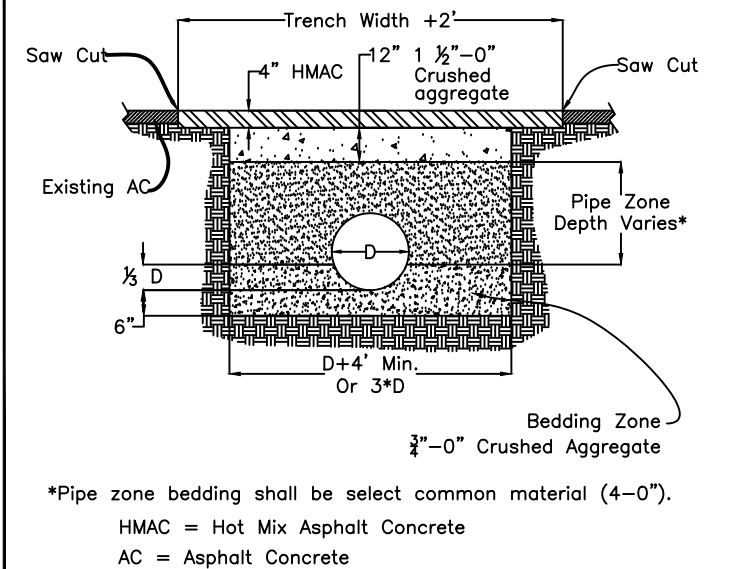
* FOR INFORMATIONAL USE ONLY. QUANTITIES SHOWN ARE NOT PAY ITEMS.
ALL ROCK QUANTITIES ARE TRUCK (LOOSE) MEASUREMENT QUANTITIES.

U. S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT COOS BAY DISTRICT OREGON	
ESTIMATE OF QUANTITIES	
DESIGNED _____	J. AGUILAR
REVIEWED _____	P. LEMAN
APPROVED _____	J. DAVIS
DRAWN JAA	SCALE NONE
DATE 08/18	SHEET 6 OF 65
DRAWING NO.	

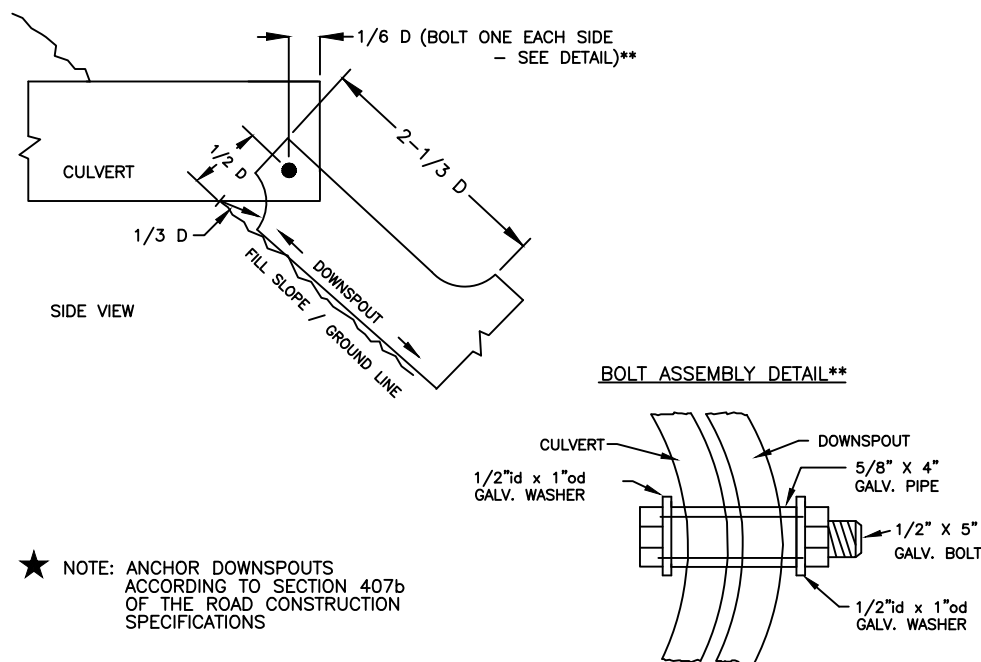
BEDDING OF CULVERTS



PAVED ROAD TRENCH DETAIL

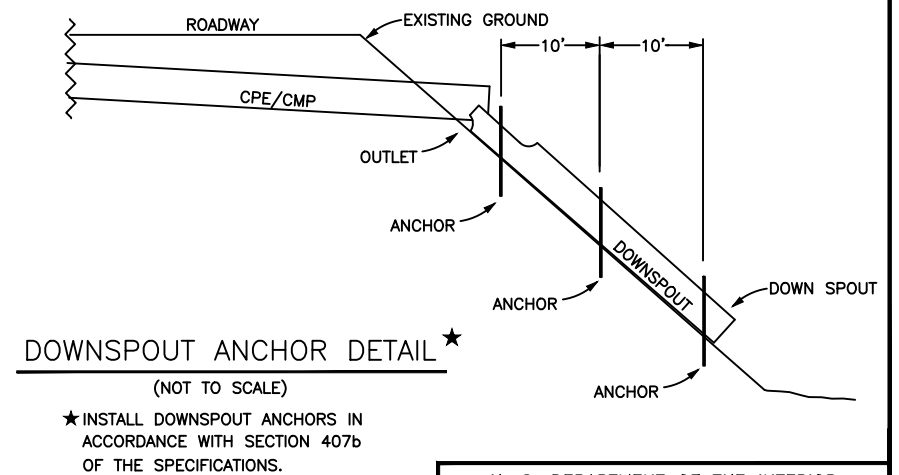
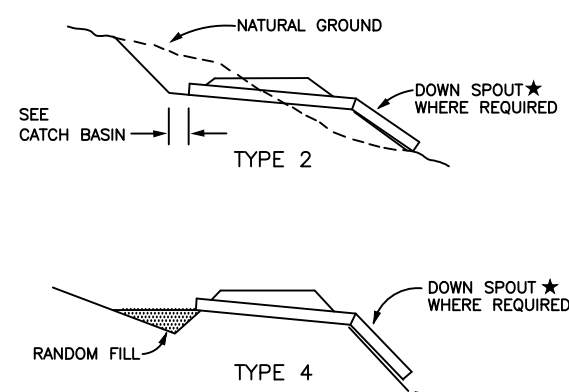
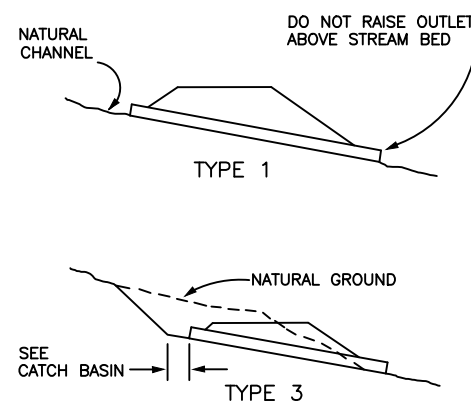


USE "ADJUSTABLE ELBOW" FOR CPE AND CMP DOWNSPOUTS



**BANDS SHALL MEET
MANUFACTURER'S SPECIFICATIONS**

CULVERT INSTALLATION TYPES



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

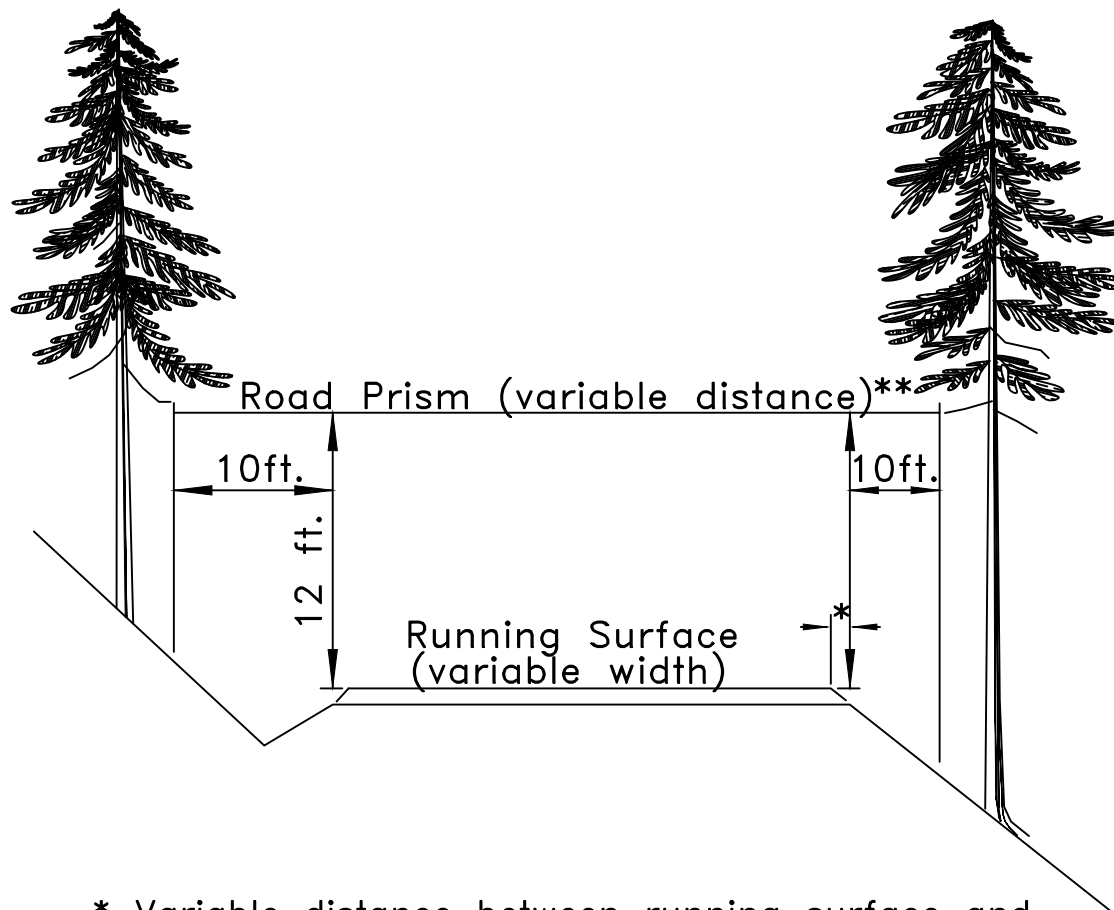
CULVERT INSTALLATION DETAILS

DESIGNED J. AGUILARREVIEWED P. LEMAN

APPROVED J. DAVIS

DRAWN	JAA	SCALE	NONE
DATE	01/01/01	UNITS	INCHES

**ALWAYS
THINK
SAFETY**



* Variable distance between running surface and start of fill slope.

** All areas within the variable distance shall be free of all vegetation capable of growing one (1) foot in height or higher, and free of all overhanging limbs and branches 12 feet in elevation above the running surface.



U. S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT COOS BAY DISTRICT OREGON	
ROADSIDE BRUSHING DETAIL	
DESIGNED	J. AGUILAR
REVIEWED	P. LEMAN
APPROVED	J. DAVIS
DRAWN JAA	SCALE NONE
DATE 08/18	SHEET 8 OF 65
DRAWING NO.	

SPECIAL PROVISIONS

Purchaser Responsibility

The Purchaser shall avoid damaging any bituminous surfaced roads and will be responsible for the repair or the cost of repair of any road damaged as a result of activity. Bituminous roads shall be left in the same condition that they were prior to operational activity.

Prior to any road construction, improvement, renovation of structures or roads, contact Oregon Utility Notifications Center (800-332-2344 or 811) for locations of buried lines or cables. The Purchaser shall be responsible for repair or replacement of any damage or destruction to structures, utilities, and cables.

Seasonal Restrictions

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

Oregon Department of Fish and Wildlife (ODFW) guidelines for timing of in-water work limits stream culvert installation to the period between July 1 and September 15. A waiver process through the Oregon Department of Fish and Wildlife is available and subject to their discretion.

Daily Timing Restrictions

Daily timing restrictions are imposed upon 2 culvert replacement locations on Lower Signal Tree Road, located at mileposts 6.08 and 6.16. Work, at these 2 sites, will be limited to 2 hours after sunrise to 2 hours before sunset.

Roadwork associated with Lower Signal Tree Road (29-9-36.0)

Roadwork upon Lower Signal Tree Road consists of 17 sites requiring culvert installation, one (1) site requiring road fill failure repair, and construction of 3 yarder pads (2 jump-ups & 1 roadside).

Sixteen (16) of the 17 culvert installation sites will require replacement of roadway asphalt surfacing as part of the Exhibit C roadwork.

Constructed yarder pads at mileposts 7.61, 7.77, and 7.92 will require replacement of roadway surfacing as part of the Exhibit D roadwork (post operational use of the yarder pads)

Excavation, culvert installation, renovation, surfacing, soil stabilization, and hot mix asphalt concrete paving shall be completed in accordance with Sections 300, 400, 500, 1000, 1200, 1800, and 2600 of Road Specifications and Culvert Installation Detail sheets. Approved culvert bedding shall be 3/4-0" crushed aggregate. Approved culvert side-fill material shall be 4-0" select common material. Approved roadway base course shall be 1.5-0" crushed aggregate installed at a 12" depth. Asphalt paving shall conform to the Oregon Department of

Transportation, Level III, ½" dense, PG 64-22 Asphalt Binder mix for use on roadways and furnished aggregate that conform to the aggregate requirements for hot mix asphalt concrete by the Oregon Department of Transportation. Asphalt paving shall be installed at a 4" depth. The length and width dimensions of the replacement asphalt surfacing over roadway excavations, will be determined by the width of the road, the width of the excavated trench, and the extent of surfacing disturbed.

Traffic delays will be limited to a maximum of 20 minutes whenever possible.

Existing asphalt pavement removed over all roadway excavations shall become the property of the Purchaser and shall be legally disposed off BLM and private lands.

Timing requirement for roadwork upon Lower Signal Tree Road (29-9-36.0)

Because Lower Signal Tree Road provides critical access to large tracts of property owned by several landowner, and Lower Signal Tree Road is utilized by many user groups for a variety of activities, proposed Exhibit C roadwork is required to commence no later than July 1, 2019 and completed by October 15, 2019. This requirement is to assist with coordination efforts with the many road user groups.

Culvert Installation

Culvert lengths listed in Special Details and Estimate of Quantity sheets are estimated culvert lengths; however, individual culvert length shall be installed to fit the actual ground & site conditions of proposed work locations. "Shotgun" pipes, or short lengths with a trench, will not be acceptable. A final tally of installed culvert lengths will be totaled upon completion of culvert installations, and any addition to totaled length will have adjustment made by the Authorized Officer at unit prices set forth in the current BLM Timber Appraisal Production Cost program.

All culverts removed under the contract become the property of the Purchaser and shall be legally disposed off BLM and private lands.

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.

Over-wintering

No natural-surfaced new construction roads shall 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 of the year of construction.

Native Seed

The Government will furnish native seed mix, when available.

SPECIAL DETAILS

RENOVATION OF BLM ROAD NO. 29-9-36.0

Individual roadwork locations between MP 5.65 TO MP 7.92

<u>MP.</u>	<u>Remarks</u>
0.00	Junction with Highway 42 at MP 51.25. Complete excavation, culvert installation, renovation, surfacing, soil stabilization, and hot mix asphalt concrete paving, at individual work locations upon Lower Signal Tree Road, in accordance with Sections 300, 400, 500, 1000, 1200, 1800, and 2600 of Road Specifications, Typical Cross Section Detail Sheet No. 4, and Culvert Installation Detail Sheet No. 7.
<p>Notes: Roadwork upon Lower Signal Tree Road consists of 17 sites requiring culvert installation, one (1) site requiring road fill failure repair, and construction of 3 yarder pads (2 jump-ups & 1 roadside). Sixteen (16) of the 17 culvert installation sites, will require replacement of roadway asphalt surfacing.</p> <p>Approved culvert bedding shall be 3/4-0" crushed aggregate. Approved culvert side-fill material shall be 4-0" select common material. Approved roadway base course shall be 1.5-0" crushed aggregate installed at a 12" depth. Asphalt paving shall conform to the Oregon Department of Transportation, Level III, ½" dense, PG 64-22 Asphalt Binder mix for use on roadways and furnished aggregate that conform to the aggregate requirements for hot mix asphalt concrete by the Oregon Department of Transportation. Asphalt paving shall be installed at a 4" depth.</p> <p>Install 6' long collar consisting of select native material around culvert inlets in accordance with Road Specification 425.</p> <p>Existing asphalt pavement removed over all roadway excavations, shall become the property of the Purchaser and shall be legally disposed off BLM and private lands.</p> <p>All culverts removed under the contract become the property of the Purchaser and shall be legally disposed off BLM and private lands.</p>	
5.65	Replace existing cross drain CMP with 18" x 40' CMP. Install new culvert marker. 10 CY of ¾-0" crushed aggregate allocated for culvert bedding. 10 CY of 1.5-0" crushed aggregate allocated for roadway base course. Asphalt surfacing shall be replaced for entire width and length of roadway excavated and extent of surfacing disturbed.
5.77	Install culvert marker on existing stream crossing CMP.

MP.	Remarks
5.79	Replace existing stream crossing CMP with 24" x 30' CMP. Install new culvert marker at inlet and 5 CY rip rap energy dissipater at outlet. 10 CY of ¾-0" crushed aggregate allocated for culvert bedding. 10 CY of 1.5-0" crushed aggregate allocated for roadway base course. Asphalt surfacing shall be replaced for entire width and length of roadway excavated and extent of surfacing disturbed.
5.81	Junction, 29-9-33.0 right.
5.86	Install culvert marker on existing cross drain CMP.
6.08	Replace existing cross drain CMP with 18" x 30' CMP. Install new culvert marker at inlet and 5 CY rip rap energy dissipater at outlet. 10 CY of ¾-0" crushed aggregate allocated for culvert bedding. 10 CY of 1.5-0" crushed aggregate allocated for roadway base course. Asphalt surfacing shall be replaced for entire width and length of roadway excavated and extent of surfacing disturbed.
NOTE: Daily timing restrictions apply, work at this site is limited to 2 hours after sunrise to 2 hours before sunset.	
6.16	Replace existing cross drain CMP with 18" x 30' CMP. Install new culvert marker. 10 CY of ¾-0" crushed aggregate allocated for culvert bedding. 10 CY of 1.5-0" crushed aggregate allocated for roadway base course. Asphalt surfacing shall be replaced for entire width and length of roadway excavated and extent of surfacing disturbed.
NOTE: Daily timing restrictions apply, work at this site is limited to 2 hours after sunrise to 2 hours before sunset.	
6.23	Existing fill failure affecting 1/3 of outside roadway for a distance of 10'. Remove asphalt surfacing for a total of 50' (25' both sided of failure). Excavate entire area down to subgrade and address any subgrade issue. Re-utilize existing base course, compacting in 6' lift. To regain road width, build up outside shoulder with Class 4 rip rap (keyed-in) and bring up road shoulder utilizing 3-0" crushed aggregate. Surface roadway with new 12" lift of 1.5-0" crushed aggregate.
	Install new cross drain 18" x 30' CMP at south end of this road repair. 10 CY of ¾-0" crushed aggregate allocated for culvert bedding.
NOTE: This repaired road segment will remain with crushed aggregate surfacing.	
6.41	Install culvert marker on existing cross drain CMP.
6.50	Install culvert marker on existing cross drain CMP with associated bank seep.

MP.	Remarks
6.58	Replace existing cross drain CMP with 18" x 40' CMP. Install new culvert marker. 10 CY of ¾-0" crushed aggregate allocated for culvert bedding. 10 CY of 1.5-0" crushed aggregate allocated for roadway base course. Asphalt surfacing shall be replaced for entire width and length of roadway excavated and extent of surfacing disturbed.
6.63	Junction, 29-9-28.4 and 29-9-28.0 left.
6.73	Replace existing cross drain CMP with 18" x 40' CMP. Install new culvert marker. 10 CY of ¾-0" crushed aggregate allocated for culvert bedding. 10 CY of 1.5-0" crushed aggregate allocated for roadway base course. Asphalt surfacing shall be replaced for entire width and length of roadway excavated and extent of surfacing disturbed.
6.90	Replace existing cross drain CMP with 18" x 50' CMP. Install new culvert marker. 10 CY of ¾-0" crushed aggregate allocated for culvert bedding. 10 CY of 1.5-0" crushed aggregate allocated for roadway base course. Asphalt surfacing shall be replaced for entire width and length of roadway excavated and extent of surfacing disturbed.
7.00	Replace existing cross drain CMP with 18" x 40' CMP. Install new culvert marker. 10 CY of ¾-0" crushed aggregate allocated for culvert bedding. 10 CY of 1.5-0" crushed aggregate allocated for roadway base course. Asphalt surfacing shall be replaced for entire width and length of roadway excavated and extent of surfacing disturbed.
7.11	Replace existing stream crossing CMP with 24" x 40' CMP. Install new culvert marker at inlet and 5 CY rip rap energy dissipater at outlet. 10 CY of ¾-0" crushed aggregate allocated for culvert bedding. 10 CY of 1.5-0" crushed aggregate allocated for roadway base course. Asphalt surfacing shall be replaced for entire width and length of roadway excavated and extent of surfacing disturbed.
7.17	Replace existing stream crossing CMP with 24" x 50' CMP. Install new culvert marker at inlet. 10 CY of ¾-0" crushed aggregate allocated for culvert bedding. 10 CY of 1.5-0" crushed aggregate allocated for roadway base course. Asphalt surfacing shall be replaced for entire width and length of roadway excavated and extent of surfacing disturbed.
7.27	Replace existing cross drain CMP with 18" x 40' CMP. Install new culvert marker. 10 CY of ¾-0" crushed aggregate allocated for culvert bedding. 10 CY of 1.5-0" crushed aggregate allocated for roadway base course. Asphalt surfacing shall be replaced for entire width and length of roadway excavated and extent of surfacing disturbed.
7.39	Replace existing stream crossing CMP with 24" x 50' CMP. Install new culvert marker at inlet. 10 CY of ¾-0" crushed aggregate allocated for culvert bedding. 10 CY of 1.5-0" crushed aggregate allocated for roadway base course. Asphalt surfacing shall be replaced for entire width and length of roadway excavated and extent of surfacing disturbed.

<u>MP.</u>	<u>Remarks</u>
7.55	Replace existing cross drain CMP with 24" x 50' CMP. Install new culvert marker. 10 CY of ¾-0" crushed aggregate allocated for culvert bedding. 10 CY of 1.5-0" crushed aggregate allocated for roadway base course. Asphalt surfacing shall be replaced for entire width and length of roadway excavated and extent of surfacing disturbed.
7.61	Construct jump-up yarder pad with approach right. Install 12" x 30' CMP in ditchline at junction with new approach. 100 CY of 6-0" crushed aggregate allocated for surfacing of yarder pad and approach.
7.73	Replace existing cross drain CMP with 18" x 36' CMP. Install new culvert marker at inlet and 5 CY rip rap energy dissipater at outlet. 10 CY of ¾-0" crushed aggregate allocated for culvert bedding. 10 CY of 1.5-0" crushed aggregate allocated for roadway base course. Asphalt surfacing shall be replaced for entire width and length of roadway excavated and extent of surfacing disturbed.
7.77	Construct jump-up yarder pad with approach right. Install 12" x 30' CMP in ditchline at junction with new approach. 100 CY of 6-0" crushed aggregate allocated for surfacing of yarder pad and approach. End haul any excess excavation to MP 7.92.
7.83	Replace existing cross drain CMP with 18" x 36' CMP. Install new culvert marker at inlet and 5 CY rip rap energy dissipater at outlet. 10 CY of ¾-0" crushed aggregate allocated for culvert bedding. 10 CY of 1.5-0" crushed aggregate allocated for roadway base course. Asphalt surfacing shall be replaced for entire width and length of roadway excavated and extent of surfacing disturbed.
7.90	Replace existing cross drain CMP with 18" x 36' CMP. Install new culvert marker. 10 CY of ¾-0" crushed aggregate allocated for culvert bedding. 10 CY of 1.5-0" crushed aggregate allocated for roadway base course. Asphalt surfacing shall be replaced for entire width and length of roadway excavated and extent of surfacing disturbed.
7.92	Construct yarder pad left. Utilize any waste material staged at this location in construction of yarder pad. 80 CY of 6-0" crushed aggregate allocated for surfacing of yarder pad.

RENOVATION OF BLM ROAD NO. 29-9-21.5
Station 0+00 to 14+50

<u>Sta.</u>	<u>Remarks</u>
0+00	Junction with BLM Road No. 29-9-36.0 (Lower Signal Tree Road) at MP 8.08. Begin clearing & grubbing, excavation, renovation, watering, erosion control, and soil stabilization in accordance with Sections 200, 300, 500, 600, 1700, and 1800 of the Road Specifications and Typical Cross Section Detail Sheet No. 4. Fill in existing earthen berm barrier and construct a wye junction for use as a truck turn-around.

<u>Sta.</u>	<u>Remarks</u>
Note:	Begin clearing slash from the existing roadway. All material shall be removed with an excavator equipped with a brush grapple or bucket & thumb and piled outside of the clearing limits of the road.
1+00	Renovate existing turn out right.
3+00	Construct 60' x 60' roadside landing right.
6+40	Junction with existing subgrade left. Utilize existing subgrade for logging equipment traffic access only.
14+50	End renovation.

IMPROVEMENT OF BLM ROAD NO. 29-9-21.9
Station 0+00 to 39+25

<u>Sta.</u>	<u>Remarks</u>
0+00	Junction with BLM Road No. 29-9-36.0 (Lower Signal Tree Road) at MP 8.15. Begin clearing & grubbing, excavation, culvert installation, road improvement, watering, surfacing, slope protection, erosion control, and soil stabilization in accordance with Sections 200, 300, 400, 500, 600, 1000, 1200, 1400, 1700, and 1800 of the Road Specifications, Culvert Installation Detail Sheet No. 7, and Typical Cross Section Detail Sheet No. 4. Fill in existing earthen berm barrier. Begin widening existing subgrade to 16' in width with a 2' ditch. All excavated material from road widening, turnout and landing construction, and culvert installation shall be utilized and embanked within the subgrade. Begin 8" compacted depth lift of 3-0" crushed aggregate base course capped with a 4" compacted depth lift of 1.5-0" crushed aggregate surfacing.
Note:	Begin clearing slash from the existing roadway. All material shall be removed with an excavator equipped with a brush grapple or bucket & thumb and piled outside of the clearing limits of the road.
0+40	Install 18" x 60' CPP Type "S" double wall poly culvert and a 6' T-post inlet marker. Utilize 20 CY of 1.5-0" crushed aggregate surfacing as bedding and backfill material. Construct a catch basin at the junction of the ditch lines of the BLM Road Nos. 29-9-21.9 and 29-9-36.0.
2+40	Construct ditch dam and catch basin. Install 18" x 40' CPP Type "S" double wall poly culvert and a 6' T-post inlet marker. Utilize 10 CY of 1.5-0" crushed aggregate surfacing as bedding and backfill material and 5 CY of Class 3 rip rap as an energy dissipater.

Sta.	Remarks
5+75	Construct ditch dam and catch basin. Install 18" x 30' CPP Type "S" double wall poly culvert and a 6' T-post inlet marker. Utilize 10 CY of 1.5-0" crushed aggregate surfacing as bedding and backfill material and 5 CY of Class 3 rip rap as an energy dissipater.
7+75	Construct truck turn out left. Surface with 30 CY of 3-0" crushed aggregate base course.
8+55	Construct 30' (width) x 60' (length) roadside landing right. Surface with 80 CY of 3-0" crushed aggregate landing rock.
9+85	Construct 30' (width) x 60' (length) roadside landing left. Surface with 80 CY of 3-0" crushed aggregate landing rock.
Note: From Sta. 9+85 to 26+85 construct ditch-outs left & right as needed for drainage.	
14+45	Construct truck turn out right. Surface with 30 CY of 3-0" crushed aggregate base course.
16+50	Construct 30' (width) x 60' (length) roadside landing left. Surface with 80 CY of 3-0" crushed aggregate landing rock.
18+10	Construct 30' (width) x 60' (length) roadside landing right. Surface with 80 CY of 3-0" crushed aggregate landing rock.
20+75	Construct 30' (width) x 60' (length) roadside landing left. Surface with 80 CY of 3-0" crushed aggregate landing rock.
23+30	Begin clearing & grubbing and excavation for subgrade re-alignment right.
24+15	Re-align subgrade 22' right.
25+00	Re-align subgrade 35' right.
25+55	Re-align subgrade 20' right. Construct 60' x 60' roadside landing left. Surface with 120 CY of 3-0" crushed aggregate landing rock.
26+85	Junction. Construct Spur 1A right. End subgrade realignment.
30+00	Construct ditch dam and catch basin. Install 18" x 40' CPP Type "S" double wall poly culvert and a 6' T-post inlet marker. Utilize 10 CY of 1.5-0" crushed aggregate surfacing as bedding and backfill material and 5 CY of Class 3 rip rap as an energy dissipater.
32+45	Construct ditch dam and catch basin. Install 18" x 30' CPP Type "S" double wall poly culvert and a 6' T-post inlet marker. Utilize 10 CY of 1.5-0" crushed aggregate surfacing as bedding and backfill material and 5 CY of Class 3 rip rap as an energy dissipater.

<u>Sta.</u>	<u>Remarks</u>
33+20	Junction. Improve existing Spur 1B left.
35+20	Construct 60' x 60' roadside landing with 100' approach left. Surface landing and approach with 180 CY of 3-0" crushed aggregate landing rock.
35+55	Construct ditch dam and catch basin. Install 18" x 40' CPP Type "S" double wall poly culvert and a 6' T-post inlet marker. Utilize 10 CY of 1.5-0" crushed aggregate surfacing as bedding and backfill material and 5 CY of Class 3 rip rap as an energy dissipater.
Note: From Sta. 35+55 to 39+25 out slope road to drain and do not construct a ditch.	
39+25	End improvement. Construct 30' (width) x 60' (length) roadside landing left. Surface with 80 CY of 3-0" crushed aggregate landing rock. Continue with construction of BLM Road No. 29-9-21.9 EXT.

IMPROVEMENT OF BLM SPUR 1B
Station 0+00 to 3+15

<u>Sta.</u>	<u>Remarks</u>
0+00	Junction with BLM Road No. 29-9-21.9 at Sta. 33+20. Begin slough and slide removal, improvement, watering, soil stabilization, and roadside brushing in accordance with Sections 500, 600, 1800, and 2100 of the Road Specifications, Typical Cross Section Details Sheet No. 4, and Roadside Brushing Detail Sheet No. 8.
Note: From 0+00 to 3+15, re-align subgrade 5'-10' to the right to allow for improvement to subgrade width plus construction of inside ditch.	
1+50	Junction. Construct Spur 1C left.
3+15	End landing. 80 CY 3-0" landing rock allocated. Construct ditch-out left. End improvement.

CONSTRUCTION DETAIL SHEET
29-9-21.9 EXT
CONTROL POINT ROAD

GENERAL

Purchaser shall construct Road No. 29-9-21.9 EXT from Sta. 0+00 to Sta. 1+36 as shown on the location map. This work shall be accomplished in accordance with details and road specifications which follow:

SHAPING

The roadway shall be constructed and shaped to conform to standards shown on Typical Cross Section Details Sheet No. 4.

TURNOUTS

None.

SUBGRADE

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

DRAINAGE FEATURES

Out-slope at 3% to achieve drainage.

SURFACING

12" compacted depth lift of 3-0" crushed aggregate base course.

ALIGNMENT

Begin construction at Sta. 39+25 of BLM Road No. 29-9-21.9. The roadway shall be constructed within posted or painted right-of-way boundaries. The minimum curve radius shall be sixty (60) feet.

GRADE

Grade shall not exceed 15% favorable. Grade of landing shall not exceed 5%.

TRUCK TURNAROUND

None. Utilize existing road side landing at Sta. 39+25 of BLM Road No. 29-9-21.9 for truck turn-around.

LANDINGS

Sta. 1+36: Construct 60' diameter end landing, surface with 80 CY of 3-0" crushed aggregate landing rock.

SOIL STABILIZATION

Apply seed, fertilizer, and mulch in accordance with Section 1800 of the Road Construction specifications.

CONSTRUCTION DETAIL SHEET
SPUR 1A
CONTROL POINT ROAD

GENERAL

Purchaser shall construct Spur 1A from Sta. 0+00 to Sta. 1+49 as shown on the location map. This work shall be accomplished in accordance with details and road specifications which follow:

SHAPING

The roadway shall be constructed and shaped to conform to standards shown on Typical Cross Section Details Sheet No. 4.

TURNOUTS

None.

SUBGRADE

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

DRAINAGE FEATURES

Out-slope at 3% to achieve drainage.

SURFACING

12" compacted depth lift of 3-0" crushed aggregate base course.

ALIGNMENT

Begin construction at Sta. 26+85 of BLM Road No. 29-9-21.9. The roadway shall be constructed within posted or painted right-of-way boundaries. The minimum curve radius shall be sixty (60) feet.

GRADE

Grade shall not exceed 15% adverse or favorable. Grade of landing shall not exceed 5%.

TRUCK TURNAROUND

None. Utilize junction at Sta. 26+85 of BLM Road No. 29-9-21.9 for truck turn-around.

LANDINGS

Sta. 1+49: Construct 60' diameter (End) landing offset to right of roadway, surface with 80 CY of 3-0" crushed aggregate landing rock.

SOIL STABILIZATION

Apply seed, fertilizer, and mulch in accordance with Section 1800 of the Road Construction specifications.

CONSTRUCTION DETAIL SHEET
SPUR 1C
CONTROL POINT ROAD

GENERAL

Purchaser shall construct Spur 1C from Sta. 0+00 to Sta. 1+47 as shown on the location map. This work shall be accomplished in accordance with details and road specifications which follow:

SHAPING

The roadway shall be constructed and shaped to conform to standards shown on Typical Cross Section Details Sheet No. 4.

TURNOUTS

None.

SUBGRADE

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

DRAINAGE FEATURES

Sta. 0+00: Install 18" x 40' CPP Type "S" double wall poly culvert and a 6' T-post inlet marker in ditchline of Spur 1B. Utilize 10 CY of 1.5-0" crushed aggregate as bedding.

Out-slope subgrade at 3% to achieve drainage.

SURFACING

12" compacted depth lift of 3-0" crushed aggregate base course.

ALIGNMENT

Begin construction at Sta. 1+50 of Spur 1B. The roadway shall be constructed within posted or painted right-of-way boundaries. The minimum curve radius shall be sixty (60) feet.

GRADE

Grade shall not exceed 15% adverse. Grade of landing shall not exceed 5%.

TRUCK TURNAROUND

None.

LANDINGS

Sta. 1+47: Construct 60' diameter end landing, 80 CY of 3-0" landing rock allocated.

SOIL STABILIZATION

Apply seed, fertilizer, and mulch in accordance with Section 1800 of the Road Construction specifications.

TIMBER SALE ROAD SPECIFICATIONS
TABLE OF CONTENTS

SECTION	DESCRIPTION
100	General
200	Clearing and Grubbing
300	Excavation and Embankment
400	Pipe Culverts
500	Renovation and Improvement of Existing Roads
600	Watering
1000	Aggregate Base Course - Crushed Rock
1200	Aggregate Surface Course - Crushed Rock
1400	Slope Protection
1700	Erosion Control
1800	Soil Stabilization
2100	Roadside Brushing
2600	Hot Mix Asphalt Concrete Paving

GENERAL – 100

*101 - Pre-work Conference(s):

A pre-work 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 of the pre-work conference will be to review the required work, exhibits and specifications, and to establish a work schedule and a list of the Purchaser's representatives (and 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 sidcasting 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:

<u>AASHTO T 11</u>	Quantity of rock finer than No. 200 sieve.
<u>AASHTO T 27</u>	Sieve analysis of fine and coarse aggregate using sieves with square openings; gradation.
<u>AASHTO T 89</u>	Liquid limit of material passing the No. 40 sieve. Water content at which the soil passes from a plastic to a liquid state.
<u>AASHTO T 90</u>	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.
<u>AASHTO T 96</u>	Resistance to abrasion of small size coarse aggregate by use of the Los Angeles machine.
<u>AASHTO T 99</u>	Relationship between soil moisture and density of soil. Method A - 4" mold, soil passing a No. 4 sieve 25 blows/layer & 3 layers. Method C - 4" mold, soil passing a 3/4 inch sieve 25 blows/layer & 3 layers. Method D - 6" mold, soil passing a 3/4 inch sieve. 56 blows/layer & 3 layers.
<u>AASHTO T 119</u>	Slump of hydraulic cement concrete.
<u>AASHTO T 152</u>	Air content of freshly mixed concrete.
<u>AASHTO T 166</u>	Specific Gravity of compacted Bituminous Mixtures.
<u>AASHTO T 176</u>	Shows relative portions of fine dust or claylike materials in soil or graded aggregate.

<u>AASHTO T 180</u>	(OSHD 106-71) moisture density relationship of soil same as AASHTO T 99 proctor but uses a 10-lb rammer & 18-in drop height.
<u>AASHTO T 191</u>	<u>Sand Cone.</u> 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.
<u>AASHTO T 205</u>	<u>Rubber balloon.</u> Density of soil in place. Use for compacted or firmly bonded soil.
<u>AASHTO T 209</u>	Maximum Specific Gravity of Bituminous Paving Mixtures.
<u>AASHTO T 210</u>	Durability of aggregates based on resistance to produce fines.
<u>AASHTO T 224</u>	Correction for coarse particles in the soil.
<u>AASHTO T 238</u>	Density of Soil and Soil-Aggregate in place by nuclear methods.
<u>AASHTO T 248</u>	Reducing field samples of aggregate to testing size by mechanical splitter, quartering, or miniature stockpile sampling.
<u>ASTM D 4564</u>	Determination of relative density of cohesionless soils.
<u>DMSO (dimethyl sulfide)</u>	Determines volume of expanding clays in aggregates. Usually associated with marine basalts.

- *103 - Compaction equipment shall meet the following requirements:
- 103a - Padded Drum (Tamping) Rollers. The unit shall consist of a drum with pads, be either self propelled or towed by a tractor, and capable of operating at a speed of 6 mph. The drum shall be no less than 48 inches in diameter over the pads and not less than 60 inches in width. The pads shall have a minimum height of 3 inches, and a face area of not less than 14 square inches. The weight at drum shall be no less than 8000 lb.

- 103b - (Sheepfoot) (Tamping) rollers. A tamping roller unit shall consist of two watertight metal drums mounted in frames in such manner as to be fully oscillating, together with a tractor having sufficient weight and power under actual working conditions to pull the roller drums at a minimum speed of 2.5 miles per hour. The drums shall be no less than 60 inches in diameter and no less than 54 inches in length, measured at the drum's surface, and shall be studded with tamping feet projecting not less than 7 inches from the face of the drums.

The distance between circumferential rows of tamper feet shall be such that the diagonal distance from any foot to the nearest foot in each adjacent row shall be not more than 12 inches. The cross-Sectional area of the face of each tamper foot, measured perpendicular to the axis of the stud, shall be not less than 5-1/2 square inches nor more than 8 square inches.

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

- 103c - Smooth-wheel power rollers. Smooth-wheel power rollers shall either be of the 3-wheel type, weighing not less than 10 tons, or of the tandem type, 2-wheel or 3-wheel, weighing not less than 8 tons. Smooth-wheel roller shall provide compression of 325 pounds per linear inch of width of rear wheels or drum.

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

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

- 103e - Grid roller. A grid roller shall consist of two or more cylindrical drums independently mounted on a common shaft in a rigid frame. Each drum shall have a minimum outside diameter of 5 feet and a minimum width of 2 feet 6 inches. The overall width of the roller exclusive of frame shall be not less than 5 feet 6 inches of which not more than 6 inches shall be used for center spacing between two roller drums. The face of the drums shall have the appearance of woven open-mesh made by interlacing bars of not less than 1-1/4 inches nor more than 1-3/4 inches diameter space spaced on 4-1/2 inches to 5-1/2 inches center. Net opening between the bars shall be not less than 3 inches nor more than 4 inches. The roller shall be so constructed that counterweights can be used to adjust the gross weight of the roller to not less than 27,000 pounds. The grid roller shall be drawn by a power unit capable of propelling the fully loaded roller through 6 inches of loose embankment material at a speed of at least 4 miles per hour.
- 103f - Vibratory roller. The drum diameter shall be not less than 48 inches, the drum width not less than 58 inches, and have a turning radius of 15 feet or less. Vibration frequency shall be regulated in steps to 1400, 1500, and 1600 vibrations per minute (VPM), corresponding to engine speeds of 1575, 1690, and 1800 RPM. The centrifugal force developed shall be 7 tons at 1600 RPM. It shall be activated by a power unit of not less than 25 horsepower. The vibratory roller shall be self-propelled or drawn by a vehicle of sufficient horsepower to enable the unit to travel through a loose layer of material at a speed ranging from 0.9 mile to 1.8 miles per hour, as directed by the Authorized Officer.
- The towing vehicle and roller or self-propelled unit meeting the above requirements shall be considered a vibratory roller unit.
- 103g - Vibratory compactor. Vibratory compactors shall consist of multiple or gang-type compacting units or pads with a minimum variable width of 2 feet. It shall be self-contained and capable of compacting material as required.
- 103h - Drum drive self-propelled vibratory grid roller. The unit shall consist of one cylindrical drum with a drum diameter of not less than 56 inches, nor more than 66 inches and the drum width shall be 84 inches. Vibratory frequency shall be regulated in steps from 1200 to 1800 vibrations per minute (VPM), and the centrifugal force developed shall be at least 40,000 pounds at 1800 RPM. The vibratory grid roller shall be self-propelled and have a power unit of not less than 112 horsepower. The "grid" design shall be a herringbone or z-bar pattern around the circumference of the drum. The grid bars shall be 1 inch in height and spaced not more than 8-1/2 inches apart.
- 103i - Other. Compaction equipment approved by the Authorized Officer.

CLEARING AND GRUBBING - 200

- *201 - This work shall consist of clearing, grubbing, removing and disposing of vegetation, debris, surface objects, and protruding obstructions within the clearing limits in accordance with these specifications and conforming to the lines, grades, dimensions and typical cross Sections shown on the plans and as staked and with a flag line on the ground.
- *202 - Where clearing limits have not been staked, established by these specifications or shown on the plans, the limits shall extend (10) feet back of the top of the cut slope and (5) feet out from the toe of the fill slope.
- *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 SubSection(s) 202, and 202a, and 202b as shown on the plans, and as staked and with a flag line on the ground and as posted.
- 203a - Brush under (2) feet in height need not be cut within the limits established for clearing.
- 203b - Standing trees and snags to be cleared shall be felled within the limits established for clearing (unless otherwise authorized).
- *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 SubSection(s) 204a, and 204b, and 204c, and 204d, and 204e between the top of the cut slope and the toe of the fill slope. Undisturbed stumps, roots and other solid objects which will be a minimum of (3) feet below subgrades or slope surfaces or embankments are excluded.
- 204a - Stumps including those overhanging cut banks, shall be removed within the required excavation limits.
- 204b - Stumps and other protruding objects shall be completely removed within the limits of required embankments having heights of less than (4) feet. When authorized, stumps and other nonperishable objects may be left provided they do not extend more than (6) inches above the existing ground line.
- 204c - On excavated areas, roots and embedded wood shall be removed to a depth not less than (6) inches below the subgrade.
- 204d - On areas to be occupied by embankments having heights greater than (4) feet, no stump or portion thereof shall remain within (3) feet of embankment subgrades or slope surfaces after grubbing is completed.

- 205 - Clearing and grubbing debris shall not be placed or permitted to remain in or under road embankment Sections. (Such debris will, however, be permitted to remain under waste material from full-bench construction on steep side slopes.).
- 206 - **Clearing and grubbing debris shall be disposed of by piling in accordance with Subsection 211.**
- 211 - Disposal of clearing and grubbing debris, stumps and cull logs shall be by piling on government lands outside of established clearing limits in an area and in a manner acceptable to the Authorized Officer.
- 212 - No grading will be permitted prior to completion and approval by the Authorized Officer of the required clearing and grubbing work, except that stump grubbing may proceed with the excavation of the road prism.
- 213 - No clearing or grubbing debris shall be left lodged against standing trees.

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 or as marked on the ground with stakes or plastic tags.
- 303 - Suitable material removed from the excavation shall be used in the formation of embankment subgrade, shoulders, slopes, bedding, backfill for structures, and for other purposes as shown on the plans.
- 303a - **Excavated material shall not be wasted as side-cast or perched. All material perched or side-casted as waste shall be retrieved and disposed of at the Purchaser's expense and at the direction of the Authorized Officer.**

- 304 - Borrow shall consist of suitable material required for the construction of embankments or for other portions of the work; such material shall be obtained as shown in these specifications, and from sources selected by the Purchaser at his option and approved by the Authorized Officer.
- *305 - Embankment construction shall consist of the placement of excavated and borrowed materials, backfilling, leveling, grading, compaction, and other earth-moving work necessary for the construction of the roadway and landings in accordance with these specifications and conforming to the lines, grades, dimensions, and typical cross Sections shown on the plans or as marked on the ground with stakes or plastic tags).
- 305a - Material used in the construction of embankment Sections shall be free of stumps, cull logs, brush, muck, sod, roots, frozen material, and other deleterious materials and shall be placed and compacted as specified.
- 305b - Embankment materials shall be placed in successive parallel layers on areas cleared of stumps, cull logs, brush, sod, and other vegetative and deleterious materials, except as provided under Subsection 204. Roadway embankments of earth material shall be placed in horizontal layers not exceeding (8) inches in depth.
- 305c - Embankments formed of material containing less than (25) percent rock not larger than (8) inches in the greatest dimension shall be placed in (12)-inch layers. Material containing more than (25) percent rock not larger than (12) inches in the greatest dimension shall be placed in successive layers not exceeding (2) feet in thickness. Individual rocks and boulders greater than (12) inches in diameter may be used to construct (12)-foot embankment layers, provided they are carefully distributed, with interstices filled with fine material to form a dense and compact mass.
- 305d - Where embankments are constructed predominantly of blasted rock material, depth of layers shall not exceed (4) feet. Rock fragments having dimensions greater than 4 feet will be permitted provided that they have no dimensions greater than (6) feet and that clearance between adjacent fragments is adequate for the placing and compacting of material in horizontal layers as specified, and that no part of the larger fragments comes within (4) feet of subgrade.

- *306 - Layers of embankment, selected borrow, final subgrade and selected roadway excavation material as specified under Subsections 305a, and 305b shall be moistened or dried to a uniform optimum moisture content suitable for maximum density and compacted to full width with compacting equipment conforming to requirements of Subsections 103a, and 103b, and 103c, and 103d, and 103e, and 103f, and 103g, and 103h, and 103i and in accordance with the following table:

Road No.	From Sta./M.P.	To Sta./M.P.
29-9-21.5	0+00	14+50
29-9-21.9	0+00	35+55
29-9-21.9 EXT.	0+00	1+36
Spur 1A	0+00	1+49
Spur 1C	0+00	1+47

- 306a - Minimum compaction for each layer of embankment, and selected borrow, and selected roadway excavation material placed at optimum moisture shall be (1) hour of continuous compacting for each (4) stations of road.
- 306c - Compacted materials shall have a uniform density of not less than (85) percent of the maximum density as determined by AASHTO T 99, Method A or Method D.
- 306d - Compacted materials within (3) feet of the established subgrade elevation shall have a density in place of not less than (95) percent of maximum density, and below the (3)-foot limit, these materials shall have a density in place of not less than (90) percent of maximum density. Maximum density shall be determined by AASHTO T 99, Method A or Method D.
- 306e - The final subgrade including landings and turn-outs and truck-turn arounds shall be compacted to full width with compacting equipment conforming to the requirements of Subsections 103a, and 103b, and 103c, and 103d, and 103e, and 103f, and 103g, and 103h, and 103i. 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. Landings and turn-outs and truck-turn arounds shall be compacted by routing construction equipment over full width.
- 306f - Compaction of embankment layers placed as specified under Subsection 305b above shall be accomplished by routing construction equipment over full width of embankment structures.

- 306g - **All fill slopes shall be compacted to (85) percent of maximum density, either by walking with cat/excavator or by pressing with excavator bucket, to prevent surface erosion and raveling.**
- 309 - The top of cut slopes shall be rounded by blending into the adjacent terrain for a distance not less than (1) foot and not more than (3) feet beyond the top of the cut. Rounding shall be performed in soils that can be shaped without ripping or blasting.
- 311 - In solid rock cuts where pockets that will not drain are formed by blasting below the subgrade elevation, drainage shall be provided by ditching to the edge of the subgrade and backfilling to grade, and compacting the pockets and the ditch with rock fragments, gravel, or other suitable porous material.
- 312 - When material, except solid rock, encountered in cuts at subgrade, is suitable for use in forming the finished roadbed, the top 6-inch layer of the subgrade shall be thoroughly scarified for the full width of the roadbed. Roots, sod, and other deleterious material or stones that will not pass a 6-inch square opening shall be removed. The scarified material shall be processed to the optimum moisture content suitable for maximum density and compacted in accordance with (these specifications) (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.

NOTE: Additional material excavated in accordance with Subsection(s) 313 and/or 314 should not be viewed as a design change under Section 20 of form 5450-3.

- 316 - Borrow material from sources selected at the Purchaser's option shall be inspected and approved in writing by the Authorized Officer prior to placement.
- 318 - Selected borrow or selected roadway excavation material shall be uniformly spread on the roadbed in lifts not to exceed (6) inches in depth until the required thickness shown on the plans is attained.

Each layer shall be uniformly moistened or dried to the optimum moisture content suitable for maximum density and compacted to full width in accordance with the requirements of Subsection 306.
- 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 outside the constructed subgrade 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 SubSections 321b, 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.
- 321b - Excess construction material as specified under Subsection 321 shall be loaded, hauled, and disposed of at disposal sites as directed by the Authorized Officer.
- 321c - End-dumping will be permitted for the placement of excess materials under SubSection 321 in designated disposal areas or within areas approved by the Authorized Officer. Watering, rolling, and placement in layers are not required. Materials placed shall be sloped, shaped, and otherwise brought to a visible condition acceptable to the Authorized Officer.
- 322 - When so indicated on the plans, selected coarse rock encountered in the excavation shall be conserved for slope protection or special rock embankment purposes and placed in accordance with the requirements and details of section 1400 of these specifications and as shown on the plans.
- 324 - Excavated material shall not be allowed to cover boles of standing trees to a depth in excess of (2) feet on the uphill side.

- *327 - The finished grading shall be approved by the Authorized Officer in writing. The Purchaser shall give the Authorized Officer (3) days notice prior to final inspection of the grading operations, and start of surfacing operations.
- 328 - The Purchaser shall adopt methods and procedures in using explosives, which will prevent damage to adjacent landscape features, and which will minimize scattering rocks and other debris outside the road prism.
- 328a - The Purchaser shall establish and be responsible for blasting techniques and shall furnish the Authorized Officer, prior to starting drilling operations, a blasting plan specifying drill-hole diameter, drill-hole spacing, depth of drilling, type of explosive to be used, loading pattern, sequence of firing, the location where the plan is to be used, and other relevant data. Acceptance of the drilling and blasting plan does not relieve the Purchaser of responsibility or liability for the results of the blasting.

PIPE CULVERTS - 400

- *401 - This work shall consist of furnishing and installing pipe culverts, and other erosion control devices in accordance with these specifications and conforming to the lines, grades, dimensions, and typical cross Sections shown on the plans. Individual lengths and locations are approximate; final lengths and locations will be determined by the Authorized Officer upon completion of the roadbed and upon installation of the appurtenance structures. Additional pipe and erosion control devices may be required at the option of the Authorized Officer, in which case a reduction in the total purchase price shall be made to offset the cost of furnishing and installing such items. Costs will be based upon the unit prices set forth in the current BLM Timber Appraisal Production Cost Schedule.
- 403 - Grade culverts shall have a gradient of from (2) percent to (4) percent greater than the adjacent road grade. Grade culverts shall be skewed down grade (30) degrees as measured from the perpendicular to the centerline unless otherwise specified on the plans.
- 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 42-inch through 60-inch diameter shall meet the requirements of AASHTO M 294-03, Type D or Type S.

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 two annular corrugations.
- 407b - Full round culvert downspouts conforming to the material and construction requirements as shown on the plans shall be anchored with two six-foot steel fence posts (one on each side of the pipe) wired together with No. 12 galvanized wire in a manner approved by the Authorized Officer. These anchors shall be placed every ten feet along the pipe beginning at the outlet of the culvert pipe.
- *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 shall conform to the lines, grades, dimensions, and typical diagram included in the plans shown on 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 selected granular or fine readily compactable soil material.
- *413 - Pipe culverts and pipe-arch culverts shall be bedded on a crushed rock material in accordance with Section 1200 gradation or as directed by Authorized Officer having a depth of not less than (6) inches as shown on plans. Foundation material shall be of uniform density throughout the length of the structure and shall be shaped to fit the pipe.
- 414a - The invert grade of the bedding shall be cambered at the middle ordinate a minimum of 1 percent of the total length of the drainage structure. Camber shall be developed on a parabolic curve.
- 415 - Inspection of pipe culverts having a diameter of (48) inches and pipe-arch culverts having a height of (40) inches or a cross sectional area of (13) or larger shall be made before backfill is placed. Culverts found to be out of alignment or damaged shall be replaced, reinstalled or repaired as directed by the Authorized Officer at the Purchaser's expense.
- 416 - Side-fill material for pipe culverts shall be placed within (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, or crushed rock material in accordance with Section 1200 gradation, or granular fill material free of excess moisture, muck, frozen material, roots, sod, or other deleterious or caustic material and devoid of rocks or stones of sizes which may impinge upon and damage the pipe or otherwise interfere with proper compaction.

- 417 - Side-fill material conforming to the requirements of Subsection 416 shall be placed and compacted under the haunches of the pipe, and shall be brought up evenly and simultaneously on both sides of the pipe to 1 foot above the pipe, in layers not exceeding 6 inches in depth and 1 pipe diameter/span, or a minimum of 2 feet in width each side of, and adjacent to, the full length of the pipe barrel. Each layer shall be moistened or dried to a uniform moisture content suitable for maximum compaction and immediately compacted by approved hand or pneumatic tampers 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.
- 423 - Construction of catch basins and ditch dams conforming to lines, grades, dimensions and typical diagrams shown on the plans, shall be required for grade culverts and culverts at the following locations:
- 425 - Where pervious materials are used for backfill and bedding, collars consisting of selected impervious material shall be placed at the inlet and at various intervals along the pipe barrel as directed by the Authorized Officer.
- 426 - Culvert markers consisting of: 1/2-inch round steel bars 4 feet in length bolted to the culvert inlet or 6 foot steel fence posts painted white top, shall be furnished, fabricated, and installed by the Purchaser as shown on the plans and as directed by the Authorized Officer.
- 428 - Remove and dispose of old culverts in a legal manner, and for any fees required. The Purchaser shall remove the old culverts from the work site within three 3 working days of completion of the culvert replacement work for each road prior to road acceptance.
- 429 - Keep the excavation site dewatered so that the installation of culverts is completed under dry conditions. Dispose of excess water by using pumping or natural drainage ways near the site. Diversion streams shall not be returned to the natural channel until all in-stream work has been completed.

RENOVATION AND IMPROVEMENT OF EXISTING ROADS - 500

- 501 - This work shall consist of reconditioning and preparing the roadbed and shoulders, minor excavation and/or embankment, cleaning and shaping drainage ditches, trimming vegetation from cut and embankment slopes, and cleaning and repairing drainage structures of existing roads in accordance with these specifications, and as shown on the Exhibit C plans and as marked on the ground with stakes or plastic tags.
- 501a - This work shall include the removal and disposal of slides in accordance with these specifications as directed by the Authorized officer.
- 502 - The existing road surface 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 at the following locations:

Road No.	From Sta./M.P.	To Sta./M.P.
29-9-21.9	0+00	39+25
29-9-21.5	0+00	14+50
Spur 1B	0+00	3+15

- 502a - Rocks larger than 4 inches in maximum dimension shall be removed from the scarified layers of the roadbed. Material so removed will not be permitted to remain on road shoulders or in ditches.
- 502b - Drainage ditches shall be bladed and shaped in accordance with the lines, grades, dimensions, and typical cross Sections shown on the plans.
- 503 - Debris from slides shall be disposed of as directed by the Authorized Officer.
- 504 - Scarified material and the existing road surface shall be uniformly moistened or dried to the optimum moisture content suitable for maximum density and compacted to full width with equipment conforming to requirements of Subsections 103a, and 103b, and 103c, and 103d, and 103e, and 103f, and 103g, and 103h, and 103i and as directed by the Authorized Officer.

- 504a - Minimum compaction required shall be 1 hour of continuous rolling or tamping for each 4 stations of road, or fraction thereof, as measured along the centerline per layer of material.
- 506 - The inlet end of existing drainage structures shall be cleared of vegetative debris and boulders that are of sufficient size to obstruct normal stream flow. Pipe inverts shall be cleared of sediment and other debris lodged in the barrel of the pipe. The outflow area of designated pipe structures shall be cleared of rock and vegetative obstructions which will impede the structure's designed outflow configuration. Catch basins shall conform to the lines, grade, dimensions, and typical diagram shown on the plans.
- 507 - Existing and new drainage structures shall be replaced and placed with structures of the type, gauge, diameter, and length shown on the plans and in accordance with the placement requirements set forth under section 400 of these specifications.
- 508 - Vegetation encroaching on the roadbed and the drainage ditches of existing roads shall be removed by cutting and disposed of in accordance with Subsection 2100 of these specifications.
- 509 - The finished grading shall be approved in writing by the Authorized Officer. The Purchaser shall give the Authorized Officer 3days notice prior to final inspection of the grading operations.

WATERING - 600

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

- 604 - Use of water sources are subject to applicable State water regulations
- 605 - The Purchaser shall secure the necessary water permits and pay all required water fees for use of the water sources selected by the Purchaser and approved by the Authorized Officer.

AGGREGATE BASE COURSE - 1000
CRUSHED ROCK MATERIAL

- *1001 - This work shall consist of furnishing, hauling, and placing one or more lifts of crushed rock material on roadbeds and landings approved for placing crushed rock material, in accordance with these specifications and conforming to the dimensions and typical cross Sections shown on the plans. Material not conforming to these specifications will be rejected and shall be removed from the road at the purchaser's expense.
- 1002 - Crushed rock materials used in this work shall consist of quarry rock, stone, gravel, or other approved materials obtained from the sources shown on the plans.
- 1002a - Crushed rock materials may be obtained from a 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	A	B	C	D	F	G	H	I
(6) -inch	-	-	-	-	-	-	-	100
3-inch	100	-	100	-	100	-	-	45-65
2-inch	90-95	100	-	100	65-95	100	100	-
1 1/2-inch	-	90-95	-	-	-	-	-	-
1-inch	45-75	50-90	-	-	-	50-85	60-90	-
3/4-inch	-	-	-	-	28-70	-	-	-
1/2-inch	-	-	-	-	-	27-60	44-70	-
3/8-inch	-	-	-	-	-	-	-	-
No. 4	15-45	15-50	-	-	10-35	15-40	28-50	0-10
No. 8	-	-	-	-	-	-	20-41	-
No. 10	-	-	-	-	-	-	-	-
No. 30	-	-	-	-	5-22	8-26	9-26	-
No. 40	5-25	5-25	-	-	-	-	-	-
No. 200	2-15	2-15	-	-	3-10	3-12	3-12	-

- 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:

TABLE 1007a

Sand Equivalent	Percent Passing #200 Sieve AASHTO T 27
34	9
33	8
32	7
31	6
30	5
29 or less	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 in writing by the Authorized Officer prior to placement of crushed rock materials. Notification for final inspection prior to rocking shall be 3 days prior to that inspection and shall be 6 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 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.
- 1011 - Crushed rock material shall be compacted by routing construction and hauling equipment over the full width of each layer placed.
- 1012 - 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 Subsections 103a, and 103c, and 103d, and 103f, and 103h. 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 one or more layers of crushed rock material on roadbeds and base courses approved for placing crushed rock material in accordance with these specifications and conforming to the dimensions and typical cross Sections shown on the plans. Material not conforming to these specifications will be rejected, and shall be removed from the road at the purchaser's expense.
- 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.

- *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	C-1	D	D-1	E	E-1
1-1/2-inch	100	100	-	-	-	-
1-inch	-	-	100	100	-	-
3/4-inch	50-90	60-90	-	70-98	100	100
1/2-inch	-	-	-	-	-	70-98
No. 4	25-50	30-55	30-60	36-60	40-75	44-70
No. 8	-	22-43	-	25-47	-	30-54
No. 30	-	11-27	-	12-31	-	15-34
No. 40	5-25	-	5-30	-	5-35	-
No. 200	2-15	3-15	3-15	3-15	2-15	3-15

- 1205 - Crushed rock material retained on the No. 4 sieve shall have a percentage of loss of not more than 35 at 500 revolutions, as determined by AASHTO T 96.
- 1206 - Crushed rock material shall show a durability value of not less than 35 as determined by AASHTO T210.
- 1207 - That portion of crushed rock material passing the No. 40 sieve, including blending filler, shall have a liquid limit of not more than (35) and a plasticity index of not less than (4) and not more than (12) as determined by AASHTO T 89 and AASHTO T 90.

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

TABLE 1207a

Sand Equivalent	Percent Passing #200 Sieve AASHTO T 27
34	9
33	8
32	7
31	6
30	5
29 or less	4

- 1208 - If additional binder or filler material is necessary to meet the grading or plasticity requirements or for satisfactory bonding of the material, it shall be uniformly blended with the crushed rock material at the crushing and screening plant prior to placing on the road, unless otherwise agreed. The material for such purposes shall be obtained from sources 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 and 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, landings, and SubSection 1000 for placing on the base course. Notification for final inspection prior to rocking shall be 3 days prior to the inspection and shall be 6 days prior to start of surfacing operations.

- *1210 - Crushed rock material conforming to the requirements of these specifications shall be placed on the approved roadbed, and landings, and base course in accordance with these specifications and conforming to the lines, grades, dimensions, and typical cross Sections shown on the plans. Compacted layers shall not exceed 4 inches in depth. When more than one layer is required, each shall be shaped, processed, compacted, and approved in writing by the Authorized Officer before the succeeding layer is placed. Irregularities or depressions that develop during compaction of the top layer shall be corrected by loosening the material at these places and then adding or removing crushed rock material until the surface is smooth and uniform.
- 1210a - Crushed rock material used to repair or reinforce soft, muddy, frozen, yielding, or rutted roadbed shall not be construed as surfacing required by this specification unless approved by the Authorized Officer.
- 1213 - 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 Subsections 103a, and 103c, and 103d, and 103f, and 103h. 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.

SLOPE PROTECTION - 1400

- *1401 - This work shall consist of furnishing, hauling, and placing stone materials for slope protection structures in accordance with these specifications and conforming to the lines, grades, dimensions, and typical cross-Sections shown on the plans. Material not conforming to these specifications will be rejected and shall be removed from the slope protection structure at the purchaser's expense and as directed by the Authorized Officer.
- *1402 - Stone material shall consist of hard angular quarry rock, blasted rock and coarse stone from roadway excavation of such quality that it will not disintegrate on exposure to water or weathering, and shall be graded in accordance with these specifications.
- 1404 - The material shall be well graded from the smallest to the maximum size specified. Stones smaller than the specified 10 percent size shall consist of spalls and fine rock fragments so distributed as to provide a stable compact mass.

1405 - Rip rap shall conform to the following gradations:

TABLE 1405¹

Class	Range of Intermediate Dimensions ² (inches)	Range of Rock Mass ³ (pounds)	% of Rock Equal or Smaller by Count
0	6-8	18-42	100
	5-6	10-18	85
	2-5	1-10	50
	0-2	0-1	15
1	9-15	59-270	100
	7-11	28-110	85
	5-8	10-42	50
	3-6	2-18	15
2	15-21	270-750	100
	11-15	110-270	85
	8-11	42-110	50
	6-8	10-42	15
3	21-27	750-1600	100
	15-19	270-560	85
	11-14	110-220	50
	8-10	42-81	15
4	27-33	1600-2900	100
	19-23	560-990	85
	14-17	220-400	50
	9-12	59-140	15

¹Gradation includes spalls and rock fragments to provide a stable, dense mass.

²The intermediate dimension is the longest straight-line distance across the rock that is perpendicular to the rock's longest axis on the rock face with the largest projection plane.

³Rock mass is based on a specific gravity of 2.65 (165#/cu.ft.) and 85 percent of the cubic volume as calculated using the intermediate dimension.

1405a - Stone materials shall show a durability value of not less than 20 as determined by AASHTO T 210.

- 1405b Stone materials shall conform to a minimum apparent specific gravity of 2.50 and a maximum absorption of 4.2 percent as determined by AASHTO T 85.
- 1406 - The placement of slope protection stones by the end dumping method shall be conducted to prevent the stones from escaping beyond the embankment toe.
- 1406a - The embankment shall be placed in successive horizontal layers of sufficient depth to contain the maximum size rock present in the material. Spalls and finer fragments of stone other than specified in Subsection 1405 shall be used to chock the larger stones solidly in position and to fill voids between the major stones as laid in the embankment. The exposed face of the embankment shall be reasonably smooth and uniform; material shall be prevented from escaping beyond the toe of the structure.
- 1406b - Spaces in back of hand-laid embankment shall be filled with hand-tamped or rammed rock-spall material.
- 1407 - Determination of the acceptability of the slope protection material gradation will be through visual inspection, and /or physical measurements by the Authorized Officer.
- 1408 - Trenches for slope protection structures shall be excavated to the lines, elevations, and typical diagram shown on the plans. They shall be of sufficient size to permit the placing of structure footing of the full widths and length shown. Trenches shall be approved by the Authorized Officer prior to placement of slope protection material.
- 1409 - Slope protection material shall be placed so as to form the cross Sections shown on the plans. The face of the slope protection structure above the low-water line shall be uniform, free from humps, depressions, or large cavities.

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, Terra-tubes filter fiber socks and other erosion control devices or methods in accordance with these specifications and conforming to the lines, grades, dimensions and typical cross Sections shown on the plans.

- 1704 - The erosion control provisions specified under this Sub Section shall be coordinated with the Soil Stabilization requirements of Section 1800.
- 1705 - The surface area of erodible earth material exposed at any one time by clearing and grubbing shall not exceed 25,000 square feet 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 without prior approval by the Authorized Officer.
- 1706a - The Purchaser shall perform, during the same construction season, erosion control measures specified in the plans, on all exposed excavation, borrow, and embankment areas.
- 1707 - Completed and partially completed segments of the roads carried over the winter and early spring periods shall be stabilized by seeding, and fertilizing, and mulching in accordance with Section 1800 exposed areas at the rate of 2000 pounds per acre and seeded with mix applied at the rate of 60 pounds per acre or with BLM furnished (when available) native seed mix at a rate of 20 pounds per acre.
- 1708a - Road segments not completed during dry weather periods shall be winterized, by providing a well-drained roadway using water bars, maintaining drainage, and performing additional measures necessary to minimize erosion and other damage to the roadway, as directed by the Authorized Officer. Portions of roads not having surface rock in place will be blocked or barricaded to prevent vehicular traffic.

SOIL STABILIZATION – 1800

*1801 - This work shall consist of seeding, fertilizing, and mulching on designated cut, fill, borrow, disposal, and special areas in accordance with these specifications and as shown on the plans. This work is 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 construction, and road renovation, and improvements, and landings, and disturbed areas, and borrow sites, and disposal sites, and specials areas 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 15th	To: April 30th
From: September 1st	To: October 15th

If soil stabilization of disturbed areas is not completed by the specified fall date, the Purchaser shall treat disturbed areas (in accordance with SubSection 1707 and then complete the requirements of Section 1800 the next construction season). The Authorized Officer may modify the above seasonal dates to conform to existing weather conditions and changes in the construction schedule.

1803a - The Purchaser shall begin soil stabilization work within 10 days of the starting work date when notified by the Authorized Officer.

- 1804 - The BLM shall provide native grass seed or for this project. If BLM is unable to provide native seed or other plant materials, the Purchaser shall furnish the following species of grass/forb seed or other plant materials.

All seed provided must meet corresponding germination, purity, and weed-content requirements:

Species	Germination Min. %	Purity Min. %	Weed Content Max. %
Annual Ryegrass <i>Lolium multiflorum</i>	85	95	0.5
Perennial Ryegrass <i>Lolium perenne</i>	85	95	0.5
n/a	00	00	0.0

The grass seed furnished shall meet the minimum requirement for Blue Tag Seed as set forth in the latest edition of the Oregon Certification Standards published by Oregon State University.

The Purchaser shall furnish the Authorized Officer a Seed Test Result for the mix from a certified seed testing lab (Oregon State University), Crop Certification Service, which shall include: date of test; lot number of each kind of seed; and results of tests as to name, percentages of purity and of germination, weed species and percentage of weed content, for each kind of seed furnished and, in case of mixture, the proportions of each kind of seed. The seed must have been tested within the last 2 years to be accepted for use on this contract.

The Purchaser shall provide in writing that the seed mixture is free of noxious weed species.

- 1805 - The Purchaser shall mix and sack grass seed specified under SubSection 1804 in the following proportions:

Species	% of Total by Weight	Lbs. per Acre
Annual Ryegrass <i>Lolium multiflorum</i>	40	24
Perennial Ryegrass <i>Lolium perenne</i>	60	36
Totals	100	60 lbs/ac.

- 1805a - The Purchaser shall provide in writing compliance with seed mixture requirements specified under SubSection 1805. Seed weight and seed mixture type shall be shown on the tag attached to each sack.

- 1805b Seed shall be sacked in quantities proportional to the capacity of the Purchaser's slurry tank and the required rate of application as specified under SubSection 1811.

- 1806 - The Purchaser shall apply the seed mixtures specified under SubSection 1804 to the corresponding seeding projects as shown on **Sheet No. 6** of the plans.

If BLM is unable to provide native seed, the Purchaser shall apply the seed mixtures specified under Subsection 1805 to the corresponding seeding projects as shown on **Sheet No. 6**.

- 1806a - Additional soil stabilization work consisting of seeding, and 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 commercial grade of fertilizer conforming (to all State and Federal regulations, and to Interim Federal Specification 0-5-241C, Amendment No. 1, 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	(16) %

The Authorized Officer will take what samples he deems necessary for determining 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 1808a, and 1808b shall be furnished by the Purchaser in the amounts specified under SubSection 1811 and applied in accordance with SubSection 1812.
- 1808a - Straw mulch shall be certified weed free from commercial grain fields and native grass fields. Straw mulch shall be from oats, wheat, rye, or other approved grain crops and shall be free from, mold, or other objectionable material. Straw mulch shall be in an air-dry condition and suitable for placement.

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

Silva Fiber	-	Weyerhaeuser Timber Company
Conweb Fiber	-	Wood Conversion Company
Spra-Mulch	-	Spra-Mulch Industries, Incorporated
Grass-Mulch	-	Grass Mulch Incorporated

If the purchaser proposes using a wood or grass fiber other than those listed above, 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.

- 1809 - Mulch material shall be delivered to the work area in a dry state. Material found to be wet will not be accepted. Material to be used in the mulching operation may be stockpiled along the road designated for treatment provided that it is maintained in a dry state and has the approval of the Authorized Officer.
- 1810 - Bulk mulching material required under these specifications shall be delivered to the work area bound either by twine, string or hemp rope. Wire binding will not be permitted.

- 1811 - The Purchaser shall furnish and apply to approximately **3.5** acres designated for treatment as shown on the plans and as specified under SubSections 1802a and 1806, a mixture of water, grass seed, and fertilizer, and mulch material at the following rate of application:

- a. Single Stage (Hydraulic):
- | | |
|------------|------------------|
| Water | 3,000 gals./acre |
| Grass Seed | 60 lbs./acre |
| Fertilizer | 200 lbs./acre |
| Mulch | 3,000 lbs./acre |
- b. Dry Application:
- | | |
|-------------|-----------------|
| Grass Seed | 60 lbs./acre |
| Fertilizer | 200 lbs./acre |
| Mulch/Straw | 3,000 lbs./acre |

The above proportion and application rate are subject to adjustment by the Authorized Officer during the application operation.

- 1812 - The Purchaser shall furnish and apply to the area designated for treatment as shown on the plans and as specified under SubSections 1802a and 1806, a mixture of grass seed, fertilizer, and mulch, material at the application rate to be determined by the Authorized Officer based on visual observation of trial applications.

Mulches shall be spread/placed in treatment areas to a depth of 2 inches to allow seed germination or as directed by the Authorized Officer. Treatment area will be covered evenly and completely. Mulch can be broadcast onto the soil surface by hand or with hand/mechanical operated spreaders.

- 1814 - The Purchaser may reduce the application rate on partially covered slopes and refrain from application on areas already well stocked with grass or on rock surfaces as determined by the Authorized Officer.

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

- 1815a - Hydraulic Method - The seed, and fertilizer, and mulch materials shall be mixed with water to form a slurry and then applied under pressure by hydroseeder.

When processed wood cellulose or fiber mulch material is to be incorporated as an integral part of the slurry mix, it shall be added after the seed and fertilizer have been thoroughly mixed.

- 1815b - Dry Method - Blowers, mechanical seeders, seed drills, landscape seeders, cultipaker seeders, fertilizer spreaders, or other approved mechanical seeding equipment may be used when seed and fertilizer are to be applied in dry form. Fertilizer in dry form shall be spread separately at the rates set forth under these specifications and SubSection 1811.

- 1816 - Hydraulic equipment used for the application of slurry shall meet the following requirements:

The equipment shall have a built-in agitation system. The slurry distribution lines shall be large enough to prevent stoppage. Discharge line shall be equipped with a set of hydraulic spray nozzles which will provide even distribution of the slurry on the various slopes to be treated. The slurry tank shall have a minimum operation capacity of 1300 gallons and shall be mounted on a traveling unit which will place the slurry tank and spray nozzles within sufficient proximity to the areas to be treated so as to provide uniform distribution without waste. Lug-or track-type units are not authorized. The hydroseeder must be capable of spraying the slurry a minimum distance of 100 feet. The nozzle, mounted on a stand, must be capable of traversing 360 degrees on a horizontal plane and a minimum of 70 degrees on a vertical plane.

All equipment and tanks (internally and externally) shall be cleaned before entering BLM lands. Tanks shall be cleaned prior to mixing BLM seed mixes to avoid application of unwanted plant species.

- 1816a - Hydromulch slurry mixing shall be with water and seed first, followed by fertilizer, and finally fiber. The time between mixing and application shall not exceed 1 hour.

- 1816b - Hydroseeding shall be performed in two steps. Water, seed and fertilizer as specified in Subsection 1811, shall be mixed with a wood fiber tracer and applied to the area specified. The second step shall include the application of water and processed wood fiber, also specified in Subsection 1811, to be applied on the same area within an hour.
- 1818 - The maximum distance to be seeded, fertilized, and mulched from the road centerline shall be 100 feet for the cut slopes and 150 feet for the fill slopes.
- 1819 - The Purchaser shall notify the Authorized Officer at least 3 days in advance of date he intends to commence the specified soil stabilization work.
- 1820 - When sprayed, the mix or slurry must overlap on the ground uniformly so that there will be no voids in the treated areas.
- 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 the removal of vegetation from the road prism - variable distance, and inside curves in accordance with these specifications and conforming to the lines, grades, dimensions, and typical cross Sections shown on the Roadside Brushing Detail Sheet of this exhibit, at designated locations as shown in the plans.
- *2102 - Roadside brushing may be performed mechanically with self-powered, self-propelled equipment and / or manually with hand tools, including chain saws.

- *2103 - Vegetation cut manually and / or mechanically less than 6 inches in diameter at D.B.H.O.B. shall be cut to a maximum height of 6 inches above the ground surface or above obstructions such as rocks or stumps on cut and fill slopes and all limbs below the 6 inch area will be severed from the trunk.
- 2103a - Vegetation shall be cut and removed from the road bed between the outside shoulders and the ditch centerline and such vegetation shall be cut to a maximum height of 1 inch above the ground and running surface. Limbs below the 1 inch area will be severed from the trunk. Sharp pointed ends will not be permitted. Cuts shall be parallel to the ground line or running surface.
- 2104 - Trees in excess of 6 inches in diameter at D.B.H.O.B. 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.
- 2108 - Self-propelled equipment shall not be permitted on cut and fill slopes or in ditches.
- 2109 - Debris resulting from this operation shall be scattered downslope from the roadway. Debris shall not be allowed to accumulate in concentrations. Debris in excess of 1 foot in length and 2 inches in diameter shall not be allowed to remain on cut slopes, ditches, roadways or water courses, or as directed by the Authorized Officer.
- 2113 - Roadside brushing shall be completed in accordance with typical cross Section and roadside brushing detail sheets.
- 2115 - Mechanical brush cutters shall not be operated when there are people and occupied vehicles within (400) feet of the immediate operating area.

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

HOT MIX ASPHALT CONCRETE PAVING – 2600

- *2601 - This work shall consist of furnishing, applying and compacting Hot Mix Asphalt Concrete on prepared surfaces, in the depths, amounts and locations as shown on the plans.
- 2602 - Submit (2) copies of the bituminous job mix formula to be used on this project (3) weeks prior to placement of paving. The Purchaser shall have written approval of the formula by the Authorized Officer prior to placement of pavement.
- *2603 - Vehicular traffic, including heavy equipment, will not be permitted on the pavement until all rolling and compacting operations have been completed.
- *2604 - Place bituminous mixture only when air temperature is above 45°F, on surfaces that do not have standing water, and when it is not raining.
- 2605 - Asphalt paving shall conform to the Oregon Department of Transportation, Level III, ½" dense, PG 64-22 Asphalt Binder mix for use on roadways. Furnish aggregate that conform to the aggregate requirements for hot mix asphalt concrete by the Oregon Department of Transportation.

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

TABLE 2606

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

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

JMF = Job Mix Formula

- 2607 - Bituminous material shall meet the requirements of AASHTO M 320.
- 2608 - Water shall be clean and free from deleterious materials.
- 2609 - The asphalt spreader shall be capable of spreading hot bituminous mixtures without tearing, shoving, or gouging and produce a finished surface of the specified grade and smoothness. Place the pavement in one or more layers, as indicated in two inch lifts.
- 2610 - The number, type and weight of rollers shall be sufficient to compact the mixture to the required density without detrimentally affecting the compacted material. All rollers shall be suitable for rolling hot-mix bituminous pavements and capable of being operated without turning on the mat and without loosening the surface being rolled. Rollers shall have suitable devices and apparatus to keep the rolling surfaces wet and prevent adherence of bituminous mixture.

- 2610a - Vibratory rollers shall be especially designed for bituminous concrete compacting and may be used provided the rollers do not impair stability of the pavement structure and any underlying layers. Depressions in pavement surfaces resulting from the use of vibratory rollers are not acceptable. Rollers shall be self-propelled, single or dual vibrating drums, and steel drive wheels, as applicable; equipped with variable amplitude and separate controls for energy and propulsion.
- 2611 - Make pavement cuts with parallel, straight lines, 1 foot wider than trench width on each side of trenches.
- 2612 - Prior to laying the asphalt concrete pavement the Purchaser shall obtain written approval from the Authorized Officer by showing satisfactory test results of the crushed aggregate base course that has been tested and meets the requirements of the specifications.
- 2613 - Prior to laying the asphalt concrete, remove unsuitable material from the underlying course.
- 2614 - Place string lines to identify the edge of pavement. Establish lines parallel to the centerline of the area to be paved, and place string lines coinciding with the established lines for the spreading machine to follow. The number and location of the lines will be as approved by the Authorized Officer.
- 2615 - Restore disturbed edges of existing bituminous pavements, matching existing edges.
- 2616 - The thickness of the asphalt concrete pavement shall be as shown on the plans.
- 2617 - Plants used for the preparation of bituminous mixtures shall conform to AASHTO M 156 and to Oregon Department of Transportation requirements.
- 2618 - Transport bituminous material from the mixing plant to the paving site in trucks having tight, clean, smooth beds that have been coated with a minimum amount of concentrated solution of hydrated lime and water or other approved coating to prevent adhesion of the mixture to the truck bodies. Petroleum products will not be permitted for coating truck bodies. When the air temperature is less than 60°F or if haul time is greater than 30 minutes, cover each load with canvas or other approved material of ample size to protect the mixture from the loss of heat.

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Version: 5.2.0.133

Updated: 6/14/2017

Summary of All Roads and Projects

T.S. Contract Name: Glide Path Tract No: 2019.0030 Sale Date: 1/25/2019

Prepared by: T.Aguilar Ph: 5417514397 Print Date: 12/7/2018 3:05:47 PM

Construction: 4.32 sta

Improve: 42.40 sta Renov: 16.08 sta Decom: 0.00 sta Temp: 0.00 sta

200 Clearing and Grubbing: 4.5 acres	\$16,138.20
300 Excavation:	\$13,097.19
Haul < 500 ft: 0 sta-yds	
Haul > 500 ft: 0 yd-mi	
400 Drainage:	\$48,155.28
Culvert: 728 lf	DownSpout: 0 lf
PolyPipe: 280 lf	
500 Renovation:	\$17,667.06
Blading 0.27 mi	
700-1200 Surfacing:	\$176,192.84
Commercial Quarry Name: B&B Roads 3-0" 3,592 LCY	
Commercial Quarry Name: B&B Roads 1.5-0" 1,127 LCY	
Commercial Quarry Name: B&B 1.5-0" Bedding 80 LCY	
Commercial Quarry Name: B&B Bedding 0.75-0" 170 LCY	
Commercial Quarry Name: B&B Roads 6-0" 280 LCY	
1300 Geotextiles:	\$0.00
1400 Slope Protection:	\$3,099.69
Gradation Class 3: 50 cy	
1800 Soil Stabilization: 3.5 acres	\$3,446.14
Includes Small Quantity Factor of 1.39	
1900 Cattleguards:	\$0.00
2100 RoadSide Brushing:	\$0.00
2300 Engineering: 0.00 sta.	\$0.00
2400 Minor Concrete:	\$0.00
2500 Gabions:	\$0.00
8000 Miscellaneous:	\$0.00
Mobilization: Const. \$3,623.00 Surf. \$1,578.00.....	\$5,201.00
Quarry Development:	\$0.00
Total: =	\$282,997.41

Notes:

Quantities shown are estimates only and not pay items.

Surfacing Quantities are loose cubic yards.

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Glide Path Sale Date: 1/25/2019

Road Number: 29-9-21.5 R Road Name:

Road Renovation: 0.27 mi 14 ft Subgrade 0 ft ditch

200 Clearing and Grubbing: 0.5 acres	\$1,705.33
300 Excavation:	\$0.00
400 Drainage:	\$0.00
Culvert: 0 lf	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	\$1,542.06
Blading 0.27 mi	
700-1200 Surfacing:	\$0.00
1300 Geotextiles:	\$0.00
1400 Slope Protection:	\$0.00
1800 Soil Stabilization: 0.7 acres	\$702.43
Includes Small Quantity Factor of 1.39	
1900 Cattleguards:	\$0.00
2100 RoadSide Brushing (NONE):0.0 acres	\$0.00
2300 Engineering: 0.00 sta.	\$0.00
2400 Minor Concrete:	\$0.00
2500 Gabions:	\$0.00
8000 Miscellaneous:	\$0.00
Mobilization: Const. \$51.51 Surf. \$0.00.....	\$51.51
Quarry Development:	\$0.00

Total: \$4,001.34

Notes:

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

Road Construction Worksheet

Road Number: 29-9-21.5 R Road Name:

Section 200 Clearing and Grubbing:

Clearing - Heavy (Clearing): Adjustment Factor (2.54)

1-15% (Avg Side Slopes): Adjustment Factor (0)

Pile and Burn (Slash): Adjustment Factor (1.28)

less than 20' (Avg Clearing Widths): Adjustment Factor (0.25)

Total Adjustment Factor: $2.54 + 0 + 1.28 + 0.25 = 4.07$

Base Cost/Acre: \$891.49 x Adjustment Factor: 4.07 x Total Acres: .47 = \$1,705.33

Subtotal: \$1,705.33

Section 300 Excavation:

Subtotal: \$0.00

Section 400 Drainage:

Subtotal: \$0.00

Section 500 Renovation:

Scarification: $\$857.82/\text{mi} \times 0.27 \text{ mi} = \231.61

Blading w/o Ditches: $\$428.91/\text{mi} \times 0.27 \text{ mi} = \115.81

Compaction: $\$325.47/\text{mi} \times 0.27 \text{ mi} = \87.88

Subgrade, landing & TO const.

Tractor: D7 with rippers 7 hr x \$158.11/hr = \$1,106.77

Subtotal: \$1,542.06

Section 700-1200 Surfacing:

Surfacing:

Subtotal: \$0.00

Section 1300 Geotextiles:

Subtotal: \$0.00

Section 1400 Slope Protection:

Subtotal: \$0.00

Section 1800 Soil Stabilization:

Dry Method with Mulch: $\$517.47/\text{acre} \times 0.70 \text{ acres} = \362.23

Includes Small Quantity Factor of 1.39

+ Seed Cost: $\$132.00/\text{acre} \times 0.70 \text{ acres} = \92.40

+ Fertilizer Cost: $\$34.00/\text{acre} \times 0.70 \text{ acres} = \23.80

+ Mulch Cost: $\$320.00/\text{acre} \times 0.70 \text{ acres} = \224.00

Subtotal: \$702.43

Section 1900 Cattleguards:

Subtotal: \$0.00

Section 2100 Roadside Brushing:

Subtotal: \$0.00

Section 2300 Engineering:

Subtotal: \$0.00

Section 2400 Minor Concrete:

Subtotal: \$0.00

Section 2500 Gabions:

Subtotal: \$0.00

Road Number: 29-9-21.5 R Continued

Section 8000 Miscellaneous:

Subtotal: \$0.00

Mobilization:

Construction - 1.42% of total Costs = \$51.51

Surfacing - 0.00% by rock volume = \$0.00

Subtotal: \$51.51

Quarry Development:

Based on 0.00% of total rock volume

Subtotal: \$0.00

Total: \$4,001.34

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Glide Path Sale Date: 1/25/2019

Road Number: 29-9-21.9 ext C Road Name:

Road Construction: 0.03 mi 16 ft Subgrade 0 ft ditch

200 Clearing and Grubbing: 0.1 acres	\$419.36
300 Excavation:	\$685.43
400 Drainage:	\$0.00
Culvert: 0 lf	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	\$0.00
700-1200 Surfacing:	\$6,121.80
Quarry Name: B&B Roads 3-0" 171 LCY	
1300 Geotextiles:	\$0.00
1400 Slope Protection:	\$0.00
1800 Soil Stabilization: 0.1 acres	\$100.35
Includes Small Quantity Factor of 1.39	
1900 Cattleguards:	\$0.00
2100 RoadSide Brushing (NONE):0.0 acres	\$0.00
2300 Engineering: 0.00 sta.	\$0.00
2400 Minor Concrete:	\$0.00
2500 Gabions:	\$0.00
8000 Miscellaneous:	\$0.00
Mobilization: Const. \$95.56 Surf. \$51.41.....	\$146.96
Quarry Development:	\$0.00

Total: \$7,473.89

Notes:

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

Road Construction Worksheet

Road Number: 29-9-21.9 ext C Road Name:

Section 200 Clearing and Grubbing:

Clearing - Heavy (Clearing): Adjustment Factor (2.54)

1-15% (Avg Side Slopes): Adjustment Factor (0)

Pile and Burn (Slash): Adjustment Factor (1.28)

20-40' (Avg Clearing Widths): Adjustment Factor (0.1)

Total Adjustment Factor: $2.54 + 0 + 1.28 + 0.1 = 3.92$

Base Cost/Acre: \$891.49 x Adjustment Factor: 3.92 x Total Acres: 0.12 = \$419.36

Subtotal: \$419.36

Section 300 Excavation:

Subgrade Compaction: 4 Sta/hr \$27.12/sta. x 1.4 sta = \$36.88

Blading without ditch: \$11.84/station x 1.36 stations = \$16.10

Subgrade & landing const.

Tractor: D7 with rippers 4 hr x \$158.11/hr = \$632.44

Subtotal: \$685.43

Section 400 Drainage:

Subtotal: \$0.00

Section 500 Renovation:

Subtotal: \$0.00

Section 700-1200 Surfacing:

Commercial Quarry Name: B&B Roads 3-0"

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.03mi	12ft	14ft	12in	5%					

Rock Volume = 91 LCY

Purchase Price / Royalty: \$9.75/LCY x 91 LCY = \$887.25

Processing: \$0.88/LCY x 91 LCY = \$80.08

Compaction: \$1.08/LCY x 91 LCY = \$98.28

Basic Rock Haul cost: \$0.58/LCY x 91 LCY = \$52.78

Rock Haul +15% grades: \$1.75/LCY-mi x 91 LCY x 7.00 mi= \$1,114.75

Rock Haul -15% grades: \$0.88/LCY-mi x 91 LCY x 3.00 mi= \$240.24

Rock Haul St& Co Roads: \$0.39/LCY-mi x 91 LCY x 16.00 mi= \$567.84

Basic Water Haul cost: \$0.53/LCY x 91 LCY = \$48.23

Water Haul +15% grades: \$0.25/LCY-mi x 91 LCY x 5.00 mi= \$113.75

Water Haul -15% grades: \$0.12/LCY-mi x 91 LCY x 5.00 mi= \$54.60

Commercial Quarry Name: B&B Roads 3-0"

Comment: END LDNG

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

Rock Volume = 80 LCY

Purchase Price / Royalty: \$9.75/LCY x 80 LCY = \$780.00

Processing: \$0.88/LCY x 80 LCY = \$70.40

Compaction: \$1.08/LCY x 80 LCY = \$86.40

Basic Rock Haul cost: \$0.58/LCY x 80 LCY = \$46.40

Rock Haul +15% grades: \$1.75/LCY-mi x 80 LCY x 7.00 mi= \$980.00

Rock Haul -15% grades: \$0.88/LCY-mi x 80 LCY x 3.00 mi= \$211.20

Rock Haul St& Co Roads: \$0.39/LCY-mi x 80 LCY x 16.00 mi= \$499.20

Basic Water Haul cost: \$0.53/LCY x 80 LCY = \$42.40

Water Haul +15% grades: \$0.25/LCY-mi x 80 LCY x 5.00 mi= \$100.00

Water Haul -15% grades: \$0.12/LCY-mi x 80 LCY x 5.00 mi= \$48.00

Subtotal: \$6,121.80

Section 1300 Geotextiles:

Subtotal: \$0.00

Section 1400 Slope Protection:

Subtotal: \$0.00

Section 1800 Soil Stabilization:

Dry Method with Mulch: \$517.47/acre x 0.10 acres = \$51.75

Includes Small Quantity Factor of 1.39

+ Seed Cost: \$132.00/acre x 0.10 acres = \$13.20

+ Fertilizer Cost: \$34.00/acre x 0.10 acres = \$3.40

+ Mulch Cost: \$320.00/acre x 0.10 acres = \$32.00

Subtotal: \$100.35

Section 1900 Cattleguards:

Subtotal: \$0.00

Section 2100 Roadside Brushing:

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 - 2.64% of total Costs = \$95.56

Surfacing - 3.26% by rock volume = \$51.41

Subtotal: \$146.96

Quarry Development:

Based on 3.26% of total rock volume

Subtotal: \$0.00

Total: \$7,473.89

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Glide Path Sale Date: 1/25/2019

Road Number: 29-9-21.9 I Road Name:

Road Improvement: 0.74 mi 16 ft Subgrade 2 ft ditch

200 Clearing and Grubbing: 3.6 acres	\$12,580.71
300 Excavation:	\$7,309.85
400 Drainage:	\$10,022.40
Culvert: 0 lf	
DownSpout: 0 lf	
PolyPipe: 240 lf	
500 Renovation:	\$0.00
700-1200 Surfacing:	\$127,979.25
Quarry Name: B&B Roads 3-0" 2,823 LCY	
Quarry Name: B&B Roads 1.5-0" 856 LCY	
Quarry Name: B&B 1.5-0" Bedding 70 LCY	
1300 Geotextiles:	\$0.00
1400 Slope Protection:	\$1,694.22
Gradation Class 3: 25 cy	
1800 Soil Stabilization: 1.8 acres	\$1,806.24
Includes Small Quantity Factor of 1.39	
1900 Cattleguards:	\$0.00
2100 RoadSide Brushing (NONE):0.0 acres	\$0.00
2300 Engineering: 0.00 sta.	\$0.00
2400 Minor Concrete:	\$0.00
2500 Gabions:	\$0.00
8000 Miscellaneous:	\$0.00
Mobilization: Const. \$2,104.87 Surf. \$1,127.06.....	\$3,231.93
Quarry Development:	\$0.00

Total: \$164,624.59

Notes:

Quantities shown are estimates only and not pay items.

Surfacing Quantities shown are loose cubic yards.

Road Construction Worksheet

Road Number: 29-9-21.9 I Road Name:

Section 200 Clearing and Grubbing:

Clearing - Heavy (Clearing): Adjustment Factor (2.54)

1-15% (Avg Side Slopes): Adjustment Factor (0)

Pile and Burn (Slash): Adjustment Factor (1.28)

20-40' (Avg Clearing Widths): Adjustment Factor (0.1)

Total Adjustment Factor: $2.54 + 0 + 1.28 + 0.1 = 3.92$

Base Cost/Acre: \$891.49 x Adjustment Factor: 3.92 x Total Acres: 3.6 = \$12,580.71

Subtotal: \$12,580.71

Section 300 Excavation:

Subgrade Compaction: 4 Sta/hr \$27.12/sta. x 39.3 sta = \$1,064.46

Blading with ditch: \$14.10/station x 39.25 stations = \$553.43

Subgrade Improvement

Tractor: D7 with rippers 20 hr x \$158.11/hr = \$3,162.20

Landing Construction

Tractor: D7 with rippers 14 hr x \$158.11/hr = \$2,213.54

Turn Out Construction

Tractor: D7 with rippers 2 hr x \$158.11/hr = \$316.22

Subtotal: \$7,309.85

Section 400 Drainage:

Poly Pipe 18 inch 240 lf x \$41.26/lf = \$9,902.40

Culvert Inlet Markers

6' Steel T-Post 6 ea x \$20.00/ea = \$120.00

Subtotal: \$10,022.40

Section 500 Renovation:

Subtotal: \$0.00

Section 700-1200 Surfacing:

Commercial Quarry Name: B&B Roads 3-0"

<u>Length</u>	<u>TopW</u>	<u>BotW</u>	<u>Depth</u>	<u>CWid</u>	<u>#TOs</u>	<u>Width</u>	<u>F.W.L</u>	<u>Taper</u>	<u>Other</u>
0.74mi	13.3ft	16ft	8in	5%					

Rock Volume = 1,983 LCY

Purchase Price / Royalty: \$9.75/LCY x 1,983 LCY = \$19,334.25

Processing: \$0.88/LCY x 1,983 LCY = \$1,745.04

Compaction: \$1.08/LCY x 1,983 LCY = \$2,141.64

Basic Rock Haul cost: \$0.58/LCY x 1,983 LCY = \$1,150.14

Rock Haul +15% grades: \$1.75/LCY-mi x 1,983 LCY x 6.00 mi= \$20,821.50

Rock Haul -15% grades: \$0.88/LCY-mi x 1,983 LCY x 3.00 mi= \$5,235.12

Rock Haul St& Co Roads: \$0.39/LCY-mi x 1,983 LCY x 16.00 mi= \$12,373.92

Basic Water Haul cost: \$0.53/LCY x 1,983 LCY = \$1,050.99

Water Haul +15% grades: \$0.25/LCY-mi x 1,983 LCY x 5.00 mi= \$2,478.75

Water Haul -15% grades: \$0.12/LCY-mi x 1,983 LCY x 5.00 mi= \$1,189.80

Commercial Quarry Name: B&B Roads 3-0"

Comment: Landing and TO surfacing

<u>Length</u>	<u>TopW</u>	<u>BotW</u>	<u>Depth</u>	<u>CWid</u>	<u>#TOs</u>	<u>Width</u>	<u>F.W.L</u>	<u>Taper</u>	<u>Other</u>
									840 LCY

Rock Volume = 840 LCY

Purchase Price / Royalty: \$9.75/LCY x 840 LCY = \$8,190.00

Processing: \$0.88/LCY x 840 LCY = \$739.20

Compaction: \$1.08/LCY x 840 LCY = \$907.20

Basic Rock Haul cost: \$0.58/LCY x 840 LCY = \$487.20

Rock Haul +15% grades: \$1.75/LCY-mi x 840 LCY x 6.00 mi= \$8,820.00

Rock Haul -15% grades: \$0.88/LCY-mi x 840 LCY x 3.00 mi= \$2,217.60

Rock Haul St& Co Roads: \$0.39/LCY-mi x 840 LCY x 16.00 mi= \$5,241.60

Basic Water Haul cost: \$0.53/LCY x 840 LCY = \$445.20

Water Haul +15% grades: \$0.25/LCY-mi x 840 LCY x 5.00 mi= \$1,050.00

Water Haul -15% grades: \$0.12/LCY-mi x 840 LCY x 5.00 mi= \$504.00

Commercial Quarry Name: B&B Roads 1.5-0"

<u>Length</u>	<u>TopW</u>	<u>BotW</u>	<u>Depth</u>	<u>CWid</u>	<u>#TOs</u>	<u>Width</u>	<u>F.W.L</u>	<u>Taper</u>	<u>Other</u>
0.74mi	12ft	13.3ft	4in	5%					

Rock Volume = 856 LCY

Purchase Price / Royalty: \$10.25/LCY x 856 LCY = \$8,774.00

Processing: \$0.88/LCY x 856 LCY = \$753.28

Compaction: \$1.08/LCY x 856 LCY = \$924.48

Basic Rock Haul cost: \$0.58/LCY x 856 LCY = \$496.48

Rock Haul +15% grades: \$1.75/LCY-mi x 856 LCY x 6.00 mi= \$8,988.00

Rock Haul -15% grades: \$0.88/LCY-mi x 856 LCY x 3.00 mi= \$2,259.84

Rock Haul St& Co Roads: \$0.39/LCY-mi x 856 LCY x 16.00 mi= \$5,341.44

Basic Water Haul cost: \$0.53/LCY x 856 LCY = \$453.68

Water Haul +15% grades: \$0.25/LCY-mi x 856 LCY x 5.00 mi= \$1,070.00

Water Haul -15% grades: \$0.12/LCY-mi x 856 LCY x 5.00 mi= \$513.60

Commercial Quarry Name: B&B 1.5-0" Bedding

<u>Length</u>	<u>TopW</u>	<u>BotW</u>	<u>Depth</u>	<u>CWid</u>	<u>#TOs</u>	<u>Width</u>	<u>F.W.L</u>	<u>Taper</u>	<u>Other</u>
									70 LCY

Rock Volume = 70 LCY

Purchase Price / Royalty: \$10.25/LCY x 70 LCY = \$717.50

Basic Rock Haul cost: \$0.58/LCY x 70 LCY = \$40.60

Rock Haul +15% grades: \$1.75/LCY-mi x 70 LCY x 6.00 mi= \$735.00

Rock Haul -15% grades: \$0.88/LCY-mi x 70 LCY x 3.00 mi= \$184.80

Rock Haul St& Co Roads: \$0.39/LCY-mi x 70 LCY x 16.00 mi= \$436.80

Basic Water Haul cost: \$0.53/LCY x 70 LCY = \$37.10

Water Haul +15% grades: \$0.25/LCY-mi x 70 LCY x 5.00 mi= \$87.50

Water Haul -15% grades: \$0.12/LCY-mi x 70 LCY x 5.00 mi= \$42.00

Subtotal: \$127,979.25

Section 1300 Geotextiles:

Subtotal: \$0.00

Section 1400 Slope Protection:

Comment: Culvert outlet energy dissapaters

Rock Source: B&B Rip Rap

Purchase Price / Royalty: \$18.00/cy x 25cy = \$450.00

Furnish Class 3 type rock

Basic Rock Haul cost: \$1.79/cy x 25cy = \$44.75

Rock Haul +15% grades: \$2.10/cy-mi x 25cy x 7.00 mi= \$367.50

Rock Haul -15% grades: \$1.05/cy-mi x 25cy x 3.00 mi= \$78.75

Rock Haul St& Co Roads: \$0.47/cy-mi x 25cy x 16.00 mi= \$188.00

Placement on Fill slopes: 25cy x (\$2.87/cy x 1.04) = \$74.62

Construct Energy Dissapaters

Excavator -Small (1.5 CY) 5 hr x \$98.12/hr = \$490.60

Subtotal: \$1,694.22

Section 1800 Soil Stabilization:

Dry Method with Mulch: $\$517.47/\text{acre} \times 1.80 \text{ acres} = \931.44
Includes Small Quantity Factor of 1.39
+ Seed Cost: $\$132.00/\text{acre} \times 1.80 \text{ acres} = \237.60
+ Fertilizer Cost: $\$34.00/\text{acre} \times 1.80 \text{ acres} = \61.20
+ Mulch Cost: $\$320.00/\text{acre} \times 1.80 \text{ acres} = \576.00

Subtotal: \$1,806.24

Section 1900 Cattleguards:

Subtotal: \$0.00

Section 2100 Roadside Brushing:

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 - 58.10% of total Costs = \$2,104.87
Surfacing - 71.42% by rock volume = \$1,127.06

Subtotal: \$3,231.93

Quarry Development:

Based on 71.42% of total rock volume

Subtotal: \$0.00

Total: \$164,624.59

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Glide Path Sale Date: 1/25/2019

Road Number: 29-9-36.0 R Road Name: Lower Signal Tree

Road Renovation: 0.03 mi 20 ft Subgrade 2 ft ditch

200 Clearing and Grubbing: acres	\$0.00
300 Excavation:	\$2,483.46
400 Drainage:	\$36,462.48
Culvert: 728 lf	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	\$16,125.00
700-1200 Surfacing:	\$18,150.29
Quarry Name: B&B Roads 1.5-0" 202 LCY	
Quarry Name: B&B Bedding 0.75-0" 170 LCY	
Quarry Name: B&B Roads 6-0" 280 LCY	
1300 Geotextiles:	\$0.00
1400 Slope Protection:	\$1,405.47
Gradation Class 3: 25 cy	
1800 Soil Stabilization: 0.5 acres	\$435.73
Includes Small Quantity Factor of 1.39	
1900 Cattleguards:	\$0.00
2100 RoadSide Brushing (NONE):0.0 acres	\$0.00
2300 Engineering: 0.00 sta.	\$0.00
2400 Minor Concrete:	\$0.00
2500 Gabions:	\$0.00
8000 Miscellaneous:	\$0.00
Mobilization: Const. \$978.96 Surf. \$196.01.....	\$1,174.97
Quarry Development:	\$0.00
Total:	\$76,237.40

Notes:

Quantities shown are estimates only and not pay items.

Surfacing Quantities shown are loose cubic yards.

Road Construction Worksheet

Road Number: 29-9-36.0 R Road Name: Lower Signal Tree

Section 200 Clearing and Grubbing:

Subtotal: \$0.00

Section 300 Excavation:

Comment: Construction 3 yarder pads

Subgrade Compaction: 4 Sta/hr \$27.12/sta. x 5.0 sta = \$135.60

MP 7.61 Construct yarder pad

Tractor: D7 with rippers 2 hr x \$158.11/hr = \$316.22

Excavator - Large (3 CY) 3 hr x \$133.94/hr = \$401.82

Dump Truck 10 cy 3 hr x \$74.45/hr = \$223.35

MP 7.77 Construct yarder pad

Tractor: D7 with rippers 2 hr x \$158.11/hr = \$316.22

Dump Truck 10 cy 3 hr x \$74.45/hr = \$223.35

Excavator - Large (3 CY) 3 hr x \$133.94/hr = \$401.82

MP 7.92 yarder pad

Tractor: D8 with winch 2 hr x \$232.54/hr = \$465.08

Subtotal: \$2,483.46

Section 400 Drainage:

Aluminized Ditchline MP 7.61	12 inch 16 ga 30 lf x \$41.87/lf	= \$1,256.10
Aluminized Ditchline MP 7.77	12 inch 16 ga 30 lf x \$41.87/lf	= \$1,256.10
Aluminized New xdrain MP 6.23	18 inch 16 ga 30 lf x \$48.11/lf	= \$1,443.30
Aluminized Stream xing MP 5.79	24 inch 16 ga 30 lf x \$54.35/lf	= \$1,630.50
Aluminized Stream xing MP 7.11	24 inch 16 ga 40 lf x \$54.35/lf	= \$2,174.00
Aluminized Stream xing MP 7.17	24 inch 16 ga 50 lf x \$54.35/lf	= \$2,717.50
Aluminized Stream xing MP 7.39	24 inch 16 ga 50 lf x \$54.35/lf	= \$2,717.50
Aluminized Xdrain MP 5.65	18 inch 16 ga 40 lf x \$48.11/lf	= \$1,924.40
Aluminized Xdrain MP 6.08	18 inch 16 ga 30 lf x \$48.11/lf	= \$1,443.30
Aluminized Xdrain MP 6.16	18 inch 16 ga 30 lf x \$48.11/lf	= \$1,443.30
Aluminized Xdrain MP 6.58	18 inch 16 ga 40 lf x \$48.11/lf	= \$1,924.40
Aluminized Xdrain MP 6.73	18 inch 16 ga 40 lf x \$48.11/lf	= \$1,924.40
Aluminized Xdrain MP 6.90	18 inch 16 ga 50 lf x \$48.11/lf	= \$2,405.50
Aluminized Xdrain MP 7.00	18 inch 16 ga 40 lf x \$48.11/lf	= \$1,924.40
Aluminized Xdrain MP 7.27	18 inch 16 ga 40 lf x \$48.11/lf	= \$1,924.40
Aluminized Xdrain MP 7.55	24 inch 16 ga 50 lf x \$54.35/lf	= \$2,717.50
Aluminized Xdrain MP 7.73	18 inch 16 ga 36 lf x \$48.11/lf	= \$1,731.96
Aluminized Xdrain MP 7.83	18 inch 16 ga 36 lf x \$48.11/lf	= \$1,731.96
Aluminized Xdrain MP 7.90	18 inch 16 ga 36 lf x \$48.11/lf	= \$1,731.96

Culvert marker install

22 Culvert markers= material + labor 22 ea x \$20.00/ea = \$440.00

Subtotal: \$36,462.48

Section 500 Renovation:

Asphalt surfacing - 16 sites

Total tons in-place = asphalt+haul+spread+compact+traffic

75 ton x \$215.00/ton = \$16,125.00

Subtotal: \$16,125.00

Section 700-1200 Surfacing:

Commercial Quarry Name: B&B Roads 1.5-0"

Comment: 12" lift new base course for 16 locations on -36.0 road

<u>Length</u>	<u>TopW</u>	<u>BotW</u>	<u>Depth</u>	<u>CWid</u>	<u>#Tos</u>	<u>Width</u>	<u>F.W.L</u>	<u>Taper</u>	<u>Other</u>
									160 LCY

Rock Volume = 160 LCY

Purchase Price / Royalty: \$10.25/LCY x 160 LCY = \$1,640.00

Processing: \$0.88/LCY x 160 LCY = \$140.80

Compaction: \$1.08/LCY x 160 LCY = \$172.80 Basic Rock Haul cost: \$0.58/LCY x 160 LCY = \$92.80

Rock Haul -15% grades: \$0.88/LCY-mi x 160 LCY x 8.00 mi= \$1,126.40

Rock Haul St& Co Roads: \$0.39/LCY-mi x 160 LCY x 16.00 mi= \$998.40

Basic Water Haul cost: \$0.53/LCY x 160 LCY = \$84.80

Water Haul +15% grades: \$0.25/LCY-mi x 160 LCY x 5.00 mi= \$200.00

Water Haul -15% grades: \$0.12/LCY-mi x 160 LCY x 5.00 mi= \$96.00

Commercial Quarry Name: B&B Roads 1.5-0"

Comment: MP 6.23 replacement surfacing

<u>Length</u>	<u>TopW</u>	<u>BotW</u>	<u>Depth</u>	<u>CWid</u>	<u>#Tos</u>	<u>Width</u>	<u>F.W.L</u>	<u>Taper</u>	<u>Other</u>
0.01mi	16ft	18ft	12in						

Rock Volume = 42 LCY

Purchase Price / Royalty: \$10.25/LCY x 42 LCY = \$430.50

Processing: \$0.88/LCY x 42 LCY = \$36.96

Compaction: \$1.08/LCY x 42 LCY = \$45.36

Basic Rock Haul cost: \$0.58/LCY x 42 LCY = \$24.36

Rock Haul -15% grades: \$0.88/LCY-mi x 42 LCY x 6.00 mi= \$221.76

Rock Haul St& Co Roads: \$0.39/LCY-mi x 42 LCY x 16.00 mi= \$262.08

Basic Water Haul cost: \$0.53/LCY x 42 LCY = \$22.26

Water Haul +15% grades: \$0.25/LCY-mi x 42 LCY x 5.00 mi= \$52.50

Water Haul -15% grades: \$0.12/LCY-mi x 42 LCY x 5.00 mi= \$25.20

Commercial Quarry Name: B&B Bedding 0.75-0"

Comment: Culvert bedding on -36.0 road

<u>Length</u>	<u>TopW</u>	<u>BotW</u>	<u>Depth</u>	<u>CWid</u>	<u>#Tos</u>	<u>Width</u>	<u>F.W.L</u>	<u>Taper</u>	<u>Other</u>
									170 LCY

Rock Volume = 170 LCY

Purchase Price / Royalty: \$10.75/LCY x 170 LCY = \$1,827.50

Processing: \$0.88/LCY x 170 LCY = \$149.60

Compaction: \$1.08/LCY x 170 LCY = \$183.60

Basic Rock Haul cost: \$0.58/LCY x 170 LCY = \$98.60

Rock Haul +15% grades: \$1.75/LCY-mi x 170 LCY x 0.00 mi= \$0.00

Rock Haul -15% grades: \$0.88/LCY-mi x 170 LCY x 8.00 mi= \$1,196.80

Rock Haul St& Co Roads: \$0.39/LCY-mi x 170 LCY x 16.00 mi= \$1,060.80

Basic Water Haul cost: \$0.53/LCY x 170 LCY = \$90.10

Water Haul +15% grades: \$0.25/LCY-mi x 170 LCY x 5.00 mi= \$212.50

Water Haul -15% grades: \$0.12/LCY-mi x 170 LCY x 5.00 mi= \$102.00

Commercial Quarry Name: B&B Roads 6-0"

Comment: MP 7.61 Surfacing yarder pad & approach

<u>Length</u>	<u>TopW</u>	<u>BotW</u>	<u>Depth</u>	<u>CWid</u>	<u>#Tos</u>	<u>Width</u>	<u>F.W.L</u>	<u>Taper</u>	<u>Other</u>
									100 LCY

Rock Volume = 100 LCY

Purchase Price / Royalty: \$9.00/LCY x 100 LCY = \$900.00

Processing: \$0.88/LCY x 100 LCY = \$88.00

Compaction: \$1.08/LCY x 100 LCY = \$108.00

Basic Rock Haul cost: \$0.58/LCY x 100 LCY = \$58.00

Rock Haul -15% grades: \$0.88/LCY-mi x 100 LCY x 7.61 mi= \$669.68

Rock Haul St& Co Roads: \$0.39/LCY-mi x 100 LCY x 16.00 mi= \$624.00

Basic Water Haul cost: \$0.53/LCY x 100 LCY = \$53.00

Water Haul +15% grades: \$0.25/LCY-mi x 100 LCY x 5.00 mi= \$125.00

Water Haul -15% grades: \$0.12/LCY-mi x 100 LCY x 5.00 mi= \$60.00

Road Number: 29-9-36.0 R Lower Signal Tree Continued

Commercial Quarry Name: B&B Roads 6-0"

Comment: MP 7.77 Surfacing yarder pad & approach

<u>Length</u>	<u>TopW</u>	<u>BotW</u>	<u>Depth</u>	<u>CWid</u>	<u>#TOs</u>	<u>Width</u>	<u>F.W.L</u>	<u>Taper</u>	<u>Other</u>
									100 LCY

Rock Volume = 100 LCY
 Purchase Price / Royalty: \$9.00/LCY x 100 LCY = \$900.00
 Processing: \$0.88/LCY x 100 LCY = \$88.00
 Compaction: \$1.08/LCY x 100 LCY = \$108.00
 Basic Rock Haul cost: \$0.58/LCY x 100 LCY = \$58.00
 Rock Haul -15% grades: \$0.88/LCY-mi x 100 LCY x 7.77 mi= \$683.76
 Rock Haul St& Co Roads: \$0.39/LCY-mi x 100 LCY x 16.00 mi= \$624.00
 Basic Water Haul cost: \$0.53/LCY x 100 LCY = \$53.00
 Water Haul +15% grades: \$0.25/LCY-mi x 100 LCY x 5.00 mi= \$125.00
 Water Haul -15% grades: \$0.12/LCY-mi x 100 LCY x 5.00 mi= \$60.00

Commercial Quarry Name: B&B Roads 6-0"

Comment: MP 7.92 Surfacing yarder pad

<u>Length</u>	<u>TopW</u>	<u>BotW</u>	<u>Depth</u>	<u>CWid</u>	<u>#TOs</u>	<u>Width</u>	<u>F.W.L</u>	<u>Taper</u>	<u>Other</u>
									80 LCY

Rock Volume = 80 LCY
 Purchase Price / Royalty: \$9.00/LCY x 80 LCY = \$720.00
 Processing: \$0.88/LCY x 80 LCY = \$70.40
 Compaction: \$1.08/LCY x 80 LCY = \$86.40
 Basic Rock Haul cost: \$0.58/LCY x 80 LCY = \$46.40
 Rock Haul -15% grades: \$0.88/LCY-mi x 80 LCY x 7.92 mi= \$557.57
 Rock Haul St& Co Roads: \$0.39/LCY-mi x 80 LCY x 16.00 mi= \$499.20
 Basic Water Haul cost: \$0.53/LCY x 80 LCY = \$42.40
 Water Haul +15% grades: \$0.25/LCY-mi x 80 LCY x 5.00 mi= \$100.00
 Water Haul -15% grades: \$0.12/LCY-mi x 80 LCY x 5.00 mi= \$48.00

Subtotal: \$18,150.29

Section 1300 Geotextiles:

Subtotal: \$0.00

Section 1400 Slope Protection:

Comment: Culvert energy dissipaters @ MP 5.79, 6.08, 7.11, 7.73, 7.83

Rock Source: B&B Rip Rap
 Purchase Price / Royalty: \$18.00/cy x 25cy = \$450.00
 Furnish Class 3 type rock
 Basic Rock Haul cost: \$1.79/cy x 25cy = \$44.75
 Rock Haul -15% grades: \$1.05/cy-mi x 25cy x 6.00 mi= \$157.50
 Rock Haul St& Co Roads: \$0.47/cy-mi x 25cy x 16.00 mi= \$188.00
 Placement on Fill slopes: 25cy x (\$2.87/cy x 1.04) = \$74.62
 Energy dissipater construction
 Excavator -Small (1.5 CY) 5 hr x \$98.12/hr = \$490.60

Subtotal: \$1,405.47

Section 1800 Soil Stabilization:

Comment: Culvert installations sites

Dry Method with Mulch: \$517.47/acre x 0.50 acres = \$258.73
 Includes Small Quantity Factor of 1.39
 + Fertilizer Cost: \$34.00/acre x 0.50 acres = \$17.00
 + Mulch Cost: \$320.00/acre x 0.50 acres = \$160.00

Subtotal: \$435.73

Section 1900 Cattleguards:

Subtotal: \$0.00

Section 2100 Roadside Brushing:

Subtotal: \$0.00

Road Number: 29-9-36.0 R Lower Signal Tree Continued

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 - 27.02% of total Costs = \$978.96

Surfacing - 12.42% by rock volume = \$196.01

Subtotal: \$1,174.97

Quarry Development:

Based on 12.42% of total rock volume

Subtotal: \$0.00

Total: \$76,237.40

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Glide Path Sale Date: 1/25/2019

Road Number: Spur 1A C Road Name:

Road Construction: 0.03 mi 16 ft Subgrade 0 ft ditch

200 Clearing and Grubbing: 0.1 acres	\$489.25
300 Excavation:	\$848.60
400 Drainage:	\$0.00
Culvert: 0 lf	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	\$0.00
700-1200 Surfacing:	\$6,129.00
Quarry Name: B&B Roads 3-0" 180 LCY	
1300 Geotextiles:	\$0.00
1400 Slope Protection:	\$0.00
1800 Soil Stabilization: 0.1 acres	\$100.35
Includes Small Quantity Factor of 1.39	
1900 Cattleguards:	\$0.00
2100 RoadSide Brushing (NONE):0.0 acres	\$0.00
2300 Engineering: 0.00 sta.	\$0.00
2400 Minor Concrete:	\$0.00
2500 Gabions:	\$0.00
8000 Miscellaneous:	\$0.00
Mobilization: Const. \$98.69 Surf. \$54.11.....	\$152.80
Quarry Development:	\$0.00

Total: \$7,720.00

Notes:

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

Road Construction Worksheet

Road Number: Spur 1A C Road Name:

Section 200 Clearing and Grubbing:

Clearing - Heavy (Clearing): Adjustment Factor (2.54)

1-15% (Avg Side Slopes): Adjustment Factor (0)

Pile and Burn (Slash): Adjustment Factor (1.28)

20-40' (Avg Clearing Widths): Adjustment Factor (0.1)

Total Adjustment Factor: $2.54 + 0 + 1.28 + 0.1 = 3.92$

Base Cost/Acre: \$891.49 x Adjustment Factor: 3.92 x Total Acres: 0.14 = \$489.25

Subtotal: \$489.25

Section 300 Excavation:

Subgrade Compaction: 4 Sta/hr \$27.12/sta. x 1.5 sta = \$40.41

Blading without ditch: \$11.84/station x 1.49 stations = \$17.64

Landing & Subgrade const.

Tractor: D7 with rippers 5 hr x \$158.11/hr = \$790.55

Subtotal: \$848.60

Section 400 Drainage:

Subtotal: \$0.00

Section 500 Renovation:

Subtotal: \$0.00

Section 700-1200 Surfacing:

Commercial Quarry Name: B&B Roads 3-0"

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.03mi	12ft	14ft	12in	5%					

Rock Volume = 100 LCY

Purchase Price / Royalty: \$9.75/LCY x 100 LCY = \$975.00

Processing: \$0.88/LCY x 100 LCY = \$88.00

Compaction: \$1.08/LCY x 100 LCY = \$108.00

Basic Rock Haul cost: \$0.58/LCY x 100 LCY = \$58.00

Rock Haul +15% grades: \$1.75/LCY-mi x 100 LCY x 6.00 mi = \$1,050.00

Rock Haul -15% grades: \$0.88/LCY-mi x 100 LCY x 3.00 mi = \$264.00

Rock Haul St& Co Roads: \$0.39/LCY-mi x 100 LCY x 16.00 mi = \$624.00

Basic Water Haul cost: \$0.53/LCY x 100 LCY = \$53.00

Water Haul +15% grades: \$0.25/LCY-mi x 100 LCY x 5.00 mi = \$125.00

Water Haul -15% grades: \$0.12/LCY-mi x 100 LCY x 5.00 mi = \$60.00

Commercial Quarry Name: B&B Roads 3-0"

Comment: END LDNG

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

Rock Volume = 80 LCY

Purchase Price / Royalty: \$9.75/LCY x 80 LCY = \$780.00

Processing: \$0.88/LCY x 80 LCY = \$70.40

Compaction: \$1.08/LCY x 80 LCY = \$86.40

Basic Rock Haul cost: \$0.58/LCY x 80 LCY = \$46.40

Rock Haul +15% grades: \$1.75/LCY-mi x 80 LCY x 6.00 mi = \$840.00

Rock Haul -15% grades: \$0.88/LCY-mi x 80 LCY x 3.00 mi = \$211.20

Rock Haul St& Co Roads: \$0.39/LCY-mi x 80 LCY x 16.00 mi = \$499.20

Basic Water Haul cost: \$0.53/LCY x 80 LCY = \$42.40

Water Haul +15% grades: \$0.25/LCY-mi x 80 LCY x 5.00 mi = \$100.00

Water Haul -15% grades: \$0.12/LCY-mi x 80 LCY x 5.00 mi = \$48.00

Subtotal: \$6,129.00

Section 1300 Geotextiles:

Subtotal: \$0.00

Road Number: Spur 1A C Continued

Section 1400 Slope Protection:

Subtotal: \$0.00

Section 1800 Soil Stabilization:

Dry Method with Mulch: \$517.47/acre x 0.10 acres = \$51.75

Includes Small Quantity Factor of 1.39

+ Seed Cost: \$132.00/acre x 0.10 acres = \$13.20

+ Fertilizer Cost: \$34.00/acre x 0.10 acres = \$3.40

+ Mulch Cost: \$320.00/acre x 0.10 acres = \$32.00

Subtotal: \$100.35

Section 1900 Cattleguards:

Subtotal: \$0.00

Section 2100 Roadside Brushing:

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 - 2.72% of total Costs = \$98.69

Surfacing - 3.43% by rock volume = \$54.11

Subtotal: \$152.80

Quarry Development:

Based on 3.43% of total rock volume

Subtotal: \$0.00

Total: \$7,720.00

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Glide Path Sale Date: 1/25/2019

Road Number: Spur 1B I Road Name:

Road Improvement: 0.06 mi 16 ft Subgrade 2 ft ditch

200 Clearing and Grubbing: 0.1 acres	\$489.25
300 Excavation:	\$1,080.15
400 Drainage:	\$0.00
Culvert: 0 lf	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	\$0.00
700-1200 Surfacing:	\$11,060.90
Quarry Name: B&B Roads 3-0" 239 LCY	
Quarry Name: B&B Roads 1.5-0" 69 LCY	
1300 Geotextiles:	\$0.00
1400 Slope Protection:	\$0.00
1800 Soil Stabilization: 0.2 acres	\$200.69
Includes Small Quantity Factor of 1.39	
1900 Cattleguards:	\$0.00
2100 RoadSide Brushing (NONE):0.0 acres	\$0.00
2300 Engineering: 0.00 sta.	\$0.00
2400 Minor Concrete:	\$0.00
2500 Gabions:	\$0.00
8000 Miscellaneous:	\$0.00
Mobilization: Const. \$167.34 Surf. \$92.59.....	\$259.93
Quarry Development:	\$0.00

Total: \$13,090.93

Notes:

Quantities shown are estimates only and not pay items.

Surfacing Quantities shown are loose cubic yards.

Road Construction Worksheet

Road Number: Spur 1B I Road Name:

Section 200 Clearing and Grubbing:

Clearing - Heavy (Clearing): Adjustment Factor (2.54)

1-15% (Avg Side Slopes): Adjustment Factor (0)

Pile and Burn (Slash): Adjustment Factor (1.28)

20-40' (Avg Clearing Widths): Adjustment Factor (0.1)

Total Adjustment Factor: $2.54 + 0 + 1.28 + 0.1 = 3.92$

Base Cost/Acre: \$891.49 x Adjustment Factor: 3.92 x Total Acres: 0.14 = \$489.25

Subtotal: \$489.25

Section 300 Excavation:

Subgrade Compaction: 4 Sta/hr \$27.12/sta. x 3.2 sta = \$86.51

Blading with ditch: \$14.10/station x 3.19 stations = \$44.98

Subgrade widening

Tractor: D7 with rippers 4 hr x \$158.11/hr = \$632.44

Landing construction

Tractor: D7 with rippers 2 hr x \$158.11/hr = \$316.22

Subtotal: \$1,080.15

Section 400 Drainage:

Subtotal: \$0.00

Section 500 Renovation:

Subtotal: \$0.00

Section 700-1200 Surfacing:

Commercial Quarry Name: B&B Roads 3-0"

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.06mi	13.3ft	16ft	8in	5%					

Rock Volume = 159 LCY

Purchase Price / Royalty: \$9.75/LCY x 159 LCY = \$1,550.25

Processing: \$0.88/LCY x 159 LCY = \$139.92

Compaction: \$1.08/LCY x 159 LCY = \$171.72

Basic Rock Haul cost: \$0.58/LCY x 159 LCY = \$92.22

Rock Haul +15% grades: \$1.75/LCY-mi x 159 LCY x 7.00 mi = \$1,947.75

Rock Haul -15% grades: \$0.88/LCY-mi x 159 LCY x 3.00 mi = \$419.76

Rock Haul St& Co Roads: \$0.39/LCY-mi x 159 LCY x 16.00 mi = \$992.16

Basic Water Haul cost: \$0.53/LCY x 159 LCY = \$84.27

Water Haul +15% grades: \$0.25/LCY-mi x 159 LCY x 5.00 mi = \$198.75

Water Haul -15% grades: \$0.12/LCY-mi x 159 LCY x 5.00 mi = \$95.40

Commercial Quarry Name: B&B Roads 3-0"

Comment: END LDNG

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

Rock Volume = 80 LCY

Purchase Price / Royalty: \$9.75/LCY x 80 LCY = \$780.00

Processing: \$0.88/LCY x 80 LCY = \$70.40

Compaction: \$1.08/LCY x 80 LCY = \$86.40

Basic Rock Haul cost: \$0.58/LCY x 80 LCY = \$46.40

Rock Haul +15% grades: \$1.75/LCY-mi x 80 LCY x 7.00 mi = \$980.00

Rock Haul -15% grades: \$0.88/LCY-mi x 80 LCY x 3.00 mi = \$211.20

Rock Haul St& Co Roads: \$0.39/LCY-mi x 80 LCY x 16.00 mi = \$499.20

Basic Water Haul cost: \$0.53/LCY x 80 LCY = \$42.40

Water Haul +15% grades: \$0.25/LCY-mi x 80 LCY x 5.00 mi = \$100.00

Water Haul -15% grades: \$0.12/LCY-mi x 80 LCY x 5.00 mi = \$48.00

Road Number: Spur 1B I Continued

Commercial Quarry Name: B&B Roads 1.5-0"

<u>Length</u>	<u>TopW</u>	<u>BotW</u>	<u>Depth</u>	<u>CWid</u>	<u>#TOs</u>	<u>Width</u>	<u>F.W.L</u>	<u>Taper</u>	<u>Other</u>
0.06mi	12ft	13.3ft	4in	5%					

Rock Volume = 69 LCY

Purchase Price / Royalty: \$10.25/LCY x 69 LCY = \$707.25

Processing: \$0.88/LCY x 69 LCY = \$60.72

Compaction: \$1.08/LCY x 69 LCY = \$74.52

Basic Rock Haul cost: \$0.58/LCY x 69 LCY = \$40.02

Rock Haul +15% grades: \$1.75/LCY-mi x 69 LCY x 7.00 mi= \$845.25

Rock Haul -15% grades: \$0.88/LCY-mi x 69 LCY x 3.00 mi= \$182.16

Rock Haul St& Co Roads: \$0.39/LCY-mi x 69 LCY x 16.00 mi= \$430.56

Basic Water Haul cost: \$0.53/LCY x 69 LCY = \$36.57

Water Haul +15% grades: \$0.25/LCY-mi x 69 LCY x 5.00 mi= \$86.25

Water Haul -15% grades: \$0.12/LCY-mi x 69 LCY x 5.00 mi= \$41.40

Subtotal: \$11,060.90

Section 1300 Geotextiles:

Subtotal: \$0.00

Section 1400 Slope Protection:

Subtotal: \$0.00

Section 1800 Soil Stabilization:

Dry Method with Mulch: \$517.47/acre x 0.20 acres = \$103.49

Includes Small Quantity Factor of 1.39

+ Seed Cost: \$132.00/acre x 0.20 acres = \$26.40

+ Fertilizer Cost: \$34.00/acre x 0.20 acres = \$6.80

+ Mulch Cost: \$320.00/acre x 0.20 acres = \$64.00

Subtotal: \$200.69

Section 1900 Cattleguards:

Subtotal: \$0.00

Section 2100 Roadside Brushing:

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 - 4.62% of total Costs = \$167.34

Surfacing - 5.87% by rock volume = \$92.59

Subtotal: \$259.93

Quarry Development:

Based on 5.87% of total rock volume

Subtotal: \$0.00

Total: \$13,090.93

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Glide Path Sale Date: 1/25/2019

Road Number: Spur 1C C Road Name:

Road Construction: 0.03 mi 16 ft Subgrade 0 ft ditch

200 Clearing and Grubbing: 0.1 acres	\$454.30
300 Excavation:	\$689.71
400 Drainage:	\$1,670.40
Culvert: 0 lf	
DownSpout: 0 lf	
PolyPipe: 40 lf	
500 Renovation:	\$0.00
700-1200 Surfacing:	\$6,751.60
Quarry Name: B&B Roads 3-0" 179 LCY	
Quarry Name: B&B 1.5-0" Bedding 10 LCY	
1300 Geotextiles:	\$0.00
1400 Slope Protection:	\$0.00
1800 Soil Stabilization: 0.1 acres	\$100.35
Includes Small Quantity Factor of 1.39	
1900 Cattleguards:	\$0.00
2100 RoadSide Brushing (NONE):0.0 acres	\$0.00
2300 Engineering: 0.00 sta.	\$0.00
2400 Minor Concrete:	\$0.00
2500 Gabions:	\$0.00
8000 Miscellaneous:	\$0.00
Mobilization: Const. \$126.07 Surf. \$56.82.....	\$182.89
Quarry Development:	\$0.00

Total: \$9,849.25

Notes:

Quantities shown are estimates only and not pay items.

Surfacing Quantities shown are loose cubic yards.

Road Construction Worksheet

Road Number: Spur 1C C Road Name:

Section 200 Clearing and Grubbing:

Clearing - Heavy (Clearing): Adjustment Factor (2.54)

1-15% (Avg Side Slopes): Adjustment Factor (0)

Pile and Burn (Slash): Adjustment Factor (1.28)

20-40' (Avg Clearing Widths): Adjustment Factor (0.1)

Total Adjustment Factor: $2.54 + 0 + 1.28 + 0.1 = 3.92$

Base Cost/Acre: \$891.49 x Adjustment Factor: 3.92 x Total Acres: .13 = \$454.30

Subtotal: \$454.30

Section 300 Excavation:

Subgrade Compaction: 4 Sta/hr \$27.12/sta. x 1.5 sta = \$39.87

Blading without ditch: \$11.84/station x 1.47 stations = \$17.40

Subgrade & Landing const.

Tractor: D7 with rippers 4 hr x \$158.11/hr = \$632.44

Subtotal: \$689.71

Section 400 Drainage:

Poly Pipe Sta. 0+35 18 inch 40 lf x \$41.26/lf = \$1,650.40

Culvert Inlet Marker

6' Steel T-post 1 ea x \$20.00/ea = \$20.00

Subtotal: \$1,670.40

Section 500 Renovation:

Subtotal: \$0.00

Section 700-1200 Surfacing:

Commercial Quarry Name: B&B Roads 3-0"

Length	TopW	BotW	Depth	CWid	#Tos	Width	F.W.L	Taper	Other
0.03mi	12ft	14ft	12in	5%					

Rock Volume = 99 LCY

Purchase Price / Royalty: \$9.75/LCY x 99 LCY = \$965.25

Processing: \$0.88/LCY x 99 LCY = \$87.12

Compaction: \$1.08/LCY x 99 LCY = \$106.92

Basic Rock Haul cost: \$0.58/LCY x 99 LCY = \$57.42

Rock Haul +15% grades: \$1.75/LCY-mi x 99 LCY x 7.00 mi= \$1,212.75

Rock Haul -15% grades: \$0.88/LCY-mi x 99 LCY x 3.00 mi= \$261.36

Rock Haul St& Co Roads: \$0.39/LCY-mi x 99 LCY x 16.00 mi= \$617.76

Basic Water Haul cost: \$0.53/LCY x 99 LCY = \$52.47

Water Haul +15% grades: \$0.25/LCY-mi x 99 LCY x 5.00 mi= \$123.75

Water Haul -15% grades: \$0.12/LCY-mi x 99 LCY x 5.00 mi= \$59.40

Commercial Quarry Name: B&B Roads 3-0"

Comment: END LDNG

Length	TopW	BotW	Depth	CWid	#Tos	Width	F.W.L	Taper	Other
									80 LCY

Rock Volume = 80 LCY

Purchase Price / Royalty: \$9.75/LCY x 80 LCY = \$780.00

Processing: \$0.88/LCY x 80 LCY = \$70.40

Compaction: \$1.08/LCY x 80 LCY = \$86.40

Basic Rock Haul cost: \$0.58/LCY x 80 LCY = \$46.40

Rock Haul +15% grades: \$1.75/LCY-mi x 80 LCY x 7.00 mi= \$980.00

Rock Haul -15% grades: \$0.88/LCY-mi x 80 LCY x 3.00 mi= \$211.20

Rock Haul St& Co Roads: \$0.39/LCY-mi x 80 LCY x 16.00 mi= \$499.20

Basic Water Haul cost: \$0.53/LCY x 80 LCY = \$42.40

Water Haul +15% grades: \$0.25/LCY-mi x 80 LCY x 5.00 mi= \$100.00

Water Haul -15% grades: \$0.12/LCY-mi x 80 LCY x 5.00 mi= \$48.00

Road Number: Spur 1C C Continued

Commercial	Quarry Name: B&B 1.5-0" Bedding									
<u>Length</u>	<u>TopW</u>	<u>BotW</u>	<u>Depth</u>	<u>CWid</u>	<u>#TOs</u>	<u>Width</u>	<u>F.W.L</u>	<u>Taper</u>	<u>Other</u>	
									10 LCY	
Rock Volume = 10 LCY										
Purchase Price / Royalty: \$10.25/LCY x 10 LCY = \$102.50										
Basic Rock Haul cost: \$0.58/LCY x 10 LCY = \$5.80										
Rock Haul +15% grades: \$1.75/LCY-mi x 10 LCY x 7.00 mi= \$122.50										
Rock Haul -15% grades: \$0.88/LCY-mi x 10 LCY x 3.00 mi= \$26.40										
Rock Haul St& Co Roads: \$0.39/LCY-mi x 10 LCY x 16.00 mi= \$62.40										
Basic Water Haul cost: \$0.53/LCY x 10 LCY = \$5.30										
Water Haul +15% grades: \$0.25/LCY-mi x 10 LCY x 5.00 mi= \$12.50										
Water Haul -15% grades: \$0.12/LCY-mi x 10 LCY x 5.00 mi= \$6.00										
Subtotal:										\$6,751.60
Section 1300 Geotextiles:										
Subtotal:										\$0.00
Section 1400 Slope Protection:										
Subtotal:										\$0.00
Section 1800 Soil Stabilization:										
Dry Method with Mulch: \$517.47/acre x 0.10 acres = \$51.75										
Includes Small Quantity Factor of 1.39										
+ Seed Cost: \$132.00/acre x 0.10 acres = \$13.20										
+ Fertilizer Cost: \$34.00/acre x 0.10 acres = \$3.40										
+ Mulch Cost: \$320.00/acre x 0.10 acres = \$32.00										
Subtotal:										\$100.35
Section 1900 Cattleguards:										
Subtotal:										\$0.00
Section 2100 Roadside Brushing:										
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 - 3.48% of total Costs = \$126.07										
Surfacing - 3.60% by rock volume = \$56.82										
Subtotal:										\$182.89
Quarry Development:										
Based on 3.60% of total rock volume										
Subtotal:										\$0.00
Total:										\$9,849.25

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Mobilization Costs - Construction and Surfacing

T.S. Contract Name: Glide Path Sale Date: 1/25/2019

Average Mobilization distance = 50 miles Factor = 1.00

Mobilization: Construction

Fire Equipment: 1 ea x (1.00 x \$74.00/ea + 0 mi x \$4.09/mi)= \$74.00
Graders-all: 1 ea x (1.00 x \$410.00/ea + 0 mi x \$14.10/mi)= \$410.00
Rollers & Comp: 1 ea x (1.00 x \$410.00/ea + 0 mi x \$21.70/mi)= \$410.00
Tractors <= D7: 1 ea x (1.00 x \$635.00/ea + 0 mi x \$31.00/mi)= \$635.00
Dump Truck<=15cy: 1 ea x (1.00 x \$89.00/ea + 0 mi x \$3.72/mi)= \$89.00
Water Truck: 1 ea x (1.00 x \$95.00/ea + 0 mi x \$3.94/mi)= \$95.00
Excavators(Small): 1 ea x (1.00 x \$410.00/ea + 0 mi x \$19.62/mi)= \$410.00
Equipment Washing: 6 ea x (\$250.00) /ea = \$1,500.00

Subtotal: \$3,623.00

Mobilization: Surfacing

Comment: Mobilization for asphalt surfacing

Fire Equipment: 1ea x (1.00 x \$74.00/ea + 0 mi x \$4.09/mi)= \$74.00
Graders-all: 1ea x (1.00 x \$410.00/ea + 0 mi x \$14.10/mi)= \$410.00
Rollers & Comp: 1ea x (1.00 x \$410.00/ea + 0 mi x \$21.70/mi)= \$410.00
Dump Truck<=15cy: 1ea x (1.00 x \$89.00/ea + 0 mi x \$3.72/mi)= \$89.00
Water Truck: 1ea x (1.00 x \$95.00/ea + 0 mi x \$3.94/mi)= \$95.00
Equipment Washing: 2 ea x (\$250.00) /ea = \$500.00

Subtotal: \$1,578.00

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Summary of Construction Quantities

T.S. Contract Name: Glide Path Sale Date: 1/25/2019

Road Number	Const	Improv	Renov	Decomm	Temp
29-9-21.5 R			14.50		
29-9-21.9 ext C	1.36				
29-9-21.9 I		39.25			
29-9-36.0 R			1.58		
Spur 1A C	1.49				
Spur 1B I		3.15			
Spur 1C C	1.47				
Total Sta:	4.32	42.40	16.08		

200 Clearing and Grubbing*	Clearing acres
29-9-21.5 R	0.5
29-9-21.9 ext C	0.1
29-9-21.9 I	3.6
29-9-36.0 R	0.0
Spur 1A C	0.1
Spur 1B I	0.1
Spur 1C C	0.1
Totals:	4.5

*Included in Excavation (Section 300) in Time & Equipment, if not shown.

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

Landing & Subgrade const.	Spur 1A C	
Tractor: D7 with rippers		5 hr
Landing construction	Spur 1B I	
Tractor: D7 with rippers		2 hr
Landing Construction	29-9-21.9 I	
Tractor: D7 with rippers		14 hr
MP 7.61 Construct yarder pad	29-9-36.0 R	
Tractor: D7 with rippers		2 hr
Excavator - Large (3 CY)		3 hr
Dump Truck 10 cy		3 hr
MP 7.77 Construct yarder pad	29-9-36.0 R	
Tractor: D7 with rippers		2 hr
Dump Truck 10 cy		3 hr
Excavator - Large (3 CY)		3 hr
MP 7.92 yarder pad	29-9-36.0 R	
Tractor: D8 with winch		2 hr
Subgrade & Landing const.	Spur 1C C	
Tractor: D7 with rippers		4 hr
Subgrade & landing const.	29-9-21.9 ext C	
Tractor: D7 with rippers		4 hr
Subgrade Improvement	29-9-21.9 I	
Tractor: D7 with rippers		20 hr
Subgrade widening	Spur 1B I	
Tractor: D7 with rippers		4 hr

Continuation of Construction Quantities

Turn Out Construction 29-9-21.9 I

Tractor: D7 with rippers 2 hr

400 Drainage

Road Number	Culvert	Polypipe	Downspout
29-9-21.9 I	0 lf	240 lf	0 lf
29-9-36.0 R	728 lf	0 lf	0 lf
Spur 1C C	0 lf	40 lf	0 lf
Total Drainage:	728 lf	280 lf	

Culvert Inlet Marker Spur 1C C

6' Steel T-post 1 ea

Culvert Inlet Markers 29-9-21.9 I

6' Steel T-Post 6 ea

Culvert marker install 29-9-36.0 R

22 Culvert markers= material + labor 22 ea

500 Renovation

Blade Miles Slide cy

29-9-21.5 R 0.27 0

Totals: 0.27 0

Asphalt surfacing - 16 sites 29-9-36.0 R

Total tons in-place = asphalt+haul+spread+compact+traffic 75 ton

Subgrade, landing & TO const. 29-9-21.5 R

Tractor: D7 with rippers 7 hr

Surfacing (Loose Cubic Yards)

Note: Due to slight rounding differences between total LCY vs. subtotaled LCY, Totals shown here may not be exactly as shown in the road summaries and worksheets.

Quarry Name: B&B Roads 3-0"

Commercial	Roadway	Turnouts	Other	
29-9-21.9 I	1,983	0	0	1,983
29-9-21.9 ext C	91	0	0	91
Spur 1A C	100	0	0	100
Spur 1B I	159	0	0	159
Spur 1C C	99	0	0	99
29-9-21.9 I	0	0	840	840
Spur 1A C	0	0	80	80
Spur 1B I	0	0	80	80
Spur 1C C	0	0	80	80
29-9-21.9 ext C	0	0	80	80
Totals:	2,432	0	1,160	3,592

Quarry Name: B&B Roads 1.5-0"

Commercial	Roadway	Turnouts	Other	
29-9-21.9 I	856	0	0	856
Spur 1B I	69	0	0	69
29-9-36.0 R	0	0	160	160
29-9-36.0 R	42	0	0	42
Totals:	967	0	160	1,127

Continuation of Construction Quantities

Quarry Name: B&B Rip Rap

Commercial	Roadway	Turnouts	Other	
Totals:	0	0	0	0

Quarry Name: B&B Landing & TO

Commercial	Roadway	Turnouts	Other	
Totals:	0	0	0	0

Quarry Name: B&B 1.5-0" Bedding

Commercial	Roadway	Turnouts	Other	
29-9-21.9 I	0	0	70	70
Spur 1C C	0	0	10	10
Totals:	0	0	80	80

Quarry Name: B&B Bedding 0.75-0"

Commercial	Roadway	Turnouts	Other	
29-9-36.0 R	0	0	170	170
Totals:	0	0	170	170

Quarry Name: B&B Roads 6-0"

Commercial	Roadway	Turnouts	Other	
29-9-36.0 R	0	0	100	100
29-9-36.0 R	0	0	100	100
29-9-36.0 R	0	0	80	80
Totals:	0	0	280	280

1300 Geotextiles

Totals: No Quantities

1400 Slope Protection

29-9-21.9 I	Gradation Class 3: 25 cy
29-9-36.0 R	Gradation Class 3: 25 cy
Totals:	50 cy

Construct Energy Dissipaters 29-9-21.9 I

Excavator -Small (1.5 CY) 5 hr

Energy dissipater construction 29-9-36.0 R

Excavator -Small (1.5 CY) 5 hr

1800 Soil stabilization - acres

	Dry W/O Mulch	Dry/with Mulch	Hydro Mulch
29-9-21.5 R	0.0	0.7	
29-9-21.9 ext C	0.0	0.1	
29-9-21.9 I	0.0	1.8	
29-9-36.0 R	0.0	0.5	
Spur 1A C	0.0	0.1	
Spur 1B I	0.0	0.2	
Spur 1C C	0.0	0.1	

Totals: 0.0 3.5 0.0

Small Quantity Factor of 1.39 used

1900 Cattleguards

Totals: No Quantities

Continuation of Construction Quantities

2100 RoadSide Brushing	acres
Totals:	<hr/> 0.0
2300 Engineering	stations
Totals:	<hr/> 0.00
2400 Minor Concrete	
Totals:	No Quantities
2500 Gabions	
Totals:	No Quantities
8000 Miscellaneous	
Totals:	No Quantities

EXHIBIT D

LEGEND

OPERATOR
MAINTAINED - BLM ROAD

CONSTRUCT BARRIER

EXISTING ROAD

PAVED ROAD

EXISTING DECOMM'D.
ROAD

R 9 W

North

T
29
S

20

WEYERHAEUSER
CO.

BLM

WEYERHAEUSER
CO.

29

BLM

28

21

Maintenance Rock:

200 CY 1-1/2"Aggregate*

*1-1/2" Aggregate Surfaced Roads ONLY

SILVER BUTTE
TIMBER CO.

ALWAYS
THINK
SAFETY

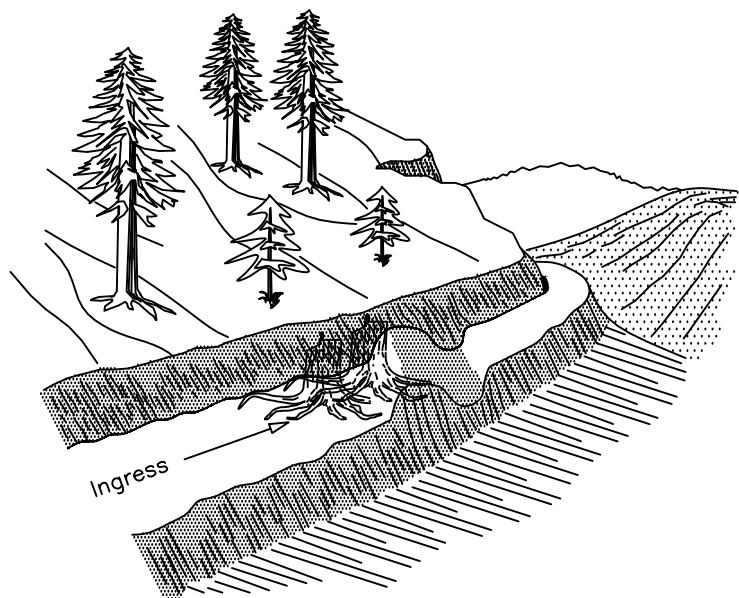
U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
COOS BAY DISTRICT OREGON

WORK LOCATION MAP
ORC04-TS- 2019.0030
GLIDE PATH

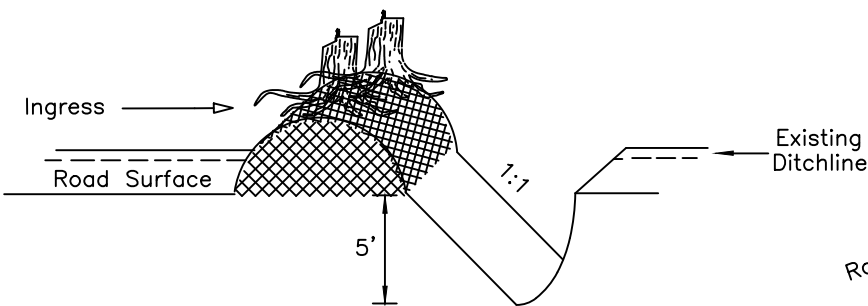
DESIGNED J. AGUILAR
REVIEWED P. LEMAN
APPROVED J. DAVIS

DRAWN JAA	SCALE NONE
DATE 10/2018	SHEET 1 OF 8
DRAWING NO.	

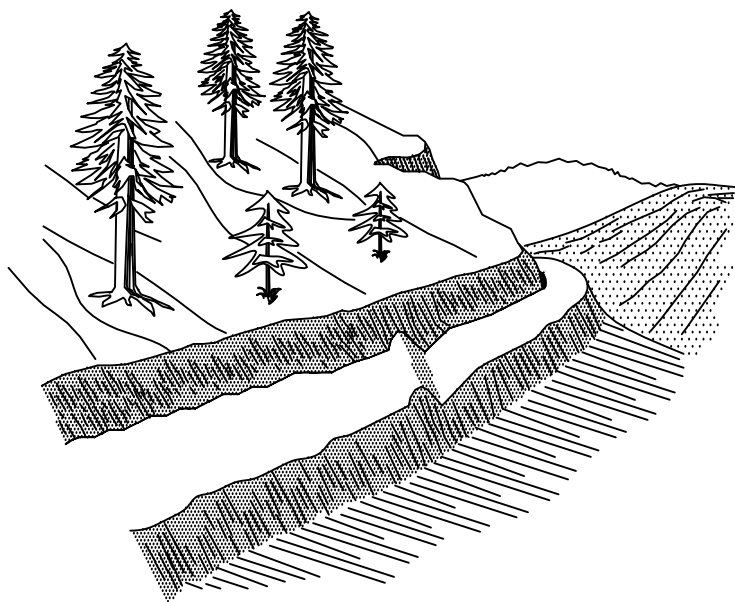
EXHIBIT D



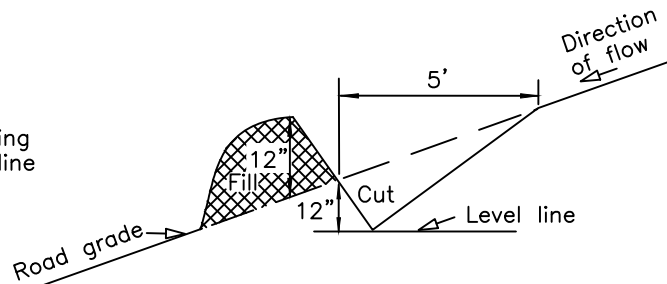
EARTHEN BERM BARRIER



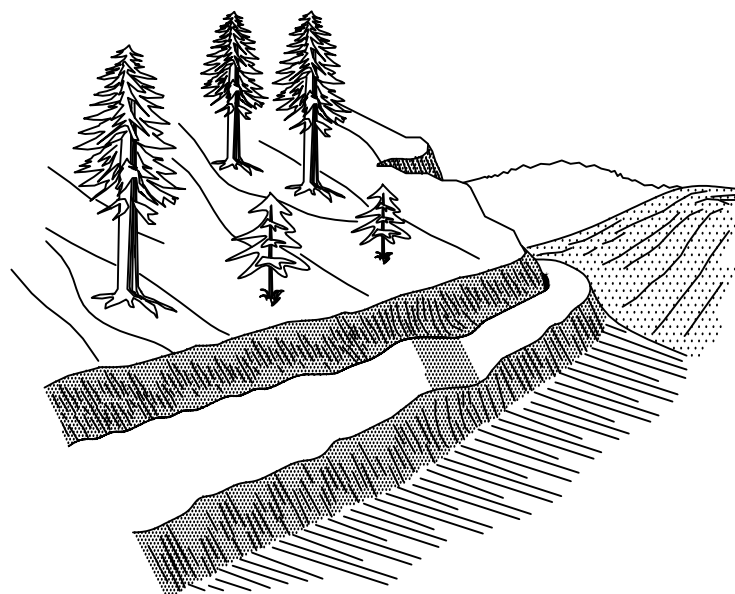
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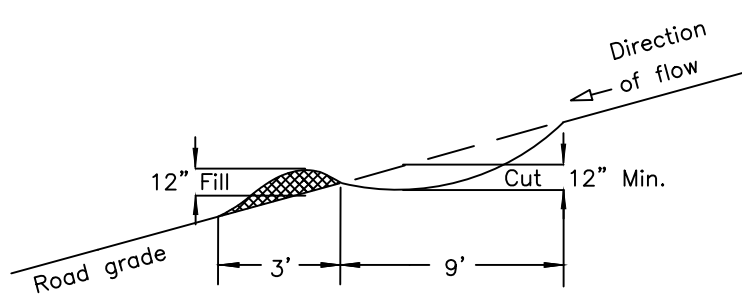
WATER BAR



(NOT TO SCALE)



WATER DIP

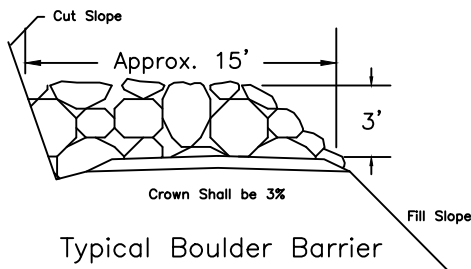


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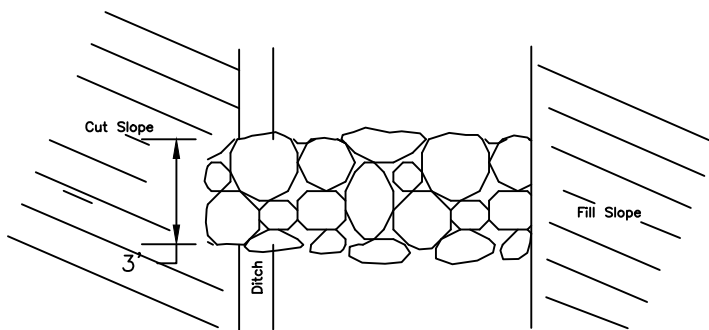
WATER DIP/BAR SPACING

ROAD GRADE	Road Class	
	Maximum Spacing (in feet)	
%	Natural	Rocked
3-5	200	300
6-10	150	200
11-15	100	150
16-20	75	100
21-25	50	50

* ON GRADES IN EXCESS OF 14%
CONSTRUCT WATER BARS.

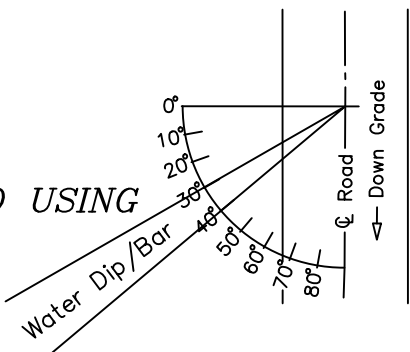


Typical Boulder Barrier



Plan View Boulder Barrier

SKEW DIAGRAM



1. ALL BARRIERS, WATER BARS, AND WATER DIPS AS REQUIRED SHALL BE CONSTRUCTED AS SHOWN.
2. LOCATIONS WILL BE AS DIRECTED BY THE AUTHORIZED OFFICER PRIOR TO CONSTRUCTION.
3. ALL WATER DIPS AND WATER BARS SHALL BE SKEWED 30° - 40°.
4. INVERT GRADE OF WATER DIPS AND WATER BARS SHALL BE OUTSLOPED A MINIMUM OF 2-5%.
5. ALL WATER BARS AND WATER DIPS SHALL BE CUT INTO THE ROADBED FROM THE DITCHLINE.
6. DITCHLINES SHALL BE BLOCKED WITH EXCAVATED MATERIAL (DITCH DAM) DOWNGRADE FROM ALL WATER BARS AND WATER DIPS.
7. EXCAVATED MATERIAL FROM BARRIER TRENCH (TANK TRAP) SHALL BE PLACED ON THE SIDE NEAREST THE BEGINNING OF THE ROAD.

8. ALL BERMS INCLUDING WATER BARS, WATER DIPS, AND EARTHEN BARRIERS SHALL BE COMPACTED TO 85% OF MAXIMUM DENSITY.
9. RIP RAP BARRIERS SHALL BE AT LEAST 3' HIGH, 3' DEEP, AND OF SUFFICIENT WIDTH TO COMPLETELY BLOCK THE ROADWAY AND ANY ADJACENT SHOULDERS THAT CAN BE TRAVELED WITH A VEHICLE.
10. RIP RAP BARRIERS SHALL BE CONSTRUCTED USING A MINIMUM OF 20 CY OF RIP RAP.
11. RIP RAP SHALL BE DURABLE (NOT LESS THAN 50 AS DETERMINED BY AASHTO T210), AND RANGE FROM 28"-34" IN DIAMETER.

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

BARRIER AND EROSION
CONTROL DETAIL

DESIGNED _____ J. AGUILAR
REVIEWED _____ P. LEMAN
APPROVED _____ J. DAVIS

DRAWN JAA SCALE NONE
DATE 10/2018 SHEET 2 OF 8

"EXHIBIT D" ESTIMATE OF QUANTITIES*

ROAD NUMBER	SURFACING				OTHER			SOIL STABILIZATION		OTHER	
	TOP **	AGG. MAINT. ROCK **	AGG. MAINT. ROCK **	WATER DIP ARMOR. **	RIPRAP BARRIER **	CLASS C ASPHALT **	JAWRUN ROCK **	DRY	HYDRO- MULCH		
SPEC. NO.	1200	1200	1000	1000	1400	2600		1800	1800		
UNITS	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	TONS	C.Y.	ACRES	ACRES		
29-9-36.0	Ⓒ	Ⓒ	(A)	(B)	(A)	(B)	(A)				
29-9-21.5	Ⓒ	Ⓒ	(A)	(B)	(A)	(B)	(A)	1.2			
29-9-21.9	Ⓒ	Ⓒ	(A)	(B)	(A)	(B)	(A)	0.2			
29-9-21.9 EXT	Ⓒ	Ⓒ	(A)	(B)	(A)	(B)	(A)	0.1			
Spur 1A	Ⓒ	Ⓒ	(A)	(B)	(A)	(B)	(A)	0.1			
Spur 1B	Ⓒ	Ⓒ	(A)	(B)	(A)	(B)	(A)	0.1			
Spur 1C	Ⓒ	Ⓒ	(A)	(B)	(A)	(B)	(A)	0.1			
	Ⓒ	Ⓒ	(A)	(B)	(A)	(B)	(A)				
	Ⓒ	Ⓒ	(A)	(B)	(A)	(B)	(A)				
	Ⓒ	Ⓒ	(A)	(B)	(A)	(B)	(A)				
	Ⓒ	Ⓒ	(A)	(B)	(A)	(B)	(A)				
	Ⓒ	Ⓒ	(A)	(B)	(A)	(B)	(A)				
	Ⓒ	Ⓒ	(A)	(B)	(A)	(B)	(A)				
	Ⓒ	Ⓒ	(A)	(B)	(A)	(B)	(A)				
	Ⓒ	Ⓒ	(A)	(B)	(A)	(B)	(A)				
	Ⓒ	Ⓒ	(A)	(B)	(A)	(B)	(A)				
	Ⓒ	Ⓒ	(A)	(B)	(A)	(B)	(A)				
	Ⓒ	Ⓒ	(A)	(B)	(A)	(B)	(A)				
	Ⓒ	Ⓒ	(A)	(B)	(A)	(B)	(A)				
	Ⓒ	Ⓒ	(A)	(B)	(A)	(B)	(A)				
	Ⓒ	Ⓒ	(A)	(B)	(A)	(B)	(A)				
	Ⓒ	Ⓒ	(A)	(B)	(A)	(B)	(A)				
	Ⓒ	Ⓒ	(A)	(B)	(A)	(B)	(A)				
	Ⓒ	Ⓒ	(A)	(B)	(A)	(B)	(A)				
	Ⓒ	Ⓒ	(A)	(B)	(A)	(B)	(A)				
	Ⓒ	Ⓒ	(A)	(B)	(A)	(B)	(A)				
	Ⓒ	Ⓒ	(A)	(B)	(A)	(B)	(A)				
	Ⓒ	Ⓒ	(A)	(B)	(A)	(B)	(A)				
TOTALS	Ⓒ	200 Ⓒ	(A)	(B)	(A)	175 (B)	(A)	1.8			

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

ITEM	SIZE	GRADE
PITRUN		
1200 (Top)	1 1/2"	Ⓒ
CLASS C ASPHALT	DENSE, 1/2", LEVEL III	

GRADE INDICATED IN CIRCLE ○



U. S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT COOS BAY DISTRICT OREGON	
"EXHIBIT D" ESTIMATE OF QUANTITIES	
DESIGNED _____	J. AGUILAR
REVIEWED _____	P. LEMAN
APPROVED _____	J. DAVIS
DRAWN TA _____	SCALE NONE
DATE 10/2018	SHEET 3 OF 8
DRAWING NO. _____	

ROAD MAINTENANCE SPECIFICATIONS

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

<u>Section</u>	
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 map 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 road(s) 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 place 200 CY of 1.5-0" crushed aggregate surfacing, conforming to the requirements in Section 1200 of Exhibit C of this contract, on the roadway at locations and in the amounts designated by the Exhibit D location maps and by the Authorized Officer.**
- This crushed aggregate shall be used to repair surface failures, and areas of depleted surface depth, excluding damages covered by Section 12 of this contract. The aggregate shall be furnished, hauled, placed, spread, and compacted by use of dump trucks, water trucks, motor patrol grader, and roller compactor.
- 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 as 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 and/or approved by the Authorized Officer.

SEASONAL MAINTENANCE - 3200

3201 The Purchaser shall perform preventive maintenance at the end of Purchaser's hauling each season and during non-hauling periods which occur between other operations on the contract area. This includes cross ditching, 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 1 each year, except as specified in Subsection 3203, after initial commencement of construction or logging operations. Thereafter all roads shall have continuous preventive maintenance and road cleanup until suspension of seasonal operations. This includes all roads used and not used during the 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 road(s) 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), Special Provisions Sections 3000, 3100, 3200, and 3300 of the maintenance specifications have been completed and a relinquishment of cutting and removal rights on cutting units tributary to these roads is signed by the Purchaser. Request for partial acceptance must be submitted in writing by the Purchaser.

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

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

OTHER MAINTENANCE - 3400

- 3401 The Purchaser shall repair any damage to road surfaces that was specified under Subsections 3108 and 3108a. **This repair includes restoring the roadway to the designed standard and replacement of surfacing with approved surface material.** This repair is not limited to use of equipment specified in Subsection 3104.
- 3402 The Purchaser shall be permitted to remove ice and snow from roads authorized for use under this contract only when prior written approval has been secured from the Authorized Officer. The Purchaser shall submit a written request for permission to remove ice and snow in advance of the date operations are to begin.

3420 The Purchaser shall perform the following work:

<u>Road No.</u>	<u>Road Work</u>
29-9-21.5	Water bars shall be constructed from Sta. 0+00 to 14+50 and an Earthen Berm Barrier shall be constructed at approximately Sta. 0+25 in accordance with Sheet No. 2 of the Exhibit D and as directed by the Authorized Officer. Seed, fertilize, and mulch entire roadway and all disturbed areas in accordance with Section 1800 of the Exhibit C.
29-9-21.9	Water dips shall be constructed from Sta. 0+00 to 39+25 in accordance with Sheet No. 2 of the Exhibit D and as directed by the Authorized Officer. Seed, fertilize, and mulch all disturbed areas in accordance with Section 1800 of the Exhibit C.
29-9-21.9 EXT	Water bars shall be constructed from Sta. 0+00 to 1+36 in accordance with Sheet No. 2 of the Exhibit D and as directed by the Authorized Officer. Seed, fertilize, and mulch all disturbed areas in accordance with Section 1800 of the Exhibit C.
29-9-36.0	<p>MP 7.61 - Replace asphalt surfacing (18'W X 100'L X 4"D) upon Lower Signal Tree Road, as directed by the Authorized Officer, in accordance with Section 2600 of the Exhibit C.</p> <p>MP 7.77 - Replace asphalt surfacing (18'W X 150'L X 4"D) upon Lower Signal Tree Road, as directed by the Authorized Officer, in accordance with Section 2600 of the Exhibit C.</p> <p>MP 7.92 - Replace asphalt surfacing (18'W X 100'L X 4"D) upon Lower Signal Tree Road, as directed by the Authorized Officer, in accordance with Section 2600 of the Exhibit C.</p>
Spur 1A	Water bars shall be constructed from Sta. 0+00 to 1+49 in accordance with Sheet No. 2 of the Exhibit D and as directed by the Authorized Officer. Seed, fertilize, and mulch all disturbed areas in accordance with Section 1800 of the Exhibit C.
Spur 1B	Water dips shall be constructed from Sta. 0+00 to 3+15 in accordance with Sheet No. 2 of the Exhibit D and as directed by the Authorized Officer. Seed, fertilize, and mulch all disturbed areas in accordance with Section 1800 of the Exhibit C.
Spur 1C	Water bars shall be constructed from Sta. 0+00 to 1+47 in accordance with Sheet No. 2 of the Exhibit D and as directed by the Authorized Officer. Seed, fertilize, and mulch all disturbed areas in accordance with Section 1800 of the Exhibit C.

ROAD MAINTENANCE APPRAISAL

SALE NO.
ORC04-TS-2019.0030

SALE NAME:
Glide Path

ROAD NUMBERS	MILES (Rnd.)
29-9-21.5	0.3
29-9-21.9	0.7
29-9-21.9 EXT.	0.1
Spur 1A	0.1
Spur 1B	0.1
Spur 1C	<u>0.1</u>
Total	1.4

-SUMMARY-

1.	MOVE IN:	\$3,266.00
2.	CULVERTS, SLOUGH, SLUMPS, & MISC	\$512.15
3.	GRADING FOR TIMBER HAUL	\$1,944.60
4.	GRADING FOR AGGREGATE HAUL	\$0.00
5.	MAINTENANCE ROCK	\$5,418.00
6.	OTHER MAINTENANCE	<u>\$42,348.00</u>

TOTAL MAINTENANCE:

\$53,488.75

ROAD MAINTENANCE APPRAISAL

SALE NO.
ORC04-TS-2019.0030

SALE NAME:
Glide Path

-APPRAISAL WORKSHEET-

1.	MOVE-IN: EQUIPMENT	MOVE-INS	COST/MOVE	
	FIRE EQUIPMENT	2	\$74.00	\$148.00
	WATER TRUCK	2	\$95.00	\$190.00
	DUMP TRUCK	2	\$89.00	\$178.00
	COMPACTOR	2	\$410.00	\$820.00
	GRADER	2	\$410.00	\$820.00
	BACKHOE W/ FE LOADER	2	\$305.00	\$610.00
	EQUIPMENT WASHING	2	\$250.00	\$500.00
	TOTAL =			\$3,266.00
2.	CULVERT MAINT., SLOUGH REMOVAL, SLUMP REPAIRS, ETC.			
	MAINT. OBLIGATION	AVE. COST		
	1.4 MILES @	\$365.82 / MILE =		\$512.15
3.	GRADING FOR TIMBER HAUL			
	FREQUENCY	2		
	MILES/FREQ.	1.4		
	TOTAL MILES	2.8		
	2.8 MILES @	\$694.50 / MILE =		\$1,944.60
4.	GRADING FOR AGGREGATE HAUL:			
	MILES @	/ MILE =		
5.	MAINTENANCE ROCK:			
	SIZE 1.5-0"	APPR FROM	B&B ROADS	
			MILES	
	ROYALTY 200 CU. YDS. @	\$10.25		\$2,050.00
	PROCESSING 200 CU. YDS. @	\$0.88		\$176.00
	COMPACTION 200 CU. YDS. @	\$1.08		\$216.00
	SLOW HAUL 200 CU. YDS. @	\$1.75	6	\$1,200.00
	MED. HAUL 200 CU. YDS. @	\$0.88	3.0	\$528.00
	FAST HAUL 200 CU. YDS. @	\$0.39	16.0	\$1,248.00
	TOTAL =			\$5,418.00
	MAINTENANCE ROCK:			
	SIZE 3-0"	APPR FROM	MILES	
	ROYALTY 0 CU. YDS. @	\$0.00		\$0.00
	PROCESSING 0 CU. YDS. @	\$0.00		\$0.00
	SLOW HAUL 0 CU. YDS. @	\$0.00		\$0.00
	MED. HAUL 0 CU. YDS. @	\$0.00		\$0.00
	FAST HAUL 0 CU. YDS. @	\$0.00		\$0.00
	TOTAL =			\$0.00
	MAINTENANCE ROCK:			
	SIZE 6-0"	APPR FROM	MILES	
	ROYALTY 0 CU. YDS. @	\$0.00		\$0.00
	PROCESSING 0 CU. YDS. @	\$0.00		\$0.00
	SLOW HAUL 0 CU. YDS. @	\$0.00		\$0.00
	MED. HAUL 0 CU. YDS. @	\$0.00	0.0	\$0.00
	TOTAL =			\$0.00

ROAD MAINTENANCE APPRAISAL

SALE NO.
ORC04-TS-2019.0030

SALE NAME:
Glide Path

6. OTHER MAINTENANCE:

<u>29-9-21.5</u>		
Seed, fertilize, mulch: 1.2 acres	\$1,109.00	
8 Waterbars	\$440.00	
Earthen barrier	<u>\$166.00</u>	
		\$1,715.00
<u>29-9-21.9</u>		
Seed, fertilize, mulch: 0.2 acres	\$185.00	
16 Water dips (incl. grader & compact.)	<u>\$2,000.00</u>	
		\$2,185.00
<u>29-9-36.0</u>		
Replace asphalt surfacing of 3.5 Sta. of Lower Singnal Tree Road @ MP 7.61, MP 7.77, and MP 7.92. 175 tons of Class C Asphalt. Total tonage in-place cost (incl. excavation, material, spread, haul, compact, and traffic control).		
	<u>\$37,625.00</u>	
		\$37,625.00
<u>29-9-21.9 EXT.</u>		
Seed, fertilize, mulch: 0.1 acres	\$92.00	
2 Waterbars	<u>\$110.00</u>	
		\$202.00
<u>Spur 1A</u>		
Seed, fertilize, mulch: 0.1 acres	\$92.00	
2 Waterbars	<u>\$110.00</u>	
		\$202.00
<u>Spur 1B</u>		
Seed, fertilize, mulch: 0.1 acres	\$92.00	
1 Water dip (incl. grader & compactor)	<u>\$125.00</u>	
		\$217.00
<u>Spur 1C</u>		
Seed, fertilize, mulch: 0.1 acres	\$92.00	
2 Waterbars	<u>\$110.00</u>	
		\$202.00
		<u>\$202.00</u>
TOTAL =		\$42,348.00

SALE NAME Glide Path
NET MBF 4895

EXHIBIT E
ORC04-TS-2019.0030

A. ROAD USE FEES - Payable to Private Company:

COMPANY NAME:	AGREEMENT NUMBER:	ROAD NUMBER	NET MBF	USE FEE per MBF	TOTAL FEES:
TOTAL USE FEE:					\$0.00

B. MAINTENANCE FEES:

1. Maintenance and Rockwear Fees Payable to the U.S. (BLM Maintained Roads):
a. Timber Haul:

Surface Type	ROAD NUMBER:	NET MBF	ROAD MILES:	SURFACE REPLACEMENT /MBF/Mile	REGULAR MAINTENANCE		TOTAL FEE:
					Subtotal	/MBF/Mile Subtotal	
	29-9-36.0 Seg F	3784	0.06	1.62	\$367.80	\$0.00	\$367.80
	29-9-36.0 Seg F	4305	0.15	1.62	\$1,046.12	\$0.00	\$1,046.12
	29-9-36.0 Seg F	4513	0.15	1.62	\$1,096.66	\$0.00	\$1,096.66
	29-9-36.0 Seg F	4756	0.09	1.62	\$693.42	\$0.00	\$693.42
	29-9-36.0 Seg D,E,F	4895	3.86	1.62	\$30,609.41	\$0.00	\$30,609.41
	29-9-36.0 Seg A-D	4895	4.20	0.92	18914.28	\$0.00	\$18,914.28
			8.51		\$52,727.69	\$0.00	\$52,727.69

SALE NAME Glide Path
NET MBF 4895

EXHIBIT E
ORC04-TS-2019.0030

2. ROCKWEAR Fees Payable to the U.S. (OPERATOR Maintained Roads):

a. Timber Haul:		SURFACE			ROCKWEAR
Surface Type	ROAD NUMBER:	NET MBF	ROAD MILES:	REPLACEMENT /MBF/Mile	Subtotal
Rock	29-9-21.9	69	0.02	\$0.60	\$0.83
Rock	29-9-21.9	416	0.07	\$0.60	\$17.47
Rock	29-9-21.9	728	0.04	\$0.60	\$17.47
Rock	Spur 1B	660	0.06	\$0.60	\$23.76
Rock	Spur 1C	174	0.03	\$0.60	\$3.13
Rock	Spur 1B	834	0.03	\$0.60	\$15.01
Rock	29-9-29.1	1562	0.7	\$0.60	\$656.04
Rock	29-9-29.1	1631	0.7	\$0.60	\$685.02
Rock	Spur1 1A	174	0.03	\$0.60	\$3.13
Rock	29-9-29.1	1805	0.02	\$0.60	\$21.66
Rock	29-9-29.1	2083	0.09	\$0.60	\$112.48
Rock	29-9-29.1	2361	0.05	\$0.60	\$70.83
Rock	29-9-29.1	3194	0.15	\$0.60	\$287.46
Rock	29-9-29.1	3402	0.02	\$0.60	\$40.82
Rock	29-9-29.1	3784	0.16	\$0.60	\$363.26
Dirt	29-9-21.5	243	0.10	\$0.00	\$0.00
Dirt	29-9-21.5	382	0.05	\$0.00	\$0.00
				2.32	\$2,318.37

3. ROAD MAINTENANCE AND/OR ROCKWEAR FEES - Payable to Private Company:

						MAINTENANCE AND/OR	
Surface Type	COMPANY NAME:	AGREEMENT NUMBER:	ROAD NUMBER	NET MBF	ROAD MILES:	ROCKWEAR FEE /MBF/MILE	TOTALS:
							\$0.00
							\$0.00
						0	\$0.00

4. OPERATOR MAINTENANCE WILL BE REQUIRED ON APPROX. 1.4 MILES OF ROAD. (SEE EXHIBIT D)

SALE VOLUME: 4895 MBF.		ROAD USE FEES:		ROCKWEAR FEES		MAINTENANCE FEES	
SUMMARY OF ROAD USE & ROAD MAINTENAN	TOTAL:	\$ /MBF		TOTAL:	\$/MBF	TOTAL:	\$/MBF:
1. COMPANY-OWNED ROADS:	\$0.00	\$0.00		\$0.00	\$0.00		\$0.00
2. BLM-MAINTAINED ROADS:				\$0.00	\$0.00	\$52,727.69	\$10.77
3. OPERATOR-MAINTAINED ROADS:				\$2,318.37	\$0.60		\$0.00
	\$0.00	\$0.00		\$2,318.37	\$0.60	\$52,727.69	\$10.77

MAINTENANCE OBLIGATION PAYABLE TO BLM \$55,046.06 11.2453647

Exhibit F

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 Sec.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.



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

Timber Appraisal

Sale Name:	Glide Path	Sale Date:	Friday, May 17, 2019
BLM District:	Coos Bay DO	Unit of Measure:	16' MBF
Contract #:	ORC04-TS-2019.0030	Contract Term:	36 months
Sale Type:	Advertised	Contract Mechanism:	5450-3
			Sale of Timber - Lump Sum

Content

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

Prepared By: Keane, Benjamin F - 3/28/2019

Approved By: Davis, Brian P - 4/1/2019

Legal Description of Contract Area

Land Status	County	Township	Range	Section	Subdivision	Meridian
O&C	Coos	29S	9W	21	S1/2NW1/4,SW1/4,W1/2SE1/4	Willamette

Species Totals

Species	Net	Gross Merch	Gross	# of Merch Logs	# of Cull Logs	# of Trees
Douglas Fir	3,255.0	3,418.0	3,437.0	34,042	852	6,390
Western Hemlock	1,614.0	1,704.0	1,745.0	16,534	732	3,653
Port Orford Cedar	26.0	27.0	31.0	347	86	158
Totals	4,895.0	5,149.0	5,213.0	50,923	1,670	10,201

Cutting Area Acres

Regeneration Harvest Acres	Partial Cut Acres	Right of Way Acres	Total Acres	Net Volume per Acre
141.0	0.0	0.0	141.0	34.7

Logging Costs

Stump to Truck	\$551,857.51
Transportation	\$152,358.91
Road Construction	\$282,997.41
Maintenance/Rockwear	\$108,534.81
Road Use	\$0.00
Other Allowances	\$172,867.20
Total:	\$1,268,615.84
Total Logging Cost per MBF:	\$259.17

Utilization Centers

Location	Distance	% of Net Volume
Dillard	29.3 miles	100 %

Profit & Risk

Profit	9 %
Risk	2 %
Total Profit & Risk	11 %

Tract Features

Quadratic Mean DBH	19.9 in
Average GM Log	101 bf
Average Volume per Acre	34.7 mbf
Recovery	94 %
<u>Net MBF volume:</u>	
Green	4,895.0 mbf
Salvage	0 mbf
Export	26 mbf
<u>Ground Base Logging:</u>	
Percent of Sale Volume	18 %
Average Yarding Slope	15 %
Average Yarding Distance	250 ft
<u>Cable Logging:</u>	
Percent of Sale Volume	82 %
Average Yarding Slope	60 %
Average Yarding Distance	309 ft
<u>Aerial Logging:</u>	
Percent of Sale Volume	0 %
Average Yarding Slope	0 %
Average Yarding Distance	0 ft

Cruise

Cruise Completed	September 2018
Cruised By	Stover,Keane, Davis
Cruise Method	Variable Plot

Stumpage Computation

Species	# of Trees	Net Volume	Pond Value	(-) Profit & Risk	(-) Logging Costs	(+) Marginal Log Value	Appraised Price/MBF	Appraised Value
Douglas Fir	6,390	3,255.0	\$476.02	\$52.36	\$259.17	\$0.00	\$164.50	\$535,447.50
Western Hemlock	3,653	1,614.0	\$383.87	\$42.23	\$259.17	\$0.00	\$82.50	\$133,155.00
Port Orford Cedar	158	26.0	\$406.38	\$44.70	\$259.17	\$0.00	\$102.50	\$2,665.00
Totals	10,201	4,895.0						\$671,267.50

Percent of Volume By Log Grade

Species	No. 1 & 2 Peeler	No. 3 Peeler	Special Mill	No. 2 Sawmill	No. 3 Sawmill	No. 4 Sawmill	Camp Run
Douglas Fir				84.0 %	15.0 %	1.0 %	

Species	Peeler	No. 1 Sawmill	Special Mill	No. 2 Sawmill	No. 3 Sawmill	No. 4 Sawmill	Camp Run
Western Hemlock				84.0 %	15.0 %	1.0 %	

Species	No. 1 & 2 Peeler	No. 3 Peeler	Special Mill	No. 2 Sawmill	No. 3 Sawmill	No. 4 Sawmill	Camp Run
Port Orford Cedar				74.0 %	20.0 %	6.0 %	

Glide Path**Unit Summary****ORC04-TS-2019.0030****Unit: 1****Net Volume/Acre: 34.7 MBF**

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	3,255.0	3,418.0	3,437.0	6,390
Western Hemlock	1,614.0	1,704.0	1,745.0	3,653
Port Orford Cedar	26.0	27.0	31.0	158
Totals:	4,895.0	5,149.0	5,213.0	10,201

Regeneration Harvest	141.0
Partial Cut	0.0
Right of Way	0.0
Total Acres:	141.0

Total Stump To Truck	Net Volume	\$/MBF
\$551,857.51	4,895.0	\$112.74

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

Yarding System	Unit of Measure	# of Units of Measure	\$/Unit of Measure	Total Cost	Remarks
Cable: Small Yarder	GM MBF	4,236.0	\$110.73	\$469,052.28	
Wheel Skidder	GM MBF	913.0	\$89.71	\$81,905.23	
Subtotal				\$550,957.51	

Additional Costs

Item	Unit of Measure	# of Units of Measure	\$/Unit of Measure	Total Cost	Remarks
Lift Tree	Each	6.0	\$150.00	\$900.00	
Subtotal				\$900.00	

Additional Moves

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

Comments:

fuel \$3.00 per gallon
chainsaws \$350.00 per day
4500 bf per load

Total	Net Volume	\$/MBF
\$152,358.91	4,895.0	\$31.13

Utilization Center	One Way Mileage	Description	Unit of Measure	# of Units	\$/Unit of Measure	Total Cost	% of Sale Volume
Dillard	29.3	Saw Logs	GM MBF	5,149.0	\$29.59	\$152,358.91	100 %

Engineering Allowances

Total	Net Volume	\$/MBF
\$391,532.22	4,895.0	\$79.99

Cost Item	Total Cost
Road Construction:	\$282,997.41
Road Maintenance/Rockwear:	\$108,534.81
Road Use Fees:	\$0.00

Comments:

Exhibit D \$53,488.75 + Exhibit E \$55,046.06

Total	Net Volume	\$/MBF
\$172,867.20	4,895.0	\$35.32

Environmental Protection

Cost item	Total Cost
Snag Creation	\$3,195.00
Vehicle Washing	\$1,625.00
Subtotal	\$4,820.00

Logging

Cost item	Total Cost
Flaggers	\$11,448.00
Subtotal	\$11,448.00

Road Construction, Maintenance, Use, & Decommissioning

Cost item	Total Cost
Asphalt Protection	\$1,250.00
Subtotal	\$1,250.00

Slash Disposal & Site Prep

Cost item	Total Cost
Landing Pull Back	\$2,455.20
Landing Pile Burn	\$909.00
Landing Pile and Cover	\$1,602.00
Machine Pile Burn	\$6,433.00
Hand Pile Burn	\$14,512.00
Slash and Lop	\$34,758.00
Hand Pile and Cover	\$41,540.00
Machine Pile and Cover	\$53,140.00
Subtotal	\$155,349.20

INSTRUCTIONS TO BIDDERS

1. **AUTHORITY**—Timber located on the revested Oregon and California Railroad Grant Lands and on the reconveyed Coos Bay Wagon Road Grant Lands is administered and sold pursuant to authority of the Act of August 28, 1937 (50 Stat. 874; 43 U.S.C. 1181a); timber located on other lands and other vegetative resources on all public lands of the United States under jurisdiction of the Bureau of Land Management are administered and sold pursuant to authority of the Act of July 31, 1947 (61 Stat. 681), as amended, by the Act of July 23, 1955 (69 Stat. 367; 30 U.S.C. 601 et. seq.). Regulations of the Secretary of the Interior governing sale of timber are codified in 43 CFR Group 5400.

2. **QUALIFICATIONS OF BIDDERS**—A bidder for sale of timber/vegetative resources must be either (a) a citizen of the United States, (b) a partnership composed wholly of such citizens, (c) an unincorporated association composed wholly of such citizens, or (d) a corporation authorized to transact business in the State in which the timber/vegetative resource is located.

3. **INSPECTION OF TIMBER/VEGETATIVE RESOURCES**—Bidder is invited, urged, and cautioned to inspect the timber/vegetative resource prior to submitting a bid. By executing the timber/vegetative resource sale contract, bidder warrants that the contract is accepted on the basis of his examination and inspection of the timber/vegetative resource and his opinion of its value.

4. **DISCLAIMER OF WARRANTY**—Government expressly disclaims any warranty of the fitness of the designated timber/vegetative resource for any purpose of the bidder; all timber/vegetative resources are to be sold “As Is” without any warranty of merchantability by Government. Any warranty as to the quantity or quality of timber/vegetative resource to be sold is expressly disclaimed by Government.

5. **BIDS**—Sealed or written bids for not less than the advertised appraised price, per timber/vegetative resource must be submitted in duplicate to the District Manager who issued *Timber/Vegetative Resource Sale Notice*.

(a) **Sealed Bid Sales**—Bids will be received until time for opening which is set out in the Notice. Enclose both copies of bid with required bid deposit in a sealed envelope marked on the outside *Bid for Timber/Vegetative Resources*, time bid is to be opened, tract number, and legal description of land on which timber/vegetative resource is located. In event of a tie, the high bidder shall be determined by lot from among those who submitted the tie bids.

(b) **Auction Sales**—Submission of the required bid deposit and a written bid is required to qualify for oral bidding. Oral bidding shall begin from the highest written bid. No oral bid will be considered which is not higher than the preceding bid. In the event there is a tie in high written bids, and no oral bidding occurs, the bidder who was the first to submit his bid deposit and written bid shall be declared the high bidder. If the officer conducting the sale cannot determine who made the first submission of high tie written bids, the high bidder shall be determined by lot. High bidder must confirm his bid, in writing, immediately upon being declared high bidder.

(c) Except as otherwise provided in 43 CFR 5442.2, bids will not be considered in resale of timber/vegetative resource remaining from an uncompleted contract from any person or affiliate of such person who failed to complete the original contract because of (1) cancellation for the purchaser's breach or (2) through failure to complete payment by expiration date.

(d) When it is in the interest of the Government to do so, it may reject any and all bids and may waive minor deficiencies in bids or in sale advertisement.

6. **BID FORMS**—All sealed, written bids, and confirmation of oral bids shall be submitted on forms provided by Government.

(a) **Lump Sum Sales**—Bids shall specify (1) Bureau of Land Management estimated volume, (2) price per unit, and (3) total purchase price. Estimated volume and price per unit are to be used for administrative and appraisal purposes only. Upon award of contract, high bidder shall be liable for total purchase price, including any adjustment which may be made as a result of reappraisal if an extension of time is granted, even though quantity of timber/vegetative resource actually cut, removed, or designated for taking is more or less than the estimated volume or quantity listed.

(b) **Timber Scale Sales**—Bids must state price per thousand board feet that will be paid for each species. High bidder will be determined by multiplying bid price per thousand board feet per species by Bureau of Land Management

estimate of volume of each species. Purchaser shall be liable for purchase price of all merchantable timber sold under contract even though all such timber is not actually cut and removed prior to expiration of time for cutting and removal as specified in contract.*

7. **BID DEPOSIT**—All bidders must make a deposit of not less than the amount specified in the *Timber/Vegetative Resource Notice*. Deposit may be in the form of cash, money orders, bank drafts, cashiers or certified checks made payable to the Department of the Interior—BLM, bid bonds of a corporate surety shown on the approved list of the United States Treasury Department*, or any approved guaranteed remittance approved by the Contracting Officer. Upon conclusion of bidding, the bid deposit of all bidders, except high bidder, will be returned. The cash deposit of the successful bidder may be applied toward the required sale deposit and/or the purchase price. Cash not applied to the sale deposit or the purchase price, or a corporate surety bid bond, will be returned at the time the contract is signed by the Government.

8. **AWARD OF CONTRACT**—Government may require high bidder to furnish such information as is necessary to determine the ability of bidder to perform the obligation of contract. Contract will be awarded to high bidder, unless he is not qualified or responsible or unless all bids are rejected. If high bidder is not qualified or responsible or fails to sign and return the contract together with required performance bond and any required payment, contract may be offered and awarded to the highest bidders qualified, responsible, and willing to accept the contract.

9. **TIMBER/VEGETATIVE RESOURCE SALE CONTRACT**—To be executed by purchaser, has been prepared by Government, and may be examined in the District Manager's office.

10. **PERFORMANCE BOND**—

(a) A performance bond in an amount of not less than 20 percent of total purchase price is required, but the amount of the bond shall not be in excess of \$500,000, except when the purchaser opts to increase the minimum bond to permit cutting prior to payment as provided in 43 CFR 5451.2, or in the event the purchaser is a holder of an unresolved default the bond may be increased as provided in 43 CFR 5450.1(b). Performance bond may be (1) bond of a corporate surety shown on approval list issued by the United States Treasury Department and executed on an approved standard form, (2) personal surety bond executed on an approved standard form if Government determines principals and bondsman are capable of carrying out the terms of the contract, (3) cash bonds, (4) negotiable securities of the United States, or (5) any guaranteed remittance approved by the Contracting Officer.

(b) If purchaser elects to cut timber without skidding or yarding it to a loading point or removing it prior to the payment of the second or subsequent installments, Government shall require an increase in amount of performance bond initially required by an amount equal to the value of timber to be cut. Such increase must be on a bond rider form supplied by Government and be approved, in writing, by Government prior to cutting timber covered by the bond increase. This increased amount of bond shall be used to assure payment for timber cut in advance of payment.*

11. **PAYMENT BOND**—If purchaser elects to (a) cut and remove timber, or (b) remove timber already cut which has been secured by an increased performance bond as provided in paragraph 10(b) above, before payment of the second or subsequent installments, Government shall require a payment bond on a form supplied by Government. Purchaser shall obtain written approval from Government of payment bond prior to cutting and/or removal of timber covered by the bond. Payment bond shall be used to assure payment for timber cut and/or removed in advance of payment.*

12. **PAYMENT OF PURCHASE PRICE**—For sales of \$500 or more, Government may allow payment by installments. Except as discussed in paragraphs 10 and 11 above, no part of any timber/vegetative resource sold may be severed, cut, or removed unless advance payment has been made as provided in contract.

13. **LIQUIDATED DAMAGES**—Within thirty (30) days from receipt of *Timber/Vegetative Resources Sale Contract*, the successful bidder shall sign contract and return it to Government, together with required bond and any required payment. If successful bidder fails to comply within the stipulated time, his bid deposit shall be retained by Government as liquidated damages.

14. **NINETY-DAY SALES** – If no bid is received within time specified in the advertisement of sale and if Government determines that there has been no significant rise in the market value of timber/vegetative resource, it may, in its discretion, keep the sale open, not to exceed ninety (90) days.

15. **UNAUTHORIZED USE OF GOVERNMENT PROPERTY** – A sale may be refused to high bidder who has been notified that he has failed to make satisfactory arrangements for payment of damages resulting from unauthorized use of, or injury to, property of the United States.

16. **EQUAL OPPORTUNITY CLAUSE** – This contract is subject to the provisions of Executive Order No. 11246 of September 24, 1965, as amended, which sets forth the nondiscrimination clauses. Copies of this order may be obtained from the District Manager. 43 CFR 60-1.7(b) requires that the Equal Opportunity Compliance Report Certification will be completed by prospective contractors. Certification may be obtained from District Manager.

17. **LOG EXPORT** – All timber offered for sale except as noted in the *Timber Sale Notice* is restricted from export from the United States in the form of unprocessed timber and cannot be 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 use; or (4) western red cedar lumber which does not meet lumber of American Lumber Standards Grades of Number 3 dimensions or better, or Pacific Lumber Inspection Bureau R-List Grades of Number 3 common or better. 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 remanufacture of eight and three quarters (8-3/4) inches in thickness or less; or (6) shakes and shingles. In event purchaser wishes to sell any or all of timber restricted from export in the form of unprocessed timber, the buyer, exchanges, or recipient shall be required to comply with contractual provisions relating to “unprocessed timber”. Special reporting, branding and painting of logs may be included in contract provisions.*

18. **DETAILED INFORMATION** – Detailed information concerning contract provisions, bid, performance bond forms, tract location maps, and access conditions may be obtained from the District Manager. All persons interested in bidding on the products listed are encouraged to familiarize themselves with all such detailed information.

(Continued on page 2)

If sale contract is executed, undersigned is liable for total purchase price even though the quantity cut, removed, or designated for taking is more or less than the total estimated volume or quantity shown above. Undersigned certifies bid was arrived at by bidder or offeror independently, and was tendered without collusion with any other bidder or offeror. In submitting or confirming this bid, undersigned agrees to the foregoing provisions, applicable regulations, and certifies that he is authorized to act as, or on behalf of, the bidder.

Bid submitted on *(date)*

(Check appropriate box, sign in ink, and complete the following)

<input type="checkbox"/> Signature, if firm is individually owned	Name of firm <i>(type or print)</i>
<input type="checkbox"/> Signatures, if firm is a partnership or L.L.C.	Business address, include zip code <i>(type or print)</i>
<input type="checkbox"/> Corporation organized under the state laws of	<i>(To be completed following oral bidding)</i>
Signature of Authorized Corporate Signing Officer	I HEREBY confirm the above oral bid By <i>(signature)</i>
Title	Date
Submit bid, in <i>duplicate</i> , to qualify for either an oral auction or sealed bid sale together with the required bid deposit made payable to the Department of the Interior – BLM. Oral Auction – Submit to Sales Supervisor prior to closing of qualifying period for tract.	Sealed Bid – Send to District Manager, who issued the sale notice, in a sealed envelope marked on the outside: (1) “Bid for Timber” or (1a) “Vegetative Resources Other Than Timber” (2) Time bids are to be opened (3) Legal description

NOTICES

The Privacy Act and 43 CFR 2.48(d) require that you be furnished with the following information in connection with the information required by this form.

AUTHORITY: 38 FR 6280 and 43 CFR 5442.1

PRINCIPAL PURPOSE: To qualify an oral auction bidder, and then if successful, to bind bidder to certain contract conditions.

ROUTINE USES: To determine that an individual is qualified to participate in oral auction bidding, and, as surety that bidder will fulfill contract requirements.

EFFECT OF NOT PROVIDING INFORMATION: Filing this deposit and bid information is necessary only when an individual wishes to participate in a sealed or auction bid sale for timber or vegetative resources.

(Continued on page 3)

(Form 5440-9, page 2)