COOS BAY SALE NO. 13-01
Space Wrangler CT

COOS BAY DISTRICT OFFICE
UMPQUA RESOURCE AREA
SOUTH COAST

SALE DATE: Nov 9, 2012
SALE TIME: 10:00 a.m.

SALE NO. 13-01, Space Wrangler CT

COOS COUNTY: OREGON: CBWR: ORAL AUCTION: Bid deposit required: $140,500.00

All timber designated for cutting on: T. 26 S., R. 12 W., Sec. 25, W½NW¼, W½SW¼, T. 26 S., R. 12 W., Sec. 26, NE¼, E½NW¼, NE¼SW¼, SE¼, 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
9,595	4,442	Douglas-fir	5,332	$199.30	$1,062,667.60
5,884	1,636	western hemlock	1,857	$146.00	$271,122.00
3,276	151	western redcedar	182	$302.10	$54,982.20
247	65	red alder	86	$186.20	$16,013.20
19,002	**6,294**	**Totals**	**7457**		**$1,404,785.00**

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

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

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

CRUISE INFORMATION: With respect to merchantable trees of all species in all cruise strata: the average DBHOB is 16.9 inches: the average gross merchantable log contains 83 bd. ft.; the total gross volume is approximately 7,995 thousand bd. ft.; and 93% recovery is expected. The average DBHOB for Douglas-fir is 19.6 inches; and the average gross merchantable log for Douglas-fir contains 95 bd. ft. The following cruise methods were used for volume determination:

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VARIABLE PLOT: Timber volumes in Unit 1 were based on a variable plot cruise. Using a 20 basal area factor (BAF), 207 plots were measured; 226 trees were randomly selected to be sampled. The sample trees have been cruised and their volumes computed using form class tables for estimating board foot volumes of trees in 16-foot logs. The volumes are then expanded to a total stratum volume.

3P: The Douglas-fir within the road right-of-way were cruised using the 3P system to select 43 sample trees. The sample trees have been cruised and their volumes computed using form class tables for estimating board foot volumes of trees in 16-foot logs. The volumes are then expanded to a total right-of-way volume.

100% CRUISE: The western hemlock and red alder timber volumes within the road right-of-way were based on a 100% cruise using form class tables for estimating board foot volume of trees in 16-foot logs.

CUTTING AREA: One unit totaling approximately 263 acres must be partial cut and 10 acres of road right-of-way must be clear cut.

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

DIRECTIONS TO SALE AREA: From Coos Bay travel south on Highway 101 to Coos City-Sumner Co. Road, turn left and travel approximately 7.9 miles to Blue Ridge Road 26-12-4.2. Then travel 2.7 miles to 26-12-35.0 road. Refer to Exhibits A and A-1 for unit locations.

ROAD USE & MAINTENANCE: Purchaser shall pay a maintenance obligation to the Government totaling $24,030.27. Operator maintenance is required on 2.5 miles of road.

ROAD CONSTRUCTION: Road construction and improvement estimates include the following:

72.10 stations Class SN-16 road

Surfacing:

5183 cu. yards of 3-inch minus crushed hardrock
1348 cu. yards of 1½-inch minus crushed hardrock
50 cu. yds. Riprap barrier rock

Drainage:

120 linear feet of 18 inch CPE culvert
90 linear feet of 12 inch CMP culvert
4 Culvert Markers

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

SPECIAL PROVISIONS:

1. Directional felling is required away from roads, property lines, posted boundaries, orange-painted reserve trees, Stream Channels, and snags.
2. No-harvest zones will be maintained adjacent to Stream Channels. Orange painted trees inside no-harvest zones in all yarding corridors will be directionally felled toward or parallel to stream channels and shall be left on site.
3. Within safety standards, harvest trees would be directionally felled away from any Stream Channels; however, trees that must be felled toward or parallel to the Stream Channel should be temporarily retained on site to provide bank armoring if other trees need to be yarded across the channel.
4. Full-log suspension will be required over Stream Channels. Where full suspension cannot be achieved, yarding will occur during the dry season.
5. All snags are reserved from cutting. Snags that are felled for safety reasons will be left on site.
6. Cutting or yarding during high sap flow, March 31 through July 1, may be restricted by the Authorized Officer.
7. Hauling on dirt surfaced roads will be permitted between June 1 and October 15, unless dry conditions extend the hauling season.
8. In the Partial Cut Area, conifer trees will be bucked to a maximum of 40-foot lengths.
9. In the Partial Cut area, yarding shall be completed with cable-type equipment capable of lateral yarding 75 feet each side of the skyline road.
10. In the Partial Cut area, one-end suspension is required. Lift trees and/or intermediate support trees may be necessary to achieve suspension.
11. The location and use of yarding roads in the Partial Cut Area shall be approved by BLM prior to use by the Purchaser.
12. Road building and logging equipment will be washed prior to moving into the Contract Area to minimize the spread of noxious weeds.
13. Hand or machine piling is required in Roadside Hazard Reduction Area.
14. BLM will assume supervisory responsibility for disposal of logging slash.
15. Small incidental areas of ground-based yarding on slopes < 35% may exist. All ground based operations must be approved by authorized officer.
16. All ground-based yarding equipment shall be approved by Authorized Officer prior to the use by the Purchaser.
17. Depending on winter haul conditions the Authorized Officer may require additional erosion control to prevent sediment form entering stream channels.

SCHEDULE I

Sec. 40. TIMBER RESERVED FROM CUTTING. The following timber on the contract area is hereby reserved from cutting and removal under the terms of this contract and is retained as the property of the Government:

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

b. All orange painted trees within the Partial Cut Area, shown on Exhibit A.

c. All hardwoods, except red alder, are reserved from cutting, except in road right-of-ways.

d. All existing standing dead trees within the Partial Cut Area, except those trees which must be felled to permit safe working operations. Snags felled for safety reasons shall be left on site.

e. All existing coarse woody debris within the contract area, unless the Authorized Officer determines the volume to be included in the Exhibit B, which is attached hereto and made a part hereof.

f. All Bearing Trees with metal tags which mark property corners.

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Sec. 41. 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 thirty days during the operating season. Such interruption or delay must be beyond the Purchaser's control. Operating Season shall be defined, for this purpose, as the time of year in which operations of the type required are normally conducted and not specifically restricted under the contract. The first installment may be reduced to five percent 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 fifteen days after such notification to returnthe 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 thirty days, and the interruption or delay is beyond the Purchasers control. Any adjustment made shall provide the Purchaser with an equal amount of operating time as would have been available without the delay. The Purchaser shall request such adjustment in writing before the due date for a periodic payment contained in Sec. 3(b).

b. Logging

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

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

(3) Directional felling is required away from roads, property lines, posted boundaries, orange-painted reserve trees, no-harvest areas and snags.

(4) Cutting or yarding during high sap flow, March 31 through July 1 of the same calendar year, may be restricted by the Authorized Officer.

(5) Hauling on dirt surfaced roads will be permitted between June 1 and October 15 unless dry conditions extend the hauling season, as directed by Authorized Officer.

(6) All trees designated for cutting in the Partial Cut Area, shall be felled to the lead of the pre-marked yarding corridors or pre-marked skid roads.

(7) All trees designated for cutting in the Partial Cut Area shall be felled, limbed, topped, and cut into log lengths not to exceed 40 feet before yarding.

(8) In the Partial Cut Area, rub trees may be cut and yarded after all lateral yarding is complete on each setting, as directed by Authorized Officer.

(9) In the Partial Cut Area, yarding shall be completed with cable-type equipment. A carriage capable of yarding in a fixed position 75 feet in either direction from the skyline corridor will be required.

(10) Complete re-spooling of lines required in making cable yarding road changes.

(11) One-end suspension will be required for in-haul of logs during cable yarding operations. Lift trees and/or intermediate supports may be required to obtain the required suspension.

(12) Cable yarding corridors will be 150 feet apart, as measured from the tail hold or where the skyline reaches the far edge of the unit, as measured perpendicular to the preceding corridor.

(13) Where yarding road locations allow, cable yarding will be done so that corridors are parallel rather than radiating from one central landing, and are placed to avoid a Stream Channel, shown on Exhibit A. Where yarding is to occur over a Stream Channel, the yarding roads will be kept as perpendicular to the Stream Channel as possible.

(14) A minimum 35 foot slope distance no-harvest zone shall be maintained on either side of a Stream Channel. Corridor trees felled within the no-harvest zone will be felled toward or parallel to the Stream Channel and left in place. All trees within the no-harvest zone are painted orange, except those reserved in Sec. 40.

(15) Where cable yarding must occur through the no-harvest area adjacent to a Stream Channel, logs will be fully suspended to protect stream banks. Where full suspension is not feasible, operations over any Stream Channel with visible surface flow will occur only during the dry season, as designated by the Authorized Officer. Bare mineral soil within 50 feet of a Stream Channel, which has been exposed by yarding, shall be covered with slash to trap sediment and prevent erosion.

(16) For incidental ground-based yarding:

(a) A harvester-forwarder system, tractor, rubber tired skidder, or track mounted log loader may be used. Any equipment must be approved in writing by the Authorized Officer prior to any operations.

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

(c) Trees shall be felled manually or by a mechanized harvester utilizing a “cut-to-length” system capable of directionally felling, cutting to length, and depositing slash along the harvesting path.

(d) The yarding machine shall utilize slash on skid trails and continually place slash on trails as to not expose bare mineral soil.

(e) The yarding machine must be approved by the Authorized Officer. It must be equipped with a grapple or an extendable and retractable arch and fairlead that is an integral part of the

machine that is capable of lifting the leading end of the turn clear of the ground. All logs in the Ground-based Yarding 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 within the incidental Ground-based Yarding Areas.

(f) If the forwarding vehicle does not achieve full suspension, forwarding roads will be de-compacted through the use of equipment such as an excavator, water barred to prevent pooling of water, and covered with logging debris as directed by the Authorized Officer. This must take place during the same operating season.

(g) Existing skid trails shall be used, wherever possible, be spaced at least 100 feet apart, and be no wider than 12 feet as measured between reserve trees.

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

(i) All ground-based equipment shall be restricted to operating on slopes less than 35% and shall not operate within 50 feet of a stream channel.

(j) Primary skid trails with a slope greater than 15% that 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 15th of the same operating season.

(17) Prior to attaching any logging equipment to a reserve tree, the Purchaser shall obtain written approval from the Authorized Officer and shall take precautions to protect the tree from damage as directed in writing by the Authorized Officer.

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

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

(b) The Purchaser may immediately cut and remove additional timber to clear cable yarding corridors; and provide tailhold, tieback, guyline, lift and intermediate support trees; and clear danger trees when the trees have been marked with blue paint above and below stump height by the Authorized Officer and thereby approved for cutting and removal by the Authorized Officer. Purchaser shall retain trees used as

tailholds, lift and support for snag recruitment, as directed by authorized officer. The volume of the timber to be sold will be determined by the Authorized Officer in accordance with Bureau of Land Management prescribed procedures. No timber may be cut or removed under terms of this provision unless sufficient installment payments have been made in accordance with Sec. 3.(b). of the contract or sufficient bonding has been provided in accordance with Sec. 3.(d). of the contract.

(c) The Purchaser agrees that sale of this additional timber shall be accomplished by a unilateral modification of the contract executed by the Authorized Officer and that such timber shall be sold at the unit prices shown in the Exhibit B of this contract, which is attached hereto and made a part hereof, unless the value of the timber must be reappraised subject to the terms for contract extension set forth in Sec. 9 of the contract; or, the Authorized Officer determines that any tree that exceeds 24 inches diameter at breast height shall be appraised and sold by bilateral modification of the contract at current fair market value in accordance with Sec. 8 of the contract.

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

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

(f) The Government may reserve trees previously designated for cutting and removal by applying orange paint as replacements for additional trees cut and removed for skid roads and/or cable yarding road corridors when the Authorized Officer determines such reservation is necessary to maintain stand densities consistent with objectives set forth in the management prescription. This may include the replacement of trees damaged by storm events, insects or disease. The volume of this timber to be reserved will be determined by the Authorized Officer in accordance with Bureau of Land Management prescribed procedures and the value shall be based on the unit prices shown in Exhibit B of the contract. The Purchaser agrees that the Total Purchase Price stated in Sec. 2 of this contract shall be reduced accordingly through a unilateral modification to the contract executed by the Authorized Officer.

(19) In accordance with the requirements of Sec. 8, it has been determined that it is in the best interest of the government and within the provisions of 43 CFR 5402.0-6 to sell additional timber located in the

Contract Area, as shown on Exhibit A, that is: obstructing needed cable yarding corridors, hazardous to workers in accordance with applicable State safety laws, codes, or regulations and must be cut or removed so that the Purchaser can continue active falling or yarding operations; needed for guyline trees to meet all applicable State safety laws, codes or regulations and must be cut or removed so the Purchaser can continue active yarding operations; or are severely damaged from the normal conduct of felling or yarding operations. The Purchaser is therefore authorized to cut and remove such additional timber in accordance with the provisions of Sec. 8; provided, however, that:

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

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

(c) the Purchaser conforms to all requirements of Sec. 8 of this contract; provided that (1) the unit prices for additional timber within unit boundaries shall be the unit prices shown in Exhibit B of this contract, or, the Authorized Officer determines that the timber should be appraised and sold at fair market value in accordance with Sec. 8 of the contract because the species, size, grade and/or value of the additional timber is not representative of the character of the timber in the forest stand(s) otherwise designated for thinning.

(d) no timber may be cut or removed under the terms of this provision if all contract payments required by Sec. 3. (b) or 3.(d) have not been made; and,

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

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

(9) cut more than the minimum number of trees necessary to properly serve as tie-backs for topped tailhold trees.

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

(20) As directed by Authorized Officer, for a distance of 100 feet from the perimeter of each landing, all logs more than six inches diameter at the large end and longer than eight 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.

(21) In the Partial Cut Area, significant damage to residual trees shall be kept to a minimum. Significant damage is defined as any tree having greater than twelve square inches of the bark removed from the circumference of the tree, any tree with top diameter broken at three inches in diameter or greater, or any tree being visually root-sprung. If the Authorized Officer determines that damage has become commonplace due to a lack of caution or operator negligence, a written warning of non-compliance will immediately be issued to the Purchaser. The Authorized Officer may suspend operations until safeguards are put in place to protect the reserve trees. If the damage continues, it will result in a violation of Sec. 13 of the contract, Timber Trespass, and the Purchaser will be held liable for damages. Any reserved trees significantly damaged or destroyed by the Purchaser shall be valued at current market value of the merchantable volume for purposes of determining damages.

(22) In the Partial Cut Area any reserved hardwood cut to facilitate logging shall be limbed, topped and yarded and shall be decked separately as directed by the Authorized Officer. Felled reserved hardwoods shall remain property of the Government.

(23) To control the spread of noxious weeds, 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 part hereof. All road building and logging equipment which will be used off of existing roads will be washed prior to moving into the Contract Area to minimize the spread of noxious weeds.

(24) Road Numbers 26-12-25.1, 26-12-35.0, and 26-12-35.4 shall be kept clear of trees, rock, dirt and other debris so far as is practicable and shall not be blocked by operations for more than 20 minutes.

(25) Post-harvest Trail Slash Removal and Rehabilitation – Immediately following the conclusion of harvest activities, the Purchaser shall be responsible for slash removal and rehabilitation of existing trails that are adversely impacted from harvest activities. Trail slash removal and rehabilitation is limited to areas within or immediately adjacent to the sale unit boundaries as shown on the Exhibit A maps. Rehabilitation shall include treatment of the actual trail surface, areas above the trail, areas immediately adjacent to the sides of the trail and any location where yarding corridors cross the trail. The Purchaser shall notify the Authorized Officer before trail rehabilitations work begins.

(a) Within the existing trail including overhanging material, all logging residue and logging related debris regardless of diameter class, brush and damaged trees shall be completely removed from the trail path. Overhanging material less than eight feet in height shall be felled and removed unless otherwise instructed by the Authorized Officer. Material that is greater than eight feet in height above the trail may be left in place unless specifically identified by the Authorized Officer for removal.

(b) Grooves or ruts left in the trail from yarding operations shall be restored to pre-harvest condition.

(c) In locations where yarding roads intersect trails, the Purchaser shall seed and mulch exposed mineral soils above and below the intersection of the yarding road and trail.

(d) Trails shall be physically disconnected from yarding roads by placement of slash above and below the trail on the yarding roads to limit erosion and discourage trail expansion by recreationalists.

c. Road Construction

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

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

(3) In addition to the requirements set forth in Sec. 25 of this contract, the Purchaser shall complete erosion control and soil stabilization measures on all cuts, fills, waste areas, and scarified areas, as designated by the Authorized Officer, along all sections of roadway disturbed during the year prior to October 1 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.

(4) The Purchaser shall, prior to construction of landings, 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.

(5) Road construction will only occur during the dry season, June 1 through October 1. Unless dry conditions exist that may extend those dates as approved by the authorized officer.

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.

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.

(2) 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, which is attached hereto and made a part hereof, resulting from wear or damage in accordance with the maintenance specifications as shown on Exhibit D.

(3) The Purchaser is authorized to use the roads shown on Exhibit E, which is 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 a maintenance obligation to the Government totaling $24,030.27, as shown on Exhibit E. Unless the total maintenance obligation due to the BLM is 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. Timber modification volume will be assessed at a rate of $3.22/MBF for removal of timber over Government controlled roads.

(4) 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. 41(c)(1) and 41(d)3 of

this contract; provided, that such cooperative arrangement shall not relieve the Purchaser of his liability for the maintenance and repair of such roads resulting from wear or damage, in accordance with this contract. The Purchaser shall furnish the Authorized Officer a copy of any cooperative maintenance agreements entered into with other users on these roads.

(5) The Contracting 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. 41(c)(1) and 41(d)3. If the total road maintenance fee does not exceed $500.00, the Purchaser shall pay such amount in full prior to use of such roads. If the total road maintenance fee exceeds $500.00, the Authorized Officer shall establish an installment schedule of payments of the maintenance obligation.

e. Fire Prevention, Hazard Reduction and Logging Residue Reduction

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

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

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

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

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

(a) The Purchaser or their designated representative is responsible for ensuring that their employees or sub-contractors understand and fully comply with the specifications.

(b) Acceptance of specified work by the Authorized Officer or their designated representative does not relieve the Purchaser of responsibility for the work quality if work is later found to be inadequate or does not fully meet the specifications.

Specifications for Landing and RHRA Piling

(a) In addition to the requirements of Sec. 15 of this contract, the Purchaser shall be responsible for logging residue reduction at all landing sites in the sale area and in the Roadside Hazard Reduction Area (RHRA), shown on the Exhibit A.

(b) Prior to commencement of piling RHRA, the Purchaser shall contact the Authorized Officer to arrange an on-site inspection on the day piling begins.

(c) Within the RHRA, the Purchaser shall (1) remove logging residue for offsite utilization or (2) pile on site for burning, all logging residue one-half inch to four inches (small end diameter) which is greater than two feet in length and is within 20 feet slope distance of the outside edge of the road shoulder. Logging residue includes slash from the harvest operations and related road construction, renovation or improvement. Removal/piling shall be accomplished by hand or with mechanized equipment capable of reaching the required 20 feet without leaving the road surface.

(d) If offsite utilization is intended, the Purchaser shall upon request from the Authorized Officer, provide information on the method of removal, the total tonnage, the intended use and destination of logging residue being removed from the sale area.

(e) Any logs or residue, regardless of piece size that is identified in the contract as reserved shall remain the property of the Government and may not be shipped for offsite utilization.

(f) Prior to commencement of logging residue removal, the Purchaser shall provide advanced notification to the Authorized Officer in order to arrange for on-site inspections of the removal operations. Upon completion of logging residue removal, the Purchaser shall notify the Authorized Officer to arrange for a final inspection of the landing sites and RHRA.

(g) If the piling/burning method is selected for the RHRA, the material shall be piled in locations designated by the Authorized Officer. All logs or parts of logs that are greater than or equal to six inches in diameter at the small end that are longer than eight feet in length shall not be placed into the burn piles but shall be placed off the road shoulder or adjacent to the road outside of the ditch line. In lieu of piling and only in approved locations, the Authorized Officer may allow for logging residue to be distributed and scattered beyond the 20 foot slope distance of the outside edge of the road shoulder.

(h) Machine piling of landing debris and slash in the RHRA shall be conducted concurrently with the logging operation or prior to the removal of logging equipment from the contract area. Hand piling of debris in RHRA may be conducted after logging operations have concluded.

(i) Logging residue within the immediate vicinity of the landing and any residue that overhangs the landing sites that can be reached with the logging equipment on site shall be pulled completely back up onto the landing surface and either piled for burning or segregated for other uses.

(j) Logging residue meeting the criteria set forth in Sec. 41.b.(20) shall not be piled for burning but shall be segregated into separate piles that are no closer than 20 feet from landing residue piles that will be burned.

(k) If during the course of pile construction or during a final acceptance inspection, the Authorized Officer determines that landing piles contain excessive amounts of logging residue that meets the specifications as described in Sec. 41.b.(20), the Purchaser may be required to remove the specified residue from the burn piles.

(l) Burn piles shall be constructed as upright as possible and have a solid base to prevent toppling. Material extending more than two feet beyond the general contour of the pile shall be cut off and placed on the pile. Pile trimming can be deferred until the time the actual pile covering takes place but shall be done before pile covering. All piled material shall be laid perpendicular to the slope. Unless directed by the authorized Officer, no piles shall be within ten feet of any green trees, snags or marked wildlife trees.

Specifications for RHRA and Landing Pile Covering

(m) Prior to commencement of landing and RHRA pile covering, the Purchaser shall contact the Authorized Officer to arrange an on-site inspection on the day pile covering begins.

(n) The Purchaser shall place polyethylene sheeting (PE) that is four MIL thickness and black in color over the pile so as to provide an adequate level of protection from fall/winter rains. For most average sized RHRA piles with base dimensions of approximately 10 feet by 10 feet or less, the size of the PE sheeting shall not exceed approximately 100 square feet.

(o) At landing sites with excessive logging residue that overhangs the landing which cannot be reached and pulled back up onto the landing with equipment on site, the Purchaser shall place additional PE sheeting over the residue concentrations below the landings.

(p) To meet ignition and combustion needs, large RHRA and landing piles may require additional PE sheeting in excess of 100 square feet to adequately cover the pile and protect it from wetting fall/winter rains. During the on-site inspection, the Authorized Officer will identify all piles that shall have additional PE covering that may exceed the 100 square foot limit. If large piles are covered without the advice and consent of the Authorized Officer and are subsequently found to be inadequately covered, the Purchaser may be required to re-cover or add additional PE coverings to the piles before acceptance is made.

(q) All PE shall be tied and/or weighted down with slash or logging debris in order to prevent blowing off or sliding. An adequate amount of anchoring material should be placed on top of the pile but no more than twenty percent of the material to be piled may be placed on top of the PE. For piles described in (p), the Authorized Officer may require the removal of PE before burning so the Purchaser should exercise discretion with respect to the method of application, the amount and composition of anchoring material used

when securing the PE.

(r) Based on the time of year and sequence in which harvest and treatment of the units is completed, burning may be required to be accomplished over multiple seasons using multiple entries.

(s) In accordance with written instructions to be issued by the Authorized Officer at least ten days in advance of the earliest date of required performance, the Purchaser shall, under supervision of the Authorized Officer or their designated representative, assist in burning and fire control, at the Purchaser's expense and for each entry as described in (r) above, provide the services of personnel and equipment as follows:

Specifications Applicable to RHRA and Landing Pile Burning

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

2. In accordance with the Authorized Officer's verbal instruction, immediately before ignition on piles with PE coverings in excess of 100 sq. ft., the Purchaser may be required to remove as much PE sheeting from the pile as feasibly possible.

3. The Purchaser shall dispose of removed PE sheeting in accordance with any applicable Federal, State, and municipal laws. Removed PE sheeting shall not be disposed of in burn piles.

4. For each entry, the Purchaser may provide more personnel, equipment and materials than indicated but no less than the minimum requirements below. Minimum personnel, equipment and material requirements for burning RHRA and landing piles are:

    a. One English-speaking foreman for crew supervision.
    b. Two persons to assist the foreman in pile burning.
    c. Three drip torches and sufficient mixed fuel to complete all pile burning.
    d. Three pounds of fuel gelling agent, mixing buckets and a sufficient amount of straight gasoline for gelled fuel mixing.

5. A minimum of 90% consumption of each pile is required. Some stoking of piled material around pile edges may be required to meet the 90% consumption requirement. Stoking can be accomplished by hand or the Purchaser will be allowed to use heavy equipment (if onsite) to facilitate stoking or re-piling of residue during pile burn operations. If used, the heavy equipment shall not be allowed to operate off of all-weather road surfaces.

6. No mop-up is required of the Purchaser.

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

f. Log Export and Substitution

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.

(1) All timber sold to the Purchaser under the terms of the contract, except exempted species, is restricted from export under the United States in the form of unprocessed timber, and is prohibited from being used as a substitute for exported private timber. For the purpose of this contract, unprocessed timber is defined as (1) any logs except those of utility grade or below, such as saw logs, peeler logs, and pulp logs; (2) cants or squares to be subsequently remanufactured exceeding eight and three-quarters inches in thickness; (3) split or round bolts or other roundwood not processed to standards and specifications suitable for end-product uses; or (4) western redcedar lumber which does not meet lumber of American Lumber Standards Grades of Number 3 dimension or better, or Pacific Lumber Inspection Bureau R-List Grades of Number 3 Common or better. Thus, timber manufactured into the following will be considered processed: (1) lumber and construction timbers, regardless of size, manufactured to standards and specifications suitable for end-product uses; (2) chips, pulp and pulp products; (3) green or dry veneer and plywood; (4) poles and piling cut or treated for use as such; (5) cants, squares, and lumber cut for remanufacturing of eight and three-quarters 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 twelve months prior to purchasing or otherwise acquiring Federal timber sold under this contract, the Purchaser shall, upon request, obtain from the affiliate information in a form specified by the Authorized Officer and furnish the information to the Authorized Officer.

(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 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.

g. Optional Scale Check of Lump Sum Sales

(1) The Government, at its option, may administratively check scale any portion of the timber removed from the contract area, and if necessary, conduct check scaling of independent scalers contracted to BLM for administrative check scaling purposes. The Purchaser hereby agrees to make such contract timber available for

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

(2) In the event that BLM elects to administratively check scale and if such check scaling causes a delay in log transportation time, an adjustment will be made to the purchase price as follows. If the entire sale is check scaled by yard scale, the purchase price of this contract shall be reduced by $3,728.50. In the event only a portion of the contract timber is scaled, the purchase price shall be reduced by that portion of $3,728.50 which is equal to the percentage of timber sold which was actually scaled by the Government. For purposes of computing this price reduction, the percentage of timber sold which has been scaled shall be determined by the Government. Any reduction in purchase price under the terms of this provision shall be full compensation to the Purchaser for any expense or loss incurred as a result of such scaling. Scaling shall be conducted in accordance with the Eastside Scribner Scaling Rules by BLM scalers, and/or independent scalers contracted to BLM. A copy of the scale report will be made available to the Purchaser upon request.

h. Equal Opportunity in Employment

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

i. Cultural Resource Protection

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

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

j. Sensitive, Threatened, or Endangered Plants or Animals

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

(1) threatened or endangered plants or animals protected under the Endangered Species Act of 1973, as amended, may be affected by the operation, and a determination is made that

consultation or reinitiation of consultation is required concerning the species prior to continuing operation, or;

(2) when, in order to comply with the Endangered Species Act or to protect occupied marbled murrelet sites in accordance with the Standards and Guidelines of the Coos Bay District Record of Decision (ROD) and Resource Management Plan (RMP), the Contracting Officer determines it may be necessary to modify or terminate the contract, or;

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

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

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

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

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

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

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

During any period of suspension, the Purchaser may withdraw performance and payment bond coverage aside from that deemed necessary by the Authorized Officer to secure cut and/or removed timber for which the Bureau of Land Management has not received payment, and/or unfulfilled contract

requirements associated with harvest operations that have already occurred and associated post-harvest requirements.

In the event of a suspension period or a combination of suspension periods that exceed a total of 30 days, the First Installment held on deposit may be temporarily reduced upon the written request of the Purchaser. For the period of suspension extending beyond 30 days, the First Installment on deposit may be reduced to five percent of the First Installment amount listed in Sec. 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 Sec. 3.b. of the contract within fifteen days after the bill for collection is issued, subject to Sec. 3.h of the contract. The Purchaser shall not resume contract operations until the First Installment amount is fully restored.

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

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

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

buffer standards and guidelines established in the ROD and RMP, or court order requirements necessitating the modification or termination.

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

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

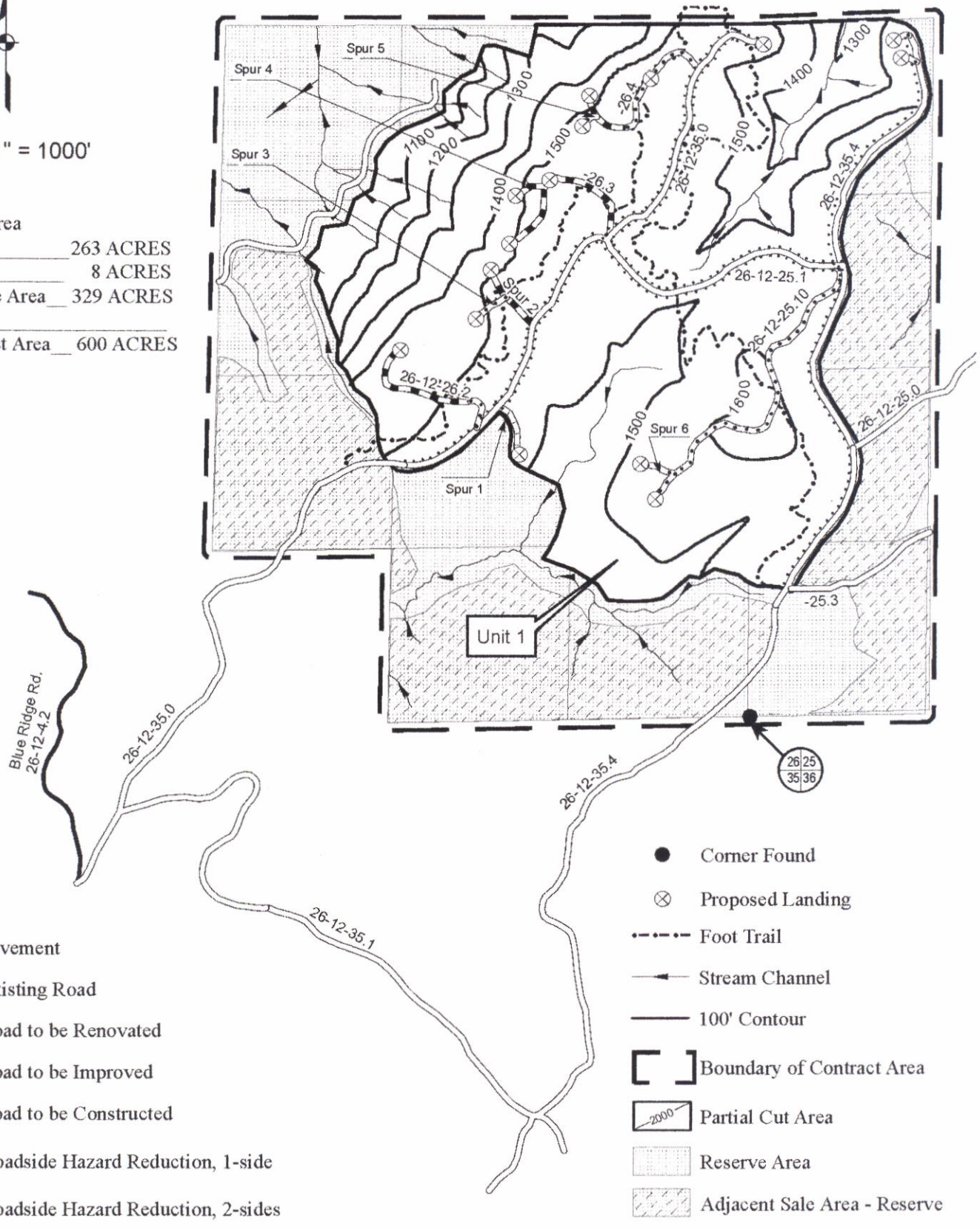
TIMBER SALE CONTRACT MAP
USDI-BLM COOS BAY DISTRICT
T. 26 S., R. 12 W., Secs. 25, & 26, Will. Mer.

SALE NO. 13-01
EXHIBIT A
Page 1 of 1
Space Wrangler CT

Scale 1" = 1000'

Partial Cut Area
Total Unit 1_____263 ACRES
RW_____8 ACRES
Total Reserve Area__329 ACRES

Total Contract Area__600 ACRES



Pavement
Existing Road
Road to be Renovated
Road to be Improved
Road to be Constructed
Roadside Hazard Reduction, 1-side
Roadside Hazard Reduction, 2-sides

Corner Found
Proposed Landing
Foot Trail
Stream Channel
100' Contour
Boundary of Contract Area
2000 Partial Cut Area
Reserve Area
Adjacent Sale Area - Reserve

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Contract No: TS13-01

Space Wrangler CT

EXHIBIT B
LUMP SUM SALE

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	5332 MBF	$199.30		$1,062,667.60
western hemlock	1857 MBF	$146.00		$271,122.00
western redcedar	182 MBF	$302.10		$54,982.20
red alder	86 MBF	$186.20		$16,013.20
Totals	7457 MBF			$1,404,785.00

The apportionment of the total purchase price is as follows:

Approx. No. of Trees	UNIT NO. 1	EST. NET MBF VOL.			
0	Douglas-fir	5010	$199.30		$998,493.00
0	western hemlock	1805	$146.00		$263,530.00
0	western redcedar	180	$302.10		$54,378.00
0	red alder	85	$186.20		$15,827.00
0	TOTALS	7080			
			263	Acres =	$5,065.51 /Ac.
					Unit Total $1,332,228.00

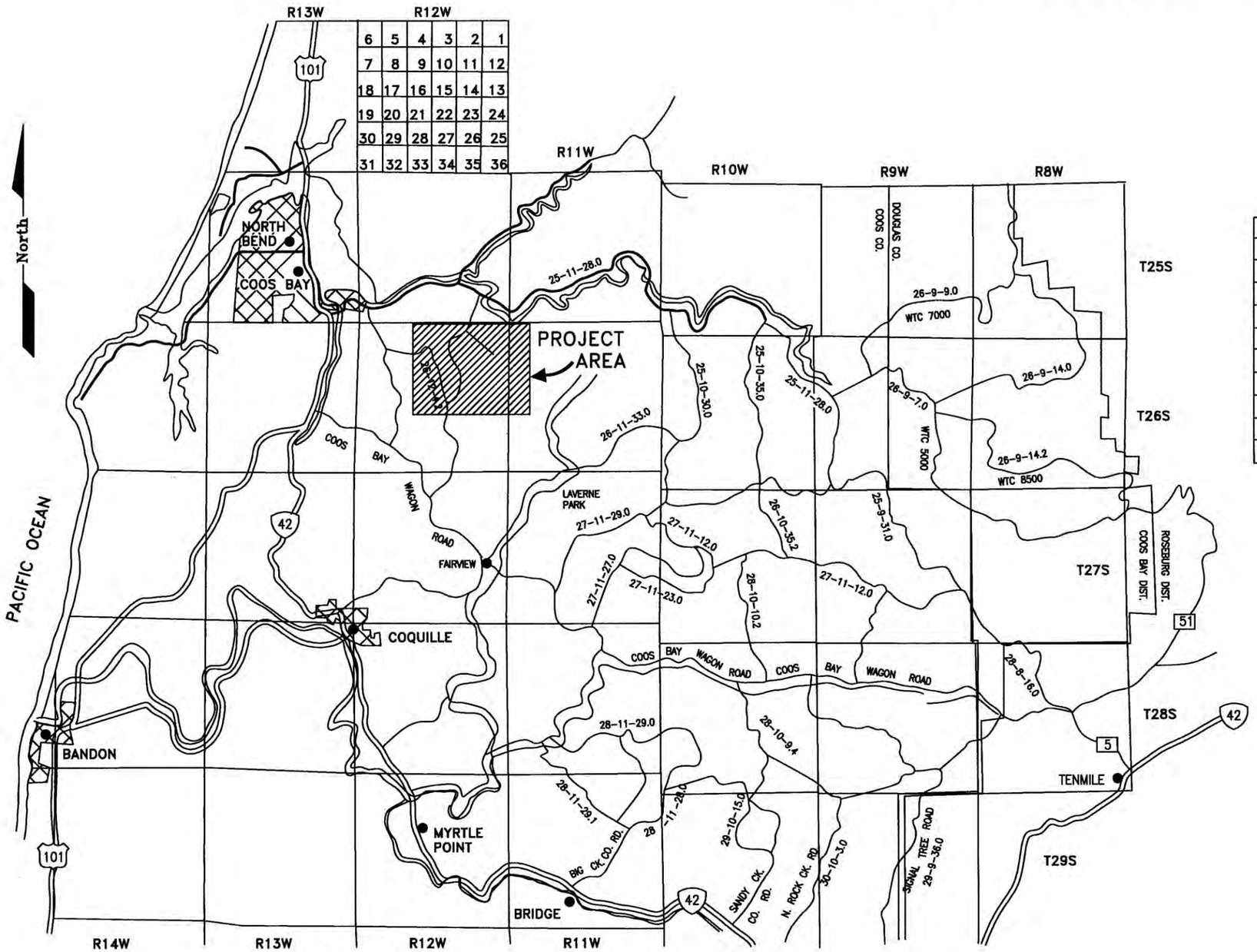
Approx. No. of Trees	UNIT NO. 2 - R/W	EST. NET MBF VOL.			
0	Douglas-fir	322	$199.30		$64,174.60
0	western hemlock	52	$146.00		$7,592.00
0	western redcedar	2	$302.10		$604.20
0	red alder	1	$186.20		$186.20
0	TOTALS	377			
			8	Acres =	$9,069.63 /Ac.
					Unit Total $72,557.00

EXHIBIT C

TIMBER SALE NAME: SPACE WRANGLER CT

TIMBER SALE NO. 13-01

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



SHEET	CONTENTS
1	TITLE SHEET
2-3	WORK LOCATION MAPS
4-5	ESTIMATE OF QUANTITIES
6	CULVERT INSTALLATION DETAILS
7	TYPICAL CROSS SECTION DETAIL
8	ROADSIDE BRUSHING DETAIL
9	LANDING DETAIL
10	SPECIAL PROVISIONS
11-21	SPECIAL DETAILS
22-44	ROAD CONSTRUCTION SPECIFICATIONS

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

TITLE SHEET

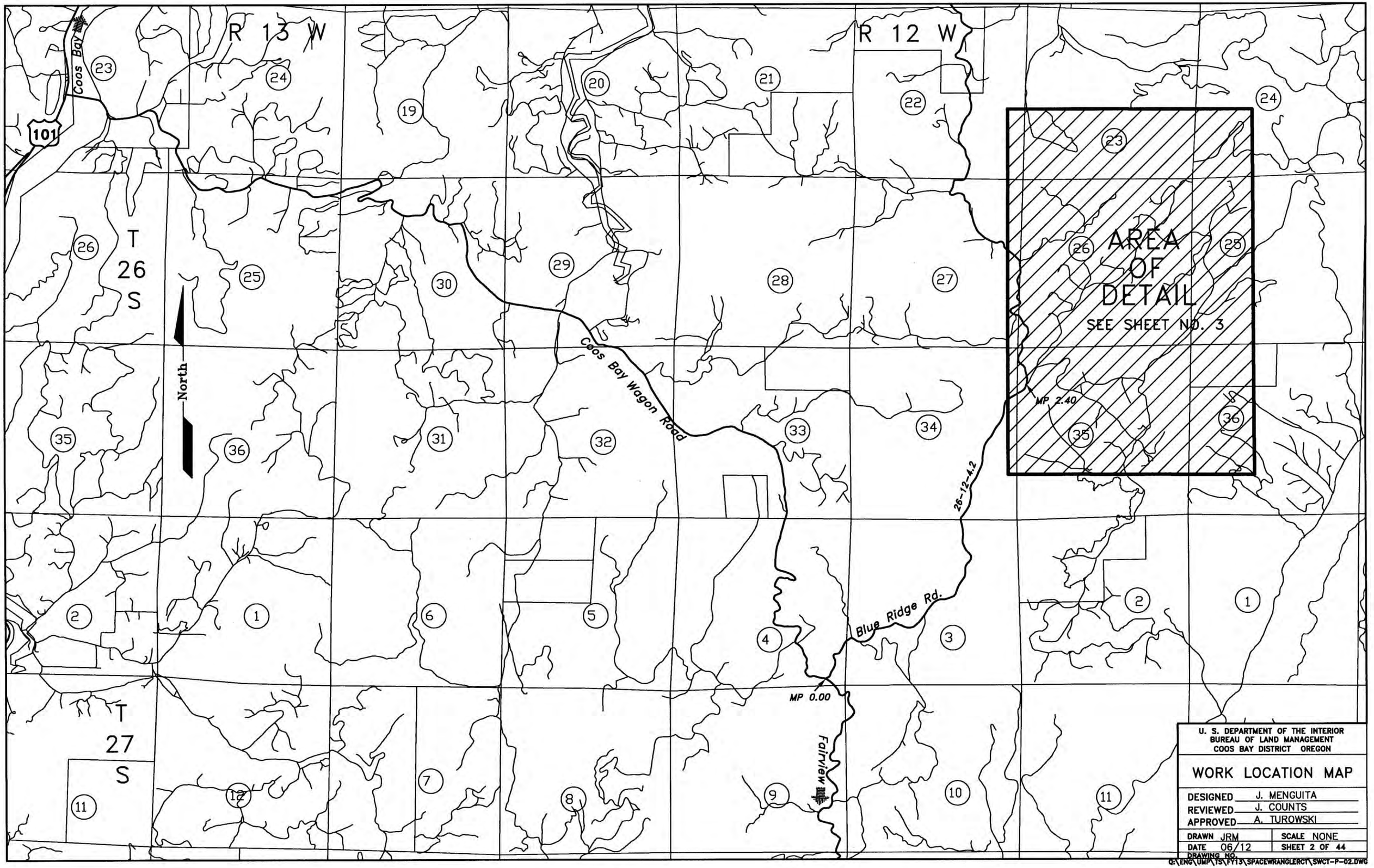
DESIGNED J. MENGUITA

REVIEWED J. COUNTS

APPROVED A. TUROWSKI

DRAWN JRM	SCALE NONE
DATE 06/12	SHEET 1 OF 44
DRAWING NO.	

Q:\ENG\UMP\TS\FY13\SPACEWRANGLERCT\SWCT-P-01.DWG



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

WORK LOCATION MAP

DESIGNED	J. MENGUITA
REVIEWED	J. COUNTS
APPROVED	A. TUROWSKI
DRAWN JRM	SCALE NONE
DATE 06/12	SHEET 2 OF 44
DRAWING NO.	

G:\ENG\UMP\TS\FY13\SPACEWRANGLERCT\SWCT-P-02.DWG

R 12 W

T 26 S

North

23

26

25

35

36

Private

Private

Private

BLM

BLM

BLM

MP 1.65

MP 1.81

12+70

-26.4

MP 1.53=
0+00

Spur 5
0+90

11+40=
0+00

Spur 4
2+25

-26.3

7+50=
0+00

-35.0

MP 1.26=
STA 0+00

12+60

MP 0.35=
STA 0+00

MP 1.43

-35.4

4+50

Spur 2

MP 1.25=
MP 0.00

26-12-25.1

Spur 3
2+25

2+75=
0+00

MP 1.10=
STA 0+00

26-12-25.10

8+70

26-12-26.2

MP 0.98=
STA 0+00

MP 0.92=
STA 0+00

Spur 1
4+00

26-12-25.0

Spur 6
2+20

26+00

23+90=
0+00

26-12-25.3

26-12-4.2

26-12-35.0

26-12-35.4

MP 2.40=
MP 0.00

26-12-35.1

MP 0.00

-35.5

Deliver 150 CY of 1.5-0" crushed aggregate to the stockpile site.

LEGEND

NEW CONSTRUCTION	
IMPROVEMENT	
RENOVATION	
EXISTING ROAD	
PAVED ROAD	
LANDING	Ⓛ
STOCKPILE SITE	Ⓢ
BLM TOWER	Ⓣ

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

WORK LOCATION MAP

DESIGNED	J. MENGUITA
REVIEWED	J. COUNTS
APPROVED	A. TUROWSKI
DRAWN JRM	SCALE NONE
DATE 06/12	SHEET 3 OF 44
DRAWING NO.	

Q:\ENG\UMP\TS\FY13\SPACEWRANGLERCT\SWCT-P-03.DWG

EXHIBIT D

R 12 W

T 26 S

North

Private

Private

BLM

BLM

BLM

Private

BLM

23

26

25

35

36

STA 0+00

0+00

MP 1.81

MP 1.77

Spur 1

Spur 2

Spur 3

Spur 4

Spur 5

Spur 6

-26.4

-26.3

-35.0

-35.4

-35.5

26-12-25.1

26-12-25.10

26-12-25.0

26-12-25.3

26-12-26.2

26-12-4.2

26-12-35.0

26-12-35.1

26-12-35.4

LEGEND

Operator Maintained – B.L.M. Road

Fee Maintained – B.L.M. Road (Rock)

Construct Barrier

Total Maintenance Rock: 80 CY 1–1/2" Aggregate*
220 CY 3–0" Aggregate**

*1–1/2" Aggregate Surfaced Roads ONLY

**3–0" Aggregate Surfaced Roads ONLY

USDI–BLM COOS BAY DISTRICT
MAINTENANCE DETAILS
SPACE WRANGLER CT

SALE NO. 13–01 | SHEET 1 OF 8

Q:\ENG\UMP\TS\FY13\SPACEWRANGLERCT\EXD\SWCT–P–01.DWG

SPECIAL PROVISIONS

Purchaser Responsibility

The Purchaser shall avoid damaging any bituminous surfaced roads, and will be responsible for the repair of any road damaged as a result of the activity. Bituminous roads shall be left in the same condition that they were prior to logging operations.
The bituminous road surface at any roadside landing locations will be protected by applying a layer of wood chips, hog fuel, or other material (excluding rock or soil) approved by the Authorized Officer, to a depth sufficient to prevent damage from yarding and loading activities.

Seasonal Restrictions

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

Seasonal restrictions apply to summer haul roads.

Native Seed

The Government will furnish native seed mix. The Purchaser shall pick up the native seed mix at the North Bend, BLM warehouse. The Purchaser shall give the Authorized Officer 3 day notice in advance before pick up. Personnel to contact are Jeanne Standley at (541) 751-4283 or Jennifer Sperling at (541) 751-4336. The native seed mix shall be applied at the rate of 60 pounds per acre (or one pound per 1,000 square feet). Sand can be mixed with the native seed to aid broadcast seeding.

Also, a generic fertilizer of 16-20-16 NPK shall be used at a rate of 200 pounds per acre. Approved mulch material shall be applied at the rate of two tons per acre. Seeding shall be applied according to the dates specified in road specification 1803.

Over-wintering

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

Aggregate stockpiling

Deliver 150 CY of 1.5" minus crushed aggregate to the stockpile site conforming to Section 1200 of the Road Specifications. See Sheet 3 for the site location.

The aggregate will be measured and paid for by the cubic yard. Truck tickets shall be given to the government the day of delivery. Tickets shall have the following information: company name, size of aggregate, date, truck number, stockpile location, amount of cubic yards to the nearest yard. If truck tickets show tonnage, a ton/yard conversion factor of 1.4 will be used. The quantity shall be verified by load tickets from an Oregon certified scales at a moisture content of 6% maximum. The addition of water to the aggregate prior to being weighed will not be permitted.

The completed stockpile shall be neat and be made to occupy the smallest feasible area. The side slopes shall not be flatter than 1:1. Avoid tracking dirt or other deleterious material onto the stockpiled material. Pushing of aggregates with a bulldozer will not be permitted. However, bulldozers may be used in the leveling of aggregates.

SPECIAL DETAILS

ROAD NO. 26-12-4.2 (BLUE RIDGE ROAD)
Milepost 0.00 to Milepost 2.40

Milepost	Remarks
0.00	Junction with Coos Bay Wagon Road.
2.40	Junction, renovate Road No. 26-12-35.0 right.

ROAD NO. 26-12-25.1
Milepost 0.00 to Milepost 0.37

Milepost	Remarks
0.00	Junction with Road No. 26-12-35.0.
NOTE:	Apply 200 CY of spot rock conforming to Section 1200 of the Road Specifications and as directed by the Authorized Officer.
0.35	Junction, construct Road No. 26-12-25.10 right.
0.37	Junction, renovate Road No. 26-12-35.4 left.

IMPROVEMENT OF ROAD NO. 26-12-26.2
Station 2+35 to Station 8+70

Station	Remarks
2+35	Begin improvement. Begin brushing, slough and slide removal, subgrade preparation, rocking, and soil stabilization in accordance with Sections 500, 1000, 1800, and 2100 of the Road Specifications, Typical Cross Section Sheet No. 7, and Roadside Brushing Detail Sheet No.8.
NOTE:	Install a 12" lift of crushed aggregate base rock in accordance with Section 1000 of the Road Specifications and Typical Cross Section Sheet No. 7.
5+25	Construct 50’ turnout left.
6+00	Construct ditchout left.
7+25	Construct truck turnaround right. 20 CY of landing rock allocated.
8+70	End landing. 50 CY landing rock allocated. End improvement.

IMPROVEMENT OF ROAD NO. 26-12-26.3
Station 0+00 to Station 12+60

Station	Remarks
0+00	Junction with Road No. 26-12-35.0. Begin brushing, slough and slide removal, subgrade preparation, culvert installation, rocking, and soil stabilization in accordance with Sections 400, 500, 1000, 1800, and 2100 of the Road Specifications, Culvert Installation Detail Sheet No. 6, Typical Cross Section Sheet No. 7, and Roadside Brushing Detail Sheet No.8.
NOTE:	Install a 12" lift of crushed aggregate base rock in accordance with Section 1000 of the Road Specifications and Typical Cross Section Sheet No. 7.
4+00	Install an 18” x 30’ CPE with marker. 12 CY bedding and backfill rock allocated.
4+30	Construct 50’ turnout right.
7+00	Install an 18” x 30’ CPE with marker. 12 CY bedding and backfill rock allocated.
7+50	Junction, improve Spur 4 right. Construct landing right. 50 CY landing rock allocated.
8+20	Install an 18” x 30’ CPE with marker. 12 CY bedding and backfill rock allocated.
10+20	Construct 50’ turnout right.
10+70	Install an 18” x 30’ CPE with marker. 12 CY bedding and backfill rock allocated.
12+60	End landing. 50 CY landing rock allocated. End improvement.

IMPROVEMENT OF ROAD NO. 26-12-26.4
Station 8+50 to Station 12+70

Station	Remarks
8+50	Begin improvement. Begin brushing, slough and slide removal, subgrade preparation, rocking, and soil stabilization in accordance with Sections 500, 1000, 1800, and 2100 of the Road Specifications, Typical Cross Section Sheet No. 7, and Roadside Brushing Detail Sheet No.8.
NOTE:	Install a 12" lift of crushed aggregate base rock in accordance with Section 1000 of the Road Specifications and Typical Cross Section Sheet No. 7. Utilize slough and slide material on existing subgrade. Outslope &/or inslope at 2% with no ditch to achieve drainage.
11+40	Junction, construct Spur 5 left.
12+70	End landing. 50 CY of landing rock allocated. End improvement.

RENOVATION OF ROAD NO. 26-12-35.0
Milepost 1.25 to Milepost 1.65

Milepost	Remarks
0.00	Junction with Road No. 26-12-4.2,(Blue Ridge Road).
NOTE:	Apply 250 CY of spot rock from MP 0.00 to 1.25 conforming to Sections 1200 of the Road Specifications and as directed by the Authorized Officer.
0.10	Junction, Road No. 26-12-35.1 right.
0.80	Approximate unit boundary.
0.92	Junction, construct and improve Road No. 26-12-26.2 left.
0.98	Junction, renovate Spur 1 right.
1.10	Junction, improve Spur 2 left.
1.25	Junction, Road No. 26-12-25.1 right. Begin brushing, slough and slide removal, and rocking in accordance with Sections 500, 1200, and 2100 of the Road Specifications, Typical Cross Section Sheet No. 7, and Roadside Brushing Detail Sheet No.8.
NOTE:	Apply a 4” lift of surface rock from MP 1.25 to 1.65 in accordance with Section 1200 of the Road Specifications.
1.26	Junction, improve Road No. 26-12-26.3 left.
1.53	Junction, construct Road No. 26-12-26.4 left.
1.65	End landing. 50 CY Landing allocated. End renovation.

RENOVATION OF ROAD NO. 26-12-35.4
Milepost 1.43 to Milepost 1.81

Milepost	Remarks
0.00	Junction with Road No. 26-12-35.1.
0.93	Junction, Road No. 26-12-25.3 right. Approximate unit boundary.
1.43	Junction, Road No. 26-12-25.1 left. Begin brushing, slough and slide removal, rocking, and soil stabilization in accordance with Sections 500, 1200, 1800, and 2100 of the Road Specifications, Typical Cross Section Sheet No. 7, and Roadside Brushing Detail Sheet No.8.

Milepost	Remarks
NOTE:	Apply a 4" lift of surface rock from MP 1.43 to 1.81 in accordance with Section 1200 of the Road Specifications.
1.74	Construct ditchouts.
1.77	Construct landing with approach left.
1.81	Construct landing with approach left. End renovation.

RENOVATION OF SPUR 1
Station 0+00 to Station 4+00

Station	Remarks
0+00	Junction with Road No. 26-12-35.0. Begin brushing, slough and slide removal, and soil stabilization in accordance with Sections 500, 1800, and 2100 of the Road Specifications, Typical Cross Section Sheet No. 7, and Roadside Brushing Detail Sheet No.8.
NOTE:	Utilize slough and slide material on existing subgrade. Outslope &/or inslope at 2% with no ditch to achieve drainage.
4+00	Construct landing. End renovation.

IMPROVEMENT OF SPUR 2
Station 0+00 to 4+50

Station	Remarks
0+00	Junction with Road No 26-12-35.0. Begin brushing, slough and slide removal, subgrade preparation, rocking, and soil stabilization in accordance with Sections 500, 1000, 1800, and 2100 of the Road Specifications, Typical Cross Section Sheet No. 7, and Roadside Brushing Detail Sheet No.8.
NOTE:	Install a 12" lift of crushed aggregate base rock in accordance with Section 1000 of the Road Specifications and Typical Cross Section Sheet No. 7.
2+75	Junction, construct Spur 3 left.
4+50	End landing. 50 CY landing rock allocated. End improvement.

IMPROVEMENT OF SPUR 4
Station 0+00 to Station 2+25

Station	Remarks
0+00	Junction with Road No. 26-12-26.3. Begin brushing, slough and slide removal, subgrade preparation, rocking, and soil stabilization in accordance with Sections 500, 1000, 1800, and 2100 of the Road Specifications, Typical Cross Section Sheet No. 7, and Roadside Brushing Detail Sheet No.8.
NOTE:	Install a 12" lift of crushed aggregate base rock in accordance with Section 1000 of the Road Specifications and Typical Cross Section Sheet No. 7.
	Utilize slough and slide material on existing subgrade. Outslope &/or inslope at 2% with no ditch to achieve drainage.
2+25	End landing. 50 CY landing rock allocated. End improvement.

EQUIPMENT WASHING

The Purchaser is responsible for conforming to the Exhibit F.

CONSTRUCTION DETAIL SHEET
ROAD NO. 26-12-25.10
CONTROL POINT ROAD

GENERAL
Purchaser shall construct Road No. 26-12-25.10 from Sta. 0+00 to Sta. 26+00 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 Sheet No. 7.

TURNOUTS
Construct 50' turnout right at Stations 5+00, 9+45, and 20+50.
Construct 50' turnout left at Sta. 15+10.

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

DRAINAGE FEATURES
Install a 12" x 30' CMP at station 0+00 in accordance with Section 400 of the Road Specifications and Culvert Installation Detail Sheet No.6.

Outslope &/or inslope at 2% with no ditch to achieve drainage.

SURFACING
Install a 12" lift of crushed aggregate base rock in accordance with Section 1000 of the Road Specifications and Typical Cross Section Sheet No. 7.

ALIGNMENT
Roadway shall be constructed within posted or painted right-of-way boundaries. Minimum curve radius shall be sixty (60) feet.

Junction, construct Spur 6 right at Station 23+90.

GRADE
Grade shall not exceed 10% adverse.

TRUCK TURNAROUND
None.

LANDINGS
Construct end landing at Sta.26+00.
50 CY of landing rock allocated.
Grade of landing shall not exceed 5%.

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

CONSTRUCTION DETAIL SHEET
ROAD NO. 26-12-26.2
CONTROL POINT ROAD

GENERAL
Purchaser shall construct Road No. 26-12-26.2 from Sta. 0+00 to Sta. 2+35 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 Sheet No. 7.

TURNOUTS
None.

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

DRAINAGE FEATURES
Outslope &/or inslope at 2% with no ditch to achieve drainage.

SURFACING
Install a 12" lift of crushed aggregate base rock in accordance with Section 1000 of the Road Specifications and Typical Cross Section Sheet No. 7.

ALIGNMENT
Roadway shall be constructed within posted or painted right-of-way boundaries. Minimum curve radius shall be sixty (60) feet.

GRADE
Grade shall not exceed 16% adverse.

TRUCK TURNAROUND
None.

LANDINGS
None.

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

CONSTRUCTION DETAIL SHEET
ROAD NO. 26-12-26.4
CONTROL POINT ROAD

GENERAL
Purchaser shall construct Road No. 26-12-26.4 from Sta. 0+00 to Sta. 8+50 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 Sheet No. 7.

TURNOUTS
Construct 50' turnout left at Sta. 8+50.

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

DRAINAGE FEATURES
Install a 12" x 30 CMP at Sta. 0+00 in accordance with Section 400 of the Road Specifications and Culvert Installation Detail Sheet No. 6.

Outslope &/or inslope at 2% with no ditch to achieve drainage.

SURFACING
Install a 12" lift of crushed aggregate base rock in accordance with Section 1000 of the Road Specifications and Typical Cross Section Sheet No. 7.

ALIGNMENT
Roadway shall be constructed within posted or painted right-of-way boundaries. Minimum curve radius shall be sixty (60) feet.

GRADE
Grade shall not exceed 12% adverse.

TRUCK TURNAROUND
None.

LANDINGS
Construct landing right at Sta. 5+30.
50 CY of landing rock allocated.
Grade of landing shall not exceed 5%.

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

CONSTRUCTION DETAIL SHEET
SPUR 3
CONTROL POINT ROAD

GENERAL
Purchaser shall construct Spur 3 from Sta. 0+00 to Sta. 2+25 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 Sheet No. 7.

TURNOUTS
None.

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

DRAINAGE FEATURES
Install a 12” x 30 CMP at Sta. 0+00 in accordance with Section 400 of the Road Specifications and Culvert Installation Detail Sheet No. 6.

SURFACING
Install a 12" lift of crushed aggregate base rock in accordance with Section 1000 of the Road Specifications and Typical Cross Section Sheet No. 7.

ALIGNMENT
Roadway shall be constructed within posted or painted right-of-way boundaries. Minimum curve radius shall be sixty (60) feet.

GRADE
Grade shall not exceed 12% adverse.

TRUCK TURNAROUND
None.

LANDINGS
Construct end landing at Sta. 2+25.
50 CY of landing rock allocated.
Grade of landing shall not exceed 5%.

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

CONSTRUCTION DETAIL SHEET
SPUR 5
CONTROL POINT ROAD

GENERAL
Purchaser shall construct Spur 5 from Sta. 0+00 to Sta. 0+90 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 Sheet No. 7.

TURNOUTS
None.

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

DRAINAGE FEATURES
Outslope &/or inslope at 2% with no ditch to achieve drainage.

SURFACING
Install a 12" lift of crushed aggregate base rock in accordance with Section 1000 of the Road Specifications and Typical Cross Section Sheet No. 7.

ALIGNMENT
Roadway shall be constructed within posted or painted right-of-way boundaries. Minimum curve radius shall be sixty (60) feet.

GRADE
Grade shall not exceed 8% adverse.

TRUCK TURNAROUND
None.

LANDINGS
Construct end landing at Sta. 0+90.
50 CY of landing rock allocated.
Grade of landing shall not exceed 5%.

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

CONSTRUCTION DETAIL SHEET
SPUR 6
CONTROL POINT ROAD

GENERAL
Purchaser shall construct Spur 6 from Sta. 0+00 to Sta. 2+20 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 Sheet No. 7.

TURNOUTS
None.

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

DRAINAGE FEATURES
Outslope &/or inslope at 2% with no ditch to achieve drainage.

SURFACING
Install a 12" lift of crushed aggregate base rock in accordance with Section 1000 of the Road Specifications and Typical Cross Section Sheet No. 7.

ALIGNMENT
Roadway shall be constructed within posted or painted right-of-way boundaries. Minimum curve radius shall be sixty (60) feet.

GRADE
Grade shall not exceed 10% adverse.

TRUCK TURNAROUND
None.

LANDINGS
Construct end landing at Sta. 2+20.
50 CY of landing rock allocated.
Grade of landing shall not exceed 5%.

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

ROAD CONSTRUCTION SPECIFICATIONS

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

Section	
100	GENERAL
200	CLEARING AND GRUBBING
300	EXCAVATION AND EMBANKMENT
400	PIPE CULVERTS
500	RENOVATION AND IMPROVEMENT OF EXISTING ROADS
600	WATERING
1000	AGGREGATE BASE COURSE (CRUSHED ROCK)
1200	AGGREGATE SURFACE COURSE (CRUSHED ROCK)
1700	EROSION CONTROL
1800	SOIL STABILIZATION
2100	ROADSIDE BRUSHING

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 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. Also referred to as Equivalent Opening Size (EOS).

ASTM - American Society for Testing and Materials.

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

BLM - Bureau of Land Management

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

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

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

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

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

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

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

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

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

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

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

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

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.

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 - Longitudinal center of 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 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.

Tackifier - A compound which penetrates into the earth and assists in creating a crust through the cohesive bonding of the surface materials to a depth sufficient to stabilize the soil surface and/or a compound used to mat together mulching material.

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, or portions thereof, which are capable of being measured in board feet.

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

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

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

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

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

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

102a - Tests Used in These Specifications:

AASHTO T 11	Quantity of rock finer than No. 200 sieve.
AASHTO T 27	Sieve analysis of fine and coarse aggregate using sieves with square openings; gradation.
AASHTO T 89	Liquid limit of material passing the No. 40 sieve. Water content at which the soil passes from a plastic to a liquid state.
AASHTO T 90	Plastic limits and plasticity index of soil.

a. Plastic limit - lowest water content at which the soil remains plastic.

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

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

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

Method A - 4" mold, soil passing a No. 4 Sieve.
25 blows/layer & 3 layers.

Method D - 6" mold, soil passing a 19.00 mm (3/4 inches) sieve.
56 blows/layer & 5 layers.

AASHTO T 176 — Shows relative portions of fine dust or clay-like materials in soil or graded aggregate.

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

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

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

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

AASHTO T 224 — Correction for coarse particles in the soil.

AASHTO T 238 — Determination of density of soil and soil-aggregates in place by nuclear methods.

AASHTO T 248 — Reducing field samples of aggregate to testing size by mechanical splitter, quartering, or miniature stockpile sampling.

DES. E-12 — Determination of relative density of cohesionless soils.

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

103 - Compaction equipment shall meet the following requirements:

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 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.

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

CLEARING AND GRUBBING - 200

201 - This work shall consist of clearing, grubbing, removing and disposing of vegetation, debris, surface objects, and protruding obstructions within the clearing limits in accordance with these specifications and conforming to the lines, grades, dimensions and typical cross sections as shown on the plans.

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 202 and as shown on the plans.

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, 204b, 204c, 204d, 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 excepted.

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.

204e - Roots and embedded wood material shall be removed to a depth not less than 1 foot below embankment subgrades or slope surfaces.

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

206 - Clearing and grubbing debris shall be disposed of by scattering in accordance with Subsection 210.

210 - Disposal of clearing and grubbing debris shall be by scattering over government owned lands outside of established clearing limits in a manner acceptable to the Authorized Officer. The areas for such scattering shall have the prior approval of the Authorized Officer.

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.

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 sidecast or perched. All material perched or sidecast as waste shall be retrieved and disposed of at the Purchaser's expense and at the direction of 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.

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 2-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 and final subgrade material as specified under Subsection(s) 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 Subsection 103f and in accordance with the following table:

Road No.	From Sta./M.P.	To Sta./M.P.
26-12-25.10	0+00	26+00
26-12-26.2	0+00	2+35
26-12-26.4	0+00	8+50
Spur 3	0+00	2+25
Spur 5	0+00	0+90
Spur 6	0+00	2+20

306d - Compacted materials within 1 foot of the established subgrade elevation shall have a density in place of not less than 95 percent of maximum density, and below the 1-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.

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 except as specified in Subsection 306.

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

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

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

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

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

320 - Ditches shall conform to the slope, grade, dimensions, and shape of the required cross section shown on the plans. Roots, stumps, rocks, and other projections shall be removed to form smooth, even slopes.

321 - Excess excavated, unsuitable, or slide materials shall not be disposed of on areas where the material will encroach on a stream course or other body of water. Such materials shall be disposed of in accordance with Subsection 321c.

NOTE: Any material being hauled over gravel or bituminous surfaced roads will be done in vehicles which meet legal highway weight requirements while hauling.

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. Placement in layers is required. Materials placed shall be sloped, shaped, and otherwise brought to a neat and sightly condition acceptable to the Authorized Officer.

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 in writing by the Authorized Officer. The Purchaser shall give the Authorized Officer 3 days notice prior to final inspection of the grading operations.

328 - The Purchaser shall adopt methods and procedures in using explosives which will prevent damage to adjacent landscape features and which will minimize scattering rocks and other debris outside the road prism.

PIPE CULVERTS - 400

401 - This work shall consist of furnishing and installing pipe culverts, pipe arch culverts, half rounds flume(s), perforated pipe culverts, downspout(s), elbow(s), and other erosion control device(s) 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. Additional pipe and erosion control devices may be required at the option of the Authorized Officer, in which case a reduction in the total purchase price shall be made to offset the cost of furnishing and installing such items. Costs will be based upon the unit prices set forth in the current BLM Timber Appraisal Production Cost Schedule.

403 - Grade culverts shall have a gradient of from 2 percent to 4 percent greater than the adjacent road grade and shall be skewed down grade 30 degrees as measured from the perpendicular to the centerline unless otherwise specified on the plans.

404 - Damage to the spelter, or burn back in excess of 3/8 inch, shall be wire brushed and painted with two coats of zinc-rich paint on zinc-coated, steel pipe and aluminum-rich paint on aluminum or aluminum-coated pipe.

405 - Corrugated steel riveted and helical pipe culverts and pipe-arch culverts and special sections shall conform to the requirements of AASHTO M 36 and AASHTO M 218 or AASHTO M 274 as specified on the plans.

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

405e - Corrugated-polyethylene pipe for culverts 12-inch through 24-inch diameter shall meet the requirements of AASHTO M 294 for type S. Installation will be subject to the same specification as other pipe materials.

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

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

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

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

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

407b - Full round culvert downspouts conforming to the material and construction requirements as shown on 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. 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.

409 - Structural-plate pipe culverts and pipe-arch culverts shall be installed in accordance with the plans and detailed erection instructions furnished by the manufacturer. One copy of the erection instructions shall be furnished the Authorized Officer prior to erection.

410 - Pipe shall be unloaded and handled with reasonable care. If the Authorized Officer determines any structure is damaged to the extent that it is unsuitable for use in the road construction, it shall be replaced at the Purchaser's expense.

411 - Trenches necessary for the installation of pipe culverts shall conform to the lines, grades, dimensions, and typical diagram included in the plans 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 selected granular or fine readily compactable soil material. Foundation material shall be of uniform density throughout the length of the structure and shall be shaped to fit the pipe.

413a - Bedding material for pipe culverts on existing surfaced roads shall be 1½ inch minus crushed aggregate meeting the requirements of Sections 1204, 1205, 1206, 1207, and 1208 of these specifications.

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 square feet 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 granular fill material free of excess moisture, muck, frozen material, roots, sod, or other deleterious or caustic material and devoid of rocks or stones of sizes which may impinge upon and damage the pipe or otherwise interfere with proper compaction.

417 - For pipe culvert(s) 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 95 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.

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 shown on the plans and as directed by the Authorized Officer.

426 - Culvert marker(s) consisting of ½-inch round steel bars 4 feet in length bolted to the culvert at the inlet or 6 foot steel fence posts painted white, shall be furnished, fabricated, and installed by the Purchaser at all grade culverts.

RENOVATION AND IMPROVEMENT OF EXISTING ROADS - 500

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

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

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 location(s):

Road No.	From Sta./M.P.	To Sta./M.P.
26-12-26.2	2+35	8+70
26-12-26.3	0+00	12+60
26-12-26.4	8+50	12+70
26-12-35.0	1.25	1.65
26-12-35.4	1.43	1.81
Spur 1	0+00	4+00
Spur 2	0+00	4+50
Spur 4	0+00	2+25

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 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 Subsection 103f and in accordance with the following table:

Road No.	From Sta./M.P.	To Sta./M.P.	Subsection 504
26-12-26.2	2+35	8+70	(504)(a)
26-12-26.3	0+00	12+60	(504)(a)
26-12-26.4	8+50	12+70	(504)(a)
26-12-35.0	1.25	1.65	(504)(a)
26-12-35.4	1.43	1.81	(504)(a)
Spur 1	0+00	4+00	(504)(a)
Spur 2	0+00	4+50	(504)(a)
Spur 4	0+00	2+25	(504)(a)

504a - Minimum compaction required shall be 1 hour of continuous rolling 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 - The finished grading shall be approved in writing by the Authorized Officer. The Purchaser shall give the Authorized Officer 3 days notice prior to final inspection of the grading operations.

WATERING - 600

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

602 - Water, when needed for compaction 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.

AGGREGATE BASE COURSE AND LANDING ROCK - 1000
CRUSHED ROCK MATERIAL

1001 - This work shall consist of furnishing, hauling, and placing one or more lifts of crushed rock material on roadbeds and landings approved for placing crushed rock material, in accordance with these specifications and conforming to the dimensions and typical cross sections shown on the plans. Material not conforming to these specifications will be rejected and shall be removed from the road.

1002a - Crushed rock materials may be obtained from commercial sources selected by the Purchaser at his option and expense providing that the rock materials selected comply with the specifications in this section.

1003 - Crushed rock material produced from gravel shall have 3 manufactured fractured face(s) on 75 percent, by weight, of the material retained on the No. 4 sieve.

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

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

Sieve Designation	A
(6) -inch	-
3-inch	100
2-inch	90-95
12-inch	-
1-inch	45-75
3/4-inch	-
2-inch	-
3/8-inch	-
No. 4	15-45
No. 8	-
No. 10	-
No. 30	-
No. 40	5-25
No. 200	2-15

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.

1006a - Crushed rock material shall show a loss of not more than 20 percent by weight when immersed in DMSO, dimethyl sulfoxide, for five days, in accordance with Federal Highway Administrations Region 10 Accelerated Weathering Test Procedure.

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

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

Sand Equivalent AASHTO T 176 Maximum	Percentage Passing No. 200 Sieve AASHTO T 27 Maximum
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 subgrade approval prior to rocking shall be 3 days prior to that approval 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, and 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.

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 Subsection 103f. 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, SPOT, AND MAINTENANCE ROCK - 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.

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

1203 - When crushed rock material is produced from gravel, not less than 75 percent by weight of the particles retained on the No. 4 sieve will have 3 manufactured fractured face(s).

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

TABLE 1204

AGGREGATE SURFACE COURSE
CRUSHED ROCK MATERIAL

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

GRADIATION

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

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

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

1206a - The crushed rock material shall show a loss of not more than 20 percent by weight, when submerged in DMSO, dimethyl sulfoxide, for five days, according to Federal Highway Administration Region 10 Accelerated Weathering Test Procedure.

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

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

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

1208 - If additional binder or filler material is necessary to meet the grading or plasticity requirements or for satisfactory bonding of the material, it shall be uniformly blended with the crushed rock material at the crushing and screening plant prior to placing on the road, unless otherwise agreed. The material for such purposes shall be 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 shall be completed and approved in writing, prior to placing crushed rock material, in accordance to the requirements of Subsections 500 for placing on the roadbeds. Notification for roadbed inspection, prior to rocking, shall be 3 days prior to that inspection and shall be 6 days prior to start of rocking operations.

1210 - Crushed rock material conforming to the requirements of these specifications shall be placed on the approved roadbed 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 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.

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

EROSION CONTROL - 1700

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

1702 - The Purchaser shall construct dike(s), dam(s), diversion channel(s), settling basin(s) and other erosion control structure(s) as directed by the Authorized Officer.

1704 - The erosion control provisions specified under this subsection shall be coordinated with the soil stabilization requirement(s) 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 road(s) to be carried over the winter and early spring periods shall be stabilized by mulching exposed areas at the rate of 2,000 pounds per acre.

1708a - Road segments not completed during dry weather periods shall be winterized, by providing a well-drained roadway by waterbarring, 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, road renovation, improvements, landings and disturbed 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 15	To:	April 30
From:	September 1	To:	October 15

If soil stabilization of disturbed areas is not completed by the specified fall date, the Purchaser shall treat disturbed areas in accordance with Section 1707 and then complete the requirements of Soil Stabilization 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.

1806a - Additional soil stabilization work consisting of seeding, fertilizing and mulching may be required at the option of the Authorized Officer. Providing the additional stabilization is not due to Purchaser negligence as specified in Section 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.

1808 - Fertilizer shall be a standard commercial grade of fertilizer conforming to all State and Federal regulations and to the standards of the Association of Official Agricultural Chemists. Fertilizer furnished shall provide the minimum percentage of available nutrients as specified below:

Available nitrogen	16%
Available phosphoric acid	20%
Potassium	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.

1809 - Mulch materials conforming to the requirements of Subsections 1809b, 1809d or 1809e shall be furnished by the Purchaser in the amounts specified under Subsection 1812.

1809b - Natural wood cellulose or grass fiber shall have the property of dispersing readily in water and shall have no toxic effect when combined with seed or other materials. The homogeneous slurry or mixture shall be capable of application with power spray equipment. A green-colored dye which is noninjurious to plant growth shall be used. Processed wood cellulose or grass fiber shall be packaged in new, labeled containers in an air dry condition. Processed wood cellulose or grass fiber furnished by the Purchaser shall be one of the following brand names or approved equal :

Silva Fiber	-	Weyerhaeuser Timber Co.
Conweb Fiber	-	Wood Conversion Co.
Spra-Mulch	-	Spra-Mulch Industries, Inc.
Grass-Mulch	-	Grass Mulch, Inc.

If the Purchaser proposes using a wood or grass fiber other than those listed above, he shall furnish a sample and descriptive literature to the Authorized Officer for approval prior to application. Processed wood cellulose or grass fiber furnished by the Purchaser which has become wet or otherwise damaged in transit or storage will not be accepted.

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

1809e - Grass straw mulch shall be from perennial grass or, if specified, an annual rye grass, from which the seed has been removed. The straw shall be free from noxious weed seed, mold, or other objectionable materials.

1810 - 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 be maintained in a dry state and has the approval of the Authorized Officer.

1811 - Bulk mulching material required under these specifications shall be delivered to the work area bound either by twine, string, or hemp rope. Wire binding and plastic twine will not be permitted.

1812 - The Purchaser shall furnish and apply to approximately 2.0 acres designated for treatment as shown on the plans and as specified under Subsection 1806, a mixture of water, grass seed, fertilizer and mulch material, or a mixture of grass seed and fertilizer 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.

1815 - The Purchaser may reduce the application rate on partially covered slopes and no application on areas already well stocked with grass or on rock surfaces.

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

1816a - Hydraulic Method - The seed, 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 grass 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.

1816b - 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.

1817 - 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 1,300 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.

1817a - 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.

1819 - 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.

1820 - The Purchaser shall notify the Authorized Officer at least 3 days in advance of date he intends to commence the specified soil stabilization work.

1822 - 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.

1823 - 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.

1826 - Twine, rope, sacks, and other debris resulting from the soil-stabilization operation shall be picked up and disposed of to the satisfaction of the Authorized Officer.

ROADSIDE BRUSHING - 2100

2101 - This work shall consist of cutting and the removal of vegetation from the road prism - variable distance and inside curves in accordance with these specifications. This work shall conform to the lines, grades, dimensions, and typical cross sections shown on the Roadside Brushing Detail Sheet, 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 chainsaws.

2103 - Vegetation cut manually or mechanically less than 6 inches in diameter at D.B.H. 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 sloped and all limbs 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. All limbs 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. 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 roadside brushing 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 accomplished as specified on the roads listed on Sheet No. 4.

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

2117 - Traffic warning signs shall be required at each end of the work area. Signs shall meet the requirements of the Manual on Uniform Traffic Devices.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Summary of All Roads and Projects T.S. Update 05/15/12

T.S. Contract Name: Space Wrangler CT Sale Date:
Prepared by: JRM Ph: Print Date:
Construction: 42.20 sta (Surfaced 42.20 sta Natural 0.00 sta)
Improve: 29.90 sta Renov: 45.18 sta Decom: 0.00 sta Temp: 0.00 sta

200 Clearing and Grubbing: 0.0 acres	$0.00
Clearing: 0.0 sta Grubbing: 0.0 acres	
Slash Treatment: 0.0 acres	
300 Excavation:	$13,638.13
Haul: 0 sta-yds	
400 Drainage:	$4,146.40
Culvert: 0 lf wt = 0 lbs	
DownSpout: 0 lf	
PolyPipe: 120 lf	
500 Renovation:	$9,475.83
Blading 1.43 mi	
Surfacing:	$193,400.17
Quarry Name: Hoover, 3-0" 4,276 cy	
Quarry Name: Hoover, 3-0" LR 620 cy	
Quarry Name: Hoover, 1.5-0" 1,335 cy	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 2.1 acres	$1,122.76
Includes Small Quantity Factor of 1.47	
1900 Cattleguards:	$0.00
2100 RoadSide Brushing: 3.5 acres	$1,219.78
2200 Surface Treatment: 0.0 tons	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $4,354.00 Surf. $0.00	$4,354.00
Quarry Development:	$0.00
Total =	$227,357.07

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

**Landing, spot, and bedding rock are truck yards.

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Space Wrangler CT Sale Date: 11/09/12
Road Number: 26-12-25.1 Spot rock

T.S. Update 05/15/12

200 Clearing and Grubbing: 0.0 acres	$0.00
Clearing:0.0 sta Grubbing:0.0 acres	
Slash Treatment:0.0 acres	
300 Excavation:	$0.00
400 Drainage:	$0.00
Culvert: 0 lf wt = 0 lbs factor = 1.2	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$0.00
Surfacing:	$6,223.00
Quarry Name: Hoover, 1.5-0" 200 cy	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.0 acres	$0.00
1900 Cattleguards:	$0.00
2100 RoadSide Brushing: 0.0 acres	$0.00
2200 Surface Treatment: 0.0 tons	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $121.50 Surf. $0.00	$121.50
Quarry Development:	$0.00
Total:	$6,344.50

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

Road Construction Worksheet

Road Number: 26-12-25.1 Road Name: Spot rock

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:

Subtotal: $0.00

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:

Subtotal: $0.00

1.5-0" Crushed aggregate Quarry Name: Hoover, 1.5-0"
Comment: Spot rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
									200cy

Rock Volume = 200cy
Royalty: $12.50/cy x 200cy = $2,500.00
Processing: $1.38/cy x 200cy = $276.00
Compaction: $0.77/cy x 200cy = $154.00
Basic Rock Haul cost: $0.93/cy x 200cy = $186.00
Rock Haul -15% grades: $1.39/cy-mi x 200cy x 1.50 mi= $417.00
Rock Haul St& Co Roads: $0.62/cy-mi x 200cy x 20.50 mi= $2,542.00
Basic Water Haul cost: $0.61/cy x 200cy = $122.00
Water Haul -15% grades: $0.13/cy-mi x 200cy x 1.00 mi= $26.00

Subtotal: $6,223.00

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:

Subtotal: $0.00

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:

Subtotal: $0.00

Section 2200 Surface Treatment:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Mobilization:
Construction - 2.79% of total Costs = $121.50
Surfacing - 3.21% by rock volume = $0.00

Subtotal: $121.50

Quarry Development:
Based on 3.21% of total rock volume

Subtotal: $0.00

Total: $6,344.50

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Space Wrangler CT Sale Date: 11/09/12
Road Number: 26-12-25.10 C Road Name:
Road Construction: 0.49 mi 16 ft Subgrade 2 ft ditch T.S. Update 05/15/12

200 Clearing and Grubbing: 0.0 acres	$0.00
Clearing:0.0 sta Grubbing:0.0 acres	
Slash Treatment:0.0 acres	
300 Excavation:	$7,452.89
400 Drainage:	$660.00
Culvert: 0 lf wt = 0 lbs factor = 1.2	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$0.00
Surfacing:	$50,772.30
Quarry Name: Hoover, 3-0" 1,583 cy	
Quarry Name: Hoover, 3-0" LR 50 cy	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.6 acres	$320.79
Includes Small Quantity Factor of 1.47	
1900 Cattleguards:	$0.00
2100 RoadSide Brushing: 0.0 acres	$0.00
2200 Surface Treatment: 0.0 tons	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $1,155.96 Surf. $0.00	$1,155.96
Quarry Development:	$0.00
Total:	$60,361.94

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

Road Construction Worksheet

Road Number: 26-12-25.10 C Road Name:

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:
  Subgrade Compaction: 4 Sta/hr $18.57/sta. x 26.0 sta = $482.82
  Blading: $11.32/station x 26.00 stations = $294.32
  Subgrade construction
   Tractor: D7 with rippers 45 hr x $148.35/hr = $6,675.75

Subtotal: $7,452.89

Section 400 Drainage:
  Sta. 0+00 culvert
   12" aluminized, 14 gage CMP
  30 LF x $22.00/LF = $660.00

Subtotal: $660.00

Section 500 Renovation:

Subtotal: $0.00

3-0" Crushed aggregate Quarry Name: Hoover, 3-0"

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.49mi	12ft	16ft	12in	7%	4	10ft	50ft	50ft	

  Rock Volume = 1,583cy
  Royalty: $12.50/cy x 1,583cy = $19,787.50
  Processing: $1.38/cy x 1,583cy = $2,184.54
  Compaction: $0.77/cy x 1,583cy = $1,218.91
  Basic Rock Haul cost: $0.93/cy x 1,583cy = $1,472.19
  Rock Haul -15% grades: $1.39/cy-mi x 1,583cy x 1.50 mi= $3,300.56
  Rock Haul St& Co Roads: $0.62/cy-mi x 1,583cy x 20.50 mi= $20,119.93
  Basic Water Haul cost: $0.61/cy x 1,583cy = $965.63
  Water Haul -15% grades: $0.13/cy-mi x 1,583cy x 1.00 mi= $205.79

3-0" Crushed aggregate Quarry Name: Hoover, 3-0" LR

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

  Rock Volume = 50cy
  Royalty: $12.50/cy x 50cy = $625.00
  Processing: $1.38/cy x 50cy = $69.00
  Basic Rock Haul cost: $0.93/cy x 50cy = $46.50
  Rock Haul -15% grades: $1.39/cy-mi x 50cy x 1.50 mi= $104.25
  Rock Haul St& Co Roads: $0.62/cy-mi x 50cy x 20.50 mi= $635.50
  Basic Water Haul cost: $0.61/cy x 50cy = $30.50
  Water Haul -15% grades: $0.13/cy-mi x 50cy x 1.00 mi= $6.50

Subtotal: $50,772.30

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:
  Dry Method with Mulch: $534.65/acre x 0.60 acres = $320.79
  Includes Small Quantity Factor of 1.47

Subtotal: $320.79

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:

Subtotal: $0.00

Section 2200 Surface Treatment:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
  Construction - 26.55% of total Costs = $1,155.96
  Surfacing - 26.21% by rock volume = $0.00

Subtotal: $1,155.96

Quarry Development:
  Based on 26.21% of total rock volume

Subtotal: $0.00

Total: $60,361.94

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Space Wrangler CT Sale Date: 11/09/12
Road Number: 26-12-26.2 C Road Name:
Road Construction: 0.04 mi 16 ft Subgrade 2 ft ditch T.S. Update 05/15/12

200 Clearing and Grubbing: 0.0 acres	$0.00
Clearing:0.0 sta Grubbing:0.0 acres	
Slash Treatment:0.0 acres	
300 Excavation:	$515.29
400 Drainage:	$0.00
Culvert: 0 lf wt = 0 lbs factor = 1.2	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$0.00
Surfacing:	$3,640.46
Quarry Name: Hoover, 3-0" 117 cy	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.1 acres	$53.46
Includes Small Quantity Factor of 1.47	
1900 Cattleguards:	$0.00
2100 RoadSide Brushing: 0.0 acres	$0.00
2200 Surface Treatment: 0.0 tons	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $82.18 Surf. $0.00	$82.18
Quarry Development:	$0.00
Total:	$4,291.39

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

Road Construction Worksheet

Road Number: 26-12-26.2 C Road Name:

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:
  Subgrade Compaction: 4 Sta/hr $18.57/sta. x 2.4 sta = $43.64
  Blading: $11.32/station x 2.35 stations = $26.60
  Subgrade construction
   Tractor: D7 with rippers 3 hr x $148.35/hr = $445.05

Subtotal: $515.29

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:

Subtotal: $0.00

3-0" Crushed aggregate Quarry Name: Hoover, 3-0"

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.04mi	12ft	16ft	12in	7%					

  Rock Volume = 117cy
  Royalty: $12.50/cy x 117cy = $1,462.50
  Processing: $1.38/cy x 117cy = $161.46
  Compaction: $0.77/cy x 117cy = $90.09
  Basic Rock Haul cost: $0.93/cy x 117cy = $108.81
  Rock Haul -15% grades: $1.39/cy-mi x 117cy x 1.50 mi= $243.95
  Rock Haul St& Co Roads: $0.62/cy-mi x 117cy x 20.50 mi= $1,487.07
  Basic Water Haul cost: $0.61/cy x 117cy = $71.37
  Water Haul -15% grades: $0.13/cy-mi x 117cy x 1.00 mi= $15.21

Subtotal: $3,640.46

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:
  Dry Method with Mulch: $534.65/acre x 0.10 acres = $53.46
        Includes Small Quantity Factor of 1.47

Subtotal: $53.46

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:

Subtotal: $0.00

Section 2200 Surface Treatment:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
  Construction - 1.89% of total Costs = $82.18
  Surfacing - 1.88% by rock volume = $0.00

Subtotal: $82.18

Quarry Development:
  Based on 1.88% of total rock volume

Subtotal: $0.00

Total: $4,291.39

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Space Wrangler CT Sale Date: 11/09/12
Road Number: 26-12-26.2 I Road Name:
Road Improvement: 0.12 mi 16 ft Subgrade 2 ft ditch T.S. Update 05/15/12

200 Clearing and Grubbing: 0.0 acres	$0.00
Clearing:0.0 sta Grubbing:0.0 acres	
Slash Treatment:0.0 acres	
300 Excavation:	$0.00
400 Drainage:	$0.00
Culvert: 0 lf wt = 0 lbs factor = 1.2	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$1,553.55
Blading 0.12 mi	
Surfacing:	$14,196.77
Quarry Name: Hoover, 3-0" 388 cy	
Quarry Name: Hoover, 3-0" LR 70 cy	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.1 acres	$53.46
Includes Small Quantity Factor of 1.47	
1900 Cattleguards:	$0.00
2100 RoadSide Brushing: 0.3 acres	$165.08
2200 Surface Treatment: 0.0 tons	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $311.78 Surf. $0.00	$311.78
Quarry Development:	$0.00
Total:	$16,280.66

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

Road Construction Worksheet

Road Number: 26-12-26.2 I Road Name:

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:

Subtotal: $0.00

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:
Blading: $512.82/mi x 0.12 mi = $61.54
Compaction: $1307.22/mi x 0.12 mi = $156.87
Subgrade improvement
Tractor: D7 with rippers 9 hr x $148.35/hr = $1,335.15

Subtotal: $1,553.55

3-0" Crushed aggregate Quarry Name: Hoover, 3-0"

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.12mi	12ft	16ft	12in	7%	1	10ft	50ft	50ft	

Rock Volume = 388cy
Royalty: $12.50/cy x 388cy = $4,850.00
Processing: $1.38/cy x 388cy = $535.44
Compaction: $0.77/cy x 388cy = $298.76
Basic Rock Haul cost: $0.93/cy x 388cy = $360.84
Rock Haul -15% grades: $1.39/cy-mi x 388cy x 1.50 mi= $808.98
Rock Haul St& Co Roads: $0.62/cy-mi x 388cy x 20.50 mi= $4,931.48
Basic Water Haul cost: $0.61/cy x 388cy = $236.68
Water Haul -15% grades: $0.13/cy-mi x 388cy x 1.00 mi= $50.44

3-0" Crushed aggregate Quarry Name: Hoover, 3-0" LR
Comment: Landing

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

Rock Volume = 50cy
Royalty: $12.50/cy x 50cy = $625.00
Processing: $1.38/cy x 50cy = $69.00
Basic Rock Haul cost: $0.93/cy x 50cy = $46.50
Rock Haul -15% grades: $1.39/cy-mi x 50cy x 1.50 mi= $104.25
Rock Haul St& Co Roads: $0.62/cy-mi x 50cy x 20.50 mi= $635.50
Basic Water Haul cost: $0.61/cy x 50cy = $30.50
Water Haul -15% grades: $0.13/cy-mi x 50cy x 1.00 mi= $6.50

3-0" Crushed aggregate Quarry Name: Hoover, 3-0" LR
Comment: Truck turnaround

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
									20cy

Rock Volume = 20cy
Royalty: $12.50/cy x 20cy = $250.00
Processing: $1.38/cy x 20cy = $27.60
Basic Rock Haul cost: $0.93/cy x 20cy = $18.60
Rock Haul -15% grades: $1.39/cy-mi x 20cy x 1.50 mi= $41.70
Rock Haul St& Co Roads: $0.62/cy-mi x 20cy x 20.50 mi= $254.20
Basic Water Haul cost: $0.61/cy x 20cy = $12.20
Water Haul -15% grades: $0.13/cy-mi x 20cy x 1.00 mi= $2.60

Subtotal: $14,196.77

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:
  Dry Method with Mulch: $534.65/acre x 0.10 acres = $53.46
        Includes Small Quantity Factor of 1.47

Subtotal: $53.46

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:
  Brushing width Left: 10ft. Right: 10ft.
  RoadSide Brushing Medium: $550.28/acre x 0.30 acres = $165.08

Subtotal: $165.08

Section 2200 Surface Treatment:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
  Construction - 7.16% of total Costs = $311.78
  Surfacing - 7.35% by rock volume = $0.00

Subtotal: $311.78

Quarry Development:
  Based on 7.35% of total rock volume

Subtotal: $0.00

Total: $16,280.66

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Space Wrangler CT Sale Date: 11/09/12
Road Number: 26-12-26.3 I Road Name:
Road Improvement: 0.24 mi 16 ft Subgrade 2 ft ditch T.S. Update 05/15/12

200 Clearing and Grubbing: 0.0 acres	$0.00
Clearing:0.0 sta Grubbing:0.0 acres	
Slash Treatment:0.0 acres	
300 Excavation:	$0.00
400 Drainage:	$2,166.40
Culvert: 0 lf wt = 0 lbs factor = 1.2	
DownSpout: 0 lf	
PolyPipe: 120 lf	
500 Renovation:	$3,403.81
Blading 0.24 mi	
Surfacing:	$28,704.38
Quarry Name: Hoover, 3-0" 777 cy	
Quarry Name: Hoover, 3-0" LR 100 cy	
Quarry Name: Hoover, 1.5-0" 48 cy	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.3 acres	$160.39
Includes Small Quantity Factor of 1.47	
1900 Cattleguards:	$0.00
2100 RoadSide Brushing: 0.6 acres	$330.17
2200 Surface Treatment: 0.0 tons	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $678.77 Surf. $0.00	$678.77
Quarry Development:	$0.00
Total:	$35,443.92

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

Road Construction Worksheet

Road Number: 26-12-26.3 I Road Name:

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:

Subtotal: $0.00

Section 400 Drainage:
Comment: 10+70
Poly Pipe 18 inch 30 lf x $17.72/lf = $531.60
Poly Pipe 18 inch 30 lf x $17.72/lf = $531.60
Poly Pipe 18 inch 30 lf x $17.72/lf = $531.60
Poly Pipe 18 inch 30 lf x $17.72/lf = $531.60
Culvert parts
Markers 4 EA x $10.00/EA = $40.00

Subtotal: $2,166.40

Section 500 Renovation:
Blading: $512.82/mi x 0.24 mi = $123.08
Compaction: $1307.22/mi x 0.24 mi = $313.73
Subgrade improvement
Tractor: D7 with rippers 20 hr x $148.35/hr = $2,967.00

Subtotal: $3,403.81

3-0" Crushed aggregate Quarry Name: Hoover, 3-0"

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.24mi	12ft	16ft	12in	7%	2	10ft	50ft	50ft	

Rock Volume = 777cy
Royalty: $12.50/cy x 777cy = $9,712.50
Processing: $1.38/cy x 777cy = $1,072.26
Compaction: $0.77/cy x 777cy = $598.29
Basic Rock Haul cost: $0.93/cy x 777cy = $722.61
Rock Haul -15% grades: $1.39/cy-mi x 777cy x 1.50 mi= $1,620.05
Rock Haul St& Co Roads: $0.62/cy-mi x 777cy x 20.50 mi= $9,875.67
Basic Water Haul cost: $0.61/cy x 777cy = $473.97
Water Haul -15% grades: $0.13/cy-mi x 777cy x 1.00 mi= $101.01

3-0" Crushed aggregate Quarry Name: Hoover, 3-0" LR
Comment: Landings

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
									100cy

Rock Volume = 100cy
Royalty: $12.50/cy x 100cy = $1,250.00
Processing: $1.38/cy x 100cy = $138.00
Basic Rock Haul cost: $0.93/cy x 100cy = $93.00
Rock Haul -15% grades: $1.39/cy-mi x 100cy x 1.50 mi= $208.50
Rock Haul St& Co Roads: $0.62/cy-mi x 100cy x 20.50 mi= $1,271.00
Basic Water Haul cost: $0.61/cy x 100cy = $61.00
Water Haul -15% grades: $0.13/cy-mi x 100cy x 1.00 mi= $13.00

1.5-0" Crushed aggregate Quarry Name: Hoover, 1.5-0"
Comment: Culvert bedding and fill

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
									48cy

Rock Volume = 48cy
Royalty: $12.50/cy x 48cy = $600.00
Processing: $1.38/cy x 48cy = $66.24
Compaction: $0.77/cy x 48cy = $36.96

Road Number: 26-12-26.3 I Continued

Basic Rock Haul cost: $0.93/cy x 48cy = $44.64
Rock Haul -15% grades: $1.39/cy-mi x 48cy x 1.50 mi= $100.08
Rock Haul St& Co Roads: $0.62/cy-mi x 48cy x 20.50 mi= $610.08
Basic Water Haul cost: $0.61/cy x 48cy = $29.28
Water Haul -15% grades: $0.13/cy-mi x 48cy x 1.00 mi= $6.24

Subtotal: $28,704.38

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:
Dry Method with Mulch: $534.65/acre x 0.30 acres = $160.39
Includes Small Quantity Factor of 1.47

Subtotal: $160.39

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:
Brushing width Left: 10ft. Right: 10ft.
RoadSide Brushing Medium: $550.28/acre x 0.60 acres = $330.17

Subtotal: $330.17

Section 2200 Surface Treatment:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
Construction - 15.59% of total Costs = $678.77
Surfacing - 14.85% by rock volume = $0.00

Subtotal: $678.77

Quarry Development:
Based on 14.85% of total rock volume

Subtotal: $0.00

Total: $35,443.92

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Space Wrangler CT Sale Date: 11/09/12
Road Number: 26-12-26.4 C Road Name:
Road Construction: 0.16 mi 16 ft Subgrade 0 ft ditch T.S. Update 05/15/12

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

300 Excavation: $3,221.07

400 Drainage: $660.00
Culvert: 0 lf wt = 0 lbs factor = 1.2
DownSpout: 0 lf
PolyPipe: 0 lf

500 Renovation: $0.00

Surfacing: $17,230.33
Quarry Name: Hoover, 3-0" 505 cy
Quarry Name: Hoover, 3-0" LR 50 cy

1300 Geotextiles: $0.00

1400 Slope Protection: $0.00

1800 Soil Stabilization: 0.2 acres $106.93
Includes Small Quantity Factor of 1.47

1900 Cattleguards: $0.00

2100 RoadSide Brushing: 0.0 acres $0.00

2200 Surface Treatment: 0.0 tons $0.00

2300 Engineering: 0.00 sta. $0.00

2400 Minor Concrete: $0.00

2500 Gabions: $0.00

8000 Miscellaneous: $0.00

Mobilization: Const. $414.27 Surf. $0.00..... $414.27

Quarry Development: $0.00

Total: $21,632.59

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

Road Construction Worksheet

Road Number: 26-12-26.4 C Road Name:

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:
Subgrade Compaction: 4 Sta/hr $18.57/sta. x 8.5 sta = $157.85
Blading: $11.32/station x 8.50 stations = $96.22
Subgrade construction
Tractor: D7 with rippers 20 hr x $148.35/hr = $2,967.00

Subtotal: $3,221.07

Section 400 Drainage:
Sta. 0+00 Culvert
12" aluminized, 14 gage CMP
30 LF x $22.00/LF = $660.00

Subtotal: $660.00

Section 500 Renovation:

Subtotal: $0.00

3-0" Crushed aggregate Quarry Name: Hoover, 3-0"

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.16mi	12ft	16ft	12in	7%	1	10ft	50ft	50ft	

Rock Volume = 505cy
Royalty: $12.50/cy x 505cy = $6,312.50
Processing: $1.38/cy x 505cy = $696.90
Compaction: $0.77/cy x 505cy = $388.85
Basic Rock Haul cost: $0.93/cy x 505cy = $469.65
Rock Haul -15% grades: $1.39/cy-mi x 505cy x 1.50 mi= $1,052.93
Rock Haul St& Co Roads: $0.62/cy-mi x 505cy x 20.50 mi= $6,418.55
Basic Water Haul cost: $0.61/cy x 505cy = $308.05
Water Haul -15% grades: $0.13/cy-mi x 505cy x 1.00 mi= $65.65

3-0" Crushed aggregate Quarry Name: Hoover, 3-0" LR
Comment: 5+30 landing

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

Rock Volume = 50cy
Royalty: $12.50/cy x 50cy = $625.00
Processing: $1.38/cy x 50cy = $69.00
Basic Rock Haul cost: $0.93/cy x 50cy = $46.50
Rock Haul -15% grades: $1.39/cy-mi x 50cy x 1.50 mi= $104.25
Rock Haul St& Co Roads: $0.62/cy-mi x 50cy x 20.50 mi= $635.50
Basic Water Haul cost: $0.61/cy x 50cy = $30.50
Water Haul -15% grades: $0.13/cy-mi x 50cy x 1.00 mi= $6.50

Subtotal: $17,230.33

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:
Dry Method with Mulch: $534.65/acre x 0.20 acres = $106.93
Includes Small Quantity Factor of 1.47

Subtotal: $106.93

Road Number: 26-12-26.4 C Continued

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:

Subtotal: $0.00

Section 2200 Surface Treatment:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
  Construction - 9.51% of total Costs = $414.27
  Surfacing - 8.91% by rock volume = $0.00

Subtotal: $414.27

Quarry Development:
  Based on 8.91% of total rock volume

Subtotal: $0.00

Total: $21,632.59

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Space Wrangler CT Sale Date: 11/09/12
Road Number: 26-12-26.4 I Road Name:
Road Improvement: 0.08 mi 16 ft Subgrade 0 ft ditch T.S. Update 05/15/12

200 Clearing and Grubbing: 0.0 acres	$0.00
Clearing:0.0 sta Grubbing:0.0 acres	
Slash Treatment:0.0 acres	
300 Excavation:	$0.00
400 Drainage:	$0.00
Culvert: 0 lf wt = 0 lbs factor = 1.2	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$887.35
Blading 0.08 mi	
Surfacing:	$8,798.16
Quarry Name: Hoover, 3-0" 234 cy	
Quarry Name: Hoover, 3-0" LR 50 cy	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.1 acres	$53.46
Includes Small Quantity Factor of 1.47	
1900 Cattleguards:	$0.00
2100 RoadSide Brushing: 0.2 acres	$110.06
2200 Surface Treatment: 0.0 tons	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $192.30 Surf. $0.00	$192.30
Quarry Development:	$0.00
Total:	$10,041.33

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

Road Construction Worksheet

Road Number: 26-12-26.4 I Road Name:

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:

Subtotal: $0.00

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:
Blading: $512.82/mi x 0.08 mi = $41.03
Compaction: $1307.22/mi x 0.08 mi = $104.58
Subgrade improvement
Tractor: D7 with rippers 5 hr x $148.35/hr = $741.75

Subtotal: $887.35

3-0" Crushed aggregate Quarry Name: Hoover, 3-0"

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.08mi	12ft	16ft	12in	7%					

Rock Volume = 234cy
Royalty: $12.50/cy x 234cy = $2,925.00
Processing: $1.38/cy x 234cy = $322.92
Compaction: $0.77/cy x 234cy = $180.18
Basic Rock Haul cost: $0.93/cy x 234cy = $217.62
Rock Haul -15% grades: $1.39/cy-mi x 234cy x 1.50 mi= $487.89
Rock Haul St& Co Roads: $0.62/cy-mi x 234cy x 20.50 mi= $2,974.14
Basic Water Haul cost: $0.61/cy x 234cy = $142.74
Water Haul -15% grades: $0.13/cy-mi x 234cy x 1.00 mi= $30.42

3-0" Crushed aggregate Quarry Name: Hoover, 3-0" LR
Comment: End landing

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

Rock Volume = 50cy
Royalty: $12.50/cy x 50cy = $625.00
Processing: $1.38/cy x 50cy = $69.00
Basic Rock Haul cost: $0.93/cy x 50cy = $46.50
Rock Haul -15% grades: $1.39/cy-mi x 50cy x 1.50 mi= $104.25
Rock Haul St& Co Roads: $0.62/cy-mi x 50cy x 20.50 mi= $635.50
Basic Water Haul cost: $0.61/cy x 50cy = $30.50
Water Haul -15% grades: $0.13/cy-mi x 50cy x 1.00 mi= $6.50

Subtotal: $8,798.16

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:
Dry Method with Mulch: $534.65/acre x 0.10 acres = $53.46
Includes Small Quantity Factor of 1.47

Subtotal: $53.46

Section 1900 Cattleguards:

Subtotal: $0.00

Road Number: 26-12-26.4 I Continued

Section 2100 Roadside Brushing:
  Brushing width Left: 10ft. Right: 10ft.
  RoadSide Brushing Medium: $550.28/acre x 0.20 acres = $110.06

Subtotal: $110.06

Section 2200 Surface Treatment:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
  Construction - 4.42% of total Costs = $192.30
  Surfacing - 4.56% by rock volume = $0.00

Subtotal: $192.30

Quarry Development:
  Based on 4.56% of total rock volume

Subtotal: $0.00

Total: $10,041.33

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Space Wrangler CT Sale Date: 11/09/12
Road Number: 26-12-35.0 Spot rock

T.S. Update 05/15/12

200 Clearing and Grubbing: 0.0 acres	$0.00
Clearing:0.0 sta Grubbing:0.0 acres	
Slash Treatment:0.0 acres	
300 Excavation:	$0.00
400 Drainage:	$0.00
Culvert: 0 lf wt = 0 lbs factor = 1.2	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$0.00
Surfacing:	$7,778.75
Quarry Name: Hoover, 1.5-0" 250 cy	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.0 acres	$0.00
1900 Cattleguards:	$0.00
2100 RoadSide Brushing: 0.0 acres	$0.00
2200 Surface Treatment: 0.0 tons	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $151.88 Surf. $0.00	$151.88
Quarry Development:	$0.00
Total:	$7,930.63

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

Road Construction Worksheet

Road Number: 26-12-35.0 Road Name:

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:

Subtotal: $0.00

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:

Subtotal: $0.00

1.5-0" Crushed aggregate Quarry Name: Hoover, 1.5-0"
Comment: Spot rock (MP 0.00 to 1.25)

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
									250cy

Rock Volume = 250cy
Royalty: $12.50/cy x 250cy = $3,125.00
Processing: $1.38/cy x 250cy = $345.00
Compaction: $0.77/cy x 250cy = $192.50
Basic Rock Haul cost: $0.93/cy x 250cy = $232.50
Rock Haul -15% grades: $1.39/cy-mi x 250cy x 1.50 mi= $521.25
Rock Haul St& Co Roads: $0.62/cy-mi x 250cy x 20.50 mi= $3,177.50
Basic Water Haul cost: $0.61/cy x 250cy = $152.50
Water Haul -15% grades: $0.13/cy-mi x 250cy x 1.00 mi= $32.50

Subtotal: $7,778.75

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:

Subtotal: $0.00

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:

Subtotal: $0.00

Section 2200 Surface Treatment:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Mobilization:
Construction - 3.49% of total Costs = $151.88
Surfacing - 4.01% by rock volume = $0.00

Subtotal: $151.88

Quarry Development:
Based on 4.01% of total rock volume

Subtotal: $0.00

Total: $7,930.63

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Space Wrangler CT Sale Date: 11/09/12
Road Number: 26-12-35.0 R Road Name:
Road Renovation: 0.40 mi 16 ft Subgrade 2 ft ditch T.S. Update 05/15/12

200 Clearing and Grubbing: 0.0 acres	$0.00
Clearing:0.0 sta Grubbing:0.0 acres	
Slash Treatment:0.0 acres	
300 Excavation:	$0.00
400 Drainage:	$0.00
Culvert: 0 lf wt = 0 lbs factor = 1.2	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$889.37
Blading 0.40 mi	
Surfacing:	$12,469.73
Quarry Name: Hoover, 3-0" LR 50 cy	
Quarry Name: Hoover, 1.5-0" 352 cy	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.0 acres	$0.00
1900 Cattleguards:	$0.00
2100 RoadSide Brushing: 1.0 acres	$229.28
2200 Surface Treatment: 0.0 tons	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $265.30 Surf. $0.00	$265.30
Quarry Development:	$0.00
Total:	$13,853.68

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

Road Construction Worksheet

Road Number: 26-12-35.0 R Road Name:

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:

Subtotal: $0.00

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:
  Blading: $512.82/mi x 0.40 mi = $205.13
  Pull Ditches: $139.08/mi x 0.40 mi = $55.63
  Compaction: $1307.22/mi x 0.40 mi = $522.89
  Clean Culverts: $264.30/mi x 0.40 mi = $105.72

Subtotal: $889.37

3-0" Crushed aggregate Quarry Name: Hoover, 3-0" LR
 Comment: End landing

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

  Rock Volume = 50cy
  Royalty: $12.50/cy x 50cy = $625.00
  Processing: $1.38/cy x 50cy = $69.00
  Basic Rock Haul cost: $0.93/cy x 50cy = $46.50
  Rock Haul -15% grades: $1.39/cy-mi x 50cy x 1.50 mi= $104.25
  Rock Haul St& Co Roads: $0.62/cy-mi x 50cy x 20.50 mi= $635.50
  Basic Water Haul cost: $0.61/cy x 50cy = $30.50
  Water Haul -15% grades: $0.13/cy-mi x 50cy x 1.00 mi= $6.50

1.5-0" Crushed aggregate Quarry Name: Hoover, 1.5-0"

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.40mi	12ft	13.3ft	4in	7%					

  Rock Volume = 352cy
  Royalty: $12.50/cy x 352cy = $4,400.00
  Processing: $1.38/cy x 352cy = $485.76
  Compaction: $0.77/cy x 352cy = $271.04
  Basic Rock Haul cost: $0.93/cy x 352cy = $327.36
  Rock Haul -15% grades: $1.39/cy-mi x 352cy x 1.50 mi= $733.92
  Rock Haul St& Co Roads: $0.62/cy-mi x 352cy x 20.50 mi= $4,473.92
  Basic Water Haul cost: $0.61/cy x 352cy = $214.72
  Water Haul -15% grades: $0.13/cy-mi x 352cy x 1.00 mi= $45.76

Subtotal: $12,469.73

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:

Subtotal: $0.00

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:
  Brushing width Left: 10ft. Right: 10ft.

Road Number: 26-12-35.0 R Continued

RoadSide Brushing Light: $229.28/acre x 1.00 acres = $229.28

Subtotal: $229.28

Section 2200 Surface Treatment:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
Construction - 6.09% of total Costs = $265.30
Surfacing - 6.45% by rock volume = $0.00

Subtotal: $265.30

Quarry Development:
Based on 6.45% of total rock volume

Subtotal: $0.00

Total: $13,853.68

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Space Wrangler CT Sale Date: 11/09/12
Road Number: 26-12-35.4 R Road Name:
Road Renovation: 0.38 mi 16 ft Subgrade 2 ft ditch T.S. Update 05/15/12

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

300 Excavation: $508.77

400 Drainage: $0.00
Culvert: 0 lf wt = 0 lbs factor = 1.2
DownSpout: 0 lf
PolyPipe: 0 lf

500 Renovation: $844.90
Blading 0.38 mi

Surfacing: $10,423.53
Quarry Name: Hoover, 1.5-0" 335 cy

1300 Geotextiles: $0.00

1400 Slope Protection: $0.00

1800 Soil Stabilization: 0.1 acres $53.46
Includes Small Quantity Factor of 1.47

1900 Cattleguards: $0.00

2100 RoadSide Brushing: 0.9 acres $206.35

2200 Surface Treatment: 0.0 tons $0.00

2300 Engineering: 0.00 sta. $0.00

2400 Minor Concrete: $0.00

2500 Gabions: $0.00

8000 Miscellaneous: $0.00

Mobilization: Const. $235.02 Surf. $0.00..... $235.02

Quarry Development: $0.00

Total: $12,272.03

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

Road Construction Worksheet

Road Number: 26-12-35.4 R Road Name:

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:
  Subgrade Compaction: 4 Sta/hr $18.57/sta. x 0.0 sta = $0.00
  MP 1.77 & 1.81 landing construction
   Tractor: D7 with rippers 2 hr x $148.35/hr = $296.70
   Vib roller: Steel drum 1 hr x $74.27/hr = $74.27
   Motor Grader 14G 1 hr x $137.80/hr = $137.80

Subtotal: $508.77

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:
  Blading: $512.82/mi x 0.38 mi = $194.87
  Pull Ditches: $139.08/mi x 0.38 mi = $52.85
  Compaction: $1307.22/mi x 0.38 mi = $496.74
  Clean Culverts: $264.30/mi x 0.38 mi = $100.43

Subtotal: $844.90

1.5-0" Crushed aggregate Quarry Name: Hoover, 1.5-0"

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.38mi	12ft	13.3ft	4in	7%					

  Rock Volume = 335cy
  Royalty: $12.50/cy x 335cy = $4,187.50
  Processing: $1.38/cy x 335cy = $462.30
  Compaction: $0.77/cy x 335cy = $257.95
  Basic Rock Haul cost: $0.93/cy x 335cy = $311.55
  Rock Haul -15% grades: $1.39/cy-mi x 335cy x 1.50 mi= $698.48
  Rock Haul St& Co Roads: $0.62/cy-mi x 335cy x 20.50 mi= $4,257.85
  Basic Water Haul cost: $0.61/cy x 335cy = $204.35
  Water Haul -15% grades: $0.13/cy-mi x 335cy x 1.00 mi= $43.55

Subtotal: $10,423.53

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:
  Dry Method with Mulch: $534.65/acre x 0.10 acres = $53.46
  Includes Small Quantity Factor of 1.47

Subtotal: $53.46

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:
  Brushing width Left: 10ft. Right: 10ft.
  RoadSide Brushing Light: $229.28/acre x 0.90 acres = $206.35

Subtotal: $206.35

Section 2200 Surface Treatment:

Subtotal: $0.00

Road Number: 26-12-35.4 R 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 - 5.40% of total Costs = $235.02
  Surfacing - 5.38% by rock volume = $0.00

Subtotal: $235.02

Quarry Development:
  Based on 5.38% of total rock volume

Subtotal: $0.00

Total: $12,272.03

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Space Wrangler CT Sale Date: 11/09/12
Road Number: Agg. stockpile Road Name: Aggregate stockpile

T.S. Update 05/15/12

200 Clearing and Grubbing: 0.0 acres	$0.00
Clearing:0.0 sta Grubbing:0.0 acres	
Slash Treatment:0.0 acres	
300 Excavation:	$0.00
400 Drainage:	$0.00
Culvert: 0 lf wt = 0 lbs factor = 1.2	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$0.00
Surfacing:	$4,667.25
Quarry Name: Hoover, 1.5-0" 150 cy	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.0 acres	$0.00
1900 Cattleguards:	$0.00
2100 RoadSide Brushing: 0.0 acres	$0.00
2200 Surface Treatment: 0.0 tons	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $91.13 Surf. $0.00	$91.13
Quarry Development:	$0.00
Total:	$4,758.38

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

Road Construction Worksheet

Road Number: Agg. stockpile Road Name: Aggregate stockpile

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:

Subtotal: $0.00

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:

Subtotal: $0.00

1.5-0" Crushed aggregate Quarry Name: Hoover, 1.5-0"
Comment: aggregate stockpile

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
									150cy

Rock Volume = 150cy
Royalty: $12.50/cy x 150cy = $1,875.00
Processing: $1.38/cy x 150cy = $207.00
Compaction: $0.77/cy x 150cy = $115.50
Basic Rock Haul cost: $0.93/cy x 150cy = $139.50
Rock Haul -15% grades: $1.39/cy-mi x 150cy x 1.50 mi= $312.75
Rock Haul St& Co Roads: $0.62/cy-mi x 150cy x 20.50 mi= $1,906.50
Basic Water Haul cost: $0.61/cy x 150cy = $91.50
Water Haul -15% grades: $0.13/cy-mi x 150cy x 1.00 mi= $19.50

Subtotal: $4,667.25

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:

Subtotal: $0.00

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:

Subtotal: $0.00

Section 2200 Surface Treatment:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Mobilization:
Construction - 2.09% of total Costs = $91.13
Surfacing - 2.41% by rock volume = $0.00

Subtotal: $91.13

Quarry Development:
Based on 2.41% of total rock volume

Subtotal: $0.00

Total: $4,758.38

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Space Wrangler CT Sale Date: 11/09/12
Road Number: Spur 1 R Road Name:
Road Renovation: 0.08 mi 12 ft Subgrade 0 ft ditch T.S. Update 05/15/12

200 Clearing and Grubbing: 0.0 acres	$0.00
Clearing:0.0 sta Grubbing:0.0 acres	
Slash Treatment:0.0 acres	
300 Excavation:	$0.00
400 Drainage:	$0.00
Culvert: 0 lf wt = 0 lbs factor = 1.2	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$510.68
Blading 0.08 mi	
Surfacing:	$0.00
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.1 acres	$53.46
Includes Small Quantity Factor of 1.47	
1900 Cattleguards:	$0.00
2100 RoadSide Brushing: 0.2 acres	$110.06
2200 Surface Treatment: 0.0 tons	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $13.16 Surf. $0.00	$13.16
Quarry Development:	$0.00
Total:	$687.36

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

Road Construction Worksheet

Road Number: Spur 1 R Road Name:

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:

Subtotal: $0.00

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:
  Blading: $512.82/mi x 0.08 mi = $41.03
  Scarification: $854.70/mi x 0.08 mi = $68.38
  Compaction: $1307.22/mi x 0.08 mi = $104.58
  Subgrade renovation
   Tractor: D7 with rippers 2 hr x $148.35/hr = $296.70

Subtotal: $510.68

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: $534.65/acre x 0.10 acres = $53.46
        Includes Small Quantity Factor of 1.47

Subtotal: $53.46

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:
  Brushing width Left: 10ft. Right: 10ft.
  RoadSide Brushing Medium: $550.28/acre x 0.20 acres = $110.06

Subtotal: $110.06

Section 2200 Surface Treatment:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Mobilization:
  Construction - 0.30% of total Costs = $13.16
  Surfacing - 0.00% by rock volume = $0.00

Subtotal: $13.16

Quarry Development:
  Based on 0.00% of total rock volume

Subtotal: $0.00

Total: $687.36

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Space Wrangler CT Sale Date: 11/09/12
Road Number: Spur 2 I Road Name:
Road Improvement: 0.09 mi 16 ft Subgrade 2 ft ditch T.S. Update 05/15/12

200 Clearing and Grubbing: 0.0 acres	$0.00
Clearing:0.0 sta Grubbing:0.0 acres	
Slash Treatment:0.0 acres	
300 Excavation:	$0.00
400 Drainage:	$0.00
Culvert: 0 lf wt = 0 lbs factor = 1.2	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$834.13
Blading 0.09 mi	
Surfacing:	$9,700.50
Quarry Name: Hoover, 3-0" 263 cy	
Quarry Name: Hoover, 3-0" LR 50 cy	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.1 acres	$53.46
Includes Small Quantity Factor of 1.47	
1900 Cattleguards:	$0.00
2100 RoadSide Brushing: 0.2 acres	$45.86
2200 Surface Treatment: 0.0 tons	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $207.62 Surf. $0.00	$207.62
Quarry Development:	$0.00
Total:	$10,841.56

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

Road Construction Worksheet

Road Number: Spur 2 I Road Name:

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:

Subtotal: $0.00

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:
Blading: $512.82/mi x 0.09 mi = $46.15
Scarification: $854.70/mi x 0.09 mi = $76.92
Compaction: $1307.22/mi x 0.09 mi = $117.65
Subgrade improvement
Tractor: D7 with rippers 4 hr x $148.35/hr = $593.40

Subtotal: $834.13

3-0" Crushed aggregate Quarry Name: Hoover, 3-0"

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.09mi	12ft	16ft	12in	7%					

Rock Volume = 263cy
Royalty: $12.50/cy x 263cy = $3,287.50
Processing: $1.38/cy x 263cy = $362.94
Compaction: $0.77/cy x 263cy = $202.51
Basic Rock Haul cost: $0.93/cy x 263cy = $244.59
Rock Haul -15% grades: $1.39/cy-mi x 263cy x 1.50 mi= $548.36
Rock Haul St& Co Roads: $0.62/cy-mi x 263cy x 20.50 mi= $3,342.73
Basic Water Haul cost: $0.61/cy x 263cy = $160.43
Water Haul -15% grades: $0.13/cy-mi x 263cy x 1.00 mi= $34.19

3-0" Crushed aggregate Quarry Name: Hoover, 3-0" LR
Comment: End landing

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

Rock Volume = 50cy
Royalty: $12.50/cy x 50cy = $625.00
Processing: $1.38/cy x 50cy = $69.00
Basic Rock Haul cost: $0.93/cy x 50cy = $46.50
Rock Haul -15% grades: $1.39/cy-mi x 50cy x 1.50 mi= $104.25
Rock Haul St& Co Roads: $0.62/cy-mi x 50cy x 20.50 mi= $635.50
Basic Water Haul cost: $0.61/cy x 50cy = $30.50
Water Haul -15% grades: $0.13/cy-mi x 50cy x 1.00 mi= $6.50

Subtotal: $9,700.50

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:
Dry Method with Mulch: $534.65/acre x 0.10 acres = $53.46
Includes Small Quantity Factor of 1.47

Subtotal: $53.46

Section 1900 Cattleguards:

Subtotal: $0.00

Road Number: Spur 2 I Continued

Section 2100 Roadside Brushing:
  Brushing width Left: 10ft. Right: 10ft.
  RoadSide Brushing Light: $229.28/acre x 0.20 acres = $45.86

Subtotal: $45.86

Section 2200 Surface Treatment:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
  Construction - 4.77% of total Costs = $207.62
  Surfacing - 5.02% by rock volume = $0.00

Subtotal: $207.62

Quarry Development:
  Based on 5.02% of total rock volume

Subtotal: $0.00

Total: $10,841.56

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Space Wrangler CT Sale Date: 11/09/12
Road Number: Spur 3 C Road Name:
Road Construction: 0.04 mi 16 ft Subgrade 2 ft ditch T.S. Update 05/15/12

200 Clearing and Grubbing: 0.0 acres	$0.00
Clearing:0.0 sta Grubbing:0.0 acres	
Slash Treatment:0.0 acres	
300 Excavation:	$809.00
400 Drainage:	$660.00
Culvert: 0 lf wt = 0 lbs factor = 1.2	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$0.00
Surfacing:	$5,157.71
Quarry Name: Hoover, 3-0" 117 cy	
Quarry Name: Hoover, 3-0" LR 50 cy	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.1 acres	$53.46
Includes Small Quantity Factor of 1.47	
1900 Cattleguards:	$0.00
2100 RoadSide Brushing: 0.0 acres	$0.00
2200 Surface Treatment: 0.0 tons	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $130.43 Surf. $0.00	$130.43
Quarry Development:	$0.00
Total:	$6,810.60

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

Road Construction Worksheet

Road Number: Spur 3 C Road Name:

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:
Subgrade Compaction: 4 Sta/hr $18.57/sta. x 2.3 sta = $41.78
Blading: $11.32/station x 2.25 stations = $25.47
Subgrade construction
Tractor: D7 with rippers 5 hr x $148.35/hr = $741.75

Subtotal: $809.00

Section 400 Drainage:
Sta. 0+00 culvert
12" aluminized, 14 gage CMP
30 LF x $22.00/LF = $660.00

Subtotal: $660.00

Section 500 Renovation:

Subtotal: $0.00

3-0" Crushed aggregate Quarry Name: Hoover, 3-0"

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.04mi	12ft	16ft	12in	7%					

Rock Volume = 117cy
Royalty: $12.50/cy x 117cy = $1,462.50
Processing: $1.38/cy x 117cy = $161.46
Compaction: $0.77/cy x 117cy = $90.09
Basic Rock Haul cost: $0.93/cy x 117cy = $108.81
Rock Haul -15% grades: $1.39/cy-mi x 117cy x 1.50 mi= $243.95
Rock Haul St& Co Roads: $0.62/cy-mi x 117cy x 20.50 mi= $1,487.07
Basic Water Haul cost: $0.61/cy x 117cy = $71.37
Water Haul -15% grades: $0.13/cy-mi x 117cy x 1.00 mi= $15.21

3-0" Crushed aggregate Quarry Name: Hoover, 3-0" LR
Comment: End landing

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

Rock Volume = 50cy
Royalty: $12.50/cy x 50cy = $625.00
Processing: $1.38/cy x 50cy = $69.00
Basic Rock Haul cost: $0.93/cy x 50cy = $46.50
Rock Haul -15% grades: $1.39/cy-mi x 50cy x 1.50 mi= $104.25
Rock Haul St& Co Roads: $0.62/cy-mi x 50cy x 20.50 mi= $635.50
Basic Water Haul cost: $0.61/cy x 50cy = $30.50
Water Haul -15% grades: $0.13/cy-mi x 50cy x 1.00 mi= $6.50

Subtotal: $5,157.71

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:
Dry Method with Mulch: $534.65/acre x 0.10 acres = $53.46
Includes Small Quantity Factor of 1.47

Subtotal: $53.46

Road Number: Spur 3 C Continued

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:

Subtotal: $0.00

Section 2200 Surface Treatment:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
  Construction - 3.00% of total Costs = $130.43
  Surfacing - 2.68% by rock volume = $0.00

Subtotal: $130.43

Quarry Development:
  Based on 2.68% of total rock volume

Subtotal: $0.00

Total: $6,810.60

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Space Wrangler CT Sale Date: 11/09/12
Road Number: Spur 4 I Road Name:
Road Improvement: 0.04 mi 16 ft Subgrade 0 ft ditch T.S. Update 05/15/12

200 Clearing and Grubbing: 0.0 acres	$0.00
Clearing:0.0 sta Grubbing:0.0 acres	
Slash Treatment:0.0 acres	
300 Excavation:	$0.00
400 Drainage:	$0.00
Culvert: 0 lf wt = 0 lbs factor = 1.2	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$552.04
Blading 0.04 mi	
Surfacing:	$5,157.71
Quarry Name: Hoover, 3-0" 117 cy	
Quarry Name: Hoover, 3-0" LR 50 cy	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.1 acres	$53.46
Includes Small Quantity Factor of 1.47	
1900 Cattleguards:	$0.00
2100 RoadSide Brushing: 0.1 acres	$22.93
2200 Surface Treatment: 0.0 tons	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $112.97 Surf. $0.00	$112.97
Quarry Development:	$0.00
Total:	$5,899.11

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

Road Construction Worksheet

Road Number: Spur 4 I Road Name:

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:

Subtotal: $0.00

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:
Blading: $512.82/mi x 0.04 mi = $20.51
Scarification: $854.70/mi x 0.04 mi = $34.19
Compaction: $1307.22/mi x 0.04 mi = $52.29
Subgrade improvement
Tractor: D7 with rippers 3 hr x $148.35/hr = $445.05

Subtotal: $552.04

3-0" Crushed aggregate Quarry Name: Hoover, 3-0"

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.04mi	12ft	16ft	12in	7%					

Rock Volume = 117cy
Royalty: $12.50/cy x 117cy = $1,462.50
Processing: $1.38/cy x 117cy = $161.46
Compaction: $0.77/cy x 117cy = $90.09
Basic Rock Haul cost: $0.93/cy x 117cy = $108.81
Rock Haul -15% grades: $1.39/cy-mi x 117cy x 1.50 mi= $243.95
Rock Haul St& Co Roads: $0.62/cy-mi x 117cy x 20.50 mi= $1,487.07
Basic Water Haul cost: $0.61/cy x 117cy = $71.37
Water Haul -15% grades: $0.13/cy-mi x 117cy x 1.00 mi= $15.21

3-0" Crushed aggregate Quarry Name: Hoover, 3-0" LR
Comment: End landing

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

Rock Volume = 50cy
Royalty: $12.50/cy x 50cy = $625.00
Processing: $1.38/cy x 50cy = $69.00
Basic Rock Haul cost: $0.93/cy x 50cy = $46.50
Rock Haul -15% grades: $1.39/cy-mi x 50cy x 1.50 mi= $104.25
Rock Haul St& Co Roads: $0.62/cy-mi x 50cy x 20.50 mi= $635.50
Basic Water Haul cost: $0.61/cy x 50cy = $30.50
Water Haul -15% grades: $0.13/cy-mi x 50cy x 1.00 mi= $6.50

Subtotal: $5,157.71

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:
Dry Method with Mulch: $534.65/acre x 0.10 acres = $53.46
Includes Small Quantity Factor of 1.47

Subtotal: $53.46

Section 1900 Cattleguards:

Subtotal: $0.00

Road Number: Spur 4 I Continued

Section 2100 Roadside Brushing:
  Brushing width Left: 10ft. Right: 10ft.
  RoadSide Brushing Light: $229.28/acre x 0.10 acres = $22.93

Subtotal: $22.93

Section 2200 Surface Treatment:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
  Construction - 2.59% of total Costs = $112.97
  Surfacing - 2.68% by rock volume = $0.00

Subtotal: $112.97

Quarry Development:
  Based on 2.68% of total rock volume

Subtotal: $0.00

Total: $5,899.11

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Space Wrangler CT Sale Date: 11/09/12
Road Number: Spur 5 C Road Name:
Road Construction: 0.02 mi 16 ft Subgrade 0 ft ditch T.S. Update 05/15/12

200 Clearing and Grubbing: 0.0 acres	$0.00
Clearing:0.0 sta Grubbing:0.0 acres	
Slash Treatment:0.0 acres	
300 Excavation:	$323.60
400 Drainage:	$0.00
Culvert: 0 lf wt = 0 lbs factor = 1.2	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$0.00
Surfacing:	$3,321.92
Quarry Name: Hoover, 3-0" 58 cy	
Quarry Name: Hoover, 3-0" LR 50 cy	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.1 acres	$53.46
Includes Small Quantity Factor of 1.47	
1900 Cattleguards:	$0.00
2100 RoadSide Brushing: 0.0 acres	$0.00
2200 Surface Treatment: 0.0 tons	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $72.22 Surf. $0.00	$72.22
Quarry Development:	$0.00
Total:	$3,771.21

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

Road Construction Worksheet

Road Number: Spur 5 C Road Name:

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:
  Subgrade Compaction: 4 Sta/hr $18.57/sta. x 0.9 sta = $16.71
  Blading: $11.32/station x 0.90 stations = $10.19
  Subgrade construction
   Tractor: D7 with rippers 2 hr x $148.35/hr = $296.70

Subtotal: $323.60

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:

Subtotal: $0.00

3-0" Crushed aggregate Quarry Name: Hoover, 3-0"

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.02mi	12ft	16ft	12in	7%					

  Rock Volume = 58cy
  Royalty: $12.50/cy x 58cy = $725.00
  Processing: $1.38/cy x 58cy = $80.04
  Compaction: $0.77/cy x 58cy = $44.66
  Basic Rock Haul cost: $0.93/cy x 58cy = $53.94
  Rock Haul -15% grades: $1.39/cy-mi x 58cy x 1.50 mi= $120.93
  Rock Haul St& Co Roads: $0.62/cy-mi x 58cy x 20.50 mi= $737.18
  Basic Water Haul cost: $0.61/cy x 58cy = $35.38
  Water Haul -15% grades: $0.13/cy-mi x 58cy x 1.00 mi= $7.54

3-0" Crushed aggregate Quarry Name: Hoover, 3-0" LR
 Comment: End landing

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

  Rock Volume = 50cy
  Royalty: $12.50/cy x 50cy = $625.00
  Processing: $1.38/cy x 50cy = $69.00
  Basic Rock Haul cost: $0.93/cy x 50cy = $46.50
  Rock Haul -15% grades: $1.39/cy-mi x 50cy x 1.50 mi= $104.25
  Rock Haul St& Co Roads: $0.62/cy-mi x 50cy x 20.50 mi= $635.50
  Basic Water Haul cost: $0.61/cy x 50cy = $30.50
  Water Haul -15% grades: $0.13/cy-mi x 50cy x 1.00 mi= $6.50

Subtotal: $3,321.92

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:
  Dry Method with Mulch: $534.65/acre x 0.10 acres = $53.46
        Includes Small Quantity Factor of 1.47

Subtotal: $53.46

Section 1900 Cattleguards:

Subtotal: $0.00

Road Number: Spur 5 C Continued

Section 2100 Roadside Brushing:

Subtotal: $0.00

Section 2200 Surface Treatment:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
  Construction - 1.66% of total Costs = $72.22
  Surfacing - 1.73% by rock volume = $0.00

Subtotal: $72.22

Quarry Development:
  Based on 1.73% of total rock volume

Subtotal: $0.00

Total: $3,771.21

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Space Wrangler CT Sale Date: 11/09/12
Road Number: Spur 6 C Road Name:
Road Construction: 0.04 mi 16 ft Subgrade 0 ft ditch T.S. Update 05/15/12

200 Clearing and Grubbing: 0.0 acres	$0.00
Clearing:0.0 sta Grubbing:0.0 acres	
Slash Treatment:0.0 acres	
300 Excavation:	$807.51
400 Drainage:	$0.00
Culvert: 0 lf wt = 0 lbs factor = 1.2	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$0.00
Surfacing:	$5,157.71
Quarry Name: Hoover, 3-0" 117 cy	
Quarry Name: Hoover, 3-0" LR 50 cy	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.1 acres	$53.46
Includes Small Quantity Factor of 1.47	
1900 Cattleguards:	$0.00
2100 RoadSide Brushing: 0.0 acres	$0.00
2200 Surface Treatment: 0.0 tons	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $117.51 Surf. $0.00	$117.51
Quarry Development:	$0.00
Total:	$6,136.19

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

Road Construction Worksheet

Road Number: Spur 6 C Road Name:

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:
  Subgrade Compaction: 4 Sta/hr $18.57/sta. x 2.2 sta = $40.85
  Blading: $11.32/station x 2.20 stations = $24.90
  Subgrade construction
   Tractor: D7 with rippers 5 hr x $148.35/hr = $741.75

Subtotal: $807.51

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:

Subtotal: $0.00

3-0" Crushed aggregate Quarry Name: Hoover, 3-0"

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.04mi	12ft	16ft	12in	7%					

  Rock Volume = 117cy
  Royalty: $12.50/cy x 117cy = $1,462.50
  Processing: $1.38/cy x 117cy = $161.46
  Compaction: $0.77/cy x 117cy = $90.09
  Basic Rock Haul cost: $0.93/cy x 117cy = $108.81
  Rock Haul -15% grades: $1.39/cy-mi x 117cy x 1.50 mi= $243.95
  Rock Haul St& Co Roads: $0.62/cy-mi x 117cy x 20.50 mi= $1,487.07
  Basic Water Haul cost: $0.61/cy x 117cy = $71.37
  Water Haul -15% grades: $0.13/cy-mi x 117cy x 1.00 mi= $15.21

3-0" Crushed aggregate Quarry Name: Hoover, 3-0" LR
 Comment: End landing

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

  Rock Volume = 50cy
  Royalty: $12.50/cy x 50cy = $625.00
  Processing: $1.38/cy x 50cy = $69.00
  Basic Rock Haul cost: $0.93/cy x 50cy = $46.50
  Rock Haul -15% grades: $1.39/cy-mi x 50cy x 1.50 mi= $104.25
  Rock Haul St& Co Roads: $0.62/cy-mi x 50cy x 20.50 mi= $635.50
  Basic Water Haul cost: $0.61/cy x 50cy = $30.50
  Water Haul -15% grades: $0.13/cy-mi x 50cy x 1.00 mi= $6.50

Subtotal: $5,157.71

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:
  Dry Method with Mulch: $534.65/acre x 0.10 acres = $53.46
        Includes Small Quantity Factor of 1.47

Subtotal: $53.46

Section 1900 Cattleguards:

Subtotal: $0.00

Road Number: Spur 6 C Continued

Section 2100 Roadside Brushing:

Subtotal: $0.00

Section 2200 Surface Treatment:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
  Construction - 2.70% of total Costs = $117.51
  Surfacing - 2.68% by rock volume = $0.00

Subtotal: $117.51

Quarry Development:
  Based on 2.68% of total rock volume

Subtotal: $0.00

Total: $6,136.19

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Mobilization Costs - Construction and Surfacing

T.S. Contract Name: Space Wrangler CT Sale Date: 11/09/12

Average Mobilization distance = 50 miles Factor = 1.00

Mobilization: Construction

Comment: Lump sum = equipment wash

Fire Equipment:	1 ea x	(1.00 x $131.00/ea +	0 mi x	$3.50/mi)=	$131.00
Graders-all:	1 ea x	(1.00 x $356.00/ea +	0 mi x	$13.78/mi)=	$356.00
Brush Cutter:	1 ea x	(1.00 x $356.00/ea) =	$356.00		
Rollers & Comp:	1 ea x	(1.00 x $356.00/ea +	0 mi x	$14.85/mi)=	$356.00
Excavators:	1 ea x	(1.00 x $680.00/ea +	0 mi x	$22.33/mi)=	$680.00
RTBackhoes 24/30:	1 ea x	(1.00 x $356.00/ea +	0 mi x	$4.84/mi)=	$356.00
Tractors <= D7:	1 ea x	(1.00 x $518.00/ea +	0 mi x	$29.49/mi)=	$518.00
Dump Truck<=10cy:	1 ea x	(1.00 x $185.00/ea +	0 mi x	$3.70/mi)=	$185.00
Water Truck:	1 ea x	(1.00 x $216.00/ea +	0 mi x	$4.33/mi)=	$216.00

Lump Sum: $1,200.00

Subtotal: $4,354.00

Mobilization: Surfacing

Subtotal: $0.00

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Summary of Construction Quantities

T.S. Contract Name: Space Wrangler CT Sale Date: 11/09/12

Road Number	Const	Improv	Renov	Decomm	Temp
26-12-25.1					
26-12-25.10 C	26.00				
26-12-26.2 C	2.35				
26-12-26.2 I		6.35			
26-12-26.3 I		12.60			
26-12-26.4 C	8.50				
26-12-26.4 I		4.20			
26-12-35.0					
26-12-35.0 R			21.12		
26-12-35.4 R			20.06		
Agg. stockpile					
Spur 1 R			4.00		
Spur 2 I		4.50			
Spur 3 C	2.25				
Spur 4 I		2.25			
Spur 5 C	0.90				
Spur 6 C	2.20				
Total Sta:	42.20	29.90	45.18		

200 Clearing and Grubbing**	Clearing stations	Grubbing acres	Slash acres
Totals:	0.00	0.0	0.0

**Included in Time and Equipment for Excavation.

300 Excavation	Excav C.Y.s	Haul sta-yds
Totals:	0	0

Subgrade construction
26-12-25.10 CTractor: D7 with rippers . . . . . 45 hr
Subgrade construction
26-12-26.2 C Tractor: D7 with rippers . . . . . 3 hr
Subgrade construction
26-12-26.4 C Tractor: D7 with rippers . . . . . 20 hr
MP 1.77 & 1.81 landing construction
26-12-35.4 R Tractor: D7 with rippers . . . . . 2 hr
26-12-35.4 R Vib roller: Steel drum . . . . . 1 hr
26-12-35.4 R Motor Grader 14G . . . . . 1 hr
Subgrade construction
Spur 3 C Tractor: D7 with rippers . . . . . 5 hr
Subgrade construction
Spur 5 C Tractor: D7 with rippers . . . . . 2 hr
Subgrade construction
Spur 6 C Tractor: D7 with rippers . . . . . 5 hr

400 Drainage

26-12-26.3 I	Poly Pipe	18 inch	30 lf
26-12-26.3 I	Poly Pipe	18 inch	30 lf
26-12-26.3 I	Poly Pipe	18 inch	30 lf
26-12-26.3 I	Poly Pipe	18 inch	30 lf

Sta. 0+00 culvert
26-12-25.10 C12" aluminized, 14 gage CMP . . . . . 30 LF

Continuation of Construction Quantities

Culvert parts
26-12-26.3 I Markers . . . . . 4 EA
Sta. 0+00 Culvert
26-12-26.4 C 12" aluminized, 14 gage CMP . . . . . 30 LF
Sta. 0+00 culvert
Spur 3 C 12" aluminized, 14 gage CMP . . . . . 30 LF

500 Renovation	Miles	Slide cy
26-12-26.2 I	0.12	0
26-12-26.3 I	0.24	0
26-12-26.4 I	0.08	0
26-12-35.0 R	0.40	0
26-12-35.4 R	0.38	0
Spur 1 R	0.08	0
Spur 2 I	0.09	0
Spur 4 I	0.04	0
Totals:	1.43	0

Subgrade improvement
26-12-26.2 I Tractor: D7 with rippers . . . . . 9 hr
Subgrade improvement
26-12-26.3 I Tractor: D7 with rippers . . . . . 20 hr
Subgrade improvement
26-12-26.4 I Tractor: D7 with rippers . . . . . 5 hr
Subgrade renovation
Spur 1 R Tractor: D7 with rippers . . . . . 2 hr
Subgrade improvement
Spur 2 I Tractor: D7 with rippers . . . . . 4 hr
Subgrade improvement
Spur 4 I Tractor: D7 with rippers . . . . . 3 hr

Surfacing (Cubic Yards)

Quarry Name: Hoover, 3-0"

3-0" Crushed aggregate	Roadway	Turnouts	Other	
26-12-25.10 C	1,435	148	0	1,583
26-12-26.2 C	117	0	0	117
26-12-26.2 I	351	37	0	388
26-12-26.4 C	468	37	0	505
26-12-26.4 I	234	0	0	234
26-12-26.3 I	703	74	0	777
Spur 2 I	263	0	0	263
Spur 3 C	117	0	0	117
Spur 4 I	117	0	0	117
Spur 5 C	58	0	0	58
Spur 6 C	117	0	0	117
Totals:	3,980	296	0	4,276

Quarry Name: Hoover, 3-0" LR

3-0" Crushed aggregate	Roadway	Turnouts	Other	
Spur 6 C	0	0	50	50
26-12-35.0 R	0	0	50	50
26-12-25.10 C	0	0	50	50
26-12-26.2 I	0	0	50	50
26-12-26.2 I	0	0	20	20
26-12-26.4 C	0	0	50	50
26-12-26.4 I	0	0	50	50
26-12-26.3 I	0	0	100	100
Spur 2 I	0	0	50	50
Spur 3 C	0	0	50	50

Spur 4 I	0	0	50	50
Spur 5 C	0	0	50	50
Totals:	0	0	620	620

Quarry Name: Hoover, 1.5-0"

1.5-0" Crushed aggregate	Roadway	Turnouts	Other	
Agg. stockpile	0	0	150	150
26-12-25.1 Spot rock	0	0	200	200
26-12-35.0 Spot rock	0	0	250	250
26-12-35.0 R	352	0	0	352
26-12-26.3 I	0	0	48	48
26-12-35.4 R	335	0	0	335
Totals:	687	0	648	1,335

1300 Geotextiles

Totals: No Quantities

1400 Slope Protection

Totals:	0

1800 Soil stabilization - acres	Dry W/O Mulch	Dry/with Mulch	Hydro Mulch
26-12-25.10 C	0.0	0.6	
26-12-26.2 C	0.0	0.1	
26-12-26.2 I	0.0	0.1	
26-12-26.3 I	0.0	0.3	
26-12-26.4 C	0.0	0.2	
26-12-26.4 I	0.0	0.1	
26-12-35.4 R	0.0	0.1	
Spur 1 R	0.0	0.1	
Spur 2 I	0.0	0.1	
Spur 3 C	0.0	0.1	
Spur 4 I	0.0	0.1	
Spur 5 C	0.0	0.1	
Spur 6 C	0.0	0.1	
Totals:	0.0	2.1	0.0

Small Quantity Factor of 1.59 used

1900 Cattleguards

Totals: No Quantities

2100 RoadSide Brushing	acres
26-12-26.2 I	0.3
26-12-26.3 I	0.6
26-12-26.4 I	0.2
26-12-35.0 R	1.0
26-12-35.4 R	0.9
Spur 1 R	0.2
Spur 2 I	0.2
Spur 4 I	0.1
Totals:	3.5

Continuation of Construction Quantities

2200 Surface Treatment		tons	L.F.
	Totals:	No Quantities	
2300 Engineering		stations	
	Totals:	0.00	
2400 Minor Concrete			
	Totals:	No Quantities	
2500 Gabions			
	Totals:	No Quantities	
8000 Miscellaneous			
	Totals:	No Quantities	

ROAD NUMBER	NEW CONSTRUCTION	RENOVATION	IMPROVEMENT	SLASH TREATMENT	GRUBBING	ROADSIDE BRUSHING	SLOPE STAKING	EARTHWORK (DESIGNED)						CPE *1		CMP *2		DOWNSPOUTS *3				MARKERS
								COMMON	RIPPABLE ROCK	ROCK CUT	FILL	SHORT HAUL 200–5000'	LONG HAUL 5000'+	18"	24"	12"	48"	FULL ROUND 18" CPE	FULL ROUND 24" CPE	FULL ROUND 24" CMP	FULL ROUND 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.	STA.YD.	YD.MI.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	EA.
26–12–25.10	26.00			2.0	1.2											30						
26–12–26.2	2.35		6.35	0.2	0.1	6.35																
26–12–26.3			12.60			12.60								120								4
26–12–26.4	8.50		4.20	0.4	0.2	4.20										30						
26–12–35.0		21.12				21.12																
26–12–35.4		20.06				20.06																
Spur 1		4.00				4.00																
Spur 2			4.50			4.50																
Spur 3	2.25			0.2	0.1											30						
Spur 4			2.25			2.25																
Spur 5	0.90			0.2	0.1																	
Spur 6	2.20			0.2	0.1																	
TOTAL	42.20	45.18	29.90	3.2	1.8	75.08								120		90						4

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.

ALWAYS THINK SAFETY

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

ESTIMATE OF QUANTITIES

DESIGNED J. MENGUITA
REVIEWED J. COUNTS
APPROVED A. TUROWSKI

DRAWN JRM | SCALE NONE
DATE 06/12 | SHEET 4 OF 44
DRAWING NO.

Q:\ENG\UMP\TS\FY13\SPACEWRANGLERCT\SWCT–P04.DWG

ESTIMATE OF QUANTITIES*

ROAD NUMBER	SURFACING					OTHER			SEEDING		OTHER (SEDIMENT CONTROL DEVICES)
	BASE ROCK ***	SURFACE ROCK ***	LANDING ROCK **	SPOT ROCK **	CULVERT BEDDING ROCK **	RIPRAP **	SUB-BASE	GEO-TEXTIILE	SEED, FERTILIZE AND MULCH		
									1800	1800	
SECTION NO.	1000	1200	1000	1200	1200		1200		DRY	HYDRO	
UNITS	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	S.Y.	ACRES	ACRES	EACH
26-12-25.1	(A)	(C)	(A)	200 (C)	(C)	(A)	(C)				
26-12-25.10	1583 (A)	(C)	50 (A)	(C)	(C)	(A)	(C)		0.6		
26-12-26.2	505 (A)	(C)	70 (A)	(C)	(C)	(A)	(C)		0.2		
26-12-26.3	777 (A)	(C)	100 (A)	(C)	48 (C)	(A)	(C)		0.3		
26-12-26.4	739 (A)	(C)	100 (A)	(C)	(C)	(A)	(C)		0.3		
26-12-35.0	(A)	352 (C)	50 (A)	250 (C)	(C)	(A)	(C)				
26-12-35.4	(A)	335 (C)	(A)	(C)	(C)	(A)	(C)		0.1		
Spur 1	(A)	(C)	(A)	(C)	(C)	(A)	(C)		0.1		
Spur 2	263 (A)	(C)	50 (A)	(C)	(C)	(A)	(C)		0.1		
Spur 3	117 (A)	(C)	50 (A)	(C)	(C)	(A)	(C)		0.1		
Spur 4	117 (A)	(C)	50 (A)	(C)	(C)	(A)	(C)		0.1		
Spur 5	58 (A)	(C)	50 (A)	(C)	(C)	(A)	(C)		0.1		
Spur 6	117 (A)	(C)	50 (A)	(C)	(C)	(A)	(C)		0.1		
Deliver to aggregate stockpile site				150 (C)							
TOTALS	4276	687	620	600	48				2.1		

SECTION	GRADE	SIZE
700	B	PITRUN
1000	A	3"
	B	4"
	C	2"
	D	
	F	
1100	B	4"
1200	C	1 1/2"
	D	1"
	A	RIPRAP
CHIP SEAL ROCK	S	3/4"

GRADE INDICATED IN CIRCLE ○

ALWAYS THINK SAFETY

* FOR INFORMATIONAL USE ONLY. QUANTITIES SHOWN ARE NOT PAY ITEMS. *** BASE AND SURFACE ROCK ARE COMPACTED QUANTITIES.

** LANDING ROCK, SPOT ROCK, BEDDING ROCK, AND RIPRAP ARE TRUCK MEASUREMENT QUANTITIES.

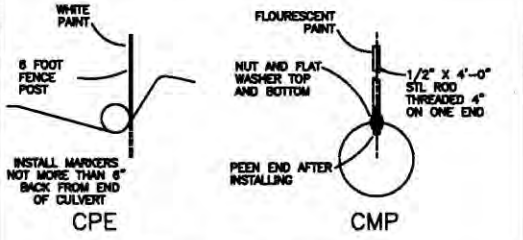
U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
COOS BAY DISTRICT OREGON

ESTIMATE OF QUANTITIES

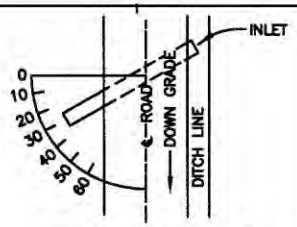
DESIGNED J. MENGUITA
REVIEWED J. COUNTS
APPROVED A. TUROWSKI

DRAWN JRM | SCALE NONE
DATE 6/12 | SHEET 5 OF 44
DRAWING NO.

Q:\ENG\UMP\TS\FY13\SPACEWRANGLERCT\SWCT-P05.DWG



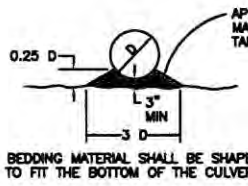
CULVERT MARKERS



SKEW DIAGRAM

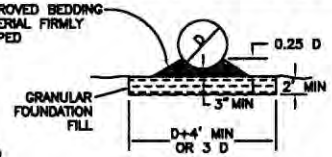
THE GRADE OF CROSSDRAINS SHALL BE AT LEAST 2% GREATER THAN THE GRADE OF THE DITCH.

BEDDING OF CULVERTS



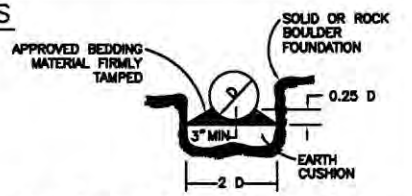
BEDDING MATERIAL SHALL BE SHAPED TO FIT THE BOTTOM OF THE CULVERT.

BEDDING OF CULVERTS ON STABLE NATURAL GROUND FOUNDATION OR COMPACTED EMBANKMENT



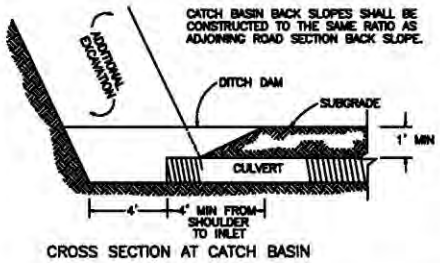
BEDDING MATERIAL SHALL BE SHAPED TO FIT THE BOTTOM OF THE CULVERT.

BEDDING OF CULVERTS ON SOFT SPONGY OR UNSTABLE SOIL FOUNDATION

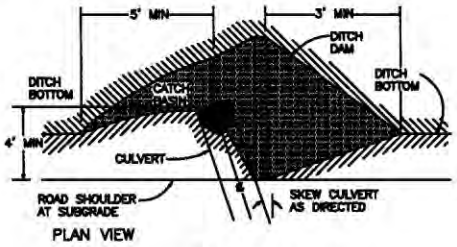


BEDDING MATERIAL SHALL BE SHAPED TO FIT THE BOTTOM OF THE CULVERT. EARTH CUSHIONING OF SILTY CLAY LOAM OR SAND MAY BE USED IF MATERIAL CAN BE PLACED IN THE DRY CONDITION. IF THE EXCAVATION IS WET, USE GRANULAR FOUNDATION FILL MATERIAL. MAINTAIN 6" MIN. DEPTH BETWEEN HIGH POINTS OF ROCKS AND/OR BOULDERS AND THE BOTTOM OF THE CULVERT.

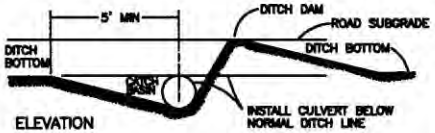
BEDDING OF CULVERT IN SOLID ROCK OR BOULDER FOUNDATION



CROSS SECTION AT CATCH BASIN

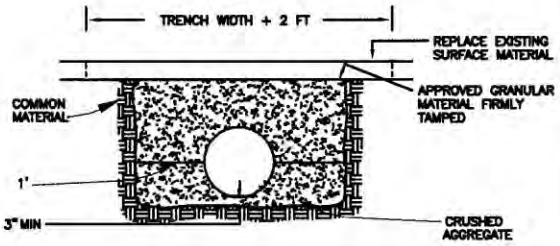


PLAN VIEW



ELEVATION

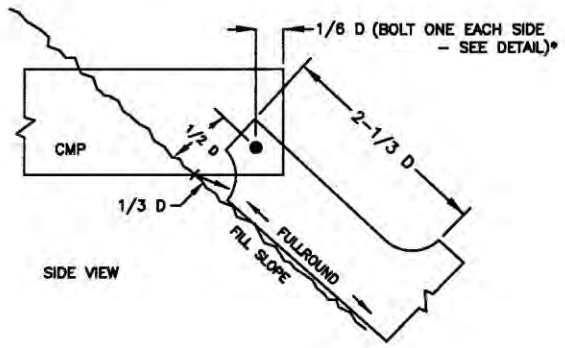
CATCH BASIN



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

★BACKFILL MATERIAL WILL CONSIST OF 1-1/2" MINUS CRUSHED AGGREGATE UP UNTIL 1 FOOT ABOVE THE PIPE.

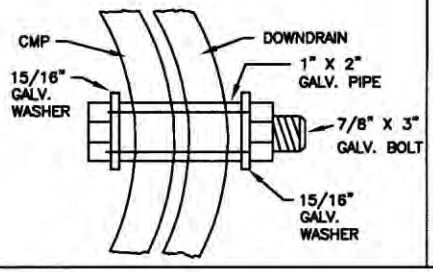
FOR CPE AND CMP DOWNSPOUTS



SIDE VIEW

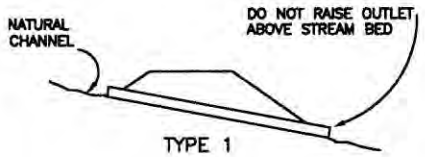
★ NOTE: ANCHOR DOWNSPOUTS ACCORDING TO SECTION 407b OF THE ROAD CONSTRUCTION SPECIFICATIONS

BOLT ASSEMBLY DETAIL*

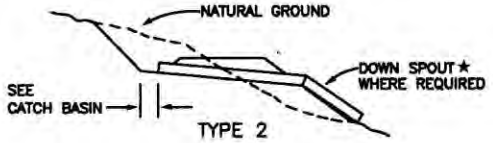


BANDS SHALL MEET MANUFACTURER'S SPECIFICATIONS

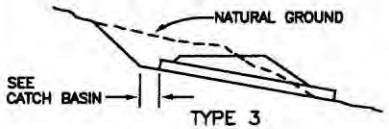
CULVERT INSTALLATION TYPES



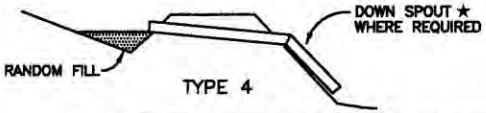
TYPE 1



TYPE 2



TYPE 3



TYPE 4

ALWAYS THINK SAFETY

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

CULVERT INSTALLATION DETAILS

DESIGNED	J. MENGUITA
REVIEWED	J. COUNTS
APPROVED	A. TUROWSKI
DRAWN JRM	SCALE NONE
DATE 6/12	SHEET 6 OF 44
DRAWING NO.	

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ROAD NUMBER **	FROM MILEPOST/ STATION	TO MILEPOST/ STATION	LENGTH IN MILES/ STATIONS	TYPICAL SECTION TYPE	ROAD WIDTH[1]		CLEARING WIDTH				SURFACING									REMARKS
							BEYOND TOP CUT	BEYOND TOE FILL	EXISTING ROADS[5] L	EXISTING ROADS[5] R	BASE COURSE					SURFACE COURSE				
					Subgrade	Ditch					Minimum Top Width	Comp. Depth	Type[2]	Grading		Minimum Top Width	Comp. Depth	Type[2]	Grading	
26-12-25.1	0.00	0.37	0.37													Apply 200 CY of Spot Rock				
26-12-25.10 C	0+00	26+00	26.00	3	16'	0'	10	5			12'	12"	D	3-0"						2% OUTSLOPE W/ NO DITCH
26-12-26.2 C	0+00	2+35	2.35	3	16'	2'	10	5			12'	12"	D	3-0"						
-26.2 I	2+35	8+70	6.35	3	16'	2'			10	10	12'	12"	D	3-0"						
26-12-26.3 I	0+00	12+60	12.60	3	16'	2'			10	10	12'	12"	D	3-0"						
26-12-26.4 C	0+00	8+50	8.50	3	16'	0'	10	5			12'	12"	D	3-0"						2% OUTSLOPE W/ NO DITCH
-26.4 I	8+50	12+70	4.20	3	16'	0'			10	10	12'	12"	D	3-0"						2% OUTSLOPE W/ NO DITCH
26-12-35.0	0.00	1.25	1.25													Apply 250 CY of Spot Rock				
26-12-35.0 R	1.25	1.65	0.40	2	16'	2'			10	10						12'	4"	D	1.5-0"	
26-12-35.4 R	1.43	1.81	0.38	2	16'	2'			10	10						12'	4"	D	1.5-0"	
Spur 1 R	0+00	4+00	4.00	1	12'	0'			10	10										2% OUTSLOPE W/ NO DITCH
Spur 2 I	0+00	4+50	4.50	3	16'	2'			10	10	12'	12"	D	3-0"						
Spur 3 C	0+00	2+25	2.25	3	16'	2'	10	5			12'	12"	D	3-0"						
Spur 4 I	0+00	2+25	2.25	3	16'	0'			10	10	12'	12"	D	3-0"						2% OUTSLOPE W/ NO DITCH
Spur 5 C	0+00	0+90	0.90	3	16'	0'	10	5			12'	12"	D	3-0"						2% OUTSLOPE W/ NO DITCH
Spur 6 C	0+00	2+20	2.20	3	16'	0'	10	5			12'	12"	D	3-0"						2% OUTSLOPE W/ NO DITCH

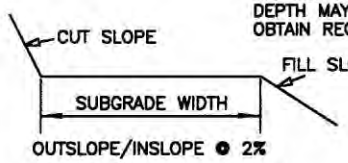
NOTES

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
   105'-200' ADD 1FT.
   75'-100' ADD 3FT.
   50'- 70' 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

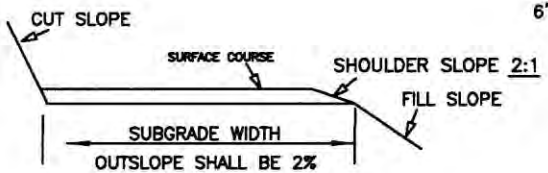
   FULL BENCH CONSTRUCTION IS REQUIRED ON SIDE SLOPES EXCEEDING 60%.
2. SURFACING TYPE
   A. PIT RUN ROCK MATERIAL.
   B. GRID ROLLED ROCK MATERIAL.
   C. SCREENED ROCK MATERIAL.
   D. CRUSHED ROCK MATERIAL.
3. TURNOUTS
   A. WIDTH 10 FT. IN ADDITION TO SUBGRADE WIDTH, OR AS SHOWN ON THE PLANS.
   B. LOCATED APPROXIMATELY AS SHOWN ON THE ROAD PLANS OR NARRATIVE.
4. SURFACING
   A. TURNOUTS, CURVE WIDENING AND ROAD APPROACH APRONS SHALL BE SURFACED.
5. CLEARING WIDTH
   SEE SUBSECTION 200 OR 2100.

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



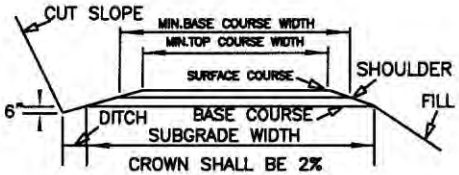
TYPICAL DIRT SECTION

TYPE 1



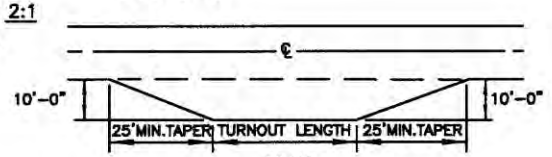
TYPICAL SURFACING SECTION

TYPE 3

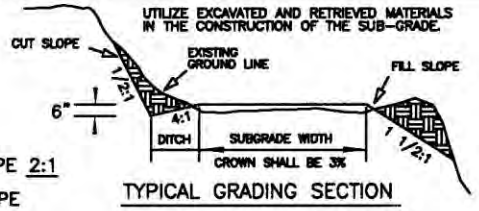


TYPICAL SURFACING SECTION

TYPE 2



PLAN
TYPICAL TURNOUT



TYPICAL GRADING SECTION

** 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. MENGUITA
REVIEWED J. COUNTS
APPROVED A. TUROWSKI
DRAWN JRM
DATE 6/12
DRAWING NO.
SCALE NONE
SHEET 7 OF 44

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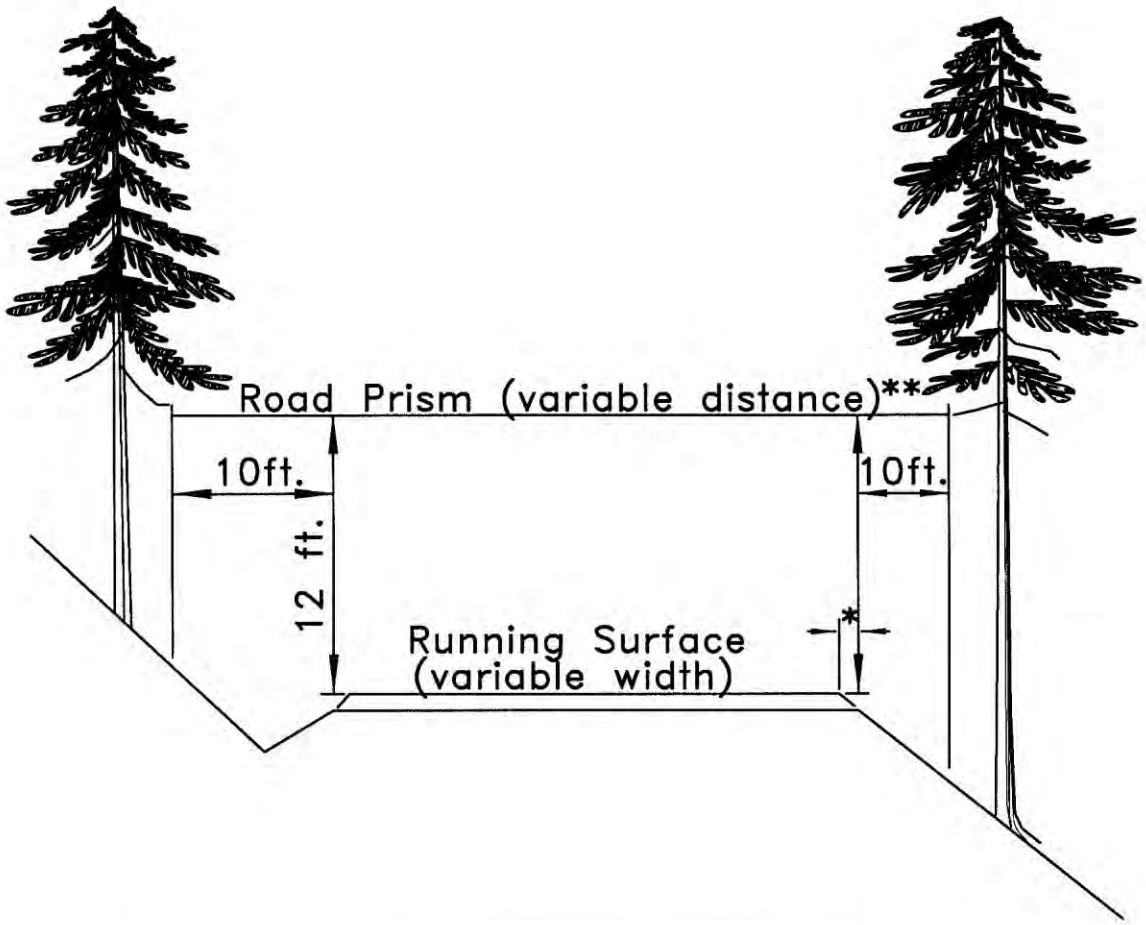


* Variable distance between running surface and start of fill slope.

** 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 over-hanging 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. MENGUITA	
REVIEWED J. COUNTS	
APPROVED A. TUROWSKI	
DRAWN JRM	SCALE NONE
DATE 6/12	SHEET 8 OF 44
DRAWING NO.	

Q:\ENG\UMPQUA\TS\FY13\SPACEWRANGLERCT\SWCT-P08.DWG

PRE–LOGGING

1. Purchaser shall stake landing locations a minimum of five (5) days in advance of construction unless otherwise agreed. Locations shall be aproved by the Authorized Officer prior to construction.

   (a) The top edges of required back–slopes shall be flagged in a prominent manner with colored plastic ribbon.

   (b) 1. For cut only landing – the elevation and perimeter of landing shall be delineated by a series of intervisible stakes located along the "daylight" points of desired exca–vation.

   2. For cut and fill landing – the toe of the fill shall be delineated by a series of intervisible stakes.

2. When required, all excavated material shall be end–hauled to disposal areas specified by the Authorized Officer at the time of approval.

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

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

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

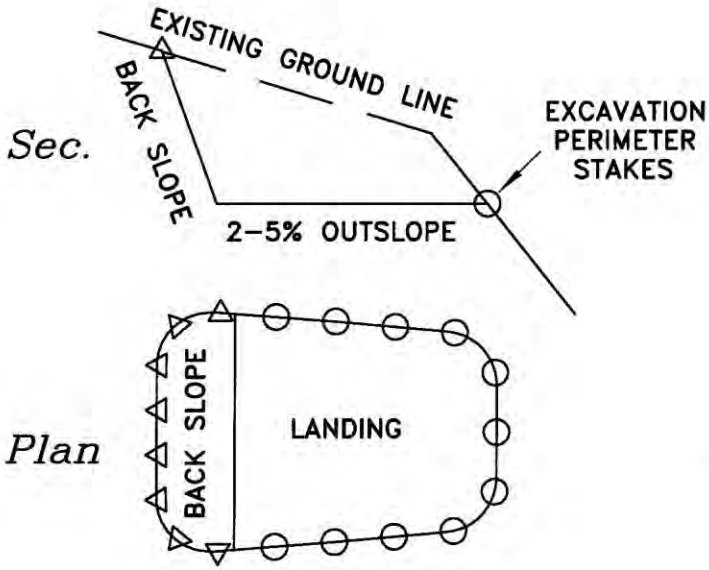
4. Landing shall be constructed with a 2–5% slope for drainage.

POST–LOGGING

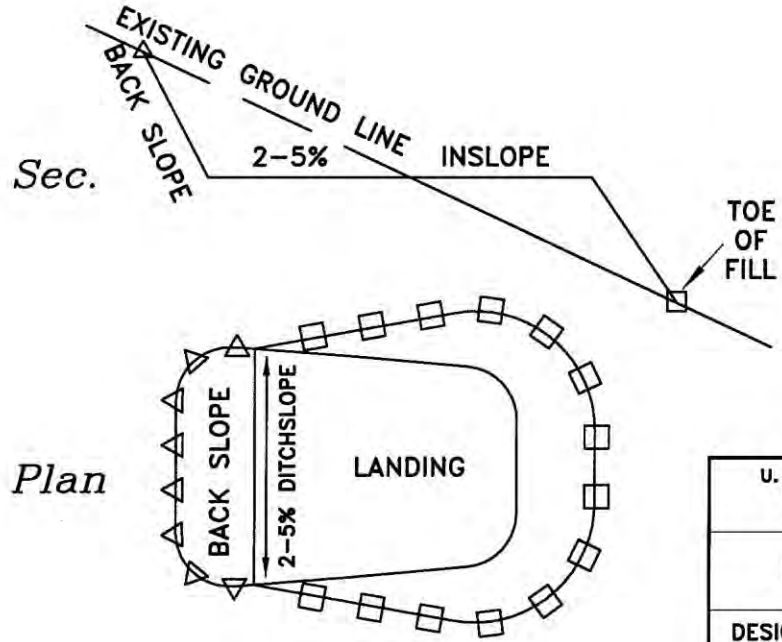
1. Purchaser shall remove and dispose of debris from the perimeter of landing in strict accordance with written instructions of the Authorized Officer. Debris is con–sidered as unclassified excavation and shall include any woody material such as log ends, cull chunks, stumps, bark, limbs, etc., and any common soil material.

2. All natural water courses shall be opened to prevent erosion.

3. Landing shall be graded, crowned, and shaped to prevent puddling and permit drainage.



TYPICAL LANDING CUT ONLY



TYPICAL LANDING CUT AND FILL

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

LANDING DETAILS

DESIGNED	J. MENGUITA
REVIEWED	J. COUNTS
APPROVED	A. TUROWSKI
DRAWN JRM	SCALE NONE
DATE 6/12	SHEET 9 OF 44
DRAWING NO.	

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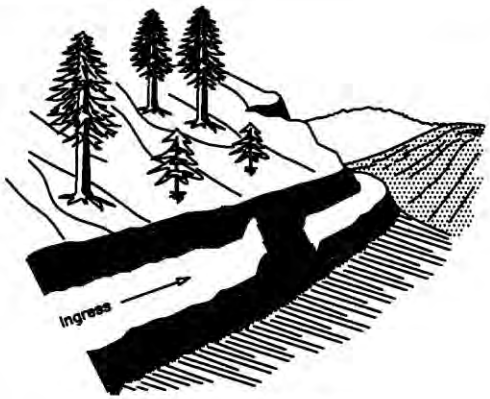
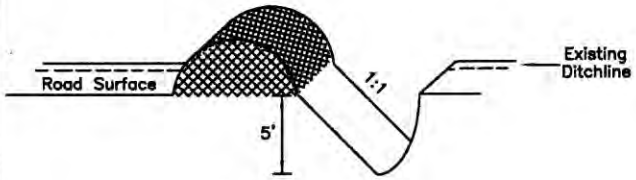
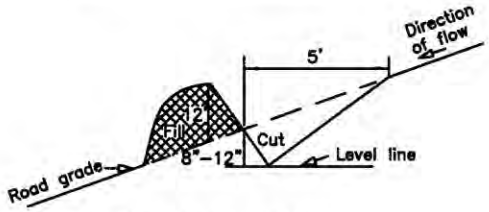


BARRIERS



(NOT TO SCALE)

WATER BAR



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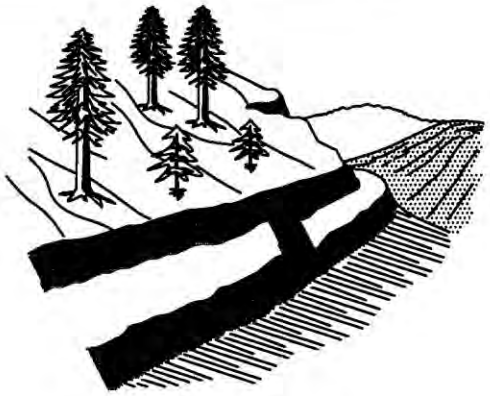
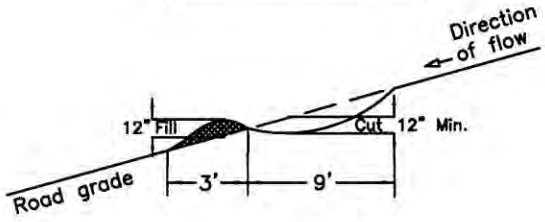


WATER DIP



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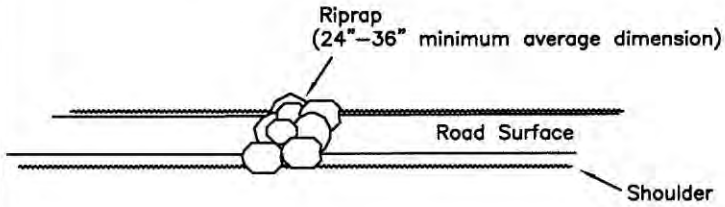
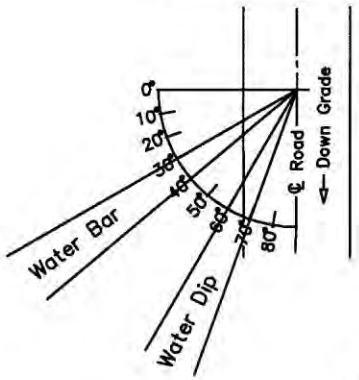


SKEW DIAGRAM



WATER DIP/BAR SPACING

ROAD GRADE	MAXIMUM SPACING
%	FEET
0–4	500
5–6	400
7–9	300
10–14	100
15–20	50

NOTES

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 BARS SHALL BE SKEWED 30° – 40°.*
4. *ALL WATER DIPS SHALL BE SKEWED 60° – 70°.*
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 SHALL BE PLACED ON THE SIDE NEAREST THE BEGINNING OF THE ROAD.*
8. *OUTLETS OF WATER DIPS MUST BE ROCKED ON FILL SLOPE.*
9. *RIPRAP BARRIERS SHALL BE AT LEAST 4' HIGH, 4' DEEP, AND OF SUFFICIENT WIDTH TO COMPLETELY BLOCK THE ROADWAY AND ANY ADJACENT SHOULDERS THAT CAN BE TRAVELED WITH A VEHICLE.*
10. *ALL BERMS INCLUDING WATER BARS, WATER DIPS, AND EARTHEN BARRIERS SHALL BE COMPACTED TO 85% OF MAXIMUM DENSITY.*

ALWAYS THINK SAFETY

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

BARRIER AND EROSION CONTROL DETAIL

DESIGNED	J. MENGUITA
REVIEWED	J. COUNTS
APPROVED	A. TUROWSKI
DRAWN	JRM
DATE	08/12
SCALE	NONE
SHEET	2 OF 8
DRAWING NO.	

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"EXHIBIT D" ESTIMATE OF QUANTITIES*

ROAD NUMBER	SURFACING				OTHER			SOIL STABILIZATION		OTHER	
	TOP **	AGG. MAINT. ROCK **	AGG. MAINT. ROCK **	BASE	RIPRAP BARRIER **	RIPRAP ARMOR **	JAWRUN ROCK **	DRY	HYDRO-MULCH		
SPEC. NO.	1200	1200	1000	1000	1400			1800	1800		
UNITS	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	ACRES	ACRES		
26-12-25.10	(C)	(C)	(B)	(B)	10 (A)	(B)	(A)				
26-12-26.2	(C)	(C)	(B)	(B)	10 (A)	(B)	(A)				
26-12-26.3	(C)	(C)	(B)	(B)	10 (A)	(B)	(A)				
26-12-26.4	(C)	(C)	(B)	(B)	10 (A)	(B)	(A)				
26-12-35.0	(C)	(C)	(B)	(B)	(A)	(B)	(A)				
26-12-35.4	(C)	(C)	(B)	(B)	(A)	(B)	(A)	0.1			
	(C)	(C)	(B)	(B)	(A)	(B)	(A)				
Spur 1	(C)	(C)	(B)	(B)	(A)	(B)	(A)	0.1			
Spur 2	(C)	(C)	(B)	(B)	10 (A)	(B)	(A)				
Spur 3	(C)	(C)	(B)	(B)	(A)	(B)	(A)				
Spur 4	(C)	(C)	(B)	(B)	(A)	(B)	(A)				
Spur 5	(C)	(C)	(B)	(B)	(A)	(B)	(A)				
Spur 6	(C)	(C)	(B)	(B)	(A)	(B)	(A)				
	(C)	(C)	(B)	(B)	(A)	(B)	(A)				
	(C)	(C)	(B)	(B)	(A)	(B)	(A)				
	(C)	(C)	(B)	(B)	(A)	(B)	(A)				
	(C)	(C)	(B)	(B)	(A)	(B)	(A)				
	(C)	(C)	(B)	(B)	(A)	(B)	(A)				
	(C)	(C)	(B)	(B)	(A)	(B)	(A)				
	(C)	(C)	(B)	(B)	(A)	(B)	(A)				
	(C)	(C)	(B)	(B)	(A)	(B)	(A)				
	(C)	(C)	(B)	(B)	(A)	(B)	(A)				
	(C)	(C)	(B)	(B)	(A)	(B)	(A)				
	(C)	(C)	(B)	(B)	(A)	(B)	(A)				
	(C)	(C)	(B)	(B)	(A)	(B)	(A)				
	(C)	(C)	(B)	(B)	(A)	(B)	(A)				
	(C)	(C)	(B)	(B)	(A)	(B)	(A)				
TOTALS	(C)	80 (C)	220 (B)	(B)	50 (A)	(B)	(A)	0.2			

ITEM	SIZE	GRADE
PITRUN		
1000 (Base)	3"	B
1100	4"	B
1200 (Top)	1½"	C
1400 (RIPRAP)	34"	A
	28"	B
CHIP SEAL ROCK	¾"	S

GRADE INDICATED IN CIRCLE ○

ALWAYS THINK SAFETY

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

** ROCK QUANTITES ARE TRUCK MEASUREMENT.

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

"EXHIBIT D"
ESTIMATE OF QUANTITIES

DESIGNED J. MENGUITA
REVIEWED J. COUNTS
APPROVED A. TUROWSKI

DRAWN JRM — SCALE NONE
DATE 08/12 — SHEET 3 OF 8
DRAWING NO.

Q:\ENG\UMP\TS\FY13\SPACERWRANGLERCT\EXD\P-03.DWG

ROAD MAINTENANCE SPECIFICATIONS

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

Section	
3000	GENERAL
3100	OPERATIONAL MAINTENANCE
3200	SEASONAL MAINTENANCE
3300	FINAL MAINTENANCE
3400	OTHER MAINTENANCE

GENERAL - 3000

3001 - The Purchaser shall be required to maintain all roads as shown on the Exhibit D 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 220 yds^3 of crushed aggregate, conforming to the requirements in Section 1000 of Exhibit C of this contract, and 80 yds^3 of crushed aggregate, 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 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, and motor patrol grader.

3103 - The Purchaser shall maintain established berms and place additional berms using adjacent material where needed to protect fills as directed by the Authorized Officer.

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

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

3104b - The Purchaser shall be responsible for removal of all slides or slough, up to fifteen (15) station yards in quantity, at any one site. This work includes unlimited multiple sites on all roads required to be maintained by the Purchaser.
Prior to removal of any slough or slide material exceeding fifteen (15) station yards at any one site, the Purchaser and the Authorized Officer or their Authorized Representatives shall agree in writing, in the field, to the quantity of material, method of disposal, and the disposal site. Work may commence immediately after agreement.

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

3105 - The Purchaser shall be responsible for maintaining normal flow in drainage structures. This includes cleaning out drainage ditches, catch basins, clearing pipe inverts of sediment and other debris lodged in the barrel of the pipe and maintaining water dips and waterbars 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 nonhauling 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:

Road No.	Work
26-12-25.10	Construct riprap barrier at Sta. 0+00 where in accordance with Sheet No. 2 of the Exhibit D and as directed by the Authorized Officer.
26-12-26.2	Construct riprap barrier at Sta. 0+00 where in accordance with Sheet No. 2 of the Exhibit D and as directed by the Authorized Officer. Construct waterbars in accordance with Sheet No. 2 of the Exhibit D and as directed by the Authorized Officer.
26-12-26.3	Construct riprap barrier at Sta. 0+00 where in accordance with Sheet No. 2 of the Exhibit D and as directed by the Authorized Officer. Construct waterbars in accordance with Sheet No. 2 of the Exhibit D and as directed by the Authorized Officer.
26-12-26.4	Construct riprap barrier at Sta. 0+00 where in accordance with Sheet No. 2 of the Exhibit D and as directed by the Authorized Officer.
26-12-35.4	Seed, fertilize, and mulch all disturbed areas at MP 1.77 and 1.81 landings in accordance with Section 1800 of the Exhibit C. Construct earthen barrier at MP 1.77 and 1.81 landings in accordance with Sheet No. 2 of the Exhibit D and as directed by the Authorized Officer.
Spur 1	Seed, fertilize, and mulch all disturbed areas in accordance with Section 1800 of the Exhibit C. Construct waterbars in accordance with Sheet No. 2 of the Exhibit D and as directed by the Authorized Officer. Construct earthen barrier at Sta. 0+00 in accordance with Sheet No. 2 of the Exhibit D and as directed by the Authorized Officer.
Spur 2	Construct riprap barrier at Sta. 0+00 where in accordance with Sheet No. 2 of the Exhibit D and as directed by the Authorized Officer. Construct waterbars in accordance with Sheet No. 2 of the Exhibit D and as directed by the Authorized Officer.
Spur 3	Construct riprap barrier at Sta. 0+00 where in accordance with Sheet No. 2 of the Exhibit D and as directed by the Authorized Officer. Construct waterbars in accordance with Sheet No. 2 of the Exhibit D and as directed by the Authorized Officer.

ROAD MAINTENANCE APPRAISAL

SALE NO. 13-01

SALE NAME: SPACE WRANGLER CT

ROAD NUMBERS	MILES
26-12-25.10	0.5
26-12-26.2	0.2
26-12-26.3	0.2
26-12-26.4	0.2
26-12-35.0	0.4
26-12-35.4	0.4
Spur 1	0.1
Spur 2	0.1
Spur 3	0.1
Spur 4	0.1
Spur 5	0.1
Spur 6	0.1
Total	**2.5**

- SUMMARY-

1.	MOVE IN:	$1,232.00
2.	CULVERTS, SLOUGH, SLUMPS, & MISC	$502.00
3.	GRADING FOR TIMBER HAUL	$1,004.00
4.	GRADING FOR AGGREGATE HAUL	$0.00
5.	MAINTENANCE ROCK	$7,546.50
6.	OTHER MAINTENANCE	$2,690.00
	TOTAL MAINTENANCE:	**$12,974.50**

ROAD MAINTENANCE APPRAISAL

SALE NO. 13-01 SALE NAME: SPACE WRANGLER CT

- APPRAISAL WORKSHEET-

1. MOVE-IN:

EQUIPMENT	MOVE-INS	COST/MOVE	
DUMP TRUCK	1	$185.00	$185.00
GRADER	1	$356.00	$356.00
COMPACTOR	1	$356.00	$335.00
BACKHOE W FE LOADER	1	$356.00	$356.00
		TOTAL =	**$1,232.00**

2. CULVERT MAINT., SLOUGH REMOVAL, SLUMP REPAIRS, ETC.

MAINT. OBLIGATION		AVE. COST		
2.5	MILES @	$200.00	/ MILE =	**$502.00**

3. GRADING FOR TIMBER HAUL

UNIT #	GRADINGS	X MILES	ACC. MILES	
	2	2.5	5.0	
		TOTAL MILES	5.0	
5.0	MILES @	$200.00	/ MILE =	**$1,004.00**

4. GRADING FOR AGGREGATE HAUL:

MILES @ / MILE =

5. MAINTENANCE ROCK: HOOVER EXCAVATING & TRUCKING

SIZE 3-0" APPR FROM

				MILES	
ROYALTY	220	CU. YDS. @	$12.50		$2,750.00
PROCESSING	220	CU. YDS. @	$0.96		$211.20
SLOW HAUL	0	CU. YDS. @	$2.18		$0.00
MED. HAUL	220	CU. YDS. @	$1.10	1.5	$363.00
FAST HAUL	220	CU. YDS. @	$0.49	20.5	$2,209.90
				TOTAL =	**$5,534.10**

MAINTENANCE ROCK: HOOVER EXCAVATING & TRUCKING

SIZE 1.5-0" APPR FROM

				MILES	
ROYALTY	80	CU. YDS. @	$12.50		$1,000.00
PROCESSING	80	CU. YDS. @	$0.96		$76.80
SLOW HAUL	0	CU. YDS. @	$2.18		$0.00
MED. HAUL	80	CU. YDS. @	$1.10	1.5	$132.00
FAST HAUL	80	CU. YDS. @	$0.49	20.5	$803.60
				TOTAL =	**$2,012.40**

SIZE 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**

ROAD MAINTENANCE APPRAISAL

SALE NO. 13-01 SALE NAME: SPACE WRANGLER CT

6. OTHER MAINTENANCE:

26-12-25.10		
Riprap Barrier	$400.00	
		$400.00
26-12-26.2		
Riprap Barrier	$400.00	
Waterbars	$150.00	
		$550.00
26-12-26.3		
Riprap Barrier	$400.00	
Waterbars	$150.00	
		$550.00
26-12-26.4		
Riprap Barrier	$400.00	
		$400.00
26-12-35.4		
Soil Stabilization	$80.00	
Earthen Barriers	$100.00	
		$180.00
Spur 1		
Soil Stabilization	$40.00	
Waterbars	$30.00	
Earthen Barrier	$50.00	
		$120.00
Spur 2		
Riprap Barrier	$400.00	
Waterbars	$90.00	
		$490.00
Spur 3		
Riprap Barrier	$400.00	
Waterbars	$30.00	
		$430.00
TOTAL		$2,690.00

SALE NAME Space Wrangler

NET MBF 7457

EXHIBIT E

OR120-TS- 13-01

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 Subtotal	/MBF/Mile	Subtotal	TOTAL FEE:
Rock	26-12-35.4	592	1.4	0.51	$431.75	$0.62	$524.87	$956.62
Rock	26-12-35.1	592	0.9	0.51	$271.73	$0.62	$330.34	$602.07
Rock	26-12-25.1	2328	0.4	0.51	$474.91	$0.62	$577.34	$1,052.25
Rock	26-12-35.0	5061	0.2	0.51	$516.22	$0.62	$627.56	$1,143.78
Rock	26-12-35.0	5754	0.1	0.51	$293.45	$0.62	$356.75	$650.20
Rock	26-12-35.0	6232	0.0	0.51	$0.00	$0.62	$0.00	$0.00
Rock	26-12-35.0	6865	0.8	0.51	$2,800.92	$0.62	$3,405.04	$6,205.96
Rock	26-12-35.0	7457	0.1	0.51	$380.31	$0.62	$462.33	$842.64
Paved	26-12-4.2	7457	2.4	0	$0.00	$0.65	$11,632.92	$11,632.92
			6.3		$5,169.29		$17,917.15	$23,086.44

SALE NAME Space Wrangler

NET MBF 7457

EXHIBIT E

OR120-TS- 13-01

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

a. Timber Haul:

Surface Type	ROAD NUMBER:	NET MBF	ROAD MILES:	SURFACE REPLACEMENT /MBF/Mile	ROCKWEAR Subtotal
Rock	Spur 6	458	0.05	$0.51	$11.68
Rock	26-12-25.10	592	0.1	$0.51	$30.19
Rock	26-12-25.10	1050	0.2	$0.51	$107.10
Rock	26-12-25.10	2328	0.2	$0.51	$237.46
Rock	26-12-35.4	81	0	$0.51	$0.00
Rock	26-12-35.4	296	0.2	$0.51	$30.19
Rock	26-12-35.4	592	0.2	$0.51	$60.38
Rock	26-12-35.0	646	0.1	$0.51	$32.95
Rock	Spur 5	162	0.05	$0.51	$4.13
Rock	26-12-26.4	478	0.1	$0.51	$24.38
Rock	26-12-26.4	794	0.1	$0.51	$40.49
Rock	26-12-35.0	1440	0.3	$0.51	$220.32
Rock	Spur 4	242	0.05	$0.51	$6.17
Rock	26-12-26.3	108	0.1	$0.51	$5.51
Rock	26-12-26.3	458	0.1	$0.51	$23.36
Rock	Spur 3	377	0.05	$0.51	$9.61
Rock	Spur 2	316	0	$0.51	$0.00
Rock	Spur 2	693	0.1	$0.51	$35.34
Dirt	Spur 1	478	0.1	$0.00	$0.00
Rock	26-12-26.2	633	0.2	$0.51	$64.57
			2.3		$943.83

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

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

4. OPERATOR MAINTENANCE WILL BE REQUIRED ON APPROX. 2.5 MILES OF ROAD. (SEE EXHIBIT D

SALE VOLUME: 7457 MBF.

SUMMARY OF ROAD USE & ROAD MAINTENAN	ROAD USE FEES: TOTAL:	ROAD USE FEES: $ /MBF	ROCKWEAR FEES TOTAL:	ROCKWEAR FEES $/MBF	MAINTENANCE FEES TOTAL:	MAINTENANCE FEES $/MBF:
1. COMPANY-OWNED ROADS:	$0.00	$0.00	$0.00	$0.00		$0.00
2. BLM-MAINTAINED ROADS:			$5,169.29	$0.69	$17,917.15	$2.40
3. OPERATOR-MAINTAINED ROADS:			$943.83	$0.13		$0.00
	$0.00	$0.00	$6,113.12	$0.82	$17,917.15	$2.40

MAINTENANCE OBLIGATION PAYABLE TO BLM $24,030.27 $3.22

Exhibit F
Sheet 1 of 1

SPECIAL PROVISIONS TO CONTROL THE SPREAD OF NOXIOUS WEEDS

Vehicle and Equipment Cleaning

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

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

Legal Description

Forest Type	Township	Range	Section	Subdivision
CBWR	26S	12W	25	W 1/2 NW 1/4, W 1/2 SW 1/4
CBWR	26S	12W	26	NE 1/4, E 1/2 NW 1/4, NE 1/4 SW 1/4, SE 1/4

Cutting Volume (16' MBF)

Unit	DF	WH	WRC	RA					Total	Regen	Partial	ROW
1	5,010	1,805	180	85					7,080	0	263	0
R/W	322	52	2	1					377	0	0	8
Totals	**5,332**	**1,857**	**182**	**86**					**7,457**	**0**	**263**	**8**

Logging Costs per 16' MBF

Stump to Truck	$	104.77
Transportation	$	36.49
Road Construction	$	30.49
Road Amortization	$	0.00
Road Maintenance	$	4.96

Other Allowances :

Landing pullback	$ 0.28
Slash Disposal	$ 0.66
Vehicle Washing	$ 0.21
Total Other Allowances :	**$ 1.16**

Total Logging Costs per 16' MBF $ **177.86**

Utilization Centers

Center #1 : Coos Bay	14 Miles
Center #2	0 Miles
Weighted distance to Utilization Centers	14

Length of Contract

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

Profit & Risk

Total Profit & Risk		11 %
Basic Profit & Risk	11 % + Additional Risk	0 %
Back Off		0 %

Tract Features

Avg Log	Douglas-fir : 95 bf	All : 83 bf
Recovery	Douglas-fir : 95 %	All : 93 %
Salvage	Douglas-fir : 0 %	All : 0 %

Avg Volume (16' MBF per Acre)	28
Avg Yarding Slope	35 %
Avg Yarding Distance (feet)	317
Avg Age	55
Volume Cable	95 %
Volume Ground	5 %
Volume Aerial	0 %
Road Construction Stations	42.20
Road Improvement Stations	29.90
Road Renovation Stations	45.18
Road Decomission Stations	76.10

Cruise

Cruised By	Davis, Kirkland, Morgan
Date	04/01/2011
Type of Cruise	VP, 3P, BLM 100
County, State	Coos, OR

Net Volume

Green (16' MBF)	7,457
Salvage (16' MBF)	0
Douglas-fir Peeler	0
Export Volume	0
Scaling Allowance ($0.50 per 16' MBF)	$3,728.50

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Stumpage Summary

Stumpage Computation (16' MBF)

Species	Trees	Net Volume	Pond Value	(-) Profit & Risk	(-) Logging Cost	(+) Marginal Log Value	(-) Back Off	Appraised Price	Appraised Value
DF	9,595	5,332	$ 423.80	$ 46.62	$ 177.86			$ 199.30	$ 1,062,667.60
WH	5,884	1,857	$ 363.90	$ 40.03	$ 177.86			$ 146.00	$ 271,122.00
WRC	3,276	182	$ 539.31	$ 59.32	$ 177.86			$ 302.10	$ 54,982.20
RA	247	86	$ 409.04	$ 44.99	$ 177.86			$ 186.20	$ 16,013.20
Totals	**19,002**	**7,457**							**$ 1,404,785.00**

Log Code by Percent

Species	Code #1	Code #2	Code #3	Code #4	Code #5	Code #6
Douglas-fir				76.0	22.0	2.0
Western red-cedar			67.0	33.0		
Western Hemlock				57.0	37.0	6.0
Red Alder		66.0	28.0	6.0		

Marginal Log Volume

Species	Grade #7	Grade #8
Douglas-fir		
Western red-cedar		
Western Hemlock		
Red Alder		

Appraised By : Davis, Brian **Date :** 08/29/2012

Area Approval By : Kirkland, Travis **Date :** 08/29/2012

District Approval By : **Date :**

Prospectus

Appraisal Method : (16' MBF)

Species	Trees	Net Volume 16' MBF	Net Volume 32' MBF	Net Volume CCF
Douglas-fir	9,595	5,332	4,442	8,706
Western Hemlock	5,884	1,857	1,636	3,226
Western red-cedar	3,276	182	151	371
Red Alder	247	86	65	149
Total	**19,002**	**7,457**	**6,294**	**12,452**

All Species

Gross Volume	Number Trees	Avg bf Volume Per Tree	DBH	Gross Merch Volume	Merch Logs	Avg bf Gross Merch Log
7,995	19,002	420	16.9	7,875	95,389	83

Merch Logs	Cull Logs	Total Logs	Logs per Tree	Net Volume	Gross Volume	Recovery
95,389	2,765	98,154	5.2	7,457	7,995	93 %

Douglas-fir

Gross Volume	Number Trees	Avg bf Volume Per Tree	DBH	Gross Merch Volume	Merch Logs	Avg bf Gross Merch Log
5,636	9,595	587	19.6	5,567	58,697	95

Merch Logs	Cull Logs	Total Logs	Logs per Tree	Net Volume	Gross Volume	Recovery
58,697	1,826	60,523	6.3	5,332	5,636	95 %

Cutting Areas

Unit	Regen Acres	Partial Cut Acres	Right Of Way Acres	Total Acres
1		263		263
R/W			8	8
Totals :		**263**	**8**	**271**