COOS BAY SALE NO. ORC00-TS-2018.0031
Llewellyn CT

COOS BAY DISTRICT OFFICE
MYRTLEWOOD RESOURCE AREA

SALE DATE: March 23, 2018
SALE TIME: 10:00 a.m.

LOCKED GATES-KEY REQUIRED

SALE NO.: ORC00-TS-2018.0031, Llewellyn CT **SET-ASIDE SALE**

COOS COUNTY: OREGON: O&C: ORAL AUCTION: Bid deposit required: $23,300.00
All timber designated for cutting on: T. 28 S., R. 12 W., Sec. 35, SE ¼ NW ¼, N1/2 SW ¼, SE ¼ SW ¼, W1/2 SE ¼, 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
13,001	1,240	Douglas-fir	1,456	$139.90	$203,694.40
5,464	284	Red alder	369	$47.90	$17,675.10
851	102	grand fir	128	$79.00	$10,112.00
118	9	western hemlock	11	$48.30	$531.30
88	4	Port-Orford cedar	5	$54.80	$274.00
19,522	**1,639**	**Total**	**1,969**		**$232,286.80**

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 2INCREMENT 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 11.4 inches: the average gross merchantable log contains 36 bd. ft.; the total gross volume is approximately 2,220 thousand bd. ft.; and 89 % recovery is expected. The average DBHOB for Douglas-fir is 11.4 inches; and the average gross merchantable log contains 35 bd. ft.; and 92% recovery is expected. None of

the total sale volume is salvage material. The following cruise method was used for volume determination:

VARIABLE PLOT: Timber volumes in all harvest units were based on a variable plot cruise. Using a 20 basal area factor (BAF), 254 plots were measured and 199 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 sale volume.

3P CRUISE: The timber volumes within the road right-of-way were based on 3P cruise data using form class tables for estimating board foot volume of trees in 16-foot logs and 37 trees were randomly selected to be sampled.

CUTTING AREA: Four units totaling approximately 138 acres must be partial cut. Four acres of right-of-way must be cut. Acres shown on Exhibit A have been computed using a Trimble Geo 7X Global Positioning System receiver. Acreage was calculated based on Global Positioning System traverse procedures including differential correction.

ACCESS: Access to the sale area is provided via: Oregon State highways, Coos County roads, privately controlled roads, and Government controlled roads. A 2A192 BLM key is needed for the locked gates.

DIRECTIONS TO SALE AREA: (North end) From Coquille, OR, travel east on Hwy 42 about 4 miles. Turn left onto Lee Valley Road. Proceed approximately 2.25 miles and turn right onto Schuck Mtn Rd (28-12-22.0). Proceed 1.17 miles, turn right onto the 28-12-27.0 road, go 0.6 miles turn left onto the 28-12-27.3 road proceed about 1 mile to unit.
(South end) From Myrtle Point, OR, travel west on Hwy 42 about 1.25 miles. Turn right onto North Fork Lane, proceed about 0.75 miles. Turn left on Llewellyn Creek Road. Proceed about 2 miles to unit.

ROAD USE & MAINTENANCE: Refer to Exhibit E Summary attached. Operator maintenance required on 4.76 miles of road.

Rockwear and Maintenance Fees Payable to BLM:	$3,055.69
Road Use Fees Payable to Private Company:	$9,168.41

ROAD CONSTRUCTION:

Road Construction estimates include the following:

New Construction:

44.65 stations

Road Renovation:

396.52 stations

Aggregate:

Surface Rock, 1 ½" minus hardrock : 1,243 C.Y. (Truck Measure)
Maintenance Rock, 1 ½" minus hardrock: 400 C.Y. (Truck Measure)
Bedding Rock, 1 ½" minus hardrock: 80 C.Y. (Truck Measure)
Riprap: 140 C.Y. (Truck Measure)

Drainage:

24" Corrugated Polyethylene Pipe: 280 Lineal Feet

Soil Stabilization:

Dry Seed, fertilizer, & mulch: 11.0 acres (Pre Haul)
Dry Seed, fertilizer, & mulch: 6.5 acres (Post Haul)

Roadside Brushing:

16.2 acres

Road Watering:

Road #: 29-12-4.0 from milepost 0.0 to 0.73

Road Decommissioning:

Earthen Barriers: 5
Normal Decommissioning: 131+75 stations 2.49 miles

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

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

1. All units are behind locked gates. Contact the BLM front office to access a gate key with $50.00 refundable deposit. BLM office is located at 1300 Airport Lane, North Bend, OR 97459. (541) 756-

0100.

2. License agreements are required with Pacific West Timber Company (Oregon) LLC, a performance bond in the amount of $10,000 and comprehensive liability insurance will be required for this license agreement. A license agreement is required with Lone Rock Timberland Company, a performance bond in the amount of $10,000 and comprehensive liability insurance will be required for this license agreement.
3. All equipment must be washed prior to entering and exiting the contract area to control the spread of noxious weeds and Port-Orford-cedar root disease.
4. All roads are summer haul only (June 1 through October 15).
5. No trees shall be felled into the Reserve Area, shown on the Exhibit A. Line pulling, jacking, or other mechanical devices shall be used as necessary.
6. Damage shall affect less than 5% of reserve trees.
7. Lift trees and intermediate support trees may be necessary.
8. One-end suspension required in cable and ground-based yarding areas.
9. Full suspension required over any stream channels. Trees cut for yarding corridors within the Reserve Area adjacent to Stream Channels shall be felled toward the channel and left on site.
10. Yarding corridors and skid trails shall be placed to avoid cutting reserve trees greater than or equal to 24" DBH within 220' of a Stream Channel. If a reserve tree greater than or equal to 24" DBH is cut for a yarding corridor or skid trail within 220' of a Stream Channel, the tree shall be left on site and will counted towards the required post-harvest down wood creation requirements.
11. A forwarder, log loader, tractor, or rubber tire skidder may be used to yard logs within the ground-based yarding areas. Ground-based equipment shall not operate within fifty feet of any Stream Channel and are restricted to areas with slopes less than 35%.
12. Log lengths shall not exceed 41 feet.
13. **No permissions or agreements are in place for tailholds on private property.**
14. Special Yarding Areas in Units 1 and 2.
15. Purchaser shall verify all landing locations and stake required clearing limits prior to construction.
16. Shape and restore all landings to a natural contour to prevent erosion.
17. Seed and fertilize all landings, road cuts and fills, and waste areas.
18. Soil stabilization, water bar construction, road decommissioning, and road barrier construction shall be conducted after the completion of harvest activities but no later than October 15th.
19. BLM will assume supervisory responsibility for disposal of logging slash.
20. Machine and/or hand piling of logging slash are required at all landing areas.
21. Personnel supplied by the Purchaser for landing pile burning shall include four (4) people qualified at a minimum, as Type-II Firefighters (FFT2). See National Wildfire Coordinating Group (NWCG) Wildland Fire Qualifications System guide, PMS 310-1.
22. After yarding is complete the purchaser shall girdle 70 conifer trees Unit 1, girdle 67 conifer trees in Unit 2, and girdle 1 conifer tree in Unit 3.
23. The Purchaser shall provide signage and flaggers to control traffic when conducting operations adjacent to any road.
24. **All vehicles must maintain a 5 MPH speed limit on Llewellyn Creek Road (29-12-4.0) from milepost 0.00 to 0.73.**

25. Road watering required on the Llewellyn Creek Road (29-12-4.0) from milepost 0.00 to 0.73.
26. This contract contains provisions (Sec. 42.b(11) and Sec. 42.b(12)) for the sale and removal of additional timber necessary to facilitate safe and efficient Purchaser operations. These provisions include:

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

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

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

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

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

    f. It is estimated that approximately ten percent of the sale volume (estimated at 196 MBF) of such additional timber may be removed under the contract. This volume is not included in the advertised sale volume nor was it included in the timber sale appraisal. This estimate is a net figure reduced by the estimate of the volume of trees previously marked for cutting, which the Authorized Officer may elect to reserve.

Seasonal Restriction Matrix ORC00-TS-2018.0031 Llewellyn CT Timber Sale Prospectus

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

Sale Area	Activity	Jan		Feb		Mar		Apr		May		June		July		Aug		Sept		Oct		Nov		Dec	
		1	15	1	15	1	15	1	15	1	15	1	15	1	15	1	15	1	15	1	15	1	15	1	15
General All Units	Falling and bucking[2]																								
	Cable yarding[2]																								
	Road Construction, Renovation, or Improvement Work[1]																								
	Hauling[1]																								
	Ground based yarding[3]											25 %													

[1] Wet season restrictions may be shortened or extended depending on weather conditions.
[2] Bark slip seasonal restrictions may be conditionally waived upon written request and Authorized Officer approval. Strict compliance with damage provision required for continued operations.
[3] Ground based yarding restricted to periods when soil moisture levels are below 25% as determined by the Authorized Officer.

SCHEDULE I

Sec 41. TIMBER RESERVED FROM CUTTING. The following timber in the Contract Area, shown on Exhibit A, which is attached hereto and made a part hereof, is hereby reserved from cutting and removal under the terms of this contract and is retained as the property of the Government:

a. All timber in the Reserve Area, shown on Exhibit A, and all blazed, orange painted and/or posted trees which are on or mark the boundaries of the Reserve Area.

b. All timber marked, by the Government, with orange paint above and below stump height within the Partial Cut Units, shown on the Exhibit A.

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

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

e. All Bearing Trees with metal tags that mark property corners.

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

a. Periodic Payment and First Installment Adjustment

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

(2) Notwithstanding the provisions of Sec. 3(b), adjustments in the due dates for periodic payments may be made by the Government if the Contracting Officer interrupts or delays

contract operations for a period expected to last at least 30 days, and the interruption or delay is beyond the Purchaser's control. Any adjustment made shall provide the Purchaser with an equal amount of operating time as would have been available without the delay. The Purchaser shall request such adjustment in writing before the due date for a periodic payment contained in Sec. 3(b).

b. Logging

(1) 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 in the contract area for the first time, or after a shutdown of ten or more days, the Purchaser shall notify the Authorized Officer in writing of the date they plan to begin operations. The Purchaser shall also notify the Authorized Officer in writing if they intend to cease operations for any period of ten or more days.

(3) Due to bark slippage, falling or yarding may be restricted by the Authorized Officer within the contract area between March 1 and June 30 of each calendar year, both days inclusive.

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

(5) Damage to residual trees shall affect less than 5% of reserve trees. Bark removed to cambium three (3) inches wide or wider, top broken at three (3) inches diameter or greater, root sprung trees, or any root collar damage shall constitute damage. Damage levels will be upon government sample of an affected area. Failure to resolve excess damage to reserve trees may result in suspension of operations and recovery of the value of the damaged timber in accordance with Sec. 13.

(6) Trees shall be felled, limbed, topped into lengths not to exceed 41 feet prior to yarding within the Partial Cut Units as shown on Exhibit A. Hardwood trees shall be whole-tree yarded wherever possible

(7) All trees (3) inches DBHOB or larger and/or twenty five (25) feet or taller designated for cutting shall be felled concurrently with all other trees designated for cutting in the Special Yarding Areas, shown on the Exhibit A.

(8) In the Special Yarding Area, all non-alder hardwood slash generated from harvest operations to a minimum size of five (5) inches in diameter and eight (8) feet in length shall be gross yarded to the landing and piled in accordance with the requirements in Sec.42.e.(2). If a

piece of slash meeting the minimum size requirements is bucked, all pieces shall be yarded to the landing.

(9) In the Partial Cut Units, yarding (except for road rights-of-way and ground-based areas, shown on Exhibit A) shall be done with a skyline cable system according to the following:

(a) The skyline cable system shall be capable of being rigged in a multi-span configuration utilizing a carriage capable of yarding 75 feet laterally from the skyline. Skyline roads shall not be spaced closer than 150 feet apart, unless approved by the Authorized Officer.

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

(c) If the placement of a yarding corridor requires the cutting of a tree within the Reserve Area adjacent to a Stream Channel, the tree shall remain on-site and felled toward the direction of the channel in a manner to protect the stream bank from disturbance during yarding. Yarding corridors shall cross stream channels perpendicular where possible to minimize cutting of trees within the Reserve Area. Yarding corridor location within the Reserve Area shall be approved by the Authorized Officer prior to cutting.

(d) Yarding corridors shall be placed to avoid cutting reserve trees greater than or equal to 24” in diameter within 220 feet of a Stream Channel where possible. If a reserve tree greater than or equal to 24 inches in diameter is required to be cut for a yarding corridor within 220 feet of a Stream Channel, the tree shall be felled and left on site and counted toward the post-harvest tree felling requirements in Sec 42.b(12).

(e) Where road locations allow, yarding will be done so that corridors run parallel to each other rather than radiate from a central landing.

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

(a) In addition to the requirements set forth in Sec. 26 of this contract, ground based operations shall be restricted to the dry season which is typically June through October.

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

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

(d) The yarding machine must be approved by the Authorized Officer. It must be equipped with a grapple or an extendable and retractable arch and fairlead that is an integral part of the machine that is capable of lifting the leading end of the turn clear of the ground. All logs in the Ground-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.

(e) Primary skid trails shall use existing trails wherever possible, be spaced at generally 95 feet apart, and be no wider than 12 feet as measured between reserve trees.

(f) Primary skid trails shall be placed to avoid cutting reserve trees greater than or equal to 24" in diameter within 220 feet of a Stream Channel where possible. If a reserve tree greater than or equal to 24 inches in diameter is required to be cut for a skid trail within 220 feet of a Stream Channel, the tree shall be felled and left onsite.

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

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

(i) Primary skid trails with a slope greater than 15% and/or are left with more than 100 feet of continuous bare ground shall have water bars installed and/or be covered with slash for erosion control prior to October 31.

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

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

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

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

Officer in accordance with Bureau of Land Management prescribed procedures. No timber may be cut or removed under terms of this provision unless sufficient installment payments have been made in accordance with Sec. 3.(b) of the contract or sufficient bonding has been provided in accordance with Sec. 3.(d) of the contract.

(c) The Purchaser agrees that sale of this additional timber shall be accomplished by a unilateral modification of the contract executed by the Contracting Officer and that such timber shall be sold at the unit prices shown in Exhibit B of this contract unless: the value of the timber must be reappraised subject to the terms for contract extension set forth in Sec. 9 of the contract; or, the Authorized Officer determines that 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 Contracting Officer shall issue a written notice to the Purchaser that the sale of additional timber under this special provision is no longer approved. In this case, the Purchaser shall inform the Authorized Officer at least two 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 Exhibit B of the contract or in accordance with Sec. 8 or 9 of the contract as determined by the Authorized Officer in accordance with this provision. The Contracting Officer may issue a written order to the Purchaser to suspend, delay, or interrupt any or all contract work for the period of time deemed necessary and

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

(13) In accordance with the requirements of Sec. 8 of the contract it has been determined that it is in the best interest of the Government and within the provisions of 43 CFR 5402.0-6 to sell additional timber located in the contract area which, is obstructing needed cable yarding roads,

hazardous to workers, needed for guyline, tailhold, and/or tieback trees to meet all applicable State safety laws, codes or regulations. This timber must be cut or removed so that the Purchaser can continue active falling and yarding operations. The Purchaser is, therefore, authorized to cut and remove such additional timber in accordance with the provisions of Sec. 8 of the contract: provided, however, that:

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

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

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

(d) the Purchaser conforms to all requirements of 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 reappraised unit prices arrived at in accordance with Sec. 9 of this contract, and (2) timber outside of unit boundaries shall be sold at fair market value;

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

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

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

10. cuts more than the minimum number of trees necessary to properly serve as tie-backs for topped tailhold trees.

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

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

If the permission to cut and remove additional timber provision is withdrawn, the Contracting Officer shall issue a written notice to the Purchaser that the sale of additional timber under this special provision is no longer approved. In this case, the Purchaser shall inform the Authorized Officer at least two 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 Exhibit B of the contract or in accordance with Sec. 8 or 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.

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

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

(14) Prior to attaching any logging equipment to any tree within the Reserve Area, or any reserve tree larger than 24 inches in diameter at breast height, the Purchaser shall obtain written approval from the Authorized Officer, and shall take precautions to protect the trees from damage, as directed in writing by the Authorized Officer.

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

(16) After completion of yarding activities, the Purchaser shall girdle 138 conifer trees, as shown on the Exhibit A and as directed by the Authorized Officer, according to the following:

(a) Unit 1: girdle 70 conifer trees

(b) Unit 2: girdle 67 conifer trees

(c) Unit3: girdle 1 conifer tree

The Purchaser shall girdle at DBH. Girdling will consist of removing a four inch band of bark (all sapwood shall remain intact) completely around the bole of the tree. Girdling will not be permitted on trees less than 100 feet from roads. Girdled trees shall have a number painted at breast height with fluorescent paint such that they are visible from at least 150 feet. Number and location of treated trees shall be depicted on a map by the Purchaser such that they may be easily verified. Existing snags or windfalls and reserve trees meeting the desired characteristics including recent broken tops or logging damage may be counted towards the requirements as directed by the Authorized Officer.

c. Road Construction

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

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

(3) In addition to the requirements set forth in Sec. 26 of this contract, the Purchaser shall complete erosion control and soil stabilization measures on all cuts, fills, waste areas, and scarified areas, as designated by the Authorized Officer, along all sections of roadway disturbed during the year typically prior to October 15th of each year. The Authorized Officer may set time limits for the beginning and completion of erosion control and soil stabilization measures and modify seasonal dates to conform to existing weather conditions and changes in the construction schedule. Such work shall be accomplished in accordance with Erosion Control and Soil Stabilization, 1700 and 1800 Series, contained in Exhibit C, which is attached hereto and made a part hereof.

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

d. Road Use and Maintenance

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

(2) Tracked type equipment shall not be allowed to cross over concrete bridge decks, other

concrete surfaced structures or asphalt surfaced roads without the proper protection of that surface. Prior approval shall be obtained from the Authorized Officer when crossing with protective devices. Details of such equipment shall be furnished to the Authorized Officer for evaluation of load characteristics, at least 15 days prior to proposed move in. Details shall include:

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

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

(3) The Purchaser is authorized to use the roads shown on Exhibit E, attached hereto and made a part hereof, for the removal of Government timber sold under the terms of this contract and for haul of mineral material required under the terms of this contract; provided, that the Purchaser shall pay the rockwear fees totaling $3,055.69, shown on Exhibit E. Unless the total maintenance and rockwear fees due BLM are paid prior to commencement of operations on the contract area, payments shall be made in installments payable in the same manner as and together with payments required by Sec. 3 of this contract.

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

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

(6) With the prior written approval of the Authorized Officer, the Purchaser may arrange for cooperative maintenance with other users of any BLM controlled road included in 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.

(7) The Authorized Officer may at any time, by written notice, terminate the Purchaser's operator road maintenance obligations and require instead payment of current Bureau of Land Management road maintenance fees for the particular surface type of the road(s) involved. These fees will be applied to the remaining contract volume on the sale area, as determined by the Authorized Officer, to be transported over the roads listed in Sec. 42.c.(1) and 42.d.(3). If the total road maintenance fee does not exceed $500.00, the Purchaser shall pay such amount in full prior to use of such roads. If the total road maintenance fee exceeds $500.00, the Authorized Officer shall establish an installment schedule of payments of the maintenance obligation.

(8) Hauling on all roads shall be permitted between June 1 and October 15 unless dry conditions extend the hauling season, as directed by the Authorized Officer.

(9) In the use of required company roads shown on the Exhibit E, the Purchaser shall comply with the conditions of Right-of-Way and Road Use Agreements between the United States and Pacific West Timber Company (Oregon) LLC RWA C-344 and Lone Rock Timberland Company RWA C-395. The purchaser shall pay a Road Use Fee of $9,168.41 to Pacific West Timber Company (Oregon) pursuant to RWA-C-344. The Agreements are available for inspection at the Bureau of Land Management, Coos Bay, Oregon.

Prior to commencement of operations, the Purchaser shall furnish to the Authorized Officer a copy of the executed License Agreements issued under the terms of the Right-of-Way Agreements. Default by the Purchaser of said Right-of-Way and Road Use Agreements, of any License Agreements executed pursuant thereto, for failure to pay appropriate road use fees or road maintenance fees shall be considered a violation of this contract. The amount of unpaid fees shall be considered as the amount of damage suffered by the Government as a result of the violation of this provision. Road maintenance fees may change during the course of the contract as determined by the Licensor. It is the responsibility of the Purchaser to pay fees current at time of haul.

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

e. Fire Prevention, Hazard Reduction and Logging Residue Reduction

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

(1) At least three (3) days prior to the operation of power-driven equipment during any operations under this contract during the closed fire season or periods of fire danger, prepare a fire prevention and control plan to the satisfaction of the Authorized Officer.

(2) Provide and maintain in the contract area in good working order, and immediately

available, the following equipment for use during the closed fire season or periods of fire danger:

(a) Firefighting tools shall be kept at each landing or at such other place as the Authorized Officer shall designate whenever employees are working on the contract area. All firefighting tools shall be kept in a sturdily constructed box which shall be painted red and lettered on the front or top in large letters, "For Fire Only." The box shall have a hinged lid and a hasp by which the lid can be sealed. One box may serve two (2) landings not over six hundred (600) feet apart. When filled, the box shall not weigh over two hundred (200) pounds. The fire tools shall be in good condition, be tight on strong handles, and have sharp cutting edges. There shall be not less than four (4) tools in each box nor less than one (1) tool for each employee working on the contract area. Three-fourths (3/4) of all fire tools shall be shovels, hazel hoes, or other scraping tools. The fire tools shall be used only for fighting fire. Operations with four or less workers are not required to provide a fire tool box as long as each worker is equipped with a shovel suitable for fire suppression.

(b) At each landing during periods of operation one (1) tank truck of three thousand (3,000) gallons or more capacity with enough one and a half inch (1 ½") hose to reach from the water supply to any location in the operation area affected by power driven machinery, or 1000 feet, whichever is greater. Two (2) nozzles and one (1) gated wye are required to support this hoselay. Two (2) fifteen hundred (1,500) gallon tank trucks or portable tanks may be substituted for each required three thousand (3,000) gallon tank truck, provided that the total capability to pump and deliver water remains unchanged. Each tank truck shall be equipped with a pump capable of delivering a minimum of twenty (20) gallons per minute (gpm) water flow at one hundred ten (110) pounds per square inch (psi) engine pressure through fifty (50) feet of one and one half (1 ½") inch fire hose. The pump may be either power take off driven or truck-mounted auxiliary engine driven, or portable. All equipment shall be acceptable to and approved by the Authorized Officer and shall conform to the standards set forth in Oregon Revised Statutes 477.645 through 477.670. All hose couplings shall have the standard thread adopted by the BLM (1 ½" inches National Hose Thread (NH), 1" inch National Pipe Straight Hose Thread (NPSH) or be provided with suitable adapters use. All tank trucks shall be filled with water and made available for immediate use.

(3) Logging Residue Reduction. In addition to the requirements of Section 15 of this contract and for hazardous fuel reduction, watershed protection, and silvicultural purposes, the Purchaser shall be responsible for logging residue reduction at all landing sites in the sale area as shown on the Exhibit A.

(a) In lieu of burning, the Purchaser may remove landing residue for off-site utilization. If the utilization method is selected, the Purchaser shall provide information on the total tonnage of landing residue being removed from the sale area.

(b) Prior to commencement of landing 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 landing residue removal, the Purchaser

shall notify the Authorized Officer to arrange for a final inspection of the landing sites.

(c) Specifications for Landing Piling

1. Unless otherwise approved in advance by the Authorized Officer, landing piling shall be completed at each yarding location (setting) concurrently with the conclusion of yarding operations while logging equipment is still on site.

2. Logging residue within the immediate vicinity of the landing, and any residue that overhangs the landing sites that can be reached by logging equipment, shall be pulled completely back up onto the landing surface and either piled for burning or segregated for other uses.

3. Logging residue at landings shall be accumulated into the fewest number of piles possible. Landing piles shall be constructed as upright as possible and have a solid base to prevent toppling. All piles with pointed, jagged tops shall be flattened or trimmed to ensure a smooth surface for the polyethylene covering. Unless directed by the Authorized Officer, no landing piles shall be constructed within fifteen (15) feet of any reserve tree.

(d) Specifications for Landing Covering

1. All piles shall be covered no later than September 30 of the same year of piling.

2. The purchaser shall place four (4) MIL, black polyethylene sheeting (PE) over the pile to provide maximum protection from fall/winter rains. Unless otherwise directed, the size of the plastic shall not exceed one-hundred (100) square feet (10’ X 10’).

3. To meet ignition and combustion needs, larger piles may require additional PE sheeting. The Purchaser shall contact the Authorized Officer before any pile covering begins. At that time, the Authorized Officer will identify all piles that are approved for covering in excess of the one-hundred (100) square foot maximum size.

4. Piles with material extending more than two (2) feet beyond the general contour of the pile shall be flattened or trimmed to create a uniform surface and to prevent the PE sheeting from tearing during wind events. Pile trimming or flattening shall be done prior to pile covering.

5. To ensure the center of the pile remains dry, all PE sheeting shall be weighted down with slash or logging debris in order to prevent sheeting from tearing, and blowing or sliding off of the pile. An adequate amount of anchoring material should be used, but no more than twenty (20) percent of the material to be piled may be placed on top of the sheeting. Sheeting shall be tied down with twine on all four corners.

6. At landing sites with excessive logging residue below the landing that is out of reach of the equipment on site, the Purchaser shall place additional PE sheeting over the residue concentrations as directed by the Authorized Officer.

7. Piles of residue identified by the Authorized Officer for other uses shall not be covered with PE sheeting.

(e) Specifications for Landing and Pile Burning In accordance with verbal or written instructions to be issued by the Authorized Officer at least ten (10) days in advance of the earliest date of required performance, the Purchaser shall, under supervision of the Authorized Officer or his/her designated representative, assist in burning and fire control, at his/her own expense, by providing the services of personnel and equipment as follows:

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

2. For each entry, the Purchaser may provide more personnel, equipment and materials than indicated, but no less than the minimum requirements listed below. Minimum personnel, equipment and materials requirements are:

a. Landing Pile Burning
   1. One (1) English-speaking crew supervisor (FFT2)
   2. Three (3) person burn crew (FFT2)
   3. Three (3) drip torches and sufficient fuel to complete all pile burning

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

3. The Purchaser shall remove and dispose of all PE sheeting exceeding the one-hundred (100) square foot maximum size. The sheeting shall not be removed until directed by the Authorized Officer. The Purchaser shall dispose of removed PE sheeting in accordance with applicable Federal, State and municipal laws. Removed PE sheeting shall not be disposed of in burn piles.

4. A minimum of eighty (80) percent consumption of landing piles, is required.

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

Based on the time of year and sequence in which harvest and treatment of the units is completed, burning may be required over multiple seasons. Time is of the essence in complying with burning provisions. In the event the Purchaser fails to provide the personnel, equipment and materials required herein, the Purchaser shall be responsible for all additional costs incurred by the Government in completing the logging residue reduction. Additional costs may include, but are not limited to, wages and associated expenses of providing federal employees or others as a substitute labor force, the cost of providing substitute equipment, and appropriate additional overhead expenses. If the Purchaser's failure results in deferral of burning, and new conditions necessitate additional site preparation work and/or the use of additional personnel and equipment to accomplish the planned burn, the Purchaser also shall be responsible for such additional costs.

f. Log Export and Substitution

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

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

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

(a) date of last export sale;
(b) volume of timber contained in last export sale;
(c) volume of timber exported in the past 12 months from the date of last export sale;
(d) volume of Federal timber purchased in the past 12months 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.

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

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

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

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

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

(8) In the event of the Purchaser's noncompliance with this subsection of the contract, the Authorized Officer may take appropriate action as set forth in 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 $1,476.75. In the event only a portion of the contract timber is scaled, the purchase price shall be reduced by that portion of $1,476.75 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. 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.

i. Sensitive, Threatened, or Endangered Plants or Animals

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

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

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

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

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

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

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

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

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

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

(i) RMP, the Contracting Officer determines it may be necessary to modify or terminate the contract.

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

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

In the event of a suspension period or a combination of suspension periods that exceed a total of 30 days, the First Installment held on deposit may be temporarily reduced upon the written

request of the Purchaser. For the period of suspension extending beyond 30 days, the First Installment on deposit may be reduced to five (5) 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 15 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 30 days, the unamortized Out-of-Pocket Expenses for road or other construction required pursuant to Exhibit C of the contract shall be refunded or transferred to another BLM contract at the request of the Purchaser. Upon written notice from the Contracting Officer lifting the suspension, the Purchaser shall reimburse the Government the amounts refunded or transferred. The Purchaser may choose to pay this reimbursement at once or in installments payable at the same time as payments are due for the timber under the contract and in amounts approximately equal to the expenses associated with the timber for which payment is due.

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

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

In the event cutting and removal rights are terminated under this subsection the Purchaser agrees that the liability of the United States shall be limited to the actual costs incurred by the Purchaser

which have not been amortized by timber removed from the contract area. This calculation of liability shall utilize actual Purchaser costs and Government estimates of timber volumes. At the Authorized Officer's request, the Purchaser agrees to provide documentation of the actual costs incurred in the performance of the contract. In addition, the Purchaser shall be released from the obligation to pay the contract price for any timber which is not authorized to be removed from the contract area.

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

j. Safety

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

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

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

Plan, Purchaser shall note traffic control device locations on a Purchaser produced copy of the contract Exhibit "A" Map.

Llewellyn Creek Road (29-12-4.0) is a single lane privately owned haul road that has multiple residences that use the road. Log trucks and all other vehicles must maintain a 5 MPH speed limit from milepost 0.00 to 0.73.

k. Small Business Administration (SBA) Set Aside

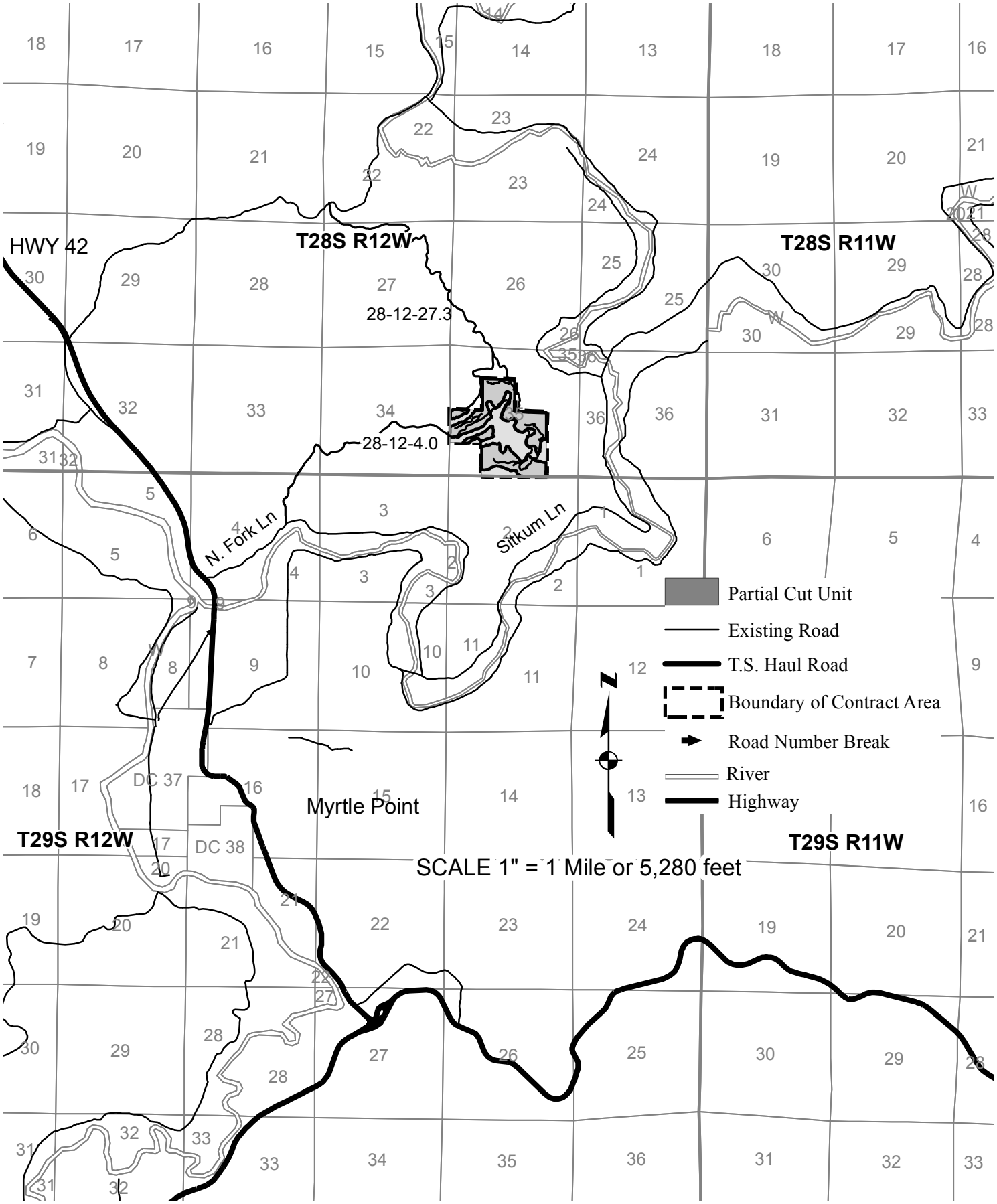
The purchaser agrees not to sell and/or exchange more than 30 percent of the timber or log volume from this preferential sale to concerns that do not meet the Small Business Administration small business size standard (13 CFR 121).

The purchaser understands that in addition to other penalties which may be imposed for violating the foregoing, the purchaser may be declared ineligible to participate in future Federal timber sales that are set-aside for preferential bidding by small business qualified concerns for two semi-annual triggered periods succeeding the violation.

The purchaser shall provide a current, interim Log Scale and Disposition of Timber Removed Report (Form 5460-15) upon request by the Authorized Officer at any time during the contract period for cutting and removal specified in Section 4 of this contract as amended.

TIMBER SALE CONTRACT MAP
USDI-BLM COOS BAY DISTRICT
T. 28 S., R. 12 W., Sec. 35

ORC00-TS-2018.0031
EXHIBIT A1
Page 1 of 1
Llewellyn CT



TIMBER SALE CONTRACT MAP
USDI-BLM COOS BAY DISTRICT
T. 28 S., R. 12 W., Sec. 35

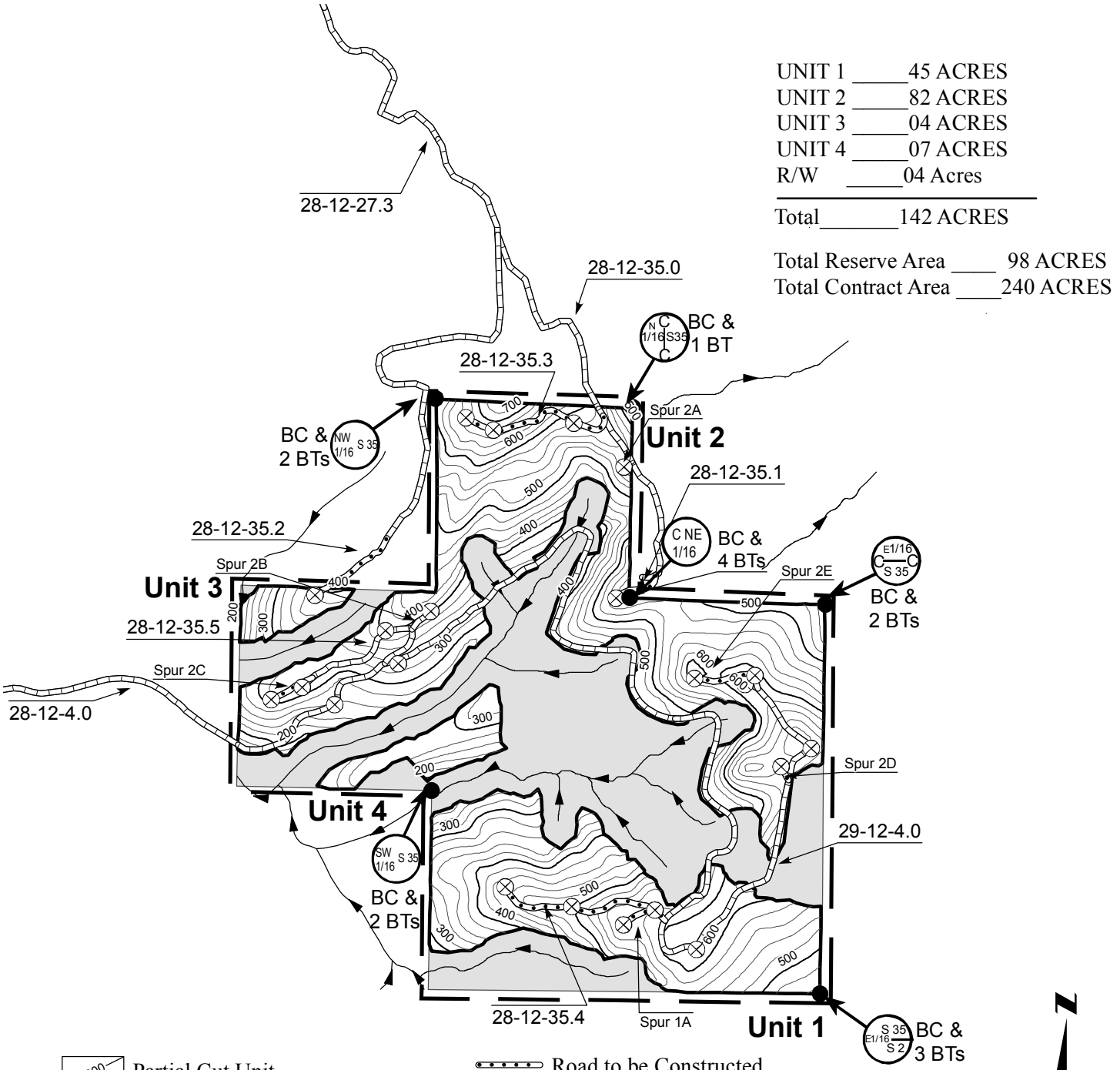
ORC00-TS-2018.0031
EXHIBIT A

Llewellyn CT

UNIT 1 _____45 ACRES
UNIT 2 _____82 ACRES
UNIT 3 _____04 ACRES
UNIT 4 _____07 ACRES
R/W _____04 Acres

Total_____142 ACRES

Total Reserve Area ____ 98 ACRES
Total Contract Area ____240 ACRES



Partial Cut Unit
Reserve Area
Existing Road
Boundary of Cutting Area, Blazed, Posted and Painted
Boundary of Contract Area
Road to be Constructed
Road to be Improved
Road to be Renovated
Proposed Landing
Stream Channel
Corner Found

1 inch = 1,000 feet

Acres shown on Exhibit A have been computed using a Trimble Geo7X Global Positioning System receiver. Acreage was calculated based on Global Positioning System traverse procedures including differential correction when appropriate.

TIMBER SALE CONTRACT MAP
USDI-BLM COOS BAY DISTRICT
T. 28 S., R. 12 W., Sec. 35

ORC00-TS-2018.0031
EXHIBIT A
Page 2 of 2
Llewellyn CT

UNIT 1 _____45 ACRES
UNIT 2 _____82 ACRES
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UNIT 4 _____07 ACRES
R/W _____04 Acres

Total_____142 ACRES

Total Reserve Area ____ 98 ACRES
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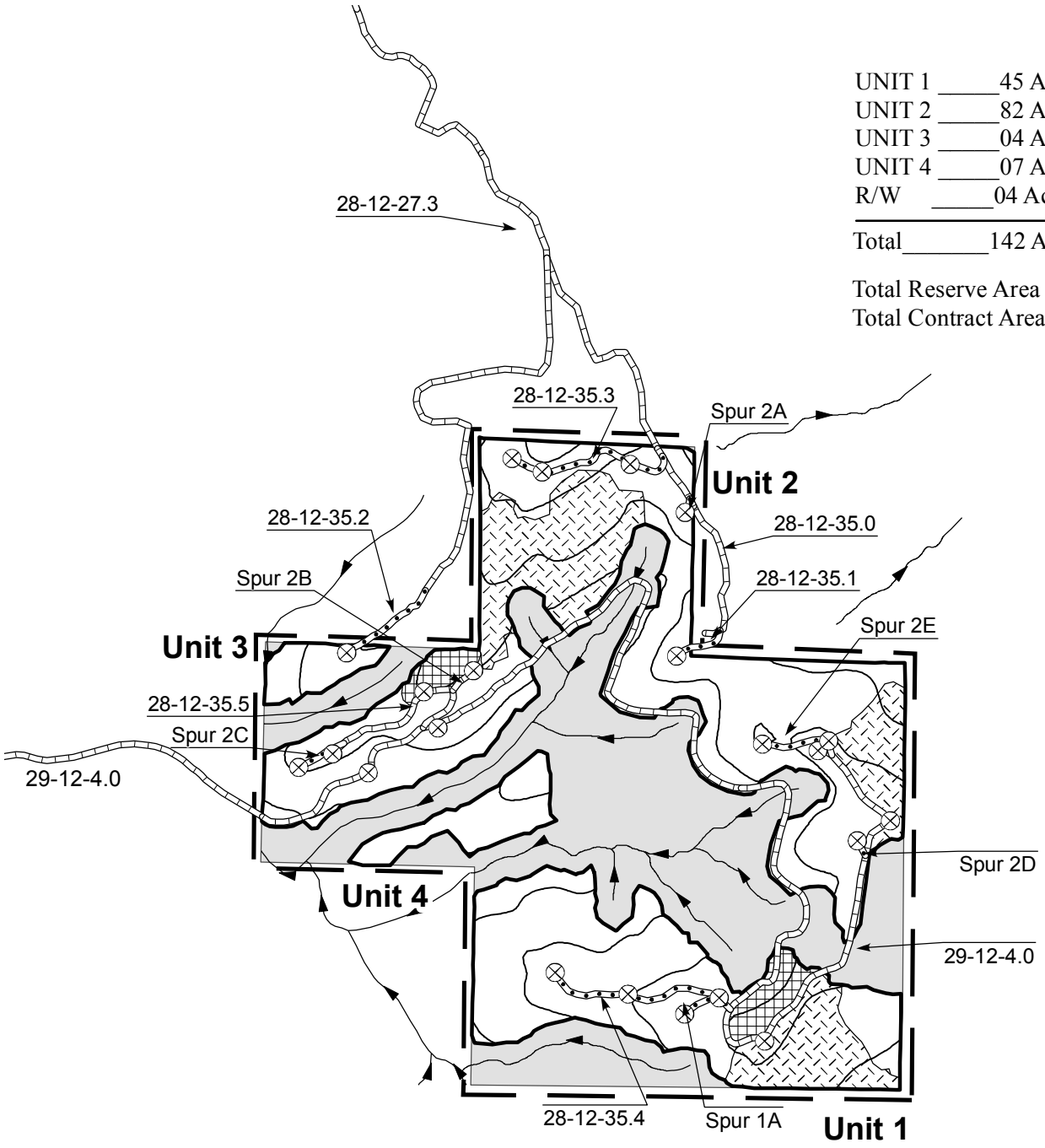


2000 Partial Cut Unit

Reserve Area

Ground Based Yarding

Special Yarding Area

N

1 inch = 1,000 feet

Acres shown on Exhibit A have been computed using a Trimble Geo7X Global Positioning System receiver. Acreage was calculated based on Global Positioning System traverse procedures including differential correction when appropriate.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Contract No: ORC00-TS-2018.0031

SALE NAME Llewelyn 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 VOLUM	PRICE PER UNIT	AMOUNT OF ESTIMATED VOLUME OR QUANTITY x UNIT PRICE
Douglas-fir	1456 MBF	$139.90	$203,694.40
grand fir	128 MBF	$79.00	$10,112.00
western hemlock	11 MBF	$48.30	$531.30
Port-Orford-cedar	5 MBF	$54.80	$274.00
incense cedar	0 MBF	0	$0.00
western redcedar	0 MBF	0	$0.00
red alder	369 MBF	$47.90	$17,675.10
bigleaf maple	0 MBF	0	$0.00
Oregon myrtle	0 MBF	0	$0.00
tanoak	0 MBF	0	$0.00
Totals	1969 MBF		$232,286.80

The apportionment of the total purchase price is as follows:

Approx. No. of Trees	UNIT NO. 1	EST. NET MBF VOL.		
3801	Douglas-fir	406	$139.90	$56,799.40
267	grand fir	39	$79.00	$3,081.00
37	western hemlock	3	$48.30	$144.90
22	Port-Orford-cedar	1	$54.80	$54.80
0	incense cedar	0	$0.00	$0.00
0	western redcedar	0	$0.00	$0.00
1703	red alder	116	$47.90	$5,556.40
0	bigleaf maple	0	$0.00	$0.00
0	Oregon myrtle	0	$0.00	$0.00
0	tanoak	0	$0.00	$0.00
5830	TOTALS	565		
			45 Acres =	$1,458.59 /Ac.
			Unit Total	$65,636.50

Approx. No. of Trees	UNIT NO. 2	EST. NET MBF VOL.		
6925	Douglas-fir	739	$139.90	$103,386.10
486	grand fir	71	$79.00	$5,609.00
67	western hemlock	7	$48.30	$338.10
39	Port-Orford-cedar	3	$54.80	$164.40
0	incense cedar	0	$0.00	$0.00
0	western redcedar	0	$0.00	$0.00
3101	red alder	212	$47.90	$10,154.80
0	bigleaf maple	0	$0.00	$0.00
0	Oregon myrtle	0	$0.00	$0.00
0	tanoak	0	$0.00	$0.00
10618	TOTALS	1032		$0.00
			82 Acres =	$1,459.18 /Ac.
			Unit Total	$119,652.40

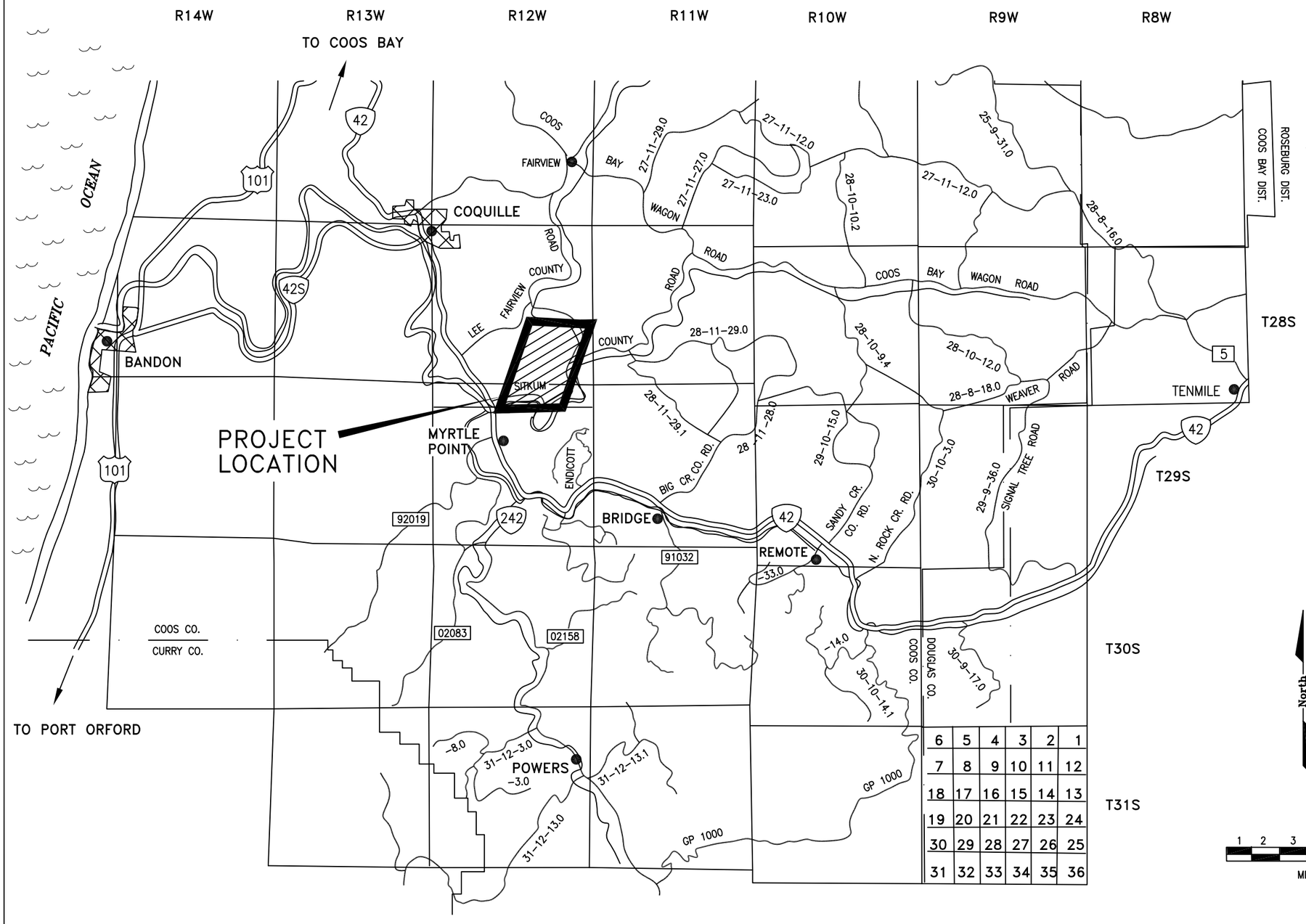
Approx. No. of Trees	UNIT NO. 3	EST. NET MBF VOL.			
338	Douglas-fir	36	$139.90	$5,036.40	
24	grand fir	3	$79.00	$237.00	
0	western hemlock	0	$48.30	$0.00	
0	Port-Orford-cedar	0	$54.80	$0.00	
0	incense cedar	0	$0.00	$0.00	
0	western redcedar	0	$0.00	$0.00	
151	red alder	10	$47.90	$479.00	
0	bigleaf maple	0	$0.00	$0.00	
0	Oregon myrtle	0	$0.00	$0.00	
0	tanoak	0	$0.00	$0.00	
513	TOTALS	49		$5,752.40	
			4 Acres =	$1,438.10 /Ac.	
				Unit Total	$5,752.40

Approx. No. of Trees	UNIT NO. 4	EST. NET MBF VOL.			
591	Douglas-fir	63	$139.90	$8,813.70	
42	grand fir	6	$79.00	$474.00	
0	western hemlock	0	$48.30	$0.00	
0	Port-Orford-cedar	0	$54.80	$0.00	
0	incense cedar	0	$0.00	$0.00	
0	western redcedar	0	$0.00	$0.00	
265	red alder	18	$47.90	$862.20	
0	bigleaf maple	0	$0.00	$0.00	
0	Oregon myrtle	0	$0.00	$0.00	
0	tanoak	0	$0.00	$0.00	
898	TOTALS	87			
			7 Acres =	$1,449.99 /Ac.	
				Unit Total	$10,149.90

Approx. No. of Trees	RW	EST. NET MBF VOL.			
1346	Douglas-fir	212	$139.90	$29,658.80	
32	grand fir	9	$79.00	$711.00	
14	western hemlock	1	$48.30	$48.30	
27	Port-Orford-cedar	1	$54.80	$54.80	
0	incense cedar	0	$0.00	$0.00	
0	western redcedar	0	$0.00	$0.00	
244	red alder	13	$47.90	$622.70	
0	bigleaf maple	0	$0.00	$0.00	
0	Oregon myrtle	0	$0.00	$0.00	
0	tanoak	0	$0.00	$0.00	
1663	TOTALS	236			
			7 Acres =	$ 4,442.23 /Ac.	
				Unit Total	$31,095.60

EXHIBIT C
LLEWELLYN CT
ORC00-TS-2018.0031

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



SHEET	CONTENTS
1	TITLE SHEET
2-4	LOCATION MAP
5	ESTIMATE OF QUANTITIES
6	TYPICAL CROSS SECTION DETAILS
7	CULVERT INSTALLATION DETAILS
8	ROADSIDE BRUSHING DETAILS & CROSS DRAIN OUTLET PROTECTION DETAIL
9	28-12-35.3 PLAN & PROFILE
10	SPECIAL PROVISIONS
14-24	SPECIAL DETAILS
25-32	ROAD CONSTRUCTION DETAILS
32-63	ROAD CONSTRUCTION SPECIFICATIONS

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

TITLE SHEET

DESIGNED	M. BAILEY
REVIEWED	K. SANDERS
APPROVED	J. DAVIS
DRAWN MGB	SCALE AS SHOWN
DATE 12/2017	SHEET 1 OF 63

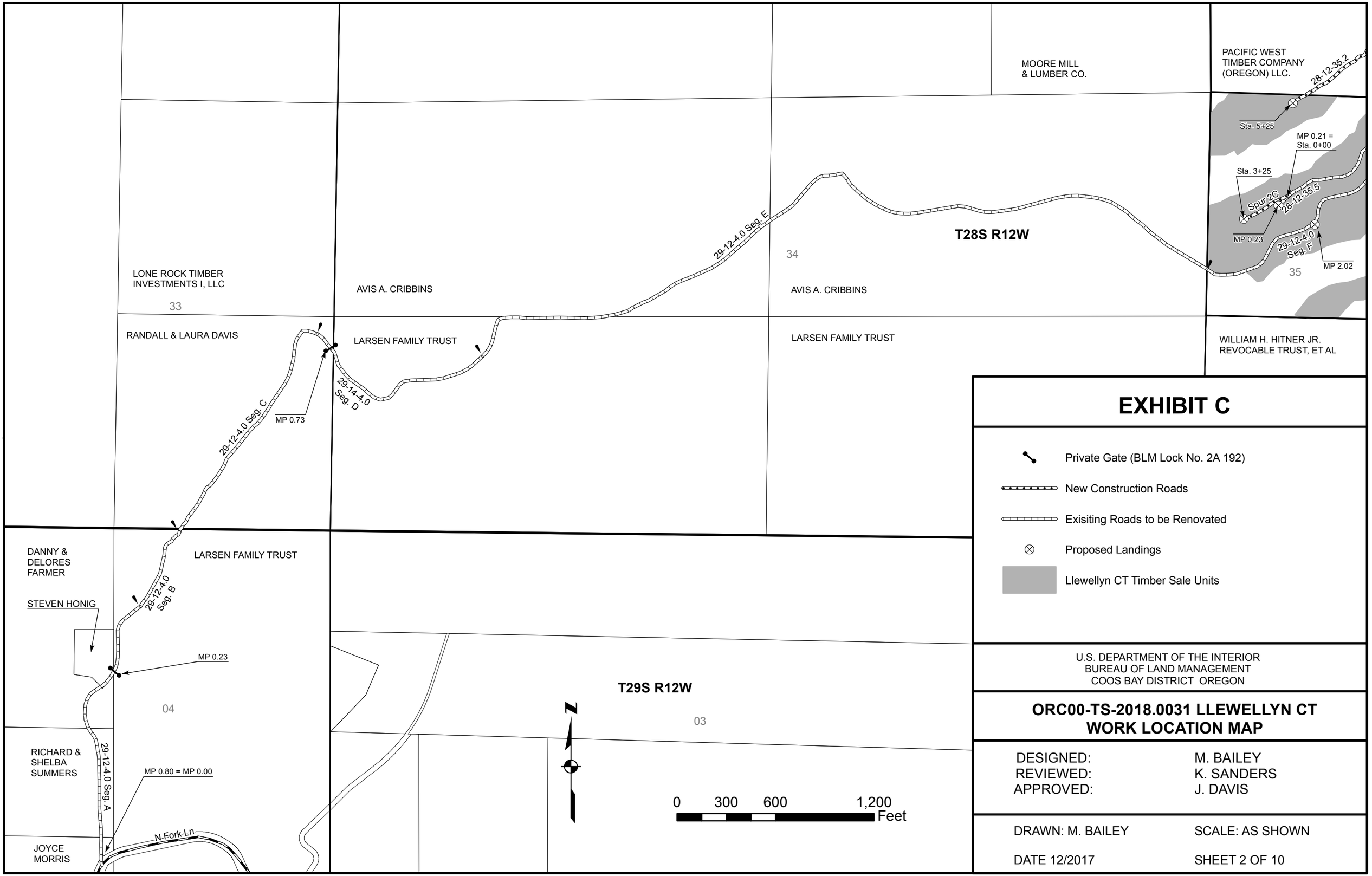


EXHIBIT C

- Private Gate (BLM Lock No. 2A 192)
- New Construction Roads
- Exisiting Roads to be Renovated
- Proposed Landings
- Llewellyn CT Timber Sale Units

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

ORC00-TS-2018.0031 LLEWELLYN CT WORK LOCATION MAP

DESIGNED:	M. BAILEY
REVIEWED:	K. SANDERS
APPROVED:	J. DAVIS

DRAWN: M. BAILEY	SCALE: AS SHOWN
DATE 12/2017	SHEET 2 OF 10

Lee Valley Rd

CHARLES &
MARIAN
VINCENT

21

22

23

24

25

28-12-22.0

MP 2.70 =
MP 0.00

MP 1.17 =
MP 0.00

28-12-27.0

28

PACIFIC WEST
TIMBER COMPANY
(OREGON) LLC.

U.S. DOI - BLM

27

T28S R12W

MP 0.66 =
MP 0.00

28-12-27.3
Seg. A

28-12-27.3

28-12-27.3
Seg. B

PACIFIC WEST
TIMBER COMPANY
(OREGON) LLC.

28-12-27.3
Seg. C

28-12-27.3
Seg. D

LONE ROCK TIMBERLAND
COMPANY

PACIFIC WEST
TIMBER COMPANY
(OREGON) LLC.

28-12-27.3 Seg E

28-12-
35.0

33

34

35

W

W

N

0 400 800 1,600 Feet

EXHIBIT C

Existing Roads

Exisiting Roads to be Renovated

Road Segment Break

Ⓦ Waste Areas

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

ORC00-TS-2018.0031 LLEWELLYN CT
WORK LOCATION MAP

DESIGNED:	M. BAILEY
REVIEWED:	K. SANDERS
APPROVED:	J. DAVIS

DRAWN: M. BAILEY	SCALE: AS SHOWN
DATE 12/2017	SHEET 3 OF 10

EXHIBIT C

Existing Roads

Road Segment Break

Proposed Landings

New Construction Roads

Exisiting Roads to be Renovated

Waste Areas

Exisiting Slide

Llewellyn CT Timber Sale Units

PACIFIC WEST TIMBER COMPANY (OREGON) LLC.

LONE ROCK TIMBERLAND COMPANY

PACIFIC WEST TIMBER COMPANY (OREGON) LLC.

PAUL L. & KAY L. DAVIS TRUST

PACIFIC WEST TIMBER COMPANY (OREGON) LLC.

MOORE MILL & LUMBER CO.

PAUL L. & KAY L. DAVIS TRUST

AVIS A. CRIBBINS

RUSSEL FAMILY LIVING TRUST

LARSEN FAMILY TRUST

WILLIAM H. HITNER JR. REVOCABLE TRUST, ET AL

TALMADGE & STEPHANIE TUFTS FAMILY TRUST

U.S. DOI - BLM

WILLIAM H. HITNER JR. REVOCABLE TRUST, ET AL

KING RANCH LLC

TALMADGE & STEPHANIE TUFTS FAMILY TRUST

27

26

34

35

03

02

T28S R12W

T29S R12W

28-12-27.3 Seg. C

28-12-27.3 Seg. D

28-12-27.3 Seg E

28-12-35.0

28-12-35.3

28-12-35.2

28-12-35.5

28-12-35.1

28-12-35.4

29-12-4.0 Seg. E

29-12-4.0 Seg. F

29-12-4.0 Seg. F2

MP 0.21

MP 0.90

MP 0.72

MP 0.29

MP 0.93

MP 0.37

Sta. 10+74

Sta. 9+40

Sta. 2+80

Spur 2A

Sta. 0+90

MP 1.19 = Sta. 0+00

Sta. 5+25

MP 0.21 = Sta. 0+00

MP 0.10

MP 0.06

Spur 2B

MP 0.06 = MP 0.00

Sta. 3+25

Spur 2C

MP 0.23

MP 2.12

MP 2.10 = MP 0.00

MP 2.02

MP 2.32

MP 2.58

MP 2.76

Sta. 3+38

MP 0.55 = Sta. 0+00

Sta. 5+00

Sta. 0+95

MP 3.67 = Sta. 0+00

Spur 2E

MP 3.68

MP 3.57

Sta. 1+52

MP 3.52 = Sta. 0+00

Spur 2D

Sta. 12+19

Sta. 1+25

Sta. 1+00 = Sta. 0+00

Sta. 7+03

Spur 1A

MP 3.18 = Sta. 0+00

Sta. 2+42

MP 3.26

N

0 300 600 1,200 Feet

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

ORC00-TS-2018.0031 LLEWELLYN CT WORK LOCATION MAP

DESIGNED:	M. BAILEY
REVIEWED:	K. SANDERS
APPROVED:	J. DAVIS
DRAWN: M. BAILEY	SCALE: AS SHOWN
DATE 12/2017	SHEET 4 OF 10

ROAD NUMBER	NEW CONSTRUCTION	RENOVATION	CLEARING & GRUBBING	ROADSIDE BRUSHING	EARTHWORK (DESIGNED)						SURFACING			CULVERTS		SEEDING
					COMMON	FILL	WASTE	MATERIAL DRIFTED 0-100'	SHORT HAUL 100-500'	LONG HAUL >500'	1.5-0" SURFACE ROCK	1.5"-0" CULVERT BEDDING ROCK	RIPRAP	24" CPP	MARKERS	SEED, FERTILIZE & MULCH (DRY)
SECTION NO.	300	500	200	2100	300	300	300	300	300	300	1200	400/1200	1400	400	400	1800
UNITS	STA.	STA.	AC.	AC.	C.Y.	C.Y.	C.Y.	STA.YD.	STA.YD.	YD.MI.	C.Y.	C.Y.	C.Y.	L.F.	EA.	AC.
28-12-22.0		61.78		2.8												
28-12-27.0		34.85		1.6							100 (C)					
28-12-27.3		62.83	0.30	2.90							40 (C)					1.0
28-12-35.0		29.04	1.30													2.0
28-12-35.1	3.38		0.30													0.3
28-12-35.2	5.25		0.50													0.5
28-12-35.3	10.74		1.20		2586	1661	925	188	1676	114						1.0
28-12-35.4	12.19		1.10													1.2
28-12-35.5		12.14	0.60													1.1
29-12-4.0		194.3		8.9							1103 (C)	80 (C)	140 (3)	280	0	2.3
SPUR 1A	2.42		0.20													0.2
SPUR 2A	0.90		0.10													0.2
SPUR 2B		1.58	0.20													0.2
SPUR 2C	3.25		0.30													0.3
SPUR 2D	1.52		0.20													0.2
SPUR 2E	5.00		0.50													0.5
Totals:	44.65	396.52	6.80	16.2	2586	1661	925	188	1676	114	1243 (C)	80 (C)	140 (3)	280	0	11.0

SECTION	GRADE	SIZE
400/1200	(C)	1.5"-0"
700	(PR)	PITRUN
900	(DR)	3"-1"
1000	(A)	3"-0"
1200	(C)	1.5"-0"
1400	(3)	Class 3
1400	(5)	Class 5

GRADE INDICATED IN CIRCLE ( )

ALWAYS THINK SAFETY

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

2018.0031 LLEWELLYN CT

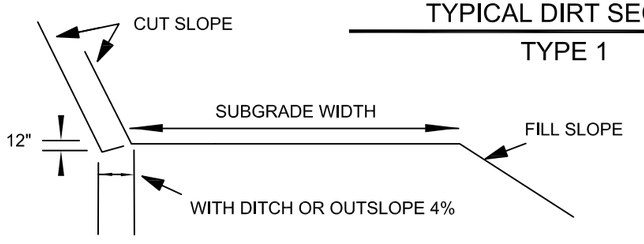
ESTIMATE OF QUANTITIES

DESIGNED M. BAILEY
REVIEWED K. SANDERS
APPROVED J. DAVIS

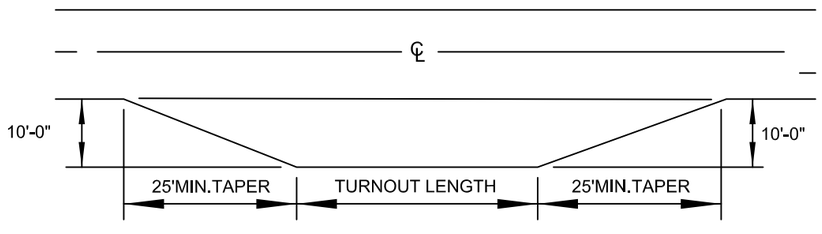
DRAWN M. BAILEY | SCALE NONE
DATE 12/2017 | SHEET 5 OF 65

ROAD NUMBER ***	FROM MILEPOST	TO MILEPOST	LENGTH MILES	TYPICAL SECTION TYPE	ROAD WIDTH¹		CLEARING WIDTH		BRUSHING WIDTH		SURFACING					REMARKS
					SUBGRADE	DITCH	BEYOND		EXISTING ROADS		SURFACE COURSE					
							TOP CUT	TOE FILL	L	R	Min Top Width	Comp. Depth	Type²	Grading	NOTE	
28-12-22.0	0.00	1.17	1.17	4	16'	2'			10	10						3% CROWNED W/ DITCH
28-12-27.0	0.00	0.66	0.66	4	16'	2'			10	10						3% CROWNED W/ DITCH
28-12-27.3	0.00	1.19	1.19	4	14'	2'			10	10						3% CROWNED W/ DITCH
28-12-35.0	0.00	0.55	0.55	1	14	2'			10	10						4% OUTSLOPED
28-12-35.1	0.00	0.06	0.06	1	14	0'	10	5								4% OUTSLOPED
28-12-35.2	0.00	0.10	0.10	1	14	0'	10	5								4% OUTSLOPED
28-12-35.3	0.00	0.20	0.20	1	14	0'	10	5								4% OUTSLOPED
28-12-35.4	0.00	0.23	0.23	1	14	0'	10	5								4% OUTSLOPED
28-12-35.5	0.00	0.23	0.23	1	14	0'			10	10						4% OUTSLOPED
29-12-4.0	0.00	3.68	3.68	4	16'	2'			10	10	12'	3"	D	1.5"-0"	MP 0.00 - 0.73	3% CROWNED W/ DITCH
SPUR 1A	0.00	0.05	0.05	1	14	0'	10	5								4% OUTSLOPED
SPUR 2A	0.00	0.02	0.02	1	14	0'	10	5								4% OUTSLOPED
SPUR 2B	0.00	0.03	0.03	1	14	0'			10	10						4% OUTSLOPED
SPUR 2C	0.00	0.06	0.06	1	14	0'	10	5								4% OUTSLOPED
SPUR 2D	0.00	0.03	0.03	1	14	0'	10	5								4% OUTSLOPED
SPUR 2E	0.00	0.09	0.09	1	14	0'	10	5								4% OUTSLOPED

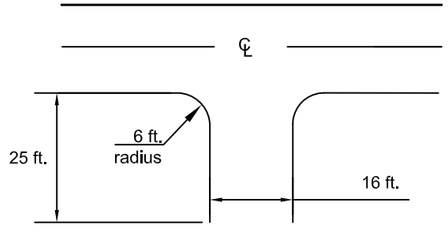
TYPICAL DIRT SECTION
TYPE 1



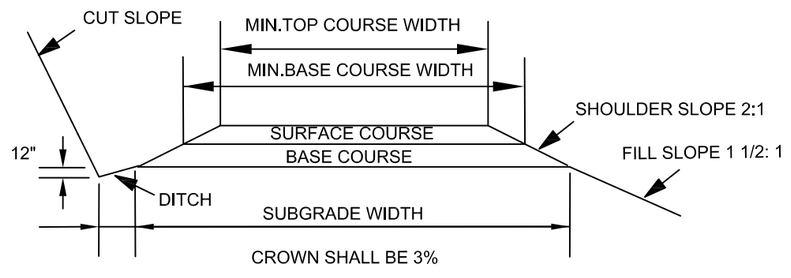
PLAN: TYPICAL TURNOUT



PLAN: TYPICAL TURNAROUND

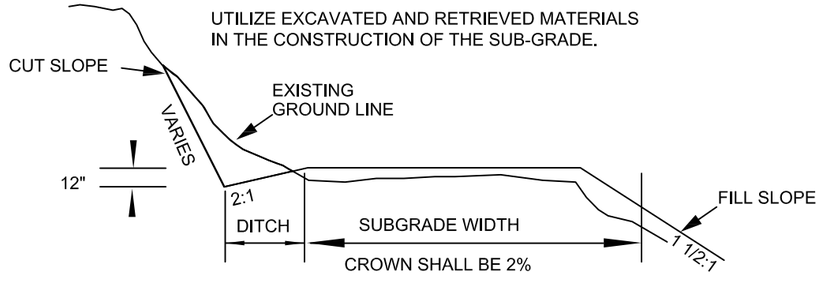


TYPICAL SURFACING SECTION
TYPE 4



TYPICAL GRADING SECTION

UTILIZE EXCAVATED AND RETRIEVED MATERIALS IN THE CONSTRUCTION OF THE SUB-GRADE.



NOTES

(1) EXTRA SUBGRADE WIDTHS

FILL WIDENING:
- 1 FT TO SHOULDER WIDTH FOR FILLS 1-6 FT IN HEIGHT
- 2 FT OF SHOULDER WIDTH FOR FILLS 6-10 FT IN HEIGHT
- 3 FT OF SHOULDER WIDTH FOR FILLS > 10 FT IN HEIGHT

CURVE WIDENING: ADD ADDITIONAL SURFACING WIDTH TO INSIDE OF CURVE FOR CURVE WIDENING AS SHOWN ON THE PLANS OR AS FOLLOWS:
- ADD 4 FT FOR CURVES 90'-120' RADIUS
- ADD 5 FT FOR CURVES 60'-90' RADIUS

(2) CUT AND FILL SLOPES

CUT AND FILL SLOPES WILL BE AS FOLLOWS BY MATERIAL TYPE AND ALSO AS SHOWN ON THE PLANS & SPECIFICATIONS:

MATERIALS	CUT SLOPES	FILL SLOPES
COMMON	3/4:1	1 1/2:1
SOFT ROCK & SHALE	1/2:1	1 1/2:1
SOLID ROCK	1/4:1	REPOSE

(3) FULL BENCH

FULL BENCH CONSTRUCTION IS REQUIRED ON ALL SLOPES EXCEEDING 60% UNLESS OTHERWISE SHOWN ON THE PLANS.

(4) SURFACING TYPE
- A. PIT RUN ROCK MATERIAL
- B. GRID ROLLED ROCK MATERIAL
- C. SCREENED ROCK MATERIAL
- D. CRUSHED ROCK MATERIAL

(5) SURFACING

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

(6) DITCHES

2:1 INSLOPE FROM ROAD SUBGRADE. DITCH OUTSLOPE WILL BE AS SPECIFIED IN NOTE 2 ABOVE.

(7) TURNOUTS
- A. WIDTH 10 FT. IN ADDITION TO SUBGRADE WIDTH, OR AS SHOWN ON THE PLANS
- B. LOCATED APPROXIMATELY AS SHOWN ON THE PLANS

ALWAYS THINK SAFETY

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

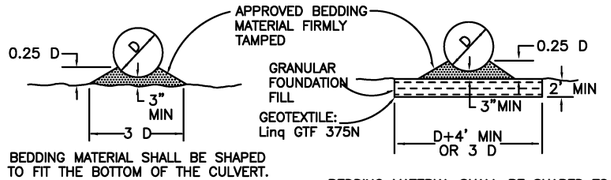
2018.0031 LLEWELLYN CT

TYPICAL SECTIONS DETAILS

DESIGNED M. BAILEY
REVIEWED K. SANDERS
APPROVED J. DAVIS

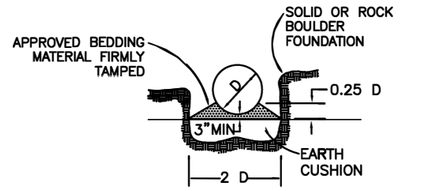
DRAWN M. BAILEY | SCALE NONE
DATE 12/2017 | SHEET 6 OF 65

BEDDING OF CULVERTS



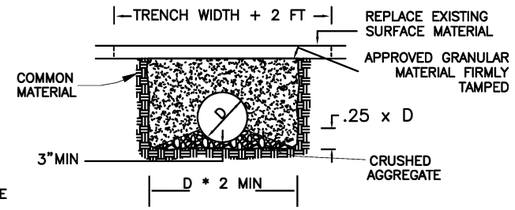
BEDDING OF CULVERTS ON STABLE NATURAL GROUND FOUNDATION OR COMPACTED EMBANKMENT

BEDDING OF CULVERTS ON SOFT SPONGY OR UNSTABLE SOIL FOUNDATION



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

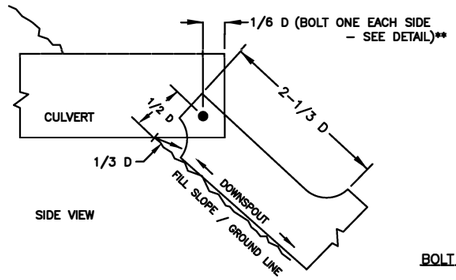
BEDDING OF CULVERT IN SOLID ROCK OR BOULDER FOUNDATION



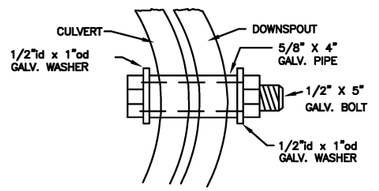
BEDDING MATERIAL SHALL BE SHAPED TO FIT THE BOTTOM OF THE CULVERT. BACKFILL MATERIAL SHALL BE APPROVED GRANULAR MATERIAL.

BEDDING OF CULVERTS ON EXISTING SURFACED ROADS

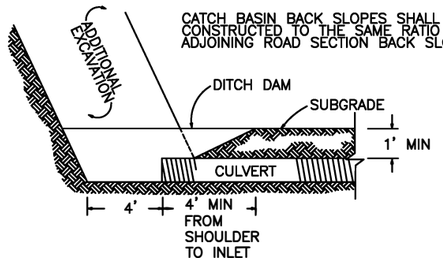
USE "ADJUSTABLE ELBOW" FOR CPP AND CMP DOWNSPOUTS



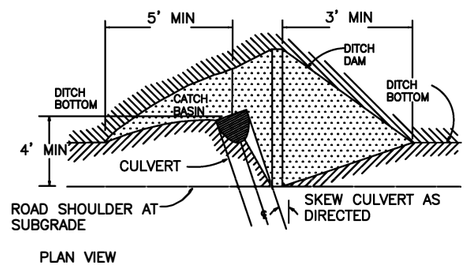
BOLT ASSEMBLY DETAIL**



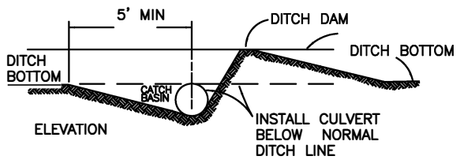
★ NOTE: ANCHOR DOWNSPOUTS ACCORDING TO SECTION 407b OF THE ROAD CONSTRUCTION SPECIFICATIONS



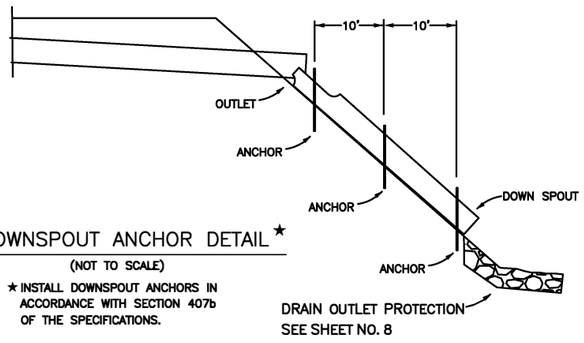
CROSS SECTION AT CATCH BASIN



PLAN VIEW



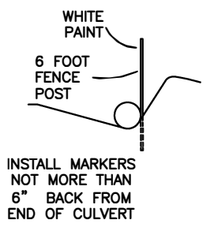
CATCH BASIN



DOWNSPOUT ANCHOR DETAIL ★

(NOT TO SCALE)

★ INSTALL DOWNSPOUT ANCHORS IN ACCORDANCE WITH SECTION 407b OF THE SPECIFICATIONS.



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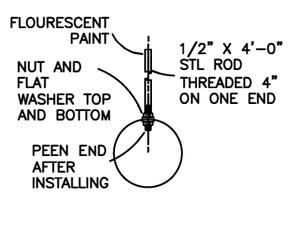
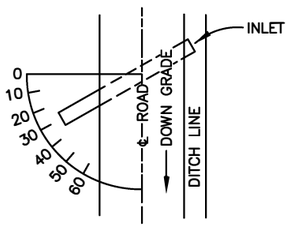


CMP

CULVERT MARKERS

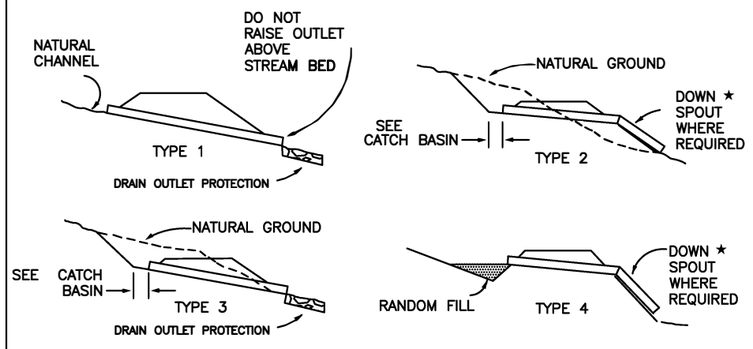


SKEW DIAGRAM

HORIZONTAL SKEW SHALL BE AS SHOWN, OR PERPENDICULAR TO DITCH LINE IN GRADE DIPS. THE GRADE OF CROSSDRAINS SHALL BE AT LEAST 2% GREATER THAN THE GRADE OF THE DITCH, WITH A MAXIMUM GRADIENT OF 5%.

BANDS SHALL MEET MANUFACTURER'S SPECIFICATIONS

CULVERT INSTALLATION TYPES



ALWAYS THINK SAFETY

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

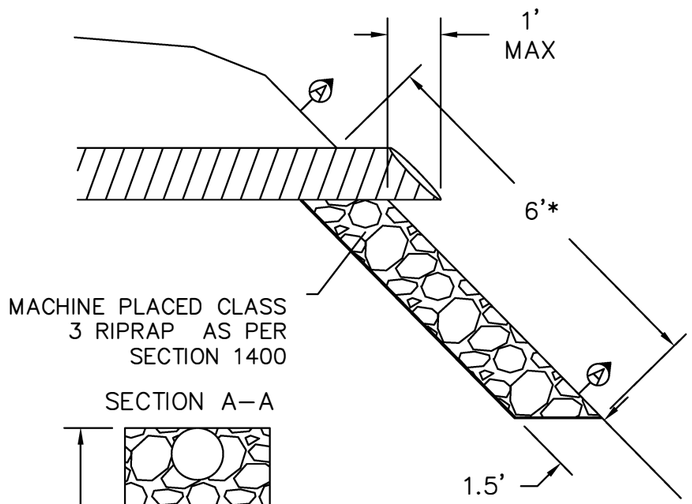
2018.0031 LLEWELLYN CT

CULVERT INSTALLATION DETAILS

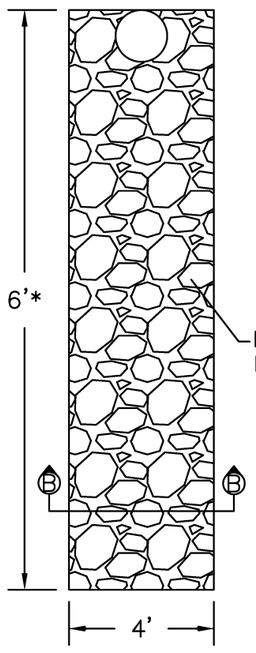
DESIGNED M. BAILEY
REVIEWED K. SANDERS
APPROVED J. DAVIS

DRAWN M. BAILEY	SCALE NONE
DATE 12/2017	SHEET 7 OF 65

CROSS DRAIN OUTLET PROTECTION DETAIL



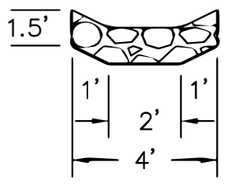
SECTION A–A



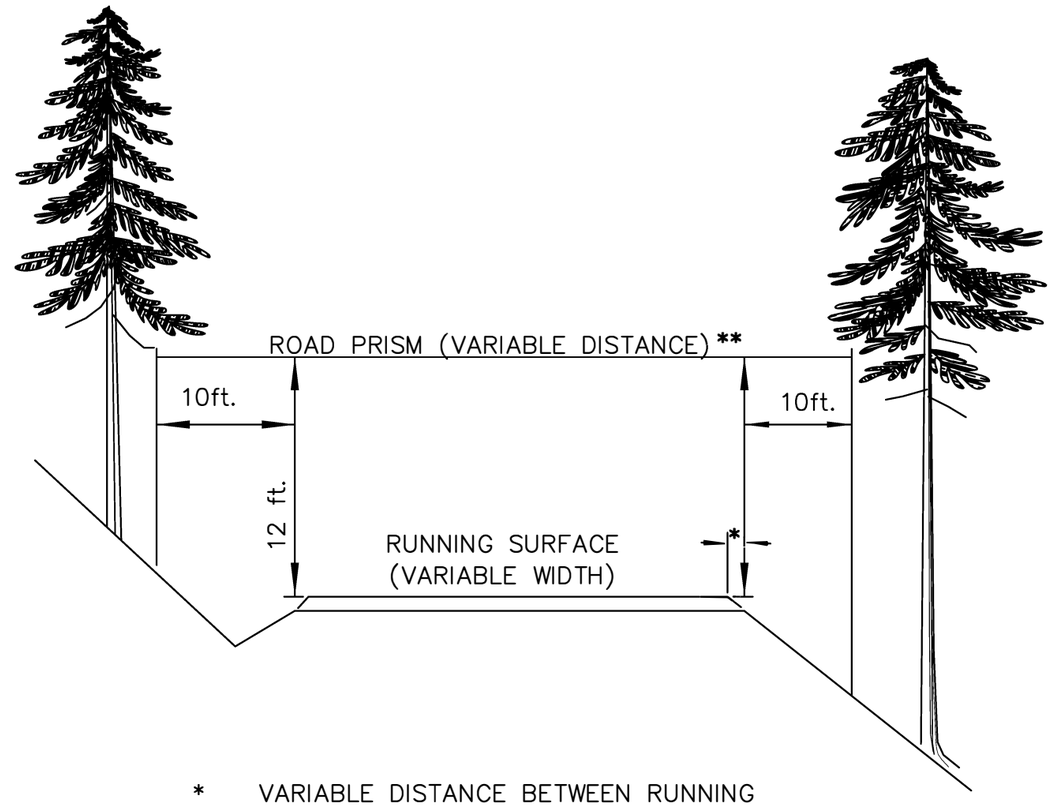
* 6' MIN OR AS
DIRECTED BY AO.

MACHINE PLACED CLASS 3
RIPRAP AS PER SECTION 1400

SECTION B–B



ROADSIDE BRUSHING DIAGRAM



* 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.

ALWAYS
THINK
SAFETY

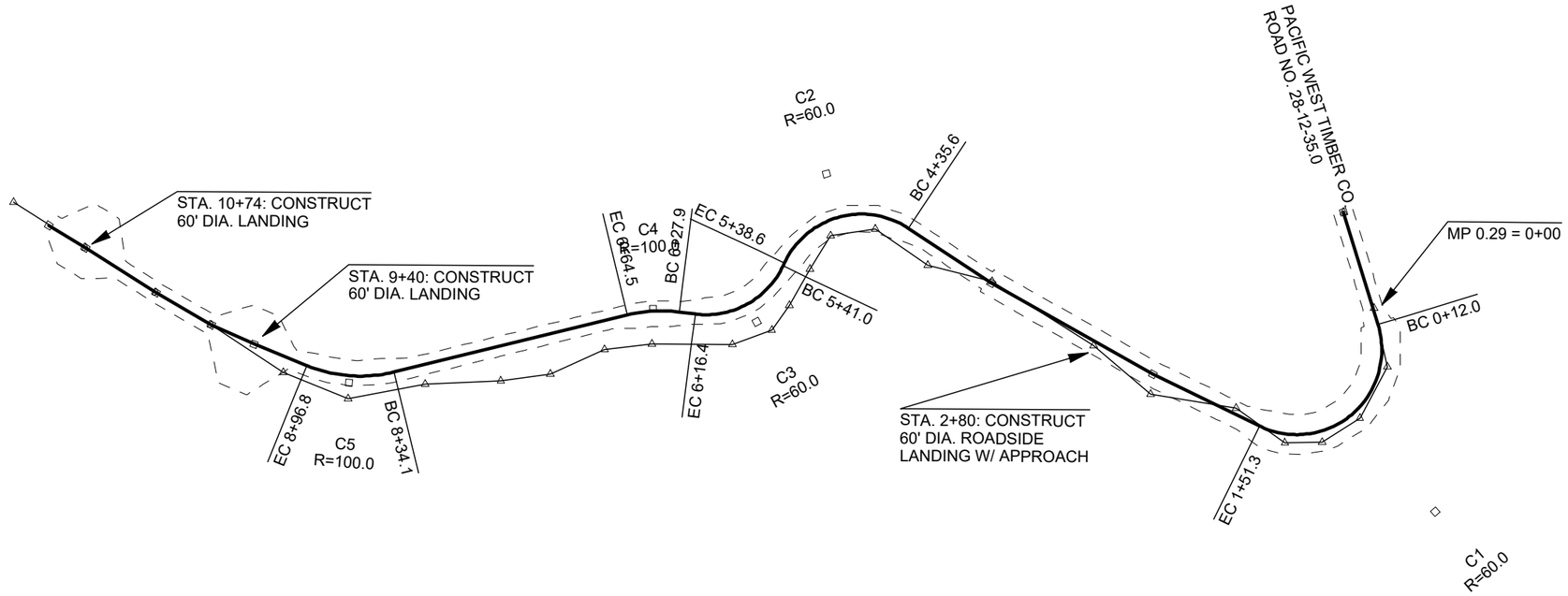
U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
COOS BAY DISTRICT OREGON

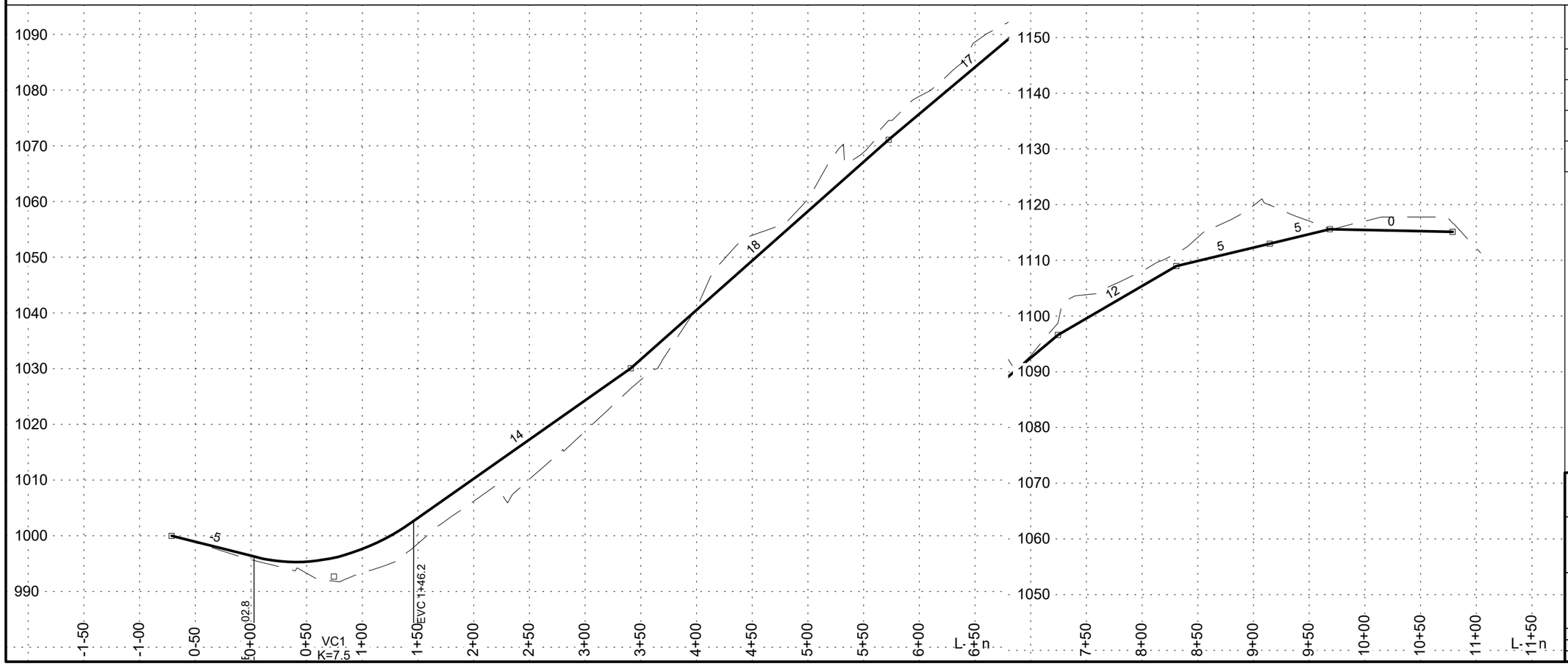
2018.0031 LLEWELLYN CT

ROAD BRUSHING DIAGRAM

DESIGNED M. BAILEY
REVIEWED K. SANDERS
APPROVED J. DAVIS

DRAWN M. BAILEY	SCALE NONE
DATE 12/2017	SHEET 8 OF 65





LEGEND

- PLAN P-LINE
- PLAN ROAD EDGES
- DESIGN ALIGNMENT
- PROFILE TOPO

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

2018.0031 LLEWELLYN CT
PLAN & PROFILE
ROAD NO. 28–12–35.3

DESIGNED M. BAILEY
REVIEWED K. SANDERS
APPROVED J. DAVIS

DRAWN: M. BAILEY	Plan Scale 1:1200
DATE 12/2017	Sheet 9 OF 65

SPECIAL PROVISIONS

Purchaser Responsibility

The Purchaser shall avoid damaging any aggregate surfaced roads, and will be responsible for the repair of any road damaged as a result of the activity. Aggregate roads shall be left in the same condition that they were prior to logging operations.

The Purchaser is responsible for any damage to privately owned improvements including gates, fences, and utilities on Road Nos. 28-12-22.0 & 29-12-4.0.

Seasonal Restrictions

All stream culvert installation and removal work shall be done during the in-stream work period of July 1 through September 15.

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

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.

Spill Containment

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

Equipment Washing

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

Waste Areas

All waste areas shall be sloped, shaped to drain, seeded, fertilized, and mulched in accordance with Sections 200, 300, and 1800 of the Road Construction Specifications.

Removed Culverts

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

SPECIAL DETAILS

RENOVATION OF BLM ROAD NO. 28-12-22.0 (Shuck Mtn. Rd.)
MP 0.00 to 1.17

MP	Remarks
0.00	Junction with Lee Valley County Road at MP 2.70. Begin renovation and roadside brushing in accordance with Sections 500, 600 and 2100 of the Road Specifications, Typical Cross Section Sheet No. 6, and Roadside Brushing Detail Sheet No. 8.
1.17	Junction. Renovate BLM Road No. 28-12-27.0 (Shuck Mtn. Spur) right.
	End renovation.

RENOVATION OF BLM ROAD NO. 28-12-27.0 (Shuck Mtn. Spur)
MP 0.00 to 0.66

MP	Remarks
0.00	Junction with BLM Road No. 28-12-22.0 at MP 1.17. Begin renovation, surfacing, and roadside brushing in accordance with Sections 500, 600, 1200, and 2100 of the Road Specifications, Typical Cross Section Sheet No. 6, and Roadside Brushing Detail Sheet No. 8.
NOTE:	From MP 0.00 to 0.66 place 100 CY of 1 ½" minus crushed aggregate surfacing spot rock as directed by the Authorized Officer.
0.66	Junction. Renovate Lone Rock Timberland Company Road No. 28-12-27.3 Seg. A left.
	End renovation.

RENOVATION OF PRIVATE ROAD NO. 28-12-27.3 Seg. A
MP 0.00 to 1.19

MP	Remarks
0.00	Junction with BLM Road No. 28-12-27.0 at MP 0.66. Begin renovation and roadside brushing in accordance with Sections 500, 600, 1800 and 2100 of the Road Specifications, Typical Cross Section Sheet No. 6, and Roadside Brushing Detail Sheet No. 8.
0.04	End of Lone Rock Timberland Company Seg. A. Continue on Pacific West Timber Company Road No. 28-12-27.3 Seg. B.

0.18	End of Pacific West Timber Company Seg. B. Continue on Lone Rock Timberland Company Road No. 28-12-27.3 Seg. C.
0.46	End of Lone Rock Timberland Company Seg. C. Continue on Pacific West Timber Company Road No. 28-12-27.3 Seg. D.
0.61	Junction with Pacific West Road No. 28-12-35.0 left. End Road No. 28-12-27.3 Seg. D and begin Seg. E.
0.72	Existing slide. Remove approximately 300 CY of slide material and reconstruct the roadway and ditch-line. End-haul slide material to waste areas at MP 0.90 and 0.93. An alternate waste area is located at MP 0.21 on Pacific West Timber Company Road No. 28-12-35.0. Restore roadway to a minimum subgrade width of 14' with a 2' ditch incorporating curve widening as shown on Sheet Typical Cross Section Sheet No. 6 (Typical Surfacing Section Type 4). Re-established cut slopes shall be 1:1. Place and compact 40 CY of 1 ½" minus aggregate spot rock surfacing in accordance with Section 1200 of the Road Specifications on reconstructed subgrade. Shape waste areas to drain after placing slide material and seed, fertilize, and mulch all disturbed areas in accordance with Section 1800 of the Road Specifications.
0.90	Junction with un-numbered private road left. Renovate waste area on flat area to right of road.
0.93	Renovate waste area on flat area to left of road.
1.19	End of renovation. Begin construction of BLM Road No. 28-12-35.2.

RENOVATION OF PACIFC WEST TIMBER COMPANY ROAD NO. 28-12-35.0
MP 0.00 to 0.55

MP	Remarks
0.00	Junction with Pacific West Timber Company Road No. 28-12-27.3 Seg. D at MP 0.46. Begin renovation in accordance with Sections 200, 500, and 600 of the Road Specifications, and Typical Cross Section Sheet No. 6.
NOTE:	All stumps shall be grubbed from the existing subgrade of the road in accordance with Section 200.
0.21	Renovate waste area on flat area to left of road.
0.29	Junction. Construct BLM Road No. 28-12-35.3 right.

0.37	Junction. Construct BLM Spur 2A right.
0.55	Begin construction of BLM Road 28-12-35.1 left.
	End of renovation.

RENOVATION OF BLM ROAD NO. 28-12-35.5
MP 0.00 to 0.23

MP	Remarks
0.00	Junction with BLM Road No. 29-12-4.0 Seg. F at MP 2.10. Begin renovation in accordance with Sections 200, 500, and 600 of the Road Specifications, and Typical Cross Section Sheet No. 6.
NOTE:	All stumps shall be grubbed from the existing subgrade of the road in accordance with Section 200.
0.06	Junction. Construct BLM Spur 2B right.
0.10	Renovate roadside landing right.
0.23	Construct BLM Spur 2C right.
	End of renovation.

RENOVATION OF PRIVATE ROAD NO. 29-12-4.0 Segments A-E (Llewellyn Crk. Rd.)
MP 0.00 to 1.86

MP	Remarks
0.00	Junction with North Fork County Road at MP 0.80. Begin renovation, surfacing, and roadside brushing in accordance with Sections 500, 1200 and 2100 of the Road Specifications, Typical Cross Section Sheet No. 6, and Roadside Brushing Detail Sheet No. 8.
NOTE:	Utilities present within roadway. For marking contact OREGON811 – Utility Notification Center. Dial “811” or 1-800-332-2344 (24/7 Call center) http//www.puc.state.or.us/
	Begin 3” lift of 1 ½” minus aggregate surfacing in accordance with Section 1200.
0.15	Renovate turn out right. Place and compact 20 CY of 1 ½” minus aggregate spot rock surfacing in accordance with Section 1200.
0.22	Renovate turn out right. Place and compact 20 CY of 1 ½” minus aggregate spot rock surfacing in accordance with Section 1200.

0.23 Existing cattle guard and private gate (BLM gate key #2A 192). Remove cattle guard grate and clean out accumulated material from pit. Replace existing concrete bases with new 14' precast concrete bases (Powder River #036-10014 or equivalent). Reinstall existing cattle guard grid. Utilize 10 CY of 1 ½" minus aggregate surfacing in accordance with Section 1200 as bedding and backfill.

0.42 Existing cattle guard. Remove cattle guard grate and clean out accumulated material from pit. Reinstall existing cattle guard grid.

0.73 Existing cattle guard and gate (BLM gate key #2A 192). Remove cattle guard grate and clean out accumulated material from pit. Reinstall existing cattle guard grid.

End 3" lift of 1 ½" minus aggregate surfacing. Begin heavy renovation and ditch-line re-establishment. Bunch and end-haul material generated from ditch-line re-establishment to designated waste areas or as directed by the Authorized Officer.

0.82 Renovate turn out right.

1.68 Renovate turn out right.

1.73 Renovate turn out right.

1.86 Existing cattle guard. Remove cattle guard grate and clean out accumulated material from pit. Reinstall existing cattle guard grid.

End of Segment E. Leave private and enter BLM and Llewellyn CT timber sale unit 2. Continue renovation of BLM Road 29-12-4.0 Segments F-F2 (Llewellyn Crk. Rd.)

RENOVATION OF BLM ROAD NO. 29-12-4.0 Segments F-F2 (Llewellyn Crk. Rd.)
MP 1.86 to 3.68

MP	Remarks
1.86	Continuation from Private Road No. 29-12-4.0 Segment E (Llewellyn Crk. Rd.) at MP 1.86. Begin culvert replacement, renovation, surfacing, slope protection, and roadside brushing in accordance with Sections 200, 400, 500, 600, 1200, 1400 and 2100 of the Road Specifications, Typical Cross Section Sheet No. 6, Culvert Installation Detail Sheet No. 7, and Cross Drain Outlet Protection Detail / Roadside Brushing Detail Sheet No. 8.
NOTE:	From MP 1.86 to 2.76 place 400 CY of 1 ½" minus crushed aggregate surfacing as directed by the Authorized Officer.
2.02	Renovate roadside landing area right.
2.10	Junction. Renovate BLM Road No. 28-12-35.5 left.

2.12 Renovate roadside landing area right.

2.29 Existing 18" CMP stream culvert. Replace with 24" x 50' CPP stream culvert. Utilize 20 CY of 1 ½" minus aggregate in accordance with Section 400 and 1200 as bedding and surfacing. Place 20 CY of Class 3 riprap in accordance with Section 1400 at culvert outlet as an energy dissipater.

2.32 Renovate waste area right.

2.42 Existing 18" CPP stream culvert. Replace with 24" x 50' CPP stream culvert. Utilize 20 CY of 1 ½" minus aggregate in accordance with Section 400 and 1200 as bedding and surfacing. Place 20 CY of Class 3 riprap in accordance with Section 1400 at culvert outlet as an energy dissipater.

2.44 Existing 18" CPP stream culvert. Replace with 24" x 40' CPP stream culvert. Utilize 20 CY of 1 ½" minus aggregate in accordance with Section 400 and 1200 as bedding and surfacing. Place 20 CY of Class 3 riprap in accordance with Section 1400 at culvert outlet as an energy dissipater.

2.52 Begin re-establishing ditch-line left. End haul slough material to the designated waste areas.

2.58 Renovate waste area right.

2.59 End ditch-line re-establishment left. Place 20 CY of Class 3 riprap slope protection on fill slope right.

2.68 Existing 18" CPP stream culvert. Replace with 24" x 70' CPP stream culvert. Utilize 20 CY of 1 ½" minus aggregate in accordance with Section 400 and 1200 as bedding and surfacing. Place 30 CY of Class 3 riprap in accordance with Section 1400 at culvert outlet as an energy dissipater.

2.76 End Segment F. Renovate waste area right. Continue on natural surfaced Segment F2. Continue culvert replacement, renovation, and roadside brushing.

NOTE: MP 2.76 – 3.68: All stumps shall be grubbed from the existing subgrade of the road in accordance with Section 200.

2.80 Existing 18" CMP stream culvert. Replace with 24" x 40' CPP stream culvert. Place 20 CY of Class 3 riprap in accordance with Section 1400 at culvert outlet as an energy dissipater.

2.95 Install 24" x 30 CPP temporary pipe. Place 10 CY of Class 3 riprap in accordance with Section 1400 at culvert outlet as an energy dissipater.

3.18 Junction. Construct BLM Road No. 28-12-35.4 right.

3.26 Renovate existing roadside landing area right.

3.52	Junction. Construct BLM Spur 2D left.
3.57	Renovate existing roadside landing area right.
3.67	Junction. Construct BLM Spur 2E right.
3.68	Renovate existing landing area.
	End renovation.

RENOVATION OF BLM SPUR 2B
MP 0.00 to 0.03

MP	Remarks
0.00	Junction with BLM Road No. 28-12-35.5 at MP 0.06. Begin renovation in accordance with Sections 500 and 600 of the Road Specifications and Typical Cross Section Sheet No. 6.
NOTE:	All stumps shall be grubbed from the existing subgrade of the road in accordance with Section 200.
0.06	Renovate existing landing area.
	End renovation.

CONSTRUCTION DETAIL SHEET
ROAD NO. 28-12-35.1
CONTROL POINT ROAD

GENERAL

Purchaser shall construct Road No. 28-12-35.1 from Sta. 0+00 to Sta. 3+38 as shown on the location map. This work shall be accomplished in accordance with details and road specifications which follow:

SHAPING

The roadway shall be constructed and shaped to conform to standards shown on Typical Cross Section Sheet No. 6.

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 4% with no ditch to achieve drainage.

SURFACING

None.

ALIGNMENT

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

GRADE

Grade shall not exceed 15% adverse.

TRUCK TURNAROUND

None.

LANDINGS

Construct 60’ diameter cable landing at Station 3+38.
Grade of landing and approach 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. 28-12-35.2
CONTROL POINT ROAD

GENERAL

Purchaser shall construct Road No. 28-12-35.2 from Sta. 0+00 to Sta. 5+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 Typical Cross Section Sheet No. 6.

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 4% with no ditch to achieve drainage.

SURFACING

None.

ALIGNMENT

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

GRADE

Grade shall not exceed 15% adverse.

TRUCK TURNAROUND

None.

LANDINGS

Construct 60’ diameter cable landing at Station 5+25.
Grade of landings or approach 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. 28-12-35.3
DESIGNED ROAD

GENERAL

Purchaser shall construct Road No. 28-12-35.3 from Sta. 0+00 to Sta. 10+74 as shown on the plan and profile Sheet No. 9. This work shall be accomplished in accordance with details and road specifications which follow:

SHAPING

The roadway shall be constructed and shaped to conform to standards shown on Typical Cross Section Sheet No. 6.

TURNOUTS

None.

SUBGRADE

The subgrade shall be excavated and compacted in accordance with the Road Specifications, 200 and 300 Sections. Full bench construction with end-haul is required from Sta. 4+12 to 9+40. Excess excavated material shall be utilized in the construction of the roadside landing at Sta. 2+80 or as additional fill widening at Sta. 1+31 through Sta. 3+66. Maximum cut depth is 7.7' and the maximum fill depth is 8.6'.

DRAINAGE FEATURES

Outslope and/or inslope subgrade at 4% with no ditch to achieve drainage.

SURFACING

None.

ALIGNMENT

Roadway shall be constructed within posted or painted right-of-way boundaries. Minimum curve radius shall be sixty (60) feet. The final L-Line location of the road has been marked. Slope staking and reference marking shall be completed by the Coos Bay BLM prior to construction.

GRADE

Grade shall not exceed 5% adverse and 18% favorable.

TRUCK TURNAROUND

Utilize junction with Pacific West Road No. 28-12-35.0 and landing areas at Sta. 2+80 and 9+40.

LANDINGS

Construct 60’ diameter cable landing with approach left at Sta. 2+80.
Construct 60’ diameter cable landing at Sta. 9+40.
Construct 60’ diameter cable landing at Sta. 10+74.
Grade of landings and approaches 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. 28-12-35.4
CONTROL POINT ROAD

GENERAL

Purchaser shall construct Road No. 28-12-35.4 from Sta. 0+00 to Sta. 12+19 as shown on the location map. This work shall be accomplished in accordance with details and road specifications which follow:

SHAPING

The roadway shall be constructed and shaped to conform to standards shown on Typical Cross Section Sheet No. 6.

TURNOUTS

None.

SUBGRADE

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

DRAINAGE FEATURES

Outslope and/or inslope at 4% with no ditch to achieve drainage.

SURFACING

None.

ALIGNMENT

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

GRADE

Grade shall not exceed 15% adverse.

TRUCK TURNAROUND

Construct a truck turn around (right) at Sta. 9+03.
Utilize junction with Spur 1A at Sta. 1+00.

LANDINGS

Construct 30’ x 60’ roadside landing at Sta. 1+25 and 7+03.
Construct 60’ diameter cable landing at Sta. 12+19.
Grade of landing or approaches 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 1A
CONTROL POINT ROAD

GENERAL

Purchaser shall construct Spur 1A from Sta. 0+00 to Sta. 2+42 as shown on the location map. This work shall be accomplished in accordance with details and road specifications which follow:

SHAPING

The roadway shall be constructed and shaped to conform to standards shown on Typical Cross Section Sheet No. 6.

TURNOUTS

None.

SUBGRADE

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

DRAINAGE FEATURES

Outslope and/or inslope at 4% with no ditch to achieve drainage.

SURFACING

None.

ALIGNMENT

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

GRADE

Grade shall not exceed 5% adverse.

TRUCK TURNAROUND

None.

LANDINGS

Construct 60’ diameter cable landing at Sta. 2+42.

Grade of landing or approaches 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 2A
CONTROL POINT ROAD

GENERAL

Purchaser shall construct Spur 2A 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 Typical Cross Section Sheet No. 6.

TURNOUTS

None.

SUBGRADE

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

DRAINAGE FEATURES

Outslope and/or inslope at 4% with no ditch to achieve drainage.

SURFACING

None.

ALIGNMENT

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

GRADE

Grade shall not exceed 15% favorable.

TRUCK TURNAROUND

None.

LANDINGS

Construct 60’ diameter cable landing at Sta. 0+90.

Grade of landing or approaches 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 2C
CONTROL POINT ROAD

GENERAL

Purchaser shall construct Spur 2C from Sta. 0+00 to Sta. 3+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 Typical Cross Section Sheet No. 6.

TURNOUTS

None.

SUBGRADE

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

DRAINAGE FEATURES

Outslope and/or inslope at 4% with no ditch to achieve drainage.

SURFACING

None.

ALIGNMENT

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

GRADE

Grade shall not exceed 15% adverse.

TRUCK TURNAROUND

None.

LANDINGS

Construct 60’ diameter cable landing at Sta. 3+25.

Grade of landing or approaches 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 2D
CONTROL POINT ROAD

GENERAL

Purchaser shall construct Spur 2D from Sta. 0+00 to Sta. 1+52 as shown on the location map. This work shall be accomplished in accordance with details and road specifications which follow:

SHAPING

The roadway shall be constructed and shaped to conform to standards shown on Typical Cross Section Sheet No. 6.

TURNOUTS

None.

SUBGRADE

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

DRAINAGE FEATURES

Outslope and/or inslope at 4% with no ditch to achieve drainage.

SURFACING

None.

ALIGNMENT

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

GRADE

Grade shall not exceed 15% favorable.

TRUCK TURNAROUND

None.

LANDINGS

Construct 60’ diameter cable landing at Sta. 1+52.

Grade of landing or approaches 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 2E
CONTROL POINT ROAD

GENERAL

Purchaser shall construct Spur 2E from Sta. 0+00 to Sta. 5+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 Typical Cross Section Sheet No. 6.

TURNOUTS

None.

SUBGRADE

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

DRAINAGE FEATURES

Outslope and/or inslope at 4% with no ditch to achieve drainage.

SURFACING

None.

ALIGNMENT

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

GRADE

Grade shall not exceed 15% adverse.

TRUCK TURNAROUND

None.

LANDINGS

Construct 30’ x 60’ roadside landing at Sta. 0+95.

Construct 60’ diameter cable landing at Sta. 5+00.
Grade of landing or approaches 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
1200	AGGREGATE SURFACE COURSE (CRUSHED ROCK)
1400	SLOPE PROTECTION
1700	EROSION CONTROL
1800	SOIL STABILIZATION
1900	CATTLE GUARDS
2100	ROADSIDE BRUSHING

GENERAL – 100

101 - Prework Conference(s):

A prework conference will be held prior to the start of new construction and renovation operations. The Purchaser shall request the conference at least (48) hours prior to the time it is to be held. The conference will be attended by the Purchaser and/or his representative(s), subcontractor(s) and/or his or their representative(s) and the Authorized Officer and/or his representative(s).

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

102 - Definitions:

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

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

ACI - American Concrete Institute

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

ASTM - American Society for Testing and Materials.

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

BLM - Bureau of Land Management

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Pore Size - The size of an opening between geotextile material filaments; apparent

opening size (AOS) is used to quantify this geotextile material property.

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

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

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

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

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

Road Centerline - The longitudinal center of a roadbed.

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

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

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

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

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

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

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

Slope ratio notation (horizontal:vertical) – Slope ratios for constructed cut and fill slopes are expressed as a ratio of horizontal units to vertical units.

Spalls - Flakes or chips of stone.

Specifications - A general term applied to all directions, provisions, and requirements

pertaining to performance of the work.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

102a - Tests Used in These Specifications:

AASHTO T 11	Quantity of rock finer than No. 200 sieve.
AASHTO T 27	Sieve analysis of fine and coarse aggregate using sieves with square openings; gradation.
AASHTO T 89	Liquid limit of material passing the No. 40 sieve. Water content at which the soil passes from a plastic to a liquid state.
AASHTO T 90	Plastic limits and plasticity index of soil. a. Plastic limit - lowest water content at which the soil remains plastic. b. Plasticity index - range of water content, within which the material is in a plastic state. Numerical difference between the liquid and plastic limits of the soil.
AASHTO T 96	Resistance to abrasion of small size coarse aggregate by use of the Los Angeles machine.
AASHTO T 99	Relationship between soil moisture and density of soil. Method A - 4" mold, soil passing a No. 4 sieve 25 blows/layer & 3 layers. Method C - 4" mold, soil passing a 3/4 inch sieve 25 blows/layer & 3 layers. Method D - 6" mold, soil passing a 3/4 inch sieve. 56 blows/layer & 3 layers.
AASHTO T 119	Slump of hydraulic cement concrete.
AASHTO T 152	Air content of freshly mixed concrete.
AASHTO T 166	Specific Gravity of compacted Bituminous Mixtures.
AASHTO T 176	Shows relative portions of fine dust or claylike materials in soil or graded aggregate.
AASHTO T 180	(OSHD 106-71) moisture density relationship of soil same as AASHTO T 99 proctor but uses a 10-lb rammer & 18-in drop height.
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 209	Maximum Specific Gravity of Bituminous Paving Mixtures.

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

AASHTO T 224 Correction for coarse particles in the soil.

AASHTO T 238 Density of Soil and Soil-Aggregate in place by nuclear methods.

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

ASTM D 4564 Determination of relative density of cohensionless soils.

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

103 - Compaction equipment shall meet the following requirements:

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

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

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

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

103c - Smooth-wheel power rollers. Smooth-wheel power rollers shall either be of the 3-wheel type, weighing not less than 10 tons, or of the tandem type, 2-wheel or

3-wheel, weighing not less than 8 tons. Smooth-wheel roller shall provide compression of 325 pounds per linear inch of width of rear wheels or drum.

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

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

103e - Grid roller. A grid roller shall consist of two or more cylindrical drums independently mounted on a common shaft in a rigid frame. Each drum shall have a minimum outside diameter of 5 feet and a minimum width of 2 feet 6 inches. The overall width of the roller exclusive of frame shall be not less than 5 feet 6 inches of which not more than 6 inches shall be used for center spacing between two roller drums. The face of the drums shall have the appearance of woven open-mesh made by interlacing bars of not less than 1-1/4 inches nor more than 1-3/4 inches diameter space spaced on 4-1/2 inches to 5-1/2 inches center. Net opening between the bars shall be not less than 3 inches nor more than 4 inches. The roller shall be so constructed that counterweights can be used to adjust the gross weight of the roller to not less than 27,000 pounds. The grid roller shall be drawn by a power unit capable of propelling the fully loaded roller through 6 inches of loose embankment material at a speed of at least 4 miles per hour.

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

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

103g - Vibratory compactor. Vibratory compactors shall consist of multiple or gang-type

compacting units or pads with a minimum variable width of 2 feet. It shall be self-contained and capable of compacting material as required.

103h - Drum drive self-propelled vibratory grid roller. The unit shall consist of one cylindrical drum with a drum diameter of not less than 56 inches, nor more than 66 inches and the drum width shall be 84 inches. Vibratory frequency shall be regulated in seeps from 1200 to 1800 vibrations per minute (VPM), and the centrifugal force developed shall be at least 40,000 pounds at 1800 RPM. The vibratory grid roller shall be self-propelled and have a power unit of not less than 112 horsepower. The "grid" design shall be a herringbone or z-bar pattern around the circumference of the drum. The grid bars shall be 1 inch in height and spaced not more than 8-1/2 inches apart.

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

CLEARING AND GRUBBING - 200

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

201a - This work shall consist of clearing, grubbing, removing and disposing of vegetation, debris, surface objects, and protruding obstructions from borrow pits, quarries, channel changes, stockpile sites, etc., in accordance with these specifications (and as staked on the ground).

202 - Where clearing limits have not been staked, established by these specifications or shown on the plans, the limits shall extend 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 staked on the ground.

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).

203c - Disposal of logs from private timber cleared within the limits established as shown on the plans shall consist of decking at a location designated by the Authorized Officer.

204 - Grubbing shall consist of the removal and disposal of stumps, roots, and other wood material embedded in the ground and protruding obstacles remaining as a result of the clearing operation in accordance with Subsections 204a, 204b, and 204c, 204d, and 204e between the top of the cut slope and the toe of the fill slope. Undisturbed stumps, roots and other solid objects which will be a minimum of 3 feet below subgrades or slope surfaces or embankments are excluded.

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

204b - Stumps and other protruding objects shall be completely removed within the limits of required embankments having heights of less than 4 feet. (When authorized, stumps and other nonperishable objects may be left provided they do not extend more than 6 inches above the existing ground line.)

204c - On excavated areas, roots and embedded wood shall be removed to a depth not less than 6 inches below the subgrade.

204d - On areas to be occupied by embankments having heights greater than 4 feet, no stump or portion thereof shall remain within 3 feet of embankment subgrades or slope surfaces after grubbing is completed.

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 and/or piling in accordance with Subsection 211.

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

210a - Disposal of clearing and grubbing debris stumps and cull logs on non-government property by scattering and piling this material outside of clearing limits will be permitted provided the Purchaser obtains a written permit from the property owner on whose property the disposal is to be made. The Purchaser shall furnish the Authorized Officer a certified copy of the permit and a written release from the property owner absolving the Government from responsibilities in connection with the disposal of debris on said property.

211 - Disposal of clearing and grubbing debris stumps and cull logs shall be by piling on government lands outside of established clearing limits in an area and in a

manner acceptable to the Authorized Officer.

212 - No grading will be permitted prior to completion and approval by the Authorized Officer of the required clearing and grubbing work, except that stump grubbing may proceed with the excavation of the road prism.

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

EXCAVATION AND EMBANKMENT - 300

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

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

303 - Suitable material removed from the excavation shall be used in the formation of embankment subgrade, shoulders, slopes, bedding, backfill for structures, and for other purposes as shown on the plans.

304 - Borrow shall consist of suitable material required for the construction of embankments or for other portions of the work; such material shall be obtained from sources selected by the Purchaser at his option and approved by the Authorized Officer.

305 - Embankment construction shall consist of the placement of excavated and borrowed materials, backfilling, leveling, grading, compaction, and other earth-moving work necessary for the construction of the roadway and landings in accordance with these specifications and conforming to the lines, grades, dimensions, and typical cross sections shown on the plans and as marked on the ground with stakes.

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

materials and shall be placed and compacted as specified.

305b - Embankment materials shall be placed in successive parallel layers on areas cleared of stumps, cull logs, brush, sod, and other vegetative and deleterious materials, except as provided under Subsection 204. Roadway embankments of earth material shall be placed in horizontal layers not exceeding 8 inches in depth.

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

305d - Where embankments are constructed predominantly of blasted rock material, depth of layers shall not exceed 4 feet. Rock fragments having dimensions greater than 4 feet will be permitted provided that they have no dimensions greater than 6 feet and that clearance between adjacent fragments is adequate for the placing and compacting of material in horizontal layers as specified, and that no part of the larger fragments comes within 4 feet of subgrade.

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

306a - Minimum compaction for each layer of embankment and selected roadway excavation material placed at optimum moisture shall be 6 passes over each full-width layer) or fraction thereof.

306d - Compacted materials within 3 feet of the established subgrade elevation shall have a density in place of not less than 95 percent of maximum density, and below the 3-foot limit, these materials shall have a density in place of not less than 90 percent of maximum density. Maximum density shall be determined by AASHTO T 99, Method A or Method D.

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

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 - All fill slopes shall be compacted to (75) percent of maximum density, either by walking with cat/excavator or by pressing with excavator bucket, to prevent surface erosion and raveling.

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

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

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

316 - Borrow material from sources selected at the Purchaser's option shall be inspected and approved in writing by the Authorized Officer prior to placement.

318 - Selected borrow or selected roadway excavation material shall be uniformly spread on the roadbed in lifts not to exceed 6 inches in depth until the required thickness shown on the plans is attained.

Each layer shall be uniformly moistened or dried to the optimum moisture content suitable for maximum density and compacted to full width in accordance with the requirements of Subsection 306.

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

321 - Excess excavated, unsuitable, or slide materials shall not be disposed of 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 321b and 321c. Materials not disposed of in this manner shall be retrieved and disposed of at the Purchaser's expense and at the direction of the Authorized Officer.

321b - Excess construction material as specified under Subsection 321 shall be loaded, hauled, and disposed of at disposal sites at the following locations:

Willamette Meridian			
Subdivision	Sec.	T.	R.
NW1/4, N1/4SW1/4, & NW1/4SE1/4	35	28 S.	12 W.

321c - End-dumping will be permitted for the placement of excess materials under Subsection 321 in designated disposal areas or within areas approved by the Authorized Officer. Watering, rolling, and placement in layers are not required. Materials placed shall be sloped, shaped, and otherwise brought to a visible condition acceptable to the Authorized Officer.

322 - When so indicated on the plans, selected coarse rock encountered in the excavation shall be conserved for slope protection or special rock embankment purposes and placed in accordance with the requirements and details of section 1400 of these specifications and as shown on the plans.

324 - Excavated material shall not be allowed to cover boles of standing trees to a depth in excess of 2feet 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 and the start of surfacing operations.

PIPE CULVERTS - 400

*401 - This work shall consist of furnishing and installing pipe culverts in accordance with these specifications and conforming to the lines, grades, dimensions, and typical cross sections shown on the plans. Individual lengths and locations are approximate; final lengths and locations will be determined by the Authorized Officer upon completion of the roadbed and upon installation of the appurtenance structures. Additional pipe 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.

402 - The pipe culvert installation shall conform to the lines, grades, dimensions, and typical cross sections shown on the plans.

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

405e - Corrugated-polyethylene pipe for culverts 18-inch through 36-inch diameter shall meet the requirements of AASHTO M 294, Type S.

Corrugated-polyethylene pipe for culverts to be used for downspouts 18-inch through 24-inch diameter shall meet the requirements of AASHTO M 294, Type C.

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

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

406a - "Hugger"-type coupling bands shall only be used with annular corrugated pipe and pipe-arch culverts, or helically corrugated pipe and pipe-arch culverts having

annular reformed ends. Annular reformed ends shall consist of two annular corrugations.

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 and the Culvert Installation Detail Sheet.

412 - Where ledge rock, boulders, soft, or spongy soils are encountered, they shall be excavated a minimum of 24 inches below the invert grade for a width of at least one pipe diameter or span on each side of the pipe and shall be backfilled with (crushed rock material in accordance with Section 1200 gradation (E-1).

413 - Pipe culverts and pipe-arch culverts shall be bedded on crushed rock material in accordance with Section 1200 gradation (E-1), or fine readily compactable soil material having a depth of not less than 6 inches as shown on plans. Foundation material shall be of uniform density throughout the length of the structure and shall be shaped to fit the pipe.

414 - The invert grade of the bedding shall be cambered in accordance with the requirements and details shown on the plans and as directed by the Authorized Officer.

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.

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

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

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

424 - Construction of energy dissipaters conforming to lines, grades, dimensions and typical diagram shown on the plans, shall be required for grade culverts and 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.

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

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

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

RENOVATION AND IMPROVEMENT OF EXISTING ROADS - 500

501 - This work shall consist of reconditioning and preparing the roadbed and shoulders, minor excavation and/or embankment, cleaning and shaping drainage ditches, trimming vegetation from cut and embankment slopes, and cleaning and repairing drainage structures of existing roads in accordance with these specifications and as shown on the 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 depth of 6 inches to eliminate surface irregularities and bladed and shaped to the lines, grades, dimensions, and typical cross sections shown on the plans.

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

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

503a - Debris from the slide at the following location:

Road No.	From Sta./M.P.	To Sta./M.P.
28-12-27.3 Seg. C	MP 0.72	-

Shall be hauled to designated disposal sites at the following locations:

Road No.	From Sta./M.P.	To Sta./M.P.
28-12-27.3 Seg. C	MP 0.90	MP 0.93
28-12-35.0	MP 0.21	-

504 - Existing road surface shall be uniformly moistened or dried to the optimum moisture content suitable for maximum density and compacted to full width with equipment conforming to requirements of Subsections 103f.

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 pipe structures shall be cleared of rock and vegetative obstructions which will impede the structure's designed outflow configuration. Catch basins shall conform to the lines, grade, dimensions, and typical diagram shown on the plans.

507 - Existing and new drainage structures shall be replaced and placed with structures of the type, gauge, diameter, and length shown on the plans and in accordance with the placement requirements set forth under section 400 of these specifications.

508 - Vegetation encroaching on the roadbed and the drainage ditches of existing roads shall be removed by cutting and disposed of in accordance with Subsection 2100 of these specifications.

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

WATERING - 600

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

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

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

604 - Use of water sources are subject to applicable State water regulations.

605 - The Purchaser shall secure the necessary water permits and pay all required water fees for use of water sources selected by the Purchaser and approved by the Authorized Officer.

AGGREGATE SURFACE COURSE - 1200
CRUSHED ROCK MATERIAL

1201 - This work shall consist of furnishing, hauling, and placing one or more layers of crushed rock material on roadbeds approved for placing crushed rock material in accordance with these specifications and conforming to the dimensions and typical cross sections shown on the plans. Material not conforming to these

specifications will be rejected, and shall be removed from the road at the purchaser's expense.

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

1203 - When crushed rock material is produced from gravel, not less than 65 percent by weight of the particles retained on the No. 4 sieve will have 2 manufactured fractured faces. (If necessary to meet the above requirements or to eliminate an excess of filler, the gravel shall be screened before crushing.)

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

TABLE 1204

AGGREGATE SURFACE COURSE
CRUSHED ROCK MATERIAL
Percentage by weight passing square mesh sieves
AASHTO T 11 & T 27

GRADATION

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

1205 - Crushed rock material shall not exceed 35 percent loss as determined by AASHTO T 96.

1206 - Crushed rock material shall show a durability value of not less than 35 as determined by AASHTO T210.

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 a liquid limit of not more than 35 and a plasticity index of not less than 4 and not more than 12 as determined by AASHTO T 89 and AASHTO T 90.

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

TABLE 1207a

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

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

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

1209 - Shaping and compacting of roadbed shall be completed and approved prior to

placing crushed rock material, in accordance to the requirements of Subsection 500.

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 unless approved by the Authorized Officer.

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 103f. Minimum compaction shall be 1 hour of continuous compacting for each 150 cubic yards of crushed rock material placed per layer, or fraction thereof.

SLOPE PROTECTION - 1400

1401 - This work shall consist of furnishing, hauling, and placing stone materials for slope protection structures in accordance with these specifications and conforming to the lines, grades, dimensions, and typical cross-sections shown on the plans. Material not conforming to these specifications will be rejected and shall be removed from the slope protection structure at the purchaser's expense as directed by the Authorized Officer.

1402 - Stone material shall consist of hard angular quarry rock of such quality that it will not disintegrate on exposure to water or weathering, and shall be graded in accordance with these specifications.

1404 - The material shall be well graded from the smallest to the maximum size specified. Stones smaller than the specified 10 percent size shall consist of spalls and fine rock fragments so distributed as to provide a stable compact

mass.

1405 - Rip rap shall conform to the following gradations:

TABLE 1405[1]

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

[1]Gradation includes spalls and rock fragments to provide a stable, dense mass.
[2]The intermediate dimension is the longest straight-line distance across the rock that is perpendicular to the rock's longest axis on the rock face with the largest projection plane.
[3]Rock mass is based on a specific gravity of 2.65 (165#/cu.ft.) and 85 percent of the cubic volume as calculated using the intermediate dimension.

1405a - Stone materials shall show a durability value of not less than 50 as determined by AASHTO T 210.

1405b Stone materials shall conform to a minimum apparent specific gravity of 2.50 and a maximum absorption of 4.2 percent as determined by AASHTO T 85.

1406 - The placement of slope protection stones by the end dumping method shall be permitted.

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

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

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

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

1409 - Slope protection material shall be placed so as to form the cross sections shown on the plans. The face of the slope protection structure above the low-water line shall be uniform, free from humps, depressions, or large cavities.

1410 - The embankment slopes at the following location:

Road No.	From Sta./M.P.	To Sta./M.P.
29-12-4.0	MP 2.59	-

shall be protected and or stabilized by placement of rock materials to form a slope-protection structure conforming to the construction requirements and details of these specifications.

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 mulches, grasses, and other erosion control devices or methods in accordance with these specifications and conforming to the lines, grades, dimensions and typical cross sections shown on the plans.

1704 - The erosion control provisions specified under this Subsection shall be coordinated with the Soil Stabilization requirements of Section 1800.

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

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

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

1707 - Completed and partially completed segments of roads carried over the winter and early spring periods shall be stabilized by seeding, fertilizing, and mulching in accordance with Section 1800.

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

1711 - The Purchaser shall construct energy dissipaters for pipe culverts conforming to the requirements and details shown on the respective exhibits and on the plans.

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, landings, disturbed areas, and disposal sites 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 Subsection 1707 and then complete the requirements of Section 1800 the next construction season. The Authorized Officer may modify the above seasonal dates to conform to existing weather conditions and changes in the construction schedule.

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

1804 - The BLM shall provide native grass seed for this project.

1806 - The Purchaser shall apply the seed mixtures specified under Subsection 1805 to the corresponding seeding projects as shown on the plans.

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

1807 - Fertilizer shall be a standard 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.

1808 - Mulch materials conforming to the requirements of Subsection 1808a shall be furnished by the Purchaser in the amounts specified under Subsection 1811 and applied in accordance with Subsection 1812.

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

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

1810 - Bulk mulching material required under these specifications shall be delivered to the work area bound either by twine, string or hemp rope. Wire binding will not be permitted.

1811 - The Purchaser shall furnish and apply to approximately 11.0 acres designated for treatment as shown on the plans and as specified under Subsections 1802 and 1806, a mixture of grass seed, fertilizer, and mulch material at the following rate of application:

Grass Seed	(60) lbs./acre
Fertilizer	(200) lbs./acre
Mulch	(3,000) lbs./acre

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

1812 - The Purchaser shall furnish and apply to the area designated for treatment as shown on the plans

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

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

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

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

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

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

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

CATTLE GUARDS AND BYPASS GATES - 1900

1901 - This work shall consist of furnishing, hauling, and installation accordance with these specifications and conforming to the lines, grades, dimensions, and typical cross sections shown on the plans at the following locations:

Road No.	Sta./M.P.
29-12-4.0	MP 0.23

1902d - Replaced foundations shall be disposed of as directed by the Authorized Officer.

1903 - The Purchaser shall furnish precast concrete cattleguard substructures conforming to the requirements and details shown on the plans, in accordance with these specifications.

1904 - The cattleguard structure shall be constructed at right angles to the roadway.

1905 - Excavation for cattleguard substructures shall be to the lines, grades, and dimensions shown on the plans.

1906 - Where subsurface solid rock is encountered, it shall be excavated 6 inches below final grade and backfilled with a compactable granular material approved by the Authorized Officer to the lines, grades, and dimensions shown on the plans and shall be hand- or pneumatically-tamped to a uniform density satisfactory to the Authorized Officer.

1906a - When the foundation material is soft or otherwise unsuitable, it shall be removed to a depth of 24 inches and replaced with granular material that has been approved in writing by the Authorized Officer.

1908 - Upon completion of installation, precast units shall be free of structural cracks, chipped and spalled edges, and honeycombing. Precast units shall be placed in an equalizing bed of sand or other granular material approved by the Authorized Officer at least 4 inches thick and conforming to the grades shown on the plans.

1909 - Backfill material shall be placed around the foundation to the finished grade shown on the plans. Backfill material shall be readily compactable soil or granular material free of excess moisture, muck, frozen materials, roots, sod, or other deleterious materials and devoid of rocks or stones larger than gravel size. The backfill shall be placed in layers not to exceed 6 inches in thickness. Each layer of backfill shall be hand or pneumatically tamped to a uniform density satisfactory to the Authorized Officer.

1912b - The cattleguard structures located at the following locations shall be so constructed that the deck is at the same grade as the existing surface.

Road No.	Sta./M.P.
29-12-4.0	MP 0.23

1913 - Drainage for cattleguard bases shall be provided during and after construction. If necessary for adequate drainage, the Purchaser shall construct approach channels to the base-end openings as shown on the plans and as directed by the Authorized Officer.

1914 - Prior to the installation of the cattleguard superstructure, the interior area of the base shall be cleared of construction debris and excavated materials to the satisfaction of the Authorized Officer.

ROADSIDE BRUSHING - 2100

2101 - This work shall consist of the removal of vegetation from the road prism - variable distance, and inside curves in accordance with these specifications and conforming to the lines, grades, dimensions, and typical cross sections shown on the Roadside Brushing Detail Sheet of this exhibit, at designated locations as shown in the plans.

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

2103 - Vegetation cut manually or mechanically less than 6 inches in diameter at D.B.H.O.B. shall be cut to a maximum height of 2 inches above the ground surface or above obstructions such as rocks or stumps on cut and fill slopes and all limbs below the 2 inch area will be severed from the trunk.

2103a - Vegetation shall be cut and removed from the road bed between the outside shoulders and the ditch centerline and such vegetation shall be cut to a maximum height of 1 inch above the ground and running surface. Limbs below the 1 inch area will be severed from the trunk. Sharp pointed ends will not be permitted. Cuts shall be parallel to the ground line or running surface.

2104 - Trees in excess of 6 inches in diameter at D.B.H.O.B shall be limbed, so that no limbs extend into the treated area or over the roadbed to a height of 12 feet above the running surface of the roadway on cut and fill slopes, within the road prism-variable distance. Limbs shall be cut to within 1 inch of the trunk to produce a smooth vertical face. Removal of trees larger than 6 inches in diameter for sight distance or safety may be directed by the Authorized Officer.

2105 - Vegetation that is outside of the road prism-variable distance that protrudes into the road prism and within 12 feet in elevation above the running surface shall be cut, to within 1 inch of the trunk to produce a smooth vertical face.

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

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

2109 - Debris resulting from this operation shall be scattered downslope from the roadway. Debris shall not be allowed to accumulate in concentrations. Debris in excess of 1 foot in length and 2 inches in diameter shall not be allowed to remain

on cut slopes, ditches, roadways or water courses, or as directed by the Authorized Officer.

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

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Version: 5.2.0.116

Summary of All Roads and Projects Updated: 6/14/2017

T.S. Contract Name: Llewellyn CT Tract No: 2018.0031 Sale Date: 03/28/2018
Prepared by: M.Bailey Ph: 5417514234 Print Date: 1/26/2018 9:17:05 AM
Construction: 44.65 sta
Improve: 0.00 sta Renov: 396.52 sta Decom: 0.00 sta Temp: 0.00 sta

200 Clearing and Grubbing: 6.8 acres $17,320.14

300 Excavation: 2,586 cy $26,365.87
Haul < 500 ft: 1,676 sta-yds
Haul > 500 ft: 114 yd-mi

400 Drainage: $17,550.40
Culvert: 0 lf DownSpout: 0 lf
PolyPipe: 280 lf

500 Renovation: $30,005.25
Blading 7.51 mi
Slide Removal 30 cy

700-1200 Surfacing: $28,499.68
Commercial Quarry Name: Hoover 1 1/2" 1,323 LCY

1300 Geotextiles: $0.00

1400 Slope Protection: $4,780.55
Gradation Class 3: 140 cy

1800 Soil Stabilization: 11.0 acres $7,952.77

1900 Cattleguards: $5,780.54

2100 RoadSide Brushing: $6,288.15
Mechanical Brushing: 16.2 acres

2300 Engineering: 0.00 sta. $0.00

2400 Minor Concrete: $0.00

2500 Gabions: $0.00

8000 Miscellaneous: $0.00

Mobilization: Const. $10,418.00 Surf. $1,978.00..... $12,396.00

Quarry Development: $0.00

Total: 1,969 mbf @ $79.705/mbf = $156,939.34

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

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Llewellyn CT Sale Date: 03/28/2018
Road Number: 28-12-22.0 Road Name: Shuck Mtn. Rd.
Road Renovation: 1.17 mi 16 ft Subgrade 2 ft ditch

200 Clearing and Grubbing: acres	$0.00
300 Excavation:	$0.00
400 Drainage:	$0.00
Culvert: 0 lf	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$2,625.02
Blading 1.17 mi	
700-1200 Surfacing:	$0.00
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.0 acres	$0.00
1900 Cattleguards:	$0.00
2100 RoadSide Brushing (Mechanical):2.8 acres	$676.51
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $237.96 Surf. $0.00	$237.96
Quarry Development:	$0.00
Total:	$3,539.49

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

Road Construction Worksheet

Road Number: 28-12-22.0 Road Name: Shuck Mtn. Rd.

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:

Subtotal: $0.00

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:
  Blading: $694.50/mi x 1.17 mi = $812.57
  Scarification: $857.82/mi x 1.17 mi = $1,003.65
  Compaction: $325.47/mi x 1.17 mi = $380.80
  Clean Culverts: $365.82/mi x 1.17 mi = $428.01

Subtotal: $2,625.02

Section 700-1200 Surfacing:
Surfacing:

Subtotal: $0.00

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:

Subtotal: $0.00

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:
Mechanical Brushing
  Brushing width Left: 10ft. Right: 10ft.
  RoadSide Brushing Light: $241.61/acre x 2.80 acres = $676.51

Subtotal: $676.51

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 - 2.28% of total Costs = $237.96
  Surfacing - 0.00% by rock volume = $0.00

Subtotal: $237.96

Quarry Development:
  Based on 0.00% of total rock volume

Subtotal:	$0.00
Total:	$3,539.49

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Llewellyn CT Sale Date: 03/28/2018
Road Number: 28-12-27.0 Road Name: Shuck Mtn. Spur
Road Renovation: 0.66 mi 16 ft Subgrade 2 ft ditch

200 Clearing and Grubbing: acres	$0.00
300 Excavation:	$0.00
400 Drainage:	$0.00
Culvert: 0 lf	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$2,041.16
Blading 0.66 mi	
Slide Removal 30 cy	
700-1200 Surfacing:	$1,953.50
Quarry Name: Hoover 1 1/2" 100 LCY	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.0 acres	$0.00
1900 Cattleguards:	$0.00
2100 RoadSide Brushing (Mechanical):1.6 acres	$644.30
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $334.35 Surf. $149.51	$483.86
Quarry Development:	$0.00
Total:	$5,122.83

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

Road Construction Worksheet

Road Number: 28-12-27.0 Road Name: Shuck Mtn. Spur

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:

Subtotal: $0.00

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:
Slide Removal 30 cy
Front End Loader $101.17/hr x 2.00 hr = $202.34
Dump Truck: $74.45/hr x 2.00 hr = $148.90
Laborer: $34.09/hr x 2.00 hr = $68.18
Grader: $140.96/hr x 1.00 hr = $140.96
Blading: $694.50/mi x 0.66 mi = $458.37
Scarification: $857.82/mi x 0.66 mi = $566.16
Compaction: $325.47/mi x 0.66 mi = $214.81
Clean Culverts: $365.82/mi x 0.66 mi = $241.44

Subtotal: $2,041.16

Section 700-1200 Surfacing:

Commercial Quarry Name: Hoover 1 1/2"

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

Rock Volume = 100 LCY
Purchase Price / Royalty: $12.50/LCY x 100 LCY = $1,250.00
Processing: $0.88/LCY x 100 LCY = $88.00
Compaction: $1.08/LCY x 100 LCY = $108.00
Basic Rock Haul cost: $0.58/LCY x 100 LCY = $58.00
Rock Haul +15% grades: $1.75/LCY-mi x 100 LCY x 1.00 mi= $175.00
Rock Haul -15% grades: $0.88/LCY-mi x 100 LCY x 1.00 mi= $88.00
Rock Haul St& Co Roads: $0.39/LCY-mi x 100 LCY x 2.00 mi= $78.00
Basic Water Haul cost: $0.53/LCY x 100 LCY = $53.00
Water Haul +15% grades: $0.25/LCY-mi x 100 LCY x 1.50 mi= $37.50
Water Haul -15% grades: $0.12/LCY-mi x 100 LCY x 1.50 mi= $18.00

Subtotal: $1,953.50

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:
Mechanical Brushing
RoadSide Brushing Medium: $402.69/acre x 1.60 acres = $644.30

Subtotal: $644.30

Section 2300 Engineering:

Subtotal: $0.00

Road Number: 28-12-27.0 Shuck Mtn. Spur Continued

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
  Construction - 3.21% of total Costs = $334.35
  Surfacing - 7.56% by rock volume = $149.51

Subtotal: $483.86

Quarry Development:
  Based on 7.56% of total rock volume

Subtotal: $0.00

Total: $5,122.83

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Llewellyn CT Sale Date: 03/28/2018
Road Number: 28-12-27.3 Road Name:
Road Renovation: 1.19 mi 14 ft Subgrade 2 ft ditch

200 Clearing and Grubbing: 0.3 acres	$401.82
300 Excavation:	$0.00
400 Drainage:	$0.00
Culvert: 0 lf	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$5,813.91
Blading 1.19 mi	
700-1200 Surfacing:	$936.60
Quarry Name: Hoover 1 1/2" 40 LCY	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 1.0 acres	$726.28
1900 Cattleguards:	$0.00
2100 RoadSide Brushing (Mechanical):2.9 acres	$1,383.39
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $667.56 Surf. $59.80	$727.36
Quarry Development:	$0.00
Total:	$9,989.36

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

Road Construction Worksheet

Road Number: 28-12-27.3 Road Name:

Section 200 Clearing and Grubbing:
  Waste Areas MP 0.90 & 0.93
   Excavator - Large (3 CY) 3 hr x $133.94/hr = $401.82

Subtotal: $401.82

Section 300 Excavation:

Subtotal: $0.00

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:
  Blading: $694.50/mi x 1.19 mi = $826.46
  Scarification: $857.82/mi x 1.19 mi = $1,020.81
  Compaction: $325.47/mi x 1.19 mi = $387.31
  Clean Culverts: $365.82/mi x 1.19 mi = $435.33
  28-12-27.3 Seg C MP 0.11 Slide
   Excavator - Large (3 CY) 15 hr x $133.94/hr = $2,009.10
   Dump Truck 10 cy 10 hr x $74.45/hr = $744.50
   Motor Grader 14M 2 hr x $140.96/hr = $281.92
   Vibratory roller, Steel Drum 1 hr x $108.49/hr = $108.49

Subtotal: $5,813.91

Section 700-1200 Surfacing:

Commercial Quarry Name: Hoover 1 1/2"

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

  Rock Volume = 40 LCY
  Purchase Price / Royalty: $12.50/LCY x 40 LCY = $500.00
  Processing: $0.88/LCY x 40 LCY = $35.20
  Compaction: $1.08/LCY x 40 LCY = $43.20
  Basic Rock Haul cost: $0.58/LCY x 40 LCY = $23.20
  Rock Haul +15% grades: $1.75/LCY-mi x 40 LCY x 2.00 mi= $140.00
  Rock Haul -15% grades: $0.88/LCY-mi x 40 LCY x 3.00 mi= $105.60
  Rock Haul St& Co Roads: $0.39/LCY-mi x 40 LCY x 2.00 mi= $31.20
  Basic Water Haul cost: $0.53/LCY x 40 LCY = $21.20
  Water Haul +15% grades: $0.25/LCY-mi x 40 LCY x 2.50 mi= $25.00
  Water Haul -15% grades: $0.12/LCY-mi x 40 LCY x 2.50 mi= $12.00

Subtotal: $936.60

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:
 Comment: Slide and Waste Area only
  Dry Method with Mulch: $372.28/acre x 1.00 acres = $372.28
        + Fertilizer Cost: $34.00/acre x 1.00 acres = $34.00
        + Mulch Cost: $320.00/acre x 1.00 acres = $320.00

Subtotal: $726.28

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:

Mechanical Brushing
Brushing width Left: 10ft. Right: 10ft.
RoadSide Brushing Light: $241.61/acre x 1.00 acres = $241.61
RoadSide Brushing Medium: $402.69/acre x 1.42 acres = $571.82
RoadSide Brushing Heavy: $644.30/acre x 0.48 acres = $309.26
Addtional manual brushing
Chainsaw 6 hr x $43.45/hr = $260.70

Subtotal: $1,383.39

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 - 6.41% of total Costs = $667.56
Surfacing - 3.02% by rock volume = $59.80

Subtotal: $727.36

Quarry Development:
Based on 3.02% of total rock volume

Subtotal: $0.00

Total: $9,989.36

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Llewellyn CT Sale Date: 03/28/2018
Road Number: 28-12-35.0 Road Name:
Road Renovation: 0.55 mi 14 ft Subgrade 2 ft ditch

200 Clearing and Grubbing: 1.3 acres	$3,681.74
300 Excavation:	$0.00
400 Drainage:	$0.00
Culvert: 0 lf	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$1,233.99
Blading 0.55 mi	
700-1200 Surfacing:	$0.00
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 2.0 acres	$1,452.56
1900 Cattleguards:	$0.00
2100 RoadSide Brushing (NONE):0.0 acres	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $459.00 Surf. $0.00	$459.00
Quarry Development:	$0.00
Total:	$6,827.28

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

Road Construction Worksheet

Road Number: 28-12-35.0 Road Name:

Section 200 Clearing and Grubbing:
  Clearing Existing Roadway
   Excavator - Large (3 CY) 20 hr x $133.94/hr = $2,678.80
   Chainsaw 20 hr x $43.45/hr = $869.00
  Waste Area MP 0.21
   Excavator - Large (3 CY) 1 hr x $133.94/hr = $133.94

Subtotal: $3,681.74

Section 300 Excavation:

Subtotal: $0.00

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:
  Blading: $694.50/mi x 0.55 mi = $381.98
  Scarification: $857.82/mi x 0.55 mi = $471.80
  Compaction: $325.47/mi x 0.55 mi = $179.01
  Clean Culverts: $365.82/mi x 0.55 mi = $201.20

Subtotal: $1,233.99

Section 700-1200 Surfacing:
Surfacing:

Subtotal: $0.00

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:
  Dry Method with Mulch: $372.28/acre x 2.00 acres = $744.56
        + Fertilizer Cost: $34.00/acre x 2.00 acres = $68.00
        + Mulch Cost: $320.00/acre x 2.00 acres = $640.00

Subtotal: $1,452.56

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
  Construction - 4.41% of total Costs = $459.00

Road Number: 28-12-35.0 Continued

Surfacing - 0.00% by rock volume = $0.00

Subtotal: $459.00

Quarry Development:
Based on 0.00% of total rock volume

Subtotal: $0.00

Total: $6,827.28

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Llewellyn CT Sale Date: 03/28/2018
Road Number: 28-12-35.1 Road Name:
Road Construction: 0.06 mi 14 ft Subgrade 0 ft ditch

200 Clearing and Grubbing: 0.3 acres	$818.74
300 Excavation:	$1,396.56
400 Drainage:	$0.00
Culvert: 0 lf	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$0.00
700-1200 Surfacing:	$0.00
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.3 acres	$217.88
1900 Cattleguards:	$0.00
2100 RoadSide Brushing (NONE):0.0 acres	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $175.37 Surf. $0.00	$175.37
Quarry Development:	$0.00
Total:	$2,608.57

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

Road Construction Worksheet

Road Number: 28-12-35.1 Road Name:

Section 200 Clearing and Grubbing:
Clearing - Medium (Clearing): Adjustment Factor (1.67)
16-30% (Avg Side Slopes): Adjustment Factor (0.1)
Scatter (Slash): Adjustment Factor (1)
20-40' (Avg Clearing Widths): Adjustment Factor (0.1)
Total Adjustment Factor:1.67 + 0.1 + 1 + 0.1 = 2.87
Base Cost/Acre: $891.49 x Adjustment Factor: 2.87 x Total Acres: .32 = $818.74

Subtotal: $818.74

Section 300 Excavation:
Subgrade Compaction: 4 Sta/hr $27.12/sta. x 3.4 sta = $91.67
Blading without ditch: $11.84/station x 3.38 stations = $40.02
Subgrade Construction
Tractor: D7 with rippers 8 hr x $158.11/hr = $1,264.88

Subtotal: $1,396.56

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:

Subtotal: $0.00

Section 700-1200 Surfacing:
Surfacing:

Subtotal: $0.00

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:
Dry Method with Mulch: $372.28/acre x 0.30 acres = $111.68
+ Fertilizer Cost: $34.00/acre x 0.30 acres = $10.20
+ Mulch Cost: $320.00/acre x 0.30 acres = $96.00

Subtotal: $217.88

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:

Road Number: 28-12-35.1 Continued

Construction - 1.68% of total Costs = $175.37
Surfacing - 0.00% by rock volume = $0.00

Subtotal: $175.37

Quarry Development:
Based on 0.00% of total rock volume

Subtotal: $0.00

Total: $2,608.57

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Llewellyn CT Sale Date: 03/28/2018
Road Number: 28-12-35.2 Road Name:
Road Construction: 0.10 mi 14 ft Subgrade 0 ft ditch

200 Clearing and Grubbing: 0.5 acres	$892.47
300 Excavation:	$1,943.75
400 Drainage:	$0.00
Culvert: 0 lf	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$0.00
700-1200 Surfacing:	$0.00
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.5 acres	$363.14
1900 Cattleguards:	$0.00
2100 RoadSide Brushing (NONE):0.0 acres	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $230.59 Surf. $0.00	$230.59
Quarry Development:	$0.00
Total:	$3,429.96

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

Road Construction Worksheet

Road Number: 28-12-35.2 Road Name:

Section 200 Clearing and Grubbing:
Clearing - Light (Clearing): Adjustment Factor (0.93)
16-30% (Avg Side Slopes): Adjustment Factor (0.1)
Scatter (Slash): Adjustment Factor (1)
20-40' (Avg Clearing Widths): Adjustment Factor (0.1)
Total Adjustment Factor:0.93 + 0.1 + 1 + 0.1 = 2.13
Base Cost/Acre: $891.49 x Adjustment Factor: 2.13 x Total Acres: 0.47 = $892.47

Subtotal: $892.47

Section 300 Excavation:
Subgrade Compaction: 4 Sta/hr $27.12/sta. x 5.3 sta = $142.38
Blading without ditch: $11.84/station x 5.25 stations = $62.16
Subgrade Construction
Tractor: D7 with rippers 11 hr x $158.11/hr = $1,739.21

Subtotal: $1,943.75

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:

Subtotal: $0.00

Section 700-1200 Surfacing:
Surfacing:

Subtotal: $0.00

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:
Dry Method with Mulch: $372.28/acre x 0.50 acres = $186.14
+ Fertilizer Cost: $34.00/acre x 0.50 acres = $17.00
+ Mulch Cost: $320.00/acre x 0.50 acres = $160.00

Subtotal: $363.14

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:

Road Number: 28-12-35.2 Continued

Construction - 2.21% of total Costs = $230.59
Surfacing - 0.00% by rock volume = $0.00

Subtotal: $230.59

Quarry Development:
Based on 0.00% of total rock volume

Subtotal: $0.00

Total: $3,429.96

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Llewellyn CT Sale Date: 03/28/2018
Road Number: 28-12-35.3 Road Name:
Road Construction: 0.20 mi 14 ft Subgrade 0 ft ditch

200 Clearing and Grubbing: 1.2 acres	$3,230.22
300 Excavation: 2,586 cy	$11,921.61
Haul < 500 ft: 1,676 sta-yds	
Haul > 500 ft: 114 yd-mi	
400 Drainage:	$0.00
Culvert: 0 lf	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$0.00
700-1200 Surfacing:	$0.00
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 1.0 acres	$726.28
1900 Cattleguards:	$0.00
2100 RoadSide Brushing (NONE):0.0 acres	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $1,144.42 Surf. $0.00	$1,144.42
Quarry Development:	$0.00
Total:	$17,022.53

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

Road Construction Worksheet

Road Number: 28-12-35.3 Road Name:

Section 200 Clearing and Grubbing:
Clearing - Medium (Clearing): Adjustment Factor (1.67)
31-45% (Avg Side Slopes): Adjustment Factor (0.2)
Scatter (Slash): Adjustment Factor (1)
20-40' (Avg Clearing Widths): Adjustment Factor (0.1)
Total Adjustment Factor:1.67 + 0.2 + 1 + 0.1 = 2.97
Base Cost/Acre: $891.49 x Adjustment Factor: 2.97 x Total Acres: 1.22 = $3,230.22
Subtotal: $3,230.22

Section 300 Excavation:
Excavation - Common: $2.01/cy x 2,586 cy = $5,197.86
Excavation - Rippable: $4.05/cy x 0 cy = $0.00
Subgrade Compaction: 4 Sta/hr $27.12/sta. x 10.7 sta = $291.27
Embankment Placement & Compaction 306.a - Common: $0.80/cy x 2,586 cy = $2,068.80
End Hauling - 100 to 500 ft: $0.16/sta-yd x 1,676 sta-yd = $268.16
End Hauling > 500 ft and 10 mph: $2.10/yd-mi x 114 yd-mi = $239.40
End Hauling > 500 ft - Fixed Cost (CY): $2.86/cy x 751 cy = $2,147.86
Blading without ditch: $11.84/station x 10.74 stations = $127.16
Sta. 2+80 Landing Construction
Tractor: D7 with rippers 10 hr x $158.11/hr = $1,581.10
Subtotal: $11,921.61

Section 400 Drainage:
Subtotal: $0.00

Section 500 Renovation:
Subtotal: $0.00

Section 700-1200 Surfacing:
Surfacing:
Subtotal: $0.00

Section 1300 Geotextiles:
Subtotal: $0.00

Section 1400 Slope Protection:
Subtotal: $0.00

Section 1800 Soil Stabilization:
Dry Method with Mulch: $372.28/acre x 1.00 acres = $372.28
+ Fertilizer Cost: $34.00/acre x 1.00 acres = $34.00
+ Mulch Cost: $320.00/acre x 1.00 acres = $320.00
Subtotal: $726.28

Section 1900 Cattleguards:
Subtotal: $0.00

Section 2100 Roadside Brushing:
Subtotal: $0.00

Section 2300 Engineering:
Subtotal: $0.00

Section 2400 Minor Concrete:
Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
Construction - 10.99% of total Costs = $1,144.42
Surfacing - 0.00% by rock volume = $0.00

Subtotal: $1,144.42

Quarry Development:
Based on 0.00% of total rock volume

Subtotal: $0.00

Total: $17,022.53

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Llewellyn CT Sale Date: 03/28/2018
Road Number: 28-12-35.4 Road Name:
Road Construction: 0.23 mi 14 ft Subgrade 0 ft ditch

200 Clearing and Grubbing: 1.1 acres	$2,938.98
300 Excavation:	$5,060.11
400 Drainage:	$0.00
Culvert: 0 lf	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$0.00
700-1200 Surfacing:	$0.00
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 1.2 acres	$871.54
1900 Cattleguards:	$0.00
2100 RoadSide Brushing (NONE):0.0 acres	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $639.35 Surf. $0.00	$639.35
Quarry Development:	$0.00
Total:	$9,509.98

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

Road Construction Worksheet

Road Number: 28-12-35.4 Road Name:

Section 200 Clearing and Grubbing:
Clearing - Medium (Clearing): Adjustment Factor (1.67)
31-45% (Avg Side Slopes): Adjustment Factor (0.2)
Scatter (Slash): Adjustment Factor (1)
20-40' (Avg Clearing Widths): Adjustment Factor (0.1)
Total Adjustment Factor:1.67 + 0.2 + 1 + 0.1 = 2.97
Base Cost/Acre: $891.49 x Adjustment Factor: 2.97 x Total Acres: 1.11 = $2,938.98

Subtotal: $2,938.98

Section 300 Excavation:
Subgrade Compaction: 4 Sta/hr $27.12/sta. x 12.2 sta = $330.59
Blading without ditch: $11.84/station x 12.19 stations = $144.33
Subgrade Construction
Tractor: D7 with rippers 24 hr x $158.11/hr = $3,794.64
Landing and TTA Construction
Tractor: D7 with rippers 5 hr x $158.11/hr = $790.55

Subtotal: $5,060.11

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:

Subtotal: $0.00

Section 700-1200 Surfacing:
Surfacing:

Subtotal: $0.00

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:
Dry Method with Mulch: $372.28/acre x 1.20 acres = $446.74
+ Fertilizer Cost: $34.00/acre x 1.20 acres = $40.80
+ Mulch Cost: $320.00/acre x 1.20 acres = $384.00

Subtotal: $871.54

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
  Construction - 6.14% of total Costs = $639.35
  Surfacing - 0.00% by rock volume = $0.00

Subtotal: $639.35

Quarry Development:
  Based on 0.00% of total rock volume

Subtotal: $0.00

Total: $9,509.98

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Llewellyn CT Sale Date: 03/28/2018
Road Number: 28-12-35.5 Road Name:
Road Renovation: 0.23 mi 14 ft Subgrade 0 ft ditch

200 Clearing and Grubbing: 0.6 acres	$1,572.59
300 Excavation:	$0.00
400 Drainage:	$0.00
Culvert: 0 lf	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$1,951.91
Blading 0.23 mi	
700-1200 Surfacing:	$0.00
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 1.1 acres	$798.91
1900 Cattleguards:	$0.00
2100 RoadSide Brushing (NONE):0.0 acres	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $311.61 Surf. $0.00	$311.61
Quarry Development:	$0.00
Total:	$4,635.01

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

Road Construction Worksheet

Road Number: 28-12-35.5 Road Name:

Section 200 Clearing and Grubbing:
   Clearing - Medium (Clearing): Adjustment Factor (1.67)
   16-30% (Avg Side Slopes): Adjustment Factor (0.1)
   Pile and Burn (Slash): Adjustment Factor (1.28)
   20-40' (Avg Clearing Widths): Adjustment Factor (0.1)
   Total Adjustment Factor:1.67 + 0.1 + 1.28 + 0.1 = 3.15
   Base Cost/Acre: $891.49 x Adjustment Factor: 3.15 x Total Acres: 0.56 = $1,572.59
Subtotal: $1,572.59

Section 300 Excavation:
Subtotal: $0.00

Section 400 Drainage:
Subtotal: $0.00

Section 500 Renovation:
  Scarification: $857.82/mi x 0.23 mi = $197.30
  Blading w/o Ditches: $428.91/mi x 0.23 mi = $98.65
  Compaction: $325.47/mi x 0.23 mi = $74.86
  Subgrade & LZ Reno
   Tractor: D7 with rippers 10 hr x $158.11/hr = $1,581.10
Subtotal: $1,951.91

Section 700-1200 Surfacing:
Surfacing:
Subtotal: $0.00

Section 1300 Geotextiles:
Subtotal: $0.00

Section 1400 Slope Protection:
Subtotal: $0.00

Section 1800 Soil Stabilization:
  Dry Method with Mulch: $372.28/acre x 1.10 acres = $409.51
        + Fertilizer Cost: $34.00/acre x 1.10 acres = $37.40
        + Mulch Cost: $320.00/acre x 1.10 acres = $352.00
Subtotal: $798.91

Section 1900 Cattleguards:
Subtotal: $0.00

Section 2100 Roadside Brushing:
Subtotal: $0.00

Section 2300 Engineering:
Subtotal: $0.00

Section 2400 Minor Concrete:
Subtotal: $0.00

Section 2500 Gabions:
Subtotal: $0.00

Section 8000 Miscellaneous:
Subtotal: $0.00

Mobilization:
  Construction - 2.99% of total Costs = $311.61
  Surfacing - 0.00% by rock volume = $0.00

Subtotal: $311.61

Quarry Development:
  Based on 0.00% of total rock volume

Subtotal: $0.00

Total: $4,635.01

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Llewellyn CT Sale Date: 03/28/2018
Road Number: 29-12-4.0 Road Name: Llewellyn Crk. Rd.
Road Renovation: 3.68 mi 16 ft Subgrade 2 ft ditch

200 Clearing and Grubbing: acres	$0.00
300 Excavation:	$0.00
400 Drainage:	$17,550.40
Culvert: 0 lf	
DownSpout: 0 lf	
PolyPipe: 280 lf	
500 Renovation:	$15,974.68
Blading 3.68 mi	
700-1200 Surfacing:	$25,609.58
Quarry Name: Hoover 1 1/2" 1,183 LCY	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$4,780.55
Gradation Class 3: 140 cy	
1800 Soil Stabilization: 2.3 acres	$1,634.13
1900 Cattleguards:	$5,780.54
2100 RoadSide Brushing (Mechanical):8.9 acres	$3,583.94
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $5,399.43 Surf. $1,768.69	$7,168.12
Quarry Development:	$0.00
Total:	$82,081.94

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

Road Construction Worksheet

Road Number: 29-12-4.0 Road Name: Llewellyn Crk. Rd.

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:

Subtotal: $0.00

Section 400 Drainage:

Poly Pipe	MP 2.29	24 inch 50 lf x $62.68/lf =	$3,134.00
Poly Pipe	MP 2.42	24 inch 50 lf x $62.68/lf =	$3,134.00
Poly Pipe	MP 2.44	24 inch 40 lf x $62.68/lf =	$2,507.20
Poly Pipe	MP 2.68	24 inch 70 lf x $62.68/lf =	$4,387.60
Poly Pipe	MP 2.80	24 inch 40 lf x $62.68/lf =	$2,507.20
Poly Pipe	MP 2.95 Temp Pipe	24 inch 30 lf x $62.68/lf =	$1,880.40

Subtotal: $17,550.40

Section 500 Renovation:

Front End Loader $101.17/hr x 20.00 hr = $2,023.40
Dump Truck: $74.45/hr x 20.00 hr = $1,489.00
Laborer: $34.09/hr x 20.00 hr = $681.80
Grader: $140.96/hr x 20.00 hr = $2,819.20
Blading: $694.50/mi x 3.68 mi = $2,555.76
Scarification: $857.82/mi x 3.68 mi = $3,156.78
Compaction: $325.47/mi x 3.68 mi = $1,197.73
Clean Culverts: $365.82/mi x 3.68 mi = $1,346.22
Reno RS LZ MP 3.26 & 3.57
Motor Grader 14M 2 hr x $140.96/hr = $281.92
Reno WA MP 2.32, 2.58, 2.76
Motor Grader 14M 3 hr x $140.96/hr = $422.88

Subtotal: $15,974.68

Section 700-1200 Surfacing:

Commercial Quarry Name: Hoover 1 1/2"
Comment: 3" Lift MP 0.00-0.73

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.73mi	12ft	13ft	3in	10%					50 LCY

Rock Volume = 703 LCY
Purchase Price / Royalty: $12.50/LCY x 703 LCY = $8,787.50
Processing: $0.88/LCY x 703 LCY = $618.64
Compaction: $1.08/LCY x 703 LCY = $759.24
Basic Rock Haul cost: $0.58/LCY x 703 LCY = $407.74
Rock Haul -15% grades: $0.88/LCY-mi x 703 LCY x 2.00 mi= $1,237.28
Rock Haul St& Co Roads: $0.39/LCY-mi x 703 LCY x 4.50 mi= $1,233.77
Basic Water Haul cost: $0.53/LCY x 703 LCY = $372.59
Water Haul -15% grades: $0.12/LCY-mi x 703 LCY x 2.00 mi= $168.72
Water Haul St&Co Roads: $0.07/LCY-mi x 703 LCY x 10.00 mi= $492.10

Commercial Quarry Name: Hoover 1 1/2"
Comment: Culvert Bedding & Surfacing

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

Rock Volume = 80 LCY
Purchase Price / Royalty: $12.50/LCY x 80 LCY = $1,000.00
Processing: $0.88/LCY x 80 LCY = $70.40
Compaction: $1.08/LCY x 80 LCY = $86.40
Basic Rock Haul cost: $0.58/LCY x 80 LCY = $46.40
Rock Haul +15% grades: $1.75/LCY-mi x 80 LCY x 2.00 mi= $280.00
Rock Haul -15% grades: $0.88/LCY-mi x 80 LCY x 2.00 mi= $140.80
Rock Haul St& Co Roads: $0.39/LCY-mi x 80 LCY x 4.50 mi= $140.40

Road Number: 29-12-4.0 Llewellyn Crk. Rd. Continued

Basic Water Haul cost: $0.53/LCY x 80 LCY = $42.40
Water Haul +15% grades: $0.25/LCY-mi x 80 LCY x 2.00 mi= $40.00
Water Haul -15% grades: $0.12/LCY-mi x 80 LCY x 2.00 mi= $19.20
Water Haul St&Co Roads: $0.07/LCY-mi x 80 LCY x 10.00 mi= $56.00

Commercial Quarry Name: Hoover 1 1/2"
Comment: MP 0.73-3.68 Maintenance Rock

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

Rock Volume = 400 LCY
Purchase Price / Royalty: $12.50/LCY x 400 LCY = $5,000.00
Processing: $0.88/LCY x 400 LCY = $352.00
Compaction: $1.08/LCY x 400 LCY = $432.00
Basic Rock Haul cost: $0.58/LCY x 400 LCY = $232.00
Rock Haul +15% grades: $1.75/LCY-mi x 400 LCY x 2.00 mi= $1,400.00
Rock Haul -15% grades: $0.88/LCY-mi x 400 LCY x 2.00 mi= $704.00
Rock Haul St& Co Roads: $0.39/LCY-mi x 400 LCY x 4.50 mi= $702.00
Basic Water Haul cost: $0.53/LCY x 400 LCY = $212.00
Water Haul +15% grades: $0.25/LCY-mi x 400 LCY x 2.00 mi= $200.00
Water Haul -15% grades: $0.12/LCY-mi x 400 LCY x 2.00 mi= $96.00
Water Haul St&Co Roads: $0.07/LCY-mi x 400 LCY x 10.00 mi= $280.00

Subtotal: $25,609.58

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:
Comment: Culvert Energy Dissapators
Rock Source: Hoover
Purchase Price / Royalty: $15.00/cy x 120cy = $1,800.00
Furnish Class 3 type rock
Basic Rock Haul cost: $1.05/cy x 120cy = $126.00
Rock Haul +15% grades: $2.10/cy-mi x 120cy x 2.00 mi= $504.00
Rock Haul -15% grades: $1.05/cy-mi x 120cy x 2.00 mi= $252.00
Rock Haul St& Co Roads: $0.47/cy-mi x 120cy x 4.50 mi= $253.80
Placement on Fill slopes: 120cy x ($2.87/cy x 1.04) = $358.18

Comment: MP 2.59 Fill Slope Protection
Rock Source: Hoover
Purchase Price / Royalty: $15.00/cy x 20cy = $300.00
Furnish Class 3 type rock
Basic Rock Haul cost: $1.05/cy x 20cy = $21.00
Rock Haul +15% grades: $2.10/cy-mi x 20cy x 2.00 mi= $84.00
Rock Haul -15% grades: $1.05/cy-mi x 20cy x 2.00 mi= $42.00
Rock Haul St& Co Roads: $0.47/cy-mi x 20cy x 4.50 mi= $42.30
Placement on Fill slopes: 20cy x ($2.87/cy x 1.04) = $59.70
Energy Dissapator Construction
Excavator - Large (3 CY) 6 hr x $133.94/hr = $803.64
Fill Slope Protection MP 2.59
Excavator - Large (3 CY) 1 hr x $133.94/hr = $133.94

Subtotal: $4,780.55

Section 1800 Soil Stabilization:
Dry Method with Mulch: $372.28/acre x 2.25 acres = $837.63
+ Fertilizer Cost: $34.00/acre x 2.25 acres = $76.50
+ Mulch Cost: $320.00/acre x 2.25 acres = $720.00

Subtotal: $1,634.13

Section 1900 Cattleguards:
Install New Pre-cast Base
Backhoe 6 hr x $85.84/hr = $515.04

Road Number: 29-12-4.0 Llewellyn Crk. Rd. Continued

Dump Truck 10 CY w/Tilt Trailer 10 hr x $100.00/hr = $1,000.00
Tamper - handheld 2 hr x $42.40/hr = $84.80
Vibratory roller, Steel Drum 2 hr x $108.49/hr = $216.98
Motor Grader 14M 2 hr x $140.96/hr = $281.92
General Laborer 20 hr x $34.09/hr = $681.80
12' Pre-cast base including frieght to 97420
2 ea x $1,500.00/ea = $3,000.00

Subtotal: $5,780.54

Section 2100 Roadside Brushing:
Mechanical Brushing
RoadSide Brushing Medium: $402.69/acre x 8.90 acres = $3,583.94

Subtotal: $3,583.94

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 - 51.83% of total Costs = $5,399.43
Surfacing - 89.42% by rock volume = $1,768.69

Subtotal: $7,168.12

Quarry Development:
Based on 89.42% of total rock volume

Subtotal: $0.00

Total: $82,081.94

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Llewellyn CT Sale Date: 03/28/2018
Road Number: Spur 1A Road Name:
Road Construction: 0.05 mi 14 ft Subgrade 0 ft ditch

200 Clearing and Grubbing: 0.2 acres	$614.06
300 Excavation:	$1,042.94
400 Drainage:	$0.00
Culvert: 0 lf	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$0.00
700-1200 Surfacing:	$0.00
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.2 acres	$145.26
1900 Cattleguards:	$0.00
2100 RoadSide Brushing (NONE):0.0 acres	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $129.90 Surf. $0.00	$129.90
Quarry Development:	$0.00
Total:	$1,932.16

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

Road Construction Worksheet

Road Number: Spur 1A Road Name:

Section 200 Clearing and Grubbing:
Clearing - Medium (Clearing): Adjustment Factor (1.67)
16-30% (Avg Side Slopes): Adjustment Factor (0.1)
Scatter (Slash): Adjustment Factor (1)
20-40' (Avg Clearing Widths): Adjustment Factor (0.1)
Total Adjustment Factor:1.67 + 0.1 + 1 + 0.1 = 2.87
Base Cost/Acre: $891.49 x Adjustment Factor: 2.87 x Total Acres: 0.24 = $614.06

Subtotal: $614.06

Section 300 Excavation:
Subgrade Compaction: 4 Sta/hr $27.12/sta. x 2.4 sta = $65.63
Blading without ditch: $11.84/station x 2.42 stations = $28.65
Subgrade & LZ Construction
Tractor: D7 with rippers 6 hr x $158.11/hr = $948.66

Subtotal: $1,042.94

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:

Subtotal: $0.00

Section 700-1200 Surfacing:
Surfacing:

Subtotal: $0.00

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:
Dry Method with Mulch: $372.28/acre x 0.20 acres = $74.46
+ Fertilizer Cost: $34.00/acre x 0.20 acres = $6.80
+ Mulch Cost: $320.00/acre x 0.20 acres = $64.00

Subtotal: $145.26

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:

Road Number: Spur 1A Continued

Construction - 1.25% of total Costs = $129.90
Surfacing - 0.00% by rock volume = $0.00

Subtotal: $129.90

Quarry Development:
Based on 0.00% of total rock volume

Subtotal: $0.00

Total: $1,932.16

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Llewellyn CT Sale Date: 03/28/2018
Road Number: Spur 2A Road Name:
Road Construction: 0.02 mi 14 ft Subgrade 0 ft ditch

200 Clearing and Grubbing: 0.1 acres	$296.33
300 Excavation:	$667.50
400 Drainage:	$0.00
Culvert: 0 lf	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$0.00
700-1200 Surfacing:	$0.00
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.2 acres	$145.26
1900 Cattleguards:	$0.00
2100 RoadSide Brushing (NONE):0.0 acres	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $79.94 Surf. $0.00	$79.94
Quarry Development:	$0.00
Total:	$1,189.03

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

Road Construction Worksheet

Road Number: Spur 2A Road Name:

Section 200 Clearing and Grubbing:
Clearing - Medium (Clearing): Adjustment Factor (1.67)
16-30% (Avg Side Slopes): Adjustment Factor (0.1)
Scatter (Slash): Adjustment Factor (1)
greater than 40' (Avg Clearing Widths): Adjustment Factor (0)
Total Adjustment Factor:1.67 + 0.1 + 1 + 0 = 2.77
Base Cost/Acre: $891.49 x Adjustment Factor: 2.77 x Total Acres: .12 = $296.33

Subtotal: $296.33

Section 300 Excavation:
Subgrade Compaction: 4 Sta/hr $27.12/sta. x 0.9 sta = $24.41
Blading without ditch: $11.84/station x 0.90 stations = $10.66
Subgrade & LZ Construction
Tractor: D7 with rippers 4 hr x $158.11/hr = $632.44

Subtotal: $667.50

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:

Subtotal: $0.00

Section 700-1200 Surfacing:
Surfacing:

Subtotal: $0.00

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:
Dry Method with Mulch: $372.28/acre x 0.20 acres = $74.46
+ Fertilizer Cost: $34.00/acre x 0.20 acres = $6.80
+ Mulch Cost: $320.00/acre x 0.20 acres = $64.00

Subtotal: $145.26

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:

Road Number: Spur 2A Continued

Construction - 0.77% of total Costs = $79.94
Surfacing - 0.00% by rock volume = $0.00

Subtotal: $79.94

Quarry Development:
Based on 0.00% of total rock volume

Subtotal: $0.00

Total: $1,189.03

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Llewellyn CT Sale Date: 03/28/2018
Road Number: Spur 2B Road Name:
Road Renovation: 0.03 mi 14 ft Subgrade 0 ft ditch

200 Clearing and Grubbing: 0.2 acres	$442.54
300 Excavation:	$0.00
400 Drainage:	$0.00
Culvert: 0 lf	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$364.59
Blading 0.03 mi	
700-1200 Surfacing:	$0.00
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.2 acres	$145.26
1900 Cattleguards:	$0.00
2100 RoadSide Brushing (NONE):0.0 acres	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $68.64 Surf. $0.00	$68.64
Quarry Development:	$0.00
Total:	$1,021.02

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

Road Construction Worksheet

Road Number: Spur 2B Road Name:

Section 200 Clearing and Grubbing:
   Clearing - Medium (Clearing): Adjustment Factor (1.67)
   1-15% (Avg Side Slopes): Adjustment Factor (0)
   Scatter (Slash): Adjustment Factor (1)
   less than 20' (Avg Clearing Widths): Adjustment Factor (0.25)
   Total Adjustment Factor:1.67 + 0 + 1 + 0.25 = 2.92
   Base Cost/Acre: $891.49 x Adjustment Factor: 2.92 x Total Acres: .17 = $442.54
Subtotal: $442.54

Section 300 Excavation:
Subtotal: $0.00

Section 400 Drainage:
Subtotal: $0.00

Section 500 Renovation:
  Scarification: $857.82/mi x 0.03 mi = $25.73
  Blading w/o Ditches: $428.91/mi x 0.03 mi = $12.87
  Compaction: $325.47/mi x 0.03 mi = $9.76
  Renovate Landing Area
   Tractor: D7 with rippers 2 hr x $158.11/hr = $316.22
Subtotal: $364.59

Section 700-1200 Surfacing:
Surfacing:
Subtotal: $0.00

Section 1300 Geotextiles:
Subtotal: $0.00

Section 1400 Slope Protection:
Subtotal: $0.00

Section 1800 Soil Stabilization:
  Dry Method with Mulch: $372.28/acre x 0.20 acres = $74.46
        + Fertilizer Cost: $34.00/acre x 0.20 acres = $6.80
        + Mulch Cost: $320.00/acre x 0.20 acres = $64.00
Subtotal: $145.26

Section 1900 Cattleguards:
Subtotal: $0.00

Section 2100 Roadside Brushing:
Subtotal: $0.00

Section 2300 Engineering:
Subtotal: $0.00

Section 2400 Minor Concrete:
Subtotal: $0.00

Section 2500 Gabions:
Subtotal: $0.00

Section 8000 Miscellaneous:
Subtotal: $0.00

Road Number: Spur 2B Continued

Mobilization:
  Construction - 0.66% of total Costs = $68.64
  Surfacing - 0.00% by rock volume = $0.00

Subtotal: $68.64

Quarry Development:
  Based on 0.00% of total rock volume

Subtotal: $0.00

Total: $1,021.02

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Llewellyn CT Sale Date: 03/28/2018
Road Number: Spur 2C Road Name:
Road Construction: 0.06 mi 14 ft Subgrade 0 ft ditch

200 Clearing and Grubbing: 0.3 acres	$793.16
300 Excavation:	$1,391.50
400 Drainage:	$0.00
Culvert: 0 lf	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$0.00
700-1200 Surfacing:	$0.00
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.3 acres	$217.88
1900 Cattleguards:	$0.00
2100 RoadSide Brushing (NONE):0.0 acres	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $173.16 Surf. $0.00	$173.16
Quarry Development:	$0.00
Total:	$2,575.71

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

Road Construction Worksheet

Road Number: Spur 2C Road Name:

Section 200 Clearing and Grubbing:
Clearing - Medium (Clearing): Adjustment Factor (1.67)
16-30% (Avg Side Slopes): Adjustment Factor (0.1)
Scatter (Slash): Adjustment Factor (1)
20-40' (Avg Clearing Widths): Adjustment Factor (0.1)
Total Adjustment Factor:1.67 + 0.1 + 1 + 0.1 = 2.87
Base Cost/Acre: $891.49 x Adjustment Factor: 2.87 x Total Acres: .31 = $793.16

Subtotal: $793.16

Section 300 Excavation:
Subgrade Compaction: 4 Sta/hr $27.12/sta. x 3.3 sta = $88.14
Blading without ditch: $11.84/station x 3.25 stations = $38.48
Subgrade & LZ Construction
Tractor: D7 with rippers 8 hr x $158.11/hr = $1,264.88

Subtotal: $1,391.50

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:

Subtotal: $0.00

Section 700-1200 Surfacing:
Surfacing:

Subtotal: $0.00

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:
Dry Method with Mulch: $372.28/acre x 0.30 acres = $111.68
+ Fertilizer Cost: $34.00/acre x 0.30 acres = $10.20
+ Mulch Cost: $320.00/acre x 0.30 acres = $96.00

Subtotal: $217.88

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:

Road Number: Spur 2C Continued

Construction - 1.66% of total Costs = $173.16
Surfacing - 0.00% by rock volume = $0.00

Subtotal: $173.16

Quarry Development:
Based on 0.00% of total rock volume

Subtotal: $0.00

Total: $2,575.71

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Llewellyn CT Sale Date: 03/28/2018
Road Number: Spur 2D Road Name:
Road Construction: 0.03 mi 14 ft Subgrade 0 ft ditch

200 Clearing and Grubbing: 0.2 acres	$434.96
300 Excavation:	$849.77
400 Drainage:	$0.00
Culvert: 0 lf	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$0.00
700-1200 Surfacing:	$0.00
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.2 acres	$145.26
1900 Cattleguards:	$0.00
2100 RoadSide Brushing (NONE):0.0 acres	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $103.07 Surf. $0.00	$103.07
Quarry Development:	$0.00
Total:	$1,533.05

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

Road Construction Worksheet

Road Number: Spur 2D Road Name:

Section 200 Clearing and Grubbing:
Clearing - Medium (Clearing): Adjustment Factor (1.67)
16-30% (Avg Side Slopes): Adjustment Factor (0.1)
Scatter (Slash): Adjustment Factor (1)
20-40' (Avg Clearing Widths): Adjustment Factor (0.1)
Total Adjustment Factor:1.67 + 0.1 + 1 + 0.1 = 2.87
Base Cost/Acre: $891.49 x Adjustment Factor: 2.87 x Total Acres: .17 = $434.96

Subtotal: $434.96

Section 300 Excavation:
Subgrade Compaction: 4 Sta/hr $27.12/sta. x 1.5 sta = $41.22
Blading without ditch: $11.84/station x 1.52 stations = $18.00
Subgrade & LZ Construction
Tractor: D7 with rippers 5 hr x $158.11/hr = $790.55

Subtotal: $849.77

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:

Subtotal: $0.00

Section 700-1200 Surfacing:
Surfacing:

Subtotal: $0.00

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:
Dry Method with Mulch: $372.28/acre x 0.20 acres = $74.46
+ Fertilizer Cost: $34.00/acre x 0.20 acres = $6.80
+ Mulch Cost: $320.00/acre x 0.20 acres = $64.00

Subtotal: $145.26

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:

Road Number: Spur 2D Continued

Construction - 0.99% of total Costs = $103.07
Surfacing - 0.00% by rock volume = $0.00

Subtotal: $103.07

Quarry Development:
Based on 0.00% of total rock volume

Subtotal: $0.00

Total: $1,533.05

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Llewellyn CT Sale Date: 03/28/2018
Road Number: Spur 2E Road Name:
Road Construction: 0.09 mi 14 ft Subgrade 0 ft ditch

200 Clearing and Grubbing: 0.5 acres	$1,202.53
300 Excavation:	$2,092.12
400 Drainage:	$0.00
Culvert: 0 lf	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$0.00
700-1200 Surfacing:	$0.00
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.5 acres	$363.14
1900 Cattleguards:	$0.00
2100 RoadSide Brushing (NONE):0.0 acres	$0.00
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $263.64 Surf. $0.00	$263.64
Quarry Development:	$0.00
Total:	$3,921.43

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

Road Construction Worksheet

Road Number: Spur 2E Road Name:

Section 200 Clearing and Grubbing:
Clearing - Medium (Clearing): Adjustment Factor (1.67)
16-30% (Avg Side Slopes): Adjustment Factor (0.1)
Scatter (Slash): Adjustment Factor (1)
20-40' (Avg Clearing Widths): Adjustment Factor (0.1)
Total Adjustment Factor:1.67 + 0.1 + 1 + 0.1 = 2.87
Base Cost/Acre: $891.49 x Adjustment Factor: 2.87 x Total Acres: 0.47 = $1,202.53

Subtotal: $1,202.53

Section 300 Excavation:
Subgrade Compaction: 4 Sta/hr $27.12/sta. x 5.0 sta = $135.60
Blading without ditch: $11.84/station x 5.00 stations = $59.20
Subgrade & LZ Construction
Tractor: D7 with rippers 12 hr x $158.11/hr = $1,897.32

Subtotal: $2,092.12

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:

Subtotal: $0.00

Section 700-1200 Surfacing:
Surfacing:

Subtotal: $0.00

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:
Dry Method with Mulch: $372.28/acre x 0.50 acres = $186.14
+ Fertilizer Cost: $34.00/acre x 0.50 acres = $17.00
+ Mulch Cost: $320.00/acre x 0.50 acres = $160.00

Subtotal: $363.14

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:

Subtotal: $0.00

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:

Road Number: Spur 2E Continued

Construction - 2.53% of total Costs = $263.64
Surfacing - 0.00% by rock volume = $0.00

Subtotal: $263.64

Quarry Development:
Based on 0.00% of total rock volume

Subtotal: $0.00

Total: $3,921.43

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Mobilization Costs - Construction and Surfacing

T.S. Contract Name: Llewellyn CT Sale Date: 03/28/2018

Average Mobilization distance = 50 miles Factor = 1.00

Mobilization: Construction

Fire Equipment:	2 ea x (1.00 x $74.00/ea +	0 mi x $4.09/mi)= $148.00
Graders-all:	2 ea x (1.00 x $410.00/ea +	0 mi x $14.10/mi)= $820.00
Loaders < 3cy:	1 ea x (1.00 x $410.00/ea +	0 mi x $8.84/mi)= $410.00
Rollers & Comp:	2 ea x (1.00 x $410.00/ea +	0 mi x $21.70/mi)= $820.00
Excavators:	2 ea x (1.00 x $861.00/ea = $1,722.00	
RTBackhoes 24/30:	2 ea x (1.00 x $305.00/ea +	0 mi x $5.65/mi)= $610.00
Tractors <= D7:	2 ea x (1.00 x $635.00/ea +	0 mi x $31.00/mi)= $1,270.00
Dump Truck<=15cy:	2 ea x (1.00 x $89.00/ea +	0 mi x $3.72/mi)= $178.00
Water Truck:	2 ea x (1.00 x $95.00/ea +	0 mi x $3.94/mi)= $190.00
Equipment Washing:	17 ea x ($250.00) /ea = $4,250.00	

Subtotal: $10,418.00

Mobilization: Surfacing

Fire Equipment:	2ea x (1.00 x $74.00/ea +	0 mi x $4.09/mi)= $148.00
Graders-all:	2ea x (1.00 x $410.00/ea +	0 mi x $14.10/mi)= $820.00
Rollers & Comp:	2ea x (1.00 x $410.00/ea +	0 mi x $21.70/mi)= $820.00
Water Truck:	2ea x (1.00 x $95.00/ea +	0 mi x $3.94/mi)= $190.00

Subtotal: $1,978.00

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Summary of Construction Quantities

T.S. Contract Name: Llewellyn CT Sale Date: 03/28/2018

Road Number	Const	Improv	Renov	Decomm	Temp
28-12-22.0			61.78		
28-12-27.0			34.85		
28-12-27.3			62.83		
28-12-35.0			29.04		
28-12-35.1	3.38				
28-12-35.2	5.25				
28-12-35.3	10.74				
28-12-35.4	12.19				
28-12-35.5			12.14		
29-12-4.0			194.30		
Spur 1A	2.42				
Spur 2A	0.90				
Spur 2B			1.58		
Spur 2C	3.25				
Spur 2D	1.52				
Spur 2E	5.00				
Total Sta:	44.65		396.52		

200 Clearing and Grubbing	Clearing acres
28-12-22.0	0.0
28-12-27.0	0.0
28-12-27.3	0.3
28-12-35.0	1.3
28-12-35.1	0.3
28-12-35.2	0.5
28-12-35.3	1.2
28-12-35.4	1.1
28-12-35.5	0.6
29-12-4.0	0.0
Spur 1A	0.2
Spur 2A	0.1
Spur 2B	0.2
Spur 2C	0.3
Spur 2D	0.2
Spur 2E	0.5
Totals:	6.8

Clearing Existing Roadway 28-12-35.0
- Excavator - Large (3 CY) . . . . . 20 hr
- Chainsaw . . . . . 20 hr

Waste Area MP 0.21 28-12-35.0
- Excavator - Large (3 CY) . . . . . 1 hr

Waste Areas MP 0.90 & 0.93 28-12-27.3
- Excavator - Large (3 CY) . . . . . 3 hr

300 Excavation	Excav LCY.s	Haul sta-yds	Haul yd-mi
28-12-35.3	2,586	1,676	114
Totals:	2,586	1,676	114

Continuation of Construction Quantities

Landing and TTA Construction 28-12-35.4
Tractor: D7 with rippers . . . . . 5 hr
Sta. 2+80 Landing Construction 28-12-35.3
Tractor: D7 with rippers . . . . . 10 hr
Subgrade & LZ Construction Spur 2E
Tractor: D7 with rippers . . . . . 12 hr
Subgrade & LZ Construction Spur 2D
Tractor: D7 with rippers . . . . . 5 hr
Subgrade & LZ Construction Spur 2C
Tractor: D7 with rippers . . . . . 8 hr
Subgrade & LZ Construction Spur 2A
Tractor: D7 with rippers . . . . . 4 hr
Subgrade & LZ Construction Spur 1A
Tractor: D7 with rippers . . . . . 6 hr
Subgrade Construction 28-12-35.4
Tractor: D7 with rippers . . . . . 24 hr
Subgrade Construction 28-12-35.2
Tractor: D7 with rippers . . . . . 11 hr
Subgrade Construction 28-12-35.1
Tractor: D7 with rippers . . . . . 8 hr

400 Drainage

Road Number	Culvert	Polypipe	Downspout
29-12-4.0	0 lf	280 lf	0 lf
Total Drainage:		280 lf	

500 Renovation

	Blade Miles	Slide cy
28-12-22.0	1.17	0
28-12-27.0	0.66	30
28-12-27.3	1.19	0
28-12-35.0	0.55	0
28-12-35.5	0.23	0
29-12-4.0	3.68	0
Spur 2B	0.03	0
Totals:	7.51	30

28-12-27.3 Seg C MP 0.11 Slide 28-12-27.3
Excavator - Large (3 CY) . . . . . 15 hr
Dump Truck 10 cy . . . . . 10 hr
Motor Grader 14M . . . . . 2 hr
Vibratory roller, Steel Drum . . . . . 1 hr
Reno RS LZ MP 3.26 & 3.57 29-12-4.0
Motor Grader 14M . . . . . 2 hr
Reno WA MP 2.32, 2.58, 2.76 29-12-4.0
Motor Grader 14M . . . . . 3 hr
Renovate Landing Area Spur 2B
Tractor: D7 with rippers . . . . . 2 hr
Subgrade & LZ Reno 28-12-35.5
Tractor: D7 with rippers . . . . . 10 hr

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

Quarry Name: Hoover 1 1/2"

Commercial	Roadway	Turnouts	Other	
28-12-27.0	0	0	100	100

Continuation of Construction Quantities

28-12-27.3	0	0	40	40
29-12-4.0	653	0	50	703
29-12-4.0	0	0	80	80
29-12-4.0	0	0	400	400
Totals:	653	0	670	1,323

1300 Geotextiles

Totals: No Quantities

1400 Slope Protection

29-12-4.0	Gradation Class 3: 20 cy
29-12-4.0	Gradation Class 3: 120 cy
Totals:	140 cy

Energy Dissapator Construction 29-12-4.0
- Excavator - Large (3 CY) . . . . . 6 hr

Fill Slope Protection MP 2.59 29-12-4.0
- Excavator - Large (3 CY) . . . . . 1 hr

1800 Soil stabilization - acres

	Dry W/O Mulch	Dry/with Mulch	Hydro Mulch
28-12-27.3	0.0	1.0	
28-12-35.0	0.0	2.0	
28-12-35.1	0.0	0.3	
28-12-35.2	0.0	0.5	
28-12-35.3	0.0	1.0	
28-12-35.4	0.0	1.2	
28-12-35.5	0.0	1.1	
29-12-4.0	0.0	2.3	
Spur 1A	0.0	0.2	
Spur 2A	0.0	0.2	
Spur 2B	0.0	0.2	
Spur 2C	0.0	0.3	
Spur 2D	0.0	0.2	
Spur 2E	0.0	0.5	
Totals:	0.0	11.0	0.0

1900 Cattleguards

Install New Pre-cast Base 29-12-4.0
- Backhoe . . . . . 6 hr
- Dump Truck 10 CY w/Tilt Trailer . . . . . 10 hr
- Tamper – handheld . . . . . 2 hr
- Vibratory roller, Steel Drum . . . . . 2 hr
- Motor Grader 14M . . . . . 2 hr
- General Laborer . . . . . 20 hr
- 12' Pre-cast base including frieght to 97420 . . . . . 2 ea

2100 RoadSide Brushing

	acres
28-12-22.0 - Mechanical Brushing	2.8
28-12-27.0 - Mechanical Brushing	1.6
28-12-27.3 - Mechanical Brushing	2.9
29-12-4.0 - Mechanical Brushing	8.9
Totals:	16.2

Addtional manual brushing 28-12-27.3

Continuation of Construction Quantities

Chainsaw . . . . . 6 hr

2300 Engineering stations

Totals: 0.00

2400 Minor Concrete

Totals: No Quantities

2500 Gabions

Totals: No Quantities

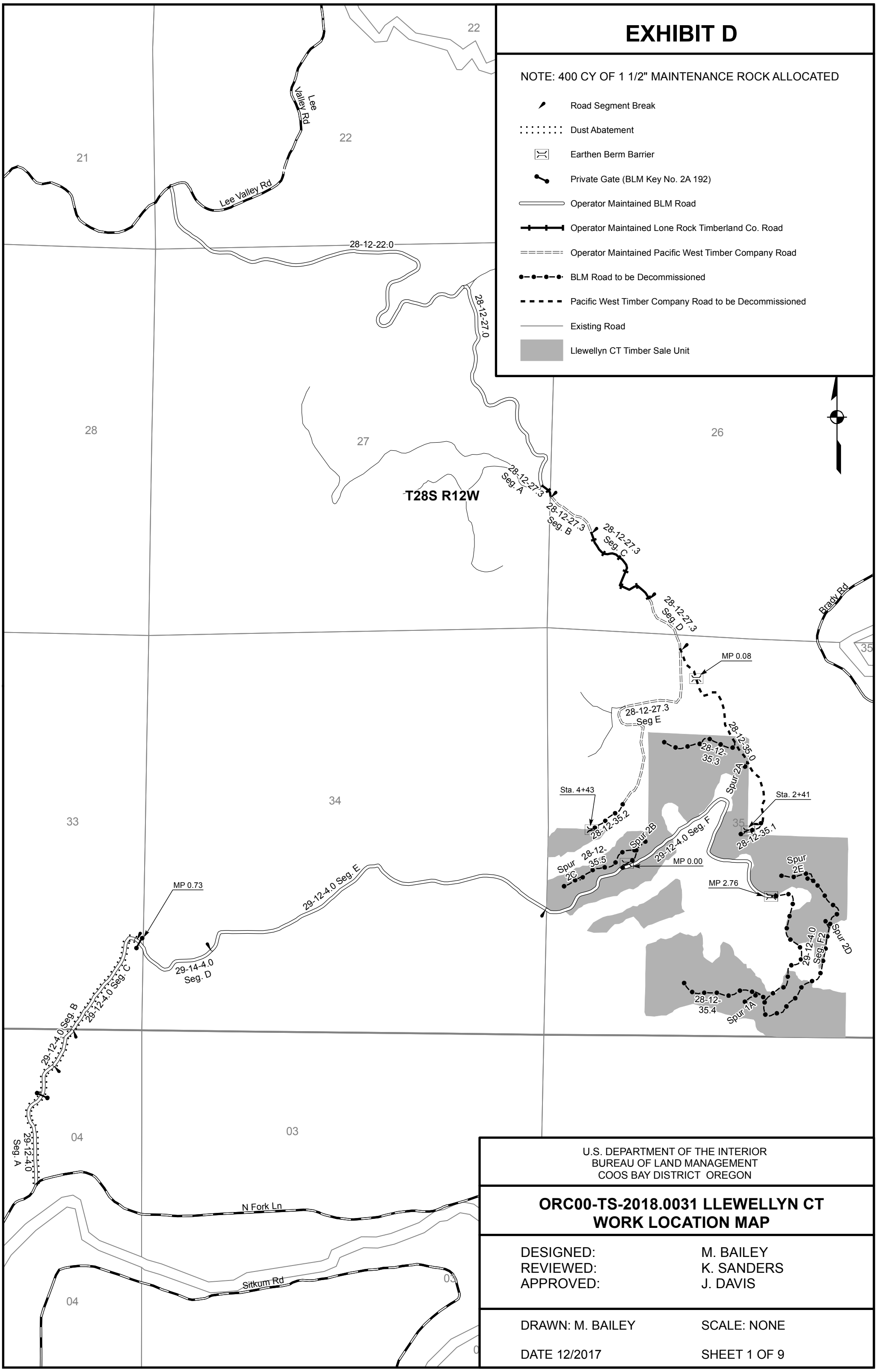
8000 Miscellaneous

Totals: No Quantities

EXHIBIT D

NOTE: 400 CY OF 1 1/2" MAINTENANCE ROCK ALLOCATED

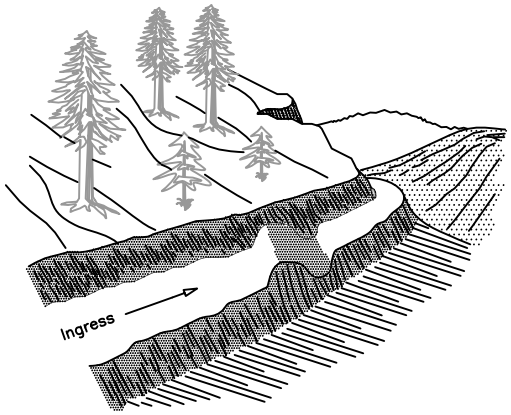
- Road Segment Break
- Dust Abatement
- Earthen Berm Barrier
- Private Gate (BLM Key No. 2A 192)
- Operator Maintained BLM Road
- Operator Maintained Lone Rock Timberland Co. Road
- Operator Maintained Pacific West Timber Company Road
- BLM Road to be Decommissioned
- Pacific West Timber Company Road to be Decommissioned
- Existing Road
- Llewellyn CT Timber Sale Unit



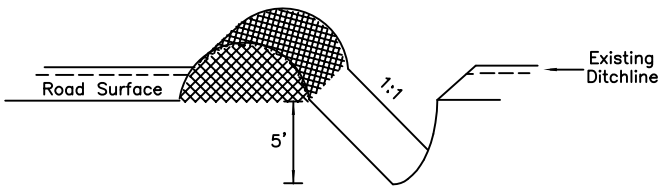
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
COOS BAY DISTRICT OREGON

ORC00-TS-2018.0031 LLEWELLYN CT WORK LOCATION MAP

DESIGNED:	M. BAILEY
REVIEWED:	K. SANDERS
APPROVED:	J. DAVIS
DRAWN: M. BAILEY	SCALE: NONE
DATE 12/2017	SHEET 1 OF 9



BARRIERS



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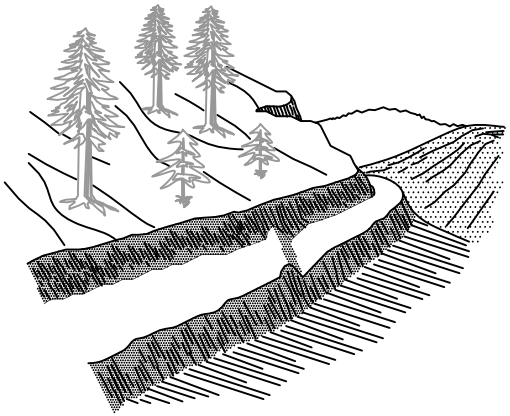
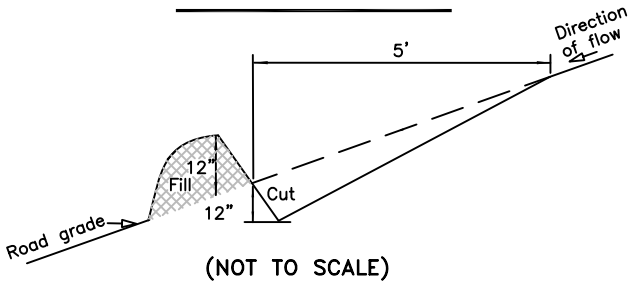


WATER BAR



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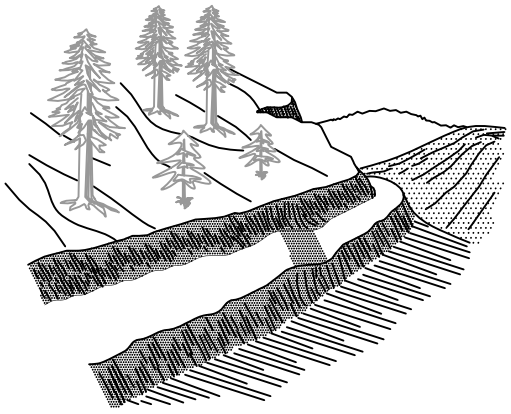
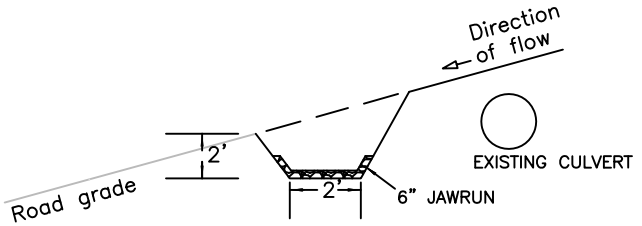


ARMORED WATER DIP



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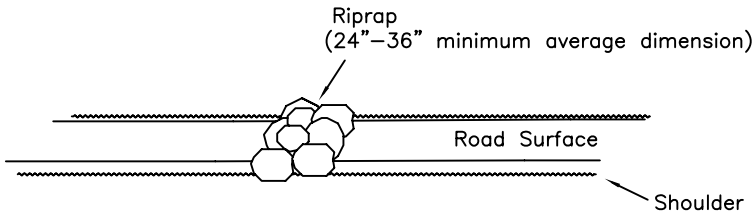
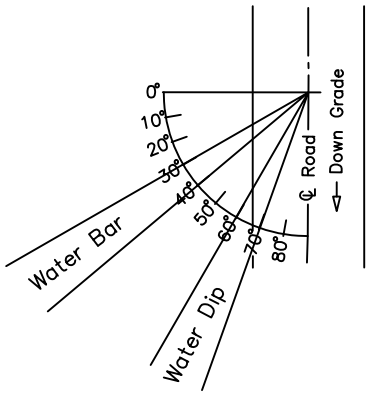


SKEW DIAGRAM



WATER DIP/BAR SPACING

ROAD GRADE	MAXIMUM SPACING
%	FEET
3–5	200
6–10	150
11–15	100
16–20	75
21–35	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 M. BAILEY
REVIEWED K. SANDERS
APPROVED J. DAVIS

DRAWN MGB | SCALE NONE
DATE 12/17 | SHEET 2 OF 8
DRAWING NO.

"EXHIBIT D" ESTIMATE OF QUANTITIES*

ROAD NUMBER	SURFACING				OTHER			SOIL STABILIZATION		OTHER	
	REPAIR ROCK **	AGG. MAINT. ROCK **	AGG. MAINT. ROCK **	SPOT ROCK **	RIPRAP BARRIER **	RIPRAP ARMOR **	JAWRUN ROCK **	DRY	HYDRO-MULCH		
SPEC. NO.	1200	1200	1000	1000	1400	1400		1800	1800		
UNITS	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	ACRES	ACRES		
28-12-22.0	(C)	(C)	(A)	(B)	(A)	(B)	(A)				
28-12-27.0	(C)	(C)	(A)	(B)	(A)	(B)	(A)				
28-12-27.3 A	(C)	(C)	(A)	(B)	(A)	(B)	(A)				
28-12-27.3 B	(C)	(C)	(A)	(B)	(A)	(B)	(A)				
28-12-27.3 C	(C)	10 (C)	(A)	(B)	(A)	(B)	(A)				
28-12-27.3 D	(C)	(C)	(A)	(B)	(A)	(B)	(A)				
28-12-27.3 E	(C)	(C)	(A)	(B)	(A)	(B)	(A)				
28-12-35.0	(C)	(C)	(A)	(B)	(A)	(B)	(A)	1.3			
28-12-35.1	(C)	(C)	(A)	(B)	(A)	(B)	(A)	0.2			
28-12-35.2	(C)	(C)	(A)	(B)	(A)	(B)	(A)	0.2			
28-12-35.3	(C)	(C)	(A)	(B)	(A)	(B)	(A)	0.6			
28-12-35.4	(C)	(C)	(A)	(B)	(A)	(B)	(A)	0.6			
28-12-35.5	(C)	(C)	(A)	(B)	(A)	(B)	(A)	0.6			
29-12-4.0 A-F	(C)	(C)	(A)	(B)	(A)	(B)	(A)				
29-12-4.0 F2	(C)	(C)	(A)	(B)	(A)	(B)	(A)	2.2			
SPUR 1A	(C)	(C)	(A)	(B)	(A)	(B)	(A)	0.1			
SPUR 2A	(C)	(C)	(A)	(B)	(A)	(B)	(A)	0.1			
SPUR 2B	(C)	(C)	(A)	(B)	(A)	(B)	(A)	0.1			
SPUR 2C	(C)	(C)	(A)	(B)	(A)	(B)	(A)	0.2			
SPUR 2D	(C)	(C)	(A)	(B)	(A)	(B)	(A)	0.1			
SPUR 2E	(C)	(C)	(A)	(B)	(A)	(B)	(A)	0.2			
	(C)	(C)	(A)	(B)	(A)	(B)	(A)				
	(C)	(C)	(A)	(B)	(A)	(B)	(A)				
	(C)	(C)	(A)	(B)	(A)	(B)	(A)				
	(C)	(C)	(A)	(B)	(A)	(B)	(A)				
	(C)	(C)	(A)	(B)	(A)	(B)	(A)				
	(C)	(C)	(A)	(B)	(A)	(B)	(A)				
TOTALS	(C)	400 (C)	(A)	(B)	(A)	(B)	(A)	6.5			

ITEM	SIZE	GRADE
PITRUN		
1000 (Base)	3"	A
JAWRUN	6"	B
1100	4"	B
1200 (Top)	1 ½"	C
1400 (RIPRAP)	24-36"	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 M. BAILEY
REVIEWED K. SANDERS
APPROVED J. DAVIS

DRAWN MGB | SCALE NONE
DATE 12/17 | SHEET 3 OF 9

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 furnish and place 400 CY of 1 ½" crushed aggregate surfacing, conforming to the requirements in Section 1200 of Exhibit C of this contract, on the roadway at locations and in the amounts designated by the Authorized Officer.

This crushed aggregate shall be used to repair surface failures, and areas of depleted surface depth, excluding damages covered by Section 12 of this contract. The aggregate shall be furnished, hauled, placed, spread, and compacted by use of dump trucks, water trucks, motor patrol grader, and roller compactor.

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

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

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

3104b The Purchaser shall be responsible for removal of all slides or slough, up to fifteen (15) station yards in quantity, at any one site. This work includes unlimited multiple sites on

all roads required to be maintained by the Purchaser.

Prior to removal of any slough or slide material exceeding fifteen (15) station yards at any one site, the Purchaser and the Authorized Officer or their Authorized Representatives shall agree in writing, in the field, to the quantity of material, method of disposal, and the disposal site. Work may commence immediately after agreement.

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

3105 The Purchaser shall be responsible for maintaining normal flow in drainage structures. This includes cleaning out drainage ditches, catch basins, clearing pipe inverts of sediment and other debris lodged in the barrel of the pipe and maintaining water dips and water bars using equipment specified in Subsection 3104 and other culvert cleaning and flushing equipment.

3106 The Purchaser shall be responsible for repair and replacement of all materials eroded from road shoulders and fill slopes, up to fifteen (15) station yards in quantity, at any one site. The work includes unlimited multiple sites on all roads required to be maintained by the Purchaser. Prior to repair and replacement of eroded material exceeding fifteen (15) station yards at any one site, the Purchaser and the Authorized Officer or their Authorized Representatives shall agree in writing, in the field, to the quantity of material, borrow source, and method of repair. Work may commence immediately after agreement.

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

3107 The Purchaser shall cut or trim trees and brush which obstructs vision or prevents the safe passage of traffic along the traveled way, when directed by the Authorized Officer.

The Purchaser shall also cut trees or brush encroaching on the road prism that are a result of his activities or winter damage during the contract period. Disposal of such vegetative material shall be by scattering below the road.

3108 The Purchaser shall avoid fouling gravel or bituminous surfaces through covering with earth and debris from side ditches, slides, or other sources. The Purchaser shall also avoid blading surfacing material off the running surface of the roadway. Skidding of logs on the roadway in or outside designated logging units is not authorized without prior written approval by the Authorized Officer. Repair required by such skidding activity is not considered maintenance and shall be performed at the Purchaser's expense.

3108a The Purchaser shall perform logging operations on gravel and/or bituminous roadways only where the locations have been marked on the ground and/or approved by the Authorized Officer.

SEASONAL MAINTENANCE - 3200

3201 The Purchaser shall perform preventive maintenance at the end of Purchaser's hauling each season and during non-hauling periods which occur between other operations on the contract area. This includes cross ditching, blockage, removing ruts or other surface irregularities, and all other requirements specified in Section 3100.

3202 The Purchaser shall perform and complete maintenance, specified in Sections 3000, 3100, and 3200, on all roads maintained by him, prior to October 15 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 roads located in an area separate from the area where logging activities will resume.

3204 The Purchaser shall be responsible for performing post storm inspections and maintenance during the winter season to minimize erosion and potential road or watershed damage.

FINAL MAINTENANCE - 3300

3301 The Purchaser shall complete final maintenance and/or damage repairs on all roads used under terms of their contract within 30 calendar days following the expiration of Purchaser's right to cut and remove timber (Sec. 4) and in accordance with Sec. 16.(b) of this contract. This work shall include any maintenance and/or damage repairs specified in Sections 3000, 3100, and 3200 necessary to meet the conditions specified in Subsection 3002 and shall be executed in accordance with Subsection 3302 of this section.

The Authorized Officer may grant acceptance of Purchaser's maintenance responsibility in part where certain individual roads or road segments are no longer of any use to the Purchaser's remaining removal operations, providing that all contract requirements as specified under Section 16.(b), 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.

3403 The Purchaser shall be required to furnish and apply non-saline water during dry hauling periods, when directed by the Authorized Officer, for the purpose of laying dust and to prevent loss of surface material. The first application of water shall be made at the rate of one- half gallon per yd^2 of road surface traveled. Subsequent applications shall be made for each 20 Mbf of timber or 120 CY of rock hauled. Subsequent watering may be done at a rate less than one-half gallon per yd^2 when a specified lesser rate is approved by the Authorized Officer. The following roads shall be watered:

Road Number	From M.P.	to	M.P.
29-12-4.0	0.00		0.73

The Purchaser shall secure any necessary water permits and pay all required water fees for use of the water sources selected by the Purchaser and approved by the Authorized Officer.

During drought periods when the transportation of water from the source to the roads noted above exceeds ten (10) miles, a reduction shall be made in the total purchase price to reflect the additional haul or the substitution of other acceptable dust palliatives in lieu of watering based on equipment rental rates from the current BLM Road Cost Guide.

3420 The Purchaser shall perform the following work:

Road No.	Work
NOTE:	All water bars, earthen berm barriers, and boulder barriers shall be constructed in accordance with Barrier and Erosion Control Sheet No. 2.
27-12-27.3 C	Place 10 CY of 1 ½" crushed aggregate surfacing, conforming to the requirements in Section 1200 of Exhibit C, upon completion of haul as directed by the Authorized Officer.
28-12-35.0	Construct an earthen berm barrier at MP 0.08. Construct water bars from MP 0.08 to 0.55. Seed, fertilize, and mulch all disturbed areas including the road surface.

28-12-35.1	Construct an earthen berm barrier at the property line at Sta. 2+41. Construct water bars from Sta. 0+00 to 3+38. Seed, fertilize, and mulch all disturbed areas including the road surface and landing areas.
28-12-35.2	Construct an earthen berm barrier at the property line at Sta. 4+43. Construct water bars from Sta. 0+00 to 5+25. Seed, fertilize, and mulch all disturbed areas including the road surface and landing areas.
28-12-35.3	Construct water bars from Sta. 0+00 to 10+74. Seed, fertilize, and mulch all disturbed areas including the road surface, and landing areas.
28-12-35.4	Construct water bars from Sta. 0+00 to 12+19. Seed, fertilize, and mulch all disturbed areas including the road surface, and landing areas.
28-12-35.5	Construct an earthen berm barrier at the junction with the 29-12-4.0 road (MP 0.00). Construct water bars from MP 0.00 to 0.23. Seed, fertilize, and mulch all disturbed areas including the road surface, and landing areas.
29-12-4.0 F2	Construct an earthen berm barrier at MP 2.76. Construct water bars from MP 2.76 to 3.68. Remove temporary 24” x 30’ CPP Culvert at MP 2.95 and legally dispose off government lands. Pull back trench slopes to 1:1 and utilize the existing riprap energy dissipater as grade control for the channel. Seed, fertilize, and mulch all disturbed areas including the road surface, and landing areas.
Spur 1A	Construct water bars from Sta. 0+00 to 2+42. Seed, fertilize, and mulch all disturbed areas including the road surface, and landing areas.
Spur 2A	Construct water bars from Sta. 0+00 to 0+90. Seed, fertilize, and mulch all disturbed areas including the road surface, and landing areas.
Spur 2B	Construct water bars from MP 0.00 to 0.03. Seed, fertilize, and mulch all disturbed areas including the road surface, and landing areas.
Spur 2C	Construct water bars from Sta. 0+00 to 3+25. Seed, fertilize, and mulch all disturbed areas including the road surface, and landing areas.
Spur 2D	Construct water bars from Sta. 0+00 to 1+52. Seed, fertilize, and mulch all disturbed areas including the road surface, and landing areas.
Spur 2E	Construct water bars from Sta. 0+00 to 5+00. Seed, fertilize, and mulch all disturbed areas including the road surface, and landing areas.

Sale: Llewellyn CT
Sale Date: 03/28/2018
Prep. By : M.Bailey
Tract No: 2018.0031

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

ROAD MAINTENANCE AND ROAD USE APPRAISAL WORK SHEET

Summary of Costs

1.1) Road Use - Amortization: $0.00/1969 MBF = $0.00/MBF

Road Maintenance Obligation:

(2.1) BLM Maintenance		$0.00
(2.2) BLM Rockwear	$0.00	
(5.1) Purchaser Maintenance Rockwear	$0.00	
Total Rockwear Payable to BLM		$0.00
(3.1) 3rd Party Maintenance		$0.00
(3.2) 3rd Party Rockwear		$0.00
(4.1) Other Maintenance Payments		$0.00
Total Maintenance Fee Obligation (2.1-5.1)		$0.00

Purchaser Maintenance Allowances:

(5.2A) Move In	$2,474.01
(5.2B) Culverts, Catch Basins, Downspouts	$2,450.99
(5.2C) Grading, Ditching	$14,667.15
(5.2D) Slide Removal and Slump Repair	$1,134.00
(5.2E) Dust Palliative (Water)	$16,392.48
(5.2F) Surface Repair (Aggregate)	$4,672.00
(5.2G) Other	$0.00
Total Purchaser Maintenance Allowances (5.2A-5.2G)	$41,790.64

(2.1-5.2G) Cost ($0.00 + $41,790.64) = $41,790.64
Cost/MBF $41,790.64 / 1969 MBF = $21.22/MBF $21.22/MBF

(5.2H) Decommissioning	$9,099.93

(5.2H) Cost/MBF $9,099.93/1969 MBF = $4.62/MBF

(2.1-5.2H) Cost ($0.00 + $41,790.64 + $9,099.93) = $50,890.57

Total Cost/MBF (Excluding Road Use) $50,890.57/1969 MBF = $25.85/MBF

1) Road Use Fees - Amortization

Details

R/W Number	Road Number	Rd Use Fee x	Vol MBF =	Road Use Obligation

Subtotal by agreement number

(1.1) Subtotal $0.00

2) BLM Maintenance - Timber Haul

		MAINTENANCE (2.1)					ROCKWEAR (2.2)			
Road Number and Segment	A N	Surf Type	Maint Mi	x Fee x	Vol MBF	= Maint	Fee x	MBF =	Rkwear

(2.1) Subtotal $0.00 (2.2) Subtotal $0.00

3) Third Party Maintenance and Rockwear

			MAINTENANCE (3.1)				ROCKWEAR (3.2)		
Agrmnt Number	Surface Type	Road Number	Mi	x Fee x	MBF =	Maint	Fee x	MBF =	Rkwear

Subtotal of maintenance fees by agreement number:
Subtotal of rockwear fees by agreement number:

(3.1) Subtotal $0.00
(3.2) Subtotal $0.00

4) Other Maintenance Payments - USFS or Others Perform Maintenance

Agency	Road Number	Miles (Log)	x Vol (mbf)	x Fee MBF/MI =	Cost

(4.1) Subtotal $0.00

5) Purchaser Maintenance - Rock Wear

TIMBER HAUL (5.1)

Road No and Segment	A N	Mi	x RkWear Fee x	Vol MBF =	Total RkWear

(5.1) Subtotal $0.00

Purchaser Operational Maintenance

Move In

Equipment	Units	No in x	Move 50 Mi x	Cost/ Factor =	Dist	Sub-total
Motor Grader:	1	3	$410.00	0.63		$774.90
Back Hoe:	1	3	$305.00	0.63		$576.45
Loader:			$410.00	0.63		$0.00
Water Truck:	1	3	$95.00	0.63		$179.55
Dump Truck:	1	3	$89.00	0.63		$168.21
Excavator:			$410.00	0.63		$0.00
Roller:	1	3	$410.00	0.63		$774.90

(5.2A) Total $2,474.01

Culvert Maintenance - Including Catch basins and Downpipes

Miles	x	Cost/Mi	=	Subtotal
6.70		$365.82		$2,450.99

(5.2B) Total $2,450.99

Grading (Includes Ditches and Shoulders)

	Miles	x	Cost/Mi	x	Freq	=	Subtotal
Blade w/ Ditch:	6.70		$694.50		3		$13,959.45
Blade w/o Ditch:	1.65		$428.91		1		$707.70

(5.2C) Total $14,667.15

Slide and Slough removal, Slump Repair (15 sta-yds. ea.)

Type Equipment	No Slides /Slumps	x	Hours Each	x	Equip Cost	=	Subtotal
Grader:	10		1		$140.96		$704.80
Loader:	0		0		$101.17		$0.00
Backhoe:	10		1		$85.84		$429.20

(5.2D) Total $1,134.00

Dust Palliative (Water)

Spreading Hours

	No Miles	/	Freq MPH	=	Truck Hours	x	Days	x	/Day	=	Hours
	1.00		5		0.2		65		1		13
Load & Haul =					2.0		65		1		130
Return trip =					1.0		65		1		65
Total Hours =					208						

Truck Cost: $78.81/Hr. x 208.0 Hours = $16,392.48

(5.2E) Total $16,392.48

Surface Repair (Aggregate)

Production Cost:	400.0 CY x $0.00/CY	=	$0.00
Haul to Stockpile:	400.0 CY x (($0.39/CY x 4.00 Mi) + $0.58)	=	$856.00
Stockpile:	0.0 CY x $1.07/CY	=	$0.00
Load from Stockpile:	0.0 CY x $1.05/CY	=	$0.00
Haul from Stockpile:	400.0 CY x (($1.75/CY x 4.00 Mi) + $0.58)	=	$3,032.00
Process with Grader:	400.0 CY x $0.88/CY	=	$352.00
Compaction:	400.0 CY x $1.08/CY	=	$432.00

(5.2F) Total $4,672.00

Other

Fallen Timber Cutting:	0.0 Hours x $0.00/Hour	=$0.00
Brush Cutting/Tree Trimming:	0.0 Hours x $0.00/Hour	=$0.00
Oil/Asphalt Materials:	Lump Sum	=$0.00
Signing for Dust Palliatives:	Lump Sum	=$0.00
	Lump Sum	=$0.00
	Lump Sum	=$0.00
	Lump Sum	=$0.00
	Lump Sum	=$0.00
	Lump Sum	=$0.00

(5.2G) Total $0.00

Decommissioning

Pipe Removal

Road Number	Qty Ditch Pipes	Cyd < 15’ Fill	Cyd > 15’ Fill	Qty Hauling	= Total
29-12-4.0	(1x$106.05)	+ (20x$2.62)	+ (0x$4.39)	+ (1x$75.82)	= $234.27

(Pipe Removal) Total $234.27

Other Costs

Road Number	Cubic Yds Pullback Material		Qty Waterbars		Qty Earthen Barriers	= Total
29-12-4.0	(0x$1.77)	+	(25x$55.35)	+	(1x$166.04)	= $1,549.79
28-12-35.3	(0x$1.77)	+	(11x$55.35)	+	(0x$166.04)	= $608.85
28-12-35.5	(0x$1.77)	+	(12x$55.35)	+	(1x$166.04)	= $830.24
28-12-35.4	(0x$1.77)	+	(12x$55.35)	+	(0x$166.04)	= $664.20
28-12-35.2	(0x$1.77)	+	(5x$55.35)	+	(1x$166.04)	= $442.79
28-12-35.1	(0x$1.77)	+	(4x$55.35)	+	(1x$166.04)	= $387.44
28-12-35.0	(0x$1.77)	+	(15x$55.35)	+	(1x$166.04)	= $996.29
Spur 1A	(0x$1.77)	+	(3x$55.35)	+	(0x$166.04)	= $166.05
Spur 2A	(0x$1.77)	+	(2x$55.35)	+	(0x$166.04)	= $110.70
Spur 2B	(0x$1.77)	+	(2x$55.35)	+	(0x$166.04)	= $110.70
Spur 2C	(0x$1.77)	+	(4x$55.35)	+	(0x$166.04)	= $221.40
Spur 2D	(0x$1.77)	+	(2x$55.35)	+	(0x$166.04)	= $110.70
Spur 2E	(0x$1.77)	+	(5x$55.35)	+	(0x$166.04)	= $276.75

(Other Cost) Total $6,475.90

Time & Equipment

29-12-4.0 Seed, Fertillizer, & Mulch: 2.2 Ac. @ $373.40/Ac.	=$821.48
28-12-35.5 Seed, Fertillizer, & Mulch: 0.56 Ac. @ $373.40/Ac.	=$209.10
28-12-35.4 Seed, Fertillizer, & Mulch: 0.56 Ac. @ $373.40/Ac.	=$209.10
28-12-35.3 Seed, Fertillizer, & Mulch: 0.62 Ac. @ $373.40/Ac.	=$231.51
28-12-35.2 Seed, Fertillizer, & Mulch: 0.24 Ac. @ $373.40/Ac.	=$89.62
28-12-35.1 Seed, Fertillizer, & Mulch: 0.16 Ac. @ $373.40/Ac.	=$59.74
28-12-35.0 Seed, Fertillizer, & Mulch: 1.33 Ac. @ $373.40/Ac.	=$496.62
Spur 1A Seed, Fertillizer, & Mulch: 0.11 Ac. @ $373.40/Ac.	=$41.07
Spur 2A Seed, Fertillizer, & Mulch: 0.06 Ac. @ $373.40/Ac.	=$22.40
Spur 2B Seed, Fertillizer, & Mulch: 0.09 Ac. @ $373.40/Ac.	=$33.61
Spur 2C Seed, Fertillizer, & Mulch: 0.15 Ac. @ $373.40/Ac.	=$56.01
Spur 2D Seed, Fertillizer, & Mulch: 0.09 Ac. @ $373.40/Ac.	=$33.61
Spur 2E Seed, Fertillizer, & Mulch: 0.23 Ac. @ $373.40/Ac.	=$85.88

(5.2H) Decommissioning Total $9,099.93

SALE NAME Llewellyn CT
NET MBF 1969

EXHIBIT E
OR00-TS-2018.0031

A. ROAD USE FEES - Payable to Private Company:

COMPANY NAME:	AGREEMENT NUMBER:	ROAD NUMBER	NET MBF	USE FEE per MBF	TOTAL FEES:
PWTC	RWA-C-344	28-12-35.0	521	$9.18	$4,782.78
PWTC	RWA-C-344	28-12-27.3 E	49	$26.57	$1,301.93
PWTC	RWA-C-344	28-12-27.3 D	570	$3.48	$1,983.60
PWTC	RWA-C-344	28-12-27.3 B	570	$1.93	$1,100.10
LRTC	RWA-C-395	28-12-27.3 A,C	570	$0.00	$0.00
			TOTAL USE FEE:		$9,168.41

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	Subtotal	REGULAR MAINTENANCE /MBF/Mile	Subtotal	TOTAL FEE:
					$0.00		$0.00	$0.00
					$0.00		$0.00	$0.00
					$0.00		$0.00	$0.00
					$0.00		$0.00	$0.00
			0		$0.00		$0.00	$0.00

SALE NAME Llewellyn CT

NET MBF

EXHIBIT E

OR00-TS-2018.0031

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
					$0.00
dirt	spur 2E	126	0.08		$0.00
dirt	spur 2E	239	0.01		$0.00
dirt	29-12- 4.0 F2	13	0.01		$0.00
dirt	29-12- 4.0 F2	252	0.10		$0.00
dirt	29-12- 4.0 F2	277	0.05		$0.00
dirt	spur 2D	113	0.03		$0.00
dirt	29-12-4.0	390	0.26		$0.00
dirt	29-12-4.0	490	0.04		$0.00
dirt	29-12-4.0	540	0.04		$0.00
dirt	28-12-35.4	432	0.1		$0.00
dirt	28-12-35.4	532	0.1		$0.00
dirt	spur 1A	25	0.05		$0.00
dirt	28-12-35.4	570	0.02		$0.00
dirt	29-12-4.0	1110	0.1		$0.00
Rock	29-12-4.0	1135	0.3	$0.60	$217.92
Rock	29-12-4.0	1135	0.6	$0.60	$435.84
Rock	29-12-4.0	1236	0.02	$0.60	$14.83
dirt	spur 2C	38	0.06		$0.00
dirt	28-12-35.5	88	0.13		$0.00
dirt	28-12-35.5	113	0.04		$0.00
dirt	spur 2B	25	0.03		$0.00
dirt	28-12-35.5	138	0.06		$0.00
Rock	29-12-4.0	1374	0.10	$0.60	$82.44
Rock	29-12-4.0	1399	0.14	$0.60	$117.52
Rock	29-12-4.0 A-E	1399	1.86	$0.60	$1,561.28
dirt	28-12-35.1	76	0.06		$0.00
dirt	spur2A	50	0.02		$0.00
dirt	28-12-35.3	370	0.03		$0.00
dirt	28-12-35.3	395	0.18		$0.00
dirt	28-12-35.2	49	0.10		$0.00
Rock	28-12-27.0	570	0.66	$0.60	$225.72
Rock	28-12-22.0	570	1.17	$0.60	$400.14
					$0.00
			6.62		$3,055.69

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:
Dirt	PWTC	RWA-C-344	28-12-35.0	76	0.18	$0.00	$0.00
Dirt	PWTC	RWA-C-344	28-12-35.0	126	0.08	$0.00	$0.00
Dirt	PWTC	RWA-C-344	28-12-35.0	521	0.29	$0.00	$0.00
Rock	PWTC	RWA-C-344	28-12-27.3 B,D	570	0.32	$0.00	$0.00
Rock	PWTC	RWA-C-344	28-12-27.3 E	49	0.58	$0.00	$0.00
Rock	LRTC	RWA-C-395	28-12-27.3 A,C	570	0.41	$0.00	$0.00
							$0.00
					1.86		$0.00

4. OPERATOR MAINTENANCE WILL BE REQUIRED ON APPROX. 8.35 MILES OF ROAD. (SEE EXHIBIT D)

SALE VOLUME: 1969 MBF.

SUMMARY OF ROAD USE & ROAD MAINTENANCE FEES:	ROAD USE FEES: TOTAL:	ROAD USE FEES: $ /MBF	ROCKWEAR FEES TOTAL:	ROCKWEAR FEES $/MBF	MAINTENANCE FEES TOTAL:	MAINTENANCE FEES $/MBF:
1. COMPANY-OWNED ROADS:	$9,168.41	$4.66	$0.00	$0.00		$0.00
2. BLM-MAINTAINED ROADS:			$0.00	$0.00	$0.00	$0.00
3. OPERATOR-MAINTAINED ROADS:			$3,055.69	$1.55		$0.00
	$9,168.41	$4.66	$3,055.69	$1.55	$0.00	$0.00

MAINTENANCE OBLIGATION PAYABLE TO BLM $3,055.69 1.551901

Exhibit F
Sheet 1 of 1

SPECIAL PROVISIONS TO CONTROL THE SPREAD OF NOXIOUS WEEDS AND PORT-ORFORD-CEDAR ROOT DISEASE

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

United States
Department of the Interior
Bureau of Land Management

Timber Appraisal

Sale Name:	Llewellyn CT	**Sale Date:**	Friday, March 23, 2018
BLM District:	Coos Bay DO	**Unit of Measure:**	16' MBF
Contract #:	ORC04-TS-2018.0031	**Contract Term:**	36 months
Sale Type:	Advertised	**Contract Mechanism:**	5450-3 Sale of Timber - Lump Sum

SBA Set-Aside

Content

Prepared By: Stover, Douglas R
Approved By: Davis, Brian P

Legal Description of Contract Area

Land Status	County	Township	Range	Section	Subdivision	Meridian
O&C	Coos	28 S	12 W	35	SE1/4 NW1/4, N1/2 SW1/4, SE1/4 SW1/4, W1/2 SE1/4	Willamette

Species Totals

Species	Net	Gross Merch	Gross	# of Merch Logs	# of Cull Logs	# of Trees
Douglas Fir	1,456.0	1,549.0	1,585.0	44,801	1,666	13,001
Red Alder	369.0	441.0	477.0	11,643	1,888	5,464
Grandfir	128.0	138.0	139.0	2,729	85	851
Western Hemlock	11.0	12.0	13.0	347	18	118
Port Orford Cedar	5.0	5.0	6.0	148	42	88
Totals	**1,969.0**	**2,145.0**	**2,220.0**	**59,668**	**3,699**	**19,522**

Cutting Area Acres

Regeneration Harvest Acres	Partial Cut Acres	Right of Way Acres	Total Acres	Net Volume per Acre
0.0	138.0	4.0	142.0	13.9

Logging Costs

Stump to Truck	$430,922.34
Transportation	$75,975.75
Road Construction	$156,939.34
Maintenance/Rockwear	$53,946.26
Road Use	$9,168.41
Other Allowances	$10,740.62
Total:	**$737,692.72**
Total Logging Cost per MBF:	**$374.65**

Utilization Centers

Location	Distance	% of Net Volume
North spit	33.6 miles	87 %
Broadbent	15.5 miles	13 %

Profit & Risk

Basic Profit & Risk	10 %
Additional Risk	3 %
Total Profit & Risk	**13 %**

Tract Features

Quadratic Mean DBH	11.4 in
Average GM Log	36 bf
Average Volume per Acre	13.9 mbf
Recovery	89 %
Net MBF volume:	
Green	1,969.0 mbf
Salvage	0 mbf
Export	5 mbf
Ground Base Logging:	
Percent of Sale Volume	14 %
Average Yarding Slope	10 %
Average Yarding Distance	225 ft
Cable Logging:	
Percent of Sale Volume	86 %
Average Yarding Slope	45 %
Average Yarding Distance	289 ft
Aerial Logging:	
Percent of Sale Volume	0 %
Average Yarding Slope	0 %
Average Yarding Distance	0 ft

Cruise

Cruise Completed April 2017

Cruised By Wooley,Davis,Stover,Kirkland,Herron,Radford

Cruise Method

For all Harvest Areas: The timber volumes for all tree species are based on a variable plot cruise, containing a total of 254 plots and 199 randomly selected sample trees. Plots were measured using a 20 basal area factor (BAF). The volume of the randomly selected sample trees has been expanded to a total sale volume. For all right-of-ways: The volume of all R/W trees has been determined by a 3P sampling cruise with 37 random sample trees and individual tree measurements using a 100% cruise.

Stumpage Computation

Species	# of Trees	Net Volume	Pond Value	(-) Profit & Risk	(-) Logging Costs	(+) Marginal Log Value	Appraised Price/MBF		Appraised Value
Douglas Fir	13,001	1,456.0	$591.44	$76.89	$374.65	$0.00	$139.90		$203,694.40
Red Alder	5,464	369.0	$478.52	$62.21	$374.65	$0.00	$47.90	*	$17,675.10
Grandfir	851	128.0	$521.45	$67.79	$374.65	$0.00	$79.00		$10,112.00
Western Hemlock	118	11.0	$482.53	$62.73	$374.65	$0.00	$48.30	*	$531.30
Port Orford Cedar	88	5.0	$493.60	$64.17	$374.65	$0.00	$54.80		$274.00
Totals	**19,522**	**1,969.0**							**$232,286.80**

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

Percent of Volume By Log Grade

Species	No. 1 & 2 Peeler	No. 3 Peeler	Special Mill	No. 2 Sawmill	No. 3 Sawmill	No. 4 Sawmill	Camp Run
Douglas Fir				22.0 %	66.0 %	12.0 %	

Species	No. 1 Sawmill	No. 2 Sawmill	No. 3 Sawmill	No. 4 Sawmill	No. 5 Sawmill		Camp Run
Red Alder		26.0 %	34.0 %	40.0 %			

Species	Peeler	No. 1 Sawmill	Special Mill	No. 2 Sawmill	No. 3 Sawmill	No. 4 Sawmill	Camp Run
Grandfir				48.0 %	43.0 %	9.0 %	

Species	Peeler	No. 1 Sawmill	Special Mill	No. 2 Sawmill	No. 3 Sawmill	No. 4 Sawmill	Camp Run
Western Hemlock				1.0 %	83.0 %	16.0 %	

Species	No. 1 & 2 Peeler	No. 3 Peeler	Special Mill	No. 2 Sawmill	No. 3 Sawmill	No. 4 Sawmill	Camp Run
Port Orford Cedar				34.0 %	38.0 %	28.0 %	

Unit: 1

Net Volume/Acre: 12.6 MBF

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	406.0	433.0	441.0	3,801
Red Alder	116.0	139.0	152.0	1,703
Grandfir	39.0	42.0	42.0	267
Western Hemlock	3.0	4.0	4.0	37
Port Orford Cedar	1.0	1.0	2.0	22
Totals:	**565.0**	**619.0**	**641.0**	**5,830**

Regeneration Harvest	0.0
Partial Cut	45.0
Right of Way	0.0
Total Acres:	**45.0**

Unit: 2

Net Volume/Acre: 12.6 MBF

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	739.0	787.0	805.0	6,925
Red Alder	212.0	254.0	275.0	3,101
Grandfir	71.0	76.0	77.0	486
Western Hemlock	7.0	7.0	8.0	67
Port Orford Cedar	3.0	3.0	3.0	39
Totals:	**1,032.0**	**1,127.0**	**1,168.0**	**10,618**

Regeneration Harvest	0.0
Partial Cut	82.0
Right of Way	0.0
Total Acres:	**82.0**

Unit: 3

Net Volume/Acre: 12.3 MBF

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	36.0	38.0	39.0	338
Red Alder	10.0	12.0	13.0	151
Grandfir	3.0	4.0	4.0	24
Totals:	**49.0**	**54.0**	**56.0**	**513**

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

Unit: 4

Net Volume/Acre: 12.4 MBF

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	63.0	67.0	69.0	591
Red Alder	18.0	22.0	23.0	265
Grandfir	6.0	7.0	7.0	42
Totals:	**87.0**	**96.0**	**99.0**	**898**

Regeneration Harvest	0.0
Partial Cut	7.0
Right of Way	0.0
Total Acres:	**7.0**

Unit: R/W

Net Volume/Acre: 59.0 MBF

Species	Net	Gross Merch	Gross	# of Trees
Douglas Fir	212.0	224.0	231.0	1,346
Red Alder	13.0	14.0	14.0	244
Grandfir	9.0	9.0	9.0	32
Port Orford Cedar	1.0	1.0	1.0	27
Western Hemlock	1.0	1.0	1.0	14
Totals:	**236.0**	**249.0**	**256.0**	**1,663**

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

Total Stump To Truck	Net Volume	$/MBF
$430,922.34	1,969.0	$218.85

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

Yarding System	Unit of Measure	# of Units of Measure	$/Unit of Measure	Total Cost	Remarks
Cable: Small Yarder	GM MBF	1,841.0	$214.02	$394,010.82	
Wheel Skidder	GM MBF	304.0	$99.38	$30,211.52	
Subtotal				**$424,222.34**	

Additional Costs

Item	Unit of Measure	# of Units of Measure	$/Unit of Measure	Total Cost	Remarks
Intermediate Support	Each	8.0	$150.00	$1,200.00	
Subtotal				**$1,200.00**	

Additional Moves

Equipment	Unit of Measure	# of Units of Measure	$/Unit of Measure	Total Cost	Remarks
Cable: Small Yarder	Each	2.0	$750.00	$1,500.00	Dirt roads and moving for different access
Shovel	Each	2.0	$750.00	$1,500.00	Dirt roads and moving for different access
processor	Each	2.0	$750.00	$1,500.00	Dirt roads and moving for different access
Dozer	Each	2.0	$500.00	$1,000.00	Dirt roads and moving for different access
Subtotal				**$5,500.00**	

Total	Net Volume	$/MBF
$75,975.75	1,969.0	$38.59

Utilization Center	One Way Mileage	Description	Unit of Measure	# of Units	$/Unit of Measure	Total Cost	% of Sale Volume
North spit	33.6	Conifer saw logs	GM MBF	1,704.0	$37.26	$63,491.04	87 %
Broadbent	15.5	Hardwood saw logs	GM MBF	441.0	$28.31	$12,484.71	13 %

Engineering Allowances

Total	Net Volume	$/MBF
$220,054.01	1,969.0	$111.76

Cost Item	Total Cost
Road Construction:	$156,939.34
Road Maintenance/Rockwear:	$53,946.26
Road Use Fees:	$9,168.41

Comments:
Ex D $50,890.57 + Ex E $3055.69 = 53946.26

Total	Net Volume	$/MBF
$10,740.62	1,969.0	$5.45

Environmental Protection

Cost item	Total Cost
Tree girdling	$3,960.00
Subtotal	**$3,960.00**

Logging

Cost item	Total Cost
Equipment Washing	$1,950.00
Subtotal	**$1,950.00**

Miscellaneous

Cost item	Total Cost
Cut and deck private RW	$149.76
Subtotal	**$149.76**

Slash Disposal & Site Prep

Cost item	Total Cost
Burning	$675.42
Hand piling and covering	$1,222.88
Landing pullback	$2,782.56
Subtotal	**$4,680.86**

INSTRUCTIONS TO BIDDERS

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

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

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

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

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

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

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

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

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

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

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

(b) *Timber Scale Sales* – Bids must state price per thousand board feet that will be paid for each species. High bidder will be determined by multiplying bid price per thousand board feet per species by Bureau of Land Management estimate of volume of each species. Purchaser shall be liable for purchase price of all merchantable timber sold under contract even though all such timber is not actually cut and removed prior to expiration of time for cutting and removal as specified in contract.*

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

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

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

10. *PERFORMANCE BOND* –

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

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

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

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

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

(Continued on page 4)

(*Applies to Timber Only)

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

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

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

17. *LOG EXPORT* – All timber offered for sale except as noted in the *Timber Sale Notice* is restricted from export from the United States in the form of unprocessed timber and cannot be used as a substitute for exported private timber. For the purpose of this contract, unprocessed timber is defined as: (1) any logs except those of utility grade or below, such as sawlogs, peeler logs, and pulp logs; (2) cants or squares to be subsequently remanufactured exceeding eight and three quarters (8-3/4) inches in thickness; (3) split or round bolts or other roundwood not processed to standards and specifications suitable for end product use; or (4) western red cedar lumber which does not meet lumber of American Lumber Standards Grades of Number 3 dimensions or better, or Pacific Lumber Inspection Bureau R-List Grades of Number 3 common or better. Timber manufactured into the following will be considered processed: (1) lumber and construction timbers, regardless of size, manufactured to standards and specifications suitable for end product uses; (2) chips, pulp and pulp products; (3) green or dry veneer and plywood; (4) poles and piling cut or treated for use as such; (5) cants, squares, and lumber cut for remanufacture of eight and three quarters (8-3/4) inches in thickness or less; or (6) shakes and shingles. In event purchaser wishes to sell any or all of timber restricted from export in the form of unprocessed timber, the buyer, exchanges, or recipient shall be required to comply with contractual provisions relating to "*unprocessed timber*". Special reporting, branding and painting of logs may be included in contract provisions.*

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

Form 5440-9
(November 2011)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

DEPOSIT AND BID FOR

☑ **TIMBER or TIMBER AND OTHER WOOD PRODUCTS**

☐ **VEGETATIVE RESOURCES (Other Than Timber)**

Name of Bidder	
Tract Number	ORC00-TS-2018.0031
Sale Name	Llewellyn CT
Sale Notice *(dated)*	February 22, 2018
BLM District	Coos Bay District

☐ Sealed Bid for Sealed Bid Sale	☑ Written Bid for Oral Auction Sale
Time for opening sealed bids ☐ a.m. ☐ p.m.	Sale commences 10:00 ☑ a.m. ☐ p.m.
On *(date)* Place	On *(date)* 03/23/2018 Place Coos Bay District Conf. Rm A

In response to the above dated Sale Notice, the required deposit and bid are hereby submitted for the purchase of designated timber/vegetative resource on the tract specified above.

Required bid deposit is $23,300.00 and is enclosed in the form of:

☐ cash ☐ money order ☐ cashier's check ☐ certified check ☐ bank draft

☐ bid bond of corporate surety on approved list of the United States Treasury ☐ guaranteed remittance approved by the authorized officer.

IT IS AGREED That the bid deposit shall be retained by the United States as liquidated damages if the bid is accepted and the undersigned fails to execute and return the contract, together with any required performance bond and any required payment within 30 days after the contract is received by the successful bidder. It is understood that no bid for less than the appraised price on a unit basis per species will be considered. If the bid is rejected the deposit will be returned.

BID SCHEDULE – LUMP SUM SALE

NOTE: Bidders should carefully check computations in completing the Bid Schedule

BID SUBMITTED					ORAL BID MADE	
PRODUCT SPECIES	UNIT	ESTIMATED VOLUME OR QUANITY	UNIT PRICE	TOTAL VALUE	UNIT PRICE	TOTAL VALUE
Douglas-fir	MBF	1,456	X	=	X	=
grand fir	MBF	128	X	=	X	=
red alder	MBF	369	X	=	X	=
western hemlock	MBF	11	X	=	X	=
Port-Orford Cedar	MBF	5	X	=	X	=
			X	=	X	=
			X	=	X	=
			X	=	X	=
			X	=	X	=
			X	=	X	=
			X	=	X	=
			X	=	X	=
			X	=	X	=
			X	=	X	=
			X	=	X	=
			X	=	X	=
		TOTAL PURCHASE PRICE				

(Continued on page 2)

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

Bid submitted on *(date)*

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

☐ Signature, if firm is individually owned	Name of firm *(type or print)*
☐ Signatures, if firm is a partnership or L.L.C.	Business address, include zip code *(type or print)*
☐ Corporation organized under the state laws of	*(To be completed following oral bidding)*
Signature of Authorized Corporate Signing Officer	I HEREBY confirm the above oral bid By *(signature)*
Title	Date

Submit bid, in *duplicate*, to qualify for either an oral auction or sealed bid sale together with the required bid deposit made payable to the Department of the Interior – BLM. Oral Auction – Submit to Sales Supervisor prior to closing of qualifying period for tract.	Sealed Bid – Send to District Manager, who issued the sale notice, in a sealed envelope marked on the outside: (1) "Bid for Timber" or (1a) "Vegetative Resources Other Than Timber" (2) Time bids are to be opened (3) Legal description

NOTICES

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

AUTHORITY: 38 FR 6280 and 43 CFR 5442.1

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

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

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

(Continued on page 3)

Form 5440-9
(November 2011)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

DEPOSIT AND BID FOR

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☐ cash ☐ money order ☐ cashier's check ☐ certified check ☐ bank draft

☐ bid bond of corporate surety on approved list of the United States Treasury ☐ guaranteed remittance approved by the authorized officer.

IT IS AGREED That the bid deposit shall be retained by the United States as liquidated damages if the bid is accepted and the undersigned fails to execute and return the contract, together with any required performance bond and any required payment within 30 days after the contract is received by the successful bidder. It is understood that no bid for less than the appraised price on a unit basis per species will be considered. If the bid is rejected the deposit will be returned.

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Bid submitted on *(date)*

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

☐ Signature, if firm is individually owned	Name of firm *(type or print)*
☐ Signatures, if firm is a partnership or L.L.C.	Business address, include zip code *(type or print)*
☐ Corporation organized under the state laws of	*(To be completed following oral bidding)*
Signature of Authorized Corporate Signing Officer	I HEREBY confirm the above oral bid By *(signature)*
Title	Date

Submit bid, in *duplicate*, to qualify for either an oral auction or sealed bid sale together with the required bid deposit made payable to the Department of the Interior – BLM. Oral Auction – Submit to Sales Supervisor prior to closing of qualifying period for tract.	Sealed Bid – Send to District Manager, who issued the sale notice, in a sealed envelope marked on the outside: (1) "Bid for Timber" or (1a) "Vegetative Resources Other Than Timber" (2) Time bids are to be opened (3) Legal description

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