



**TIMBER NOTICE OF SALE**

**SALE NAME:** FIDDLEHEAD VRH VDT

**AGREEMENT NO:** 30-103982

**AUCTION:** August 31, 2023 starting at 10:00 a.m., **COUNTY:** Skamania  
Pacific Cascade Region Office, Castle Rock, WA

**SALE LOCATION:** Sale located approximately 7 miles Northwest of Stevenson

**PRODUCTS SOLD  
AND SALE AREA:**

All timber and timber described in Schedule A, except leave trees bound by yellow "Leave Tree Area" tags, leave trees marked with blue paint, all downed timber greater than 10 inches diameter and snags bounded by the following;

Unit 1 VDT: White "Timber Sale Boundary" tags with pink flagging, CG-2031 road and pink flagging, gaps marked with blue "Special Management Area" tags with pink flagging.

Unit 2 VDT: Pink flagging at timber type change, white "Timber Sale Boundary" tags with pink flagging, gaps marked with blue "Special Management Area" tags with pink flagging.

Unit 3 VRH: Pink flagging at property line posts and timber type change, white "Timber Sale Boundary" tags with pink flagging.

Unit 4 ROW: Orange "Right-of-Way" tags.

Unit 5 ROW: Orange "Right-of-Way" tags.

Unit 6 ROW: Orange "Right-of-Way" tags.

All forest products above located on part(s) of Sections 15 and 22 all in Township 3 North, Range 7 East, W.M., containing 140 acres, more or less.

**CERTIFICATION:** This sale is certified under the Sustainable Forestry Initiative® program Standard (cert no: PwC-SFIFM-513)

**ESTIMATED SALE VOLUMES AND QUALITY:**

Species	Avg DBH	Ring Count	Total MBF	Total \$/MBF	MBF by Grade								
					1P	2P	3P	SM	1S	2S	3S	4S	UT
Douglas fir	18.3	7	3,476	\$197.00				96		1,908	1,130	316	26
Maple	12.1		169	\$20.00							11	33	126
Red alder	8		10	\$20.00									10
Hemlock	13		1	\$75.00									1
Sale Total			3,656										

**MINIMUM BID:** \$197/MBF (est. value \$691,000.00) **BID METHOD:** Sealed Bids

**PERFORMANCE SECURITY:** \$100,000.00 **SALE TYPE:** MBF Scale

**EXPIRATION DATE:** October 31, 2026 **ALLOCATION:** Export Restricted



## TIMBER NOTICE OF SALE

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**BIDDABLE SPECIES:** Douglas fir

**BID DEPOSIT:** \$69,100.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

**HARVEST METHOD:** Ground based equipment, Cable, and Cable-Assist. This sale is estimated to be 35 percent cable/cable assist harvest systems and 65 percent ground based harvest systems. Ground based yarding equipment will not be permitted on sustained slopes over 40 percent. Cable assist equipment will not be permitted on sustained slopes over 70 percent. For additional harvesting requirements, see Schedule A: Thinning Prescription and Clause H-140 in the contract. Ground Based Yarding will not be permitted from November 1 to April 30 unless authorized in writing by the Contract Administrator.

**ROADS:** 37.27 stations of optional construction. 74.40 stations of optional reconstruction. 290.58 stations of required prehaul maintenance. 52.03 stations of abandonment, if built. 41.70 stations of decommissioning. Rock used in accordance with the quantities on the ROCK LIST may be obtained from the CG-2037 Pit #2 (Sec. 10 T3N R7E W.M) at no charge to the purchaser. For additional information see Road Plan 6-2. Rock used in accordance with the quantities on the ROCK LIST may be obtained from existing stockpiles; CG-2031D Stockpile at Station 1+32 on CG-2031D and CG-2037 Stockpile at Station 47+01 at no charge to the purchaser. See Road Plan 6-3 for additional information. Rock used in accordance with the quantities on the ROCK LIST may be obtained from any commercial source at the Purchaser's expense. Rock sources are subject to written approval by the Contract Administrator before their use. For additional information see Road Plan 6-5. Purchaser shall conduct rock source development in accordance with Rock Source Development Plan. See Road Plan 6-10 for additional information.

Load Ratings: CG-2030 at Rock Creek Bridge are U80 (wheeled machines and log trucks) = 80 ton load limit with controlled crossing requirements. L90 (tracked machine) = 70 ton load limit with controlled crossing requirements. Controlled crossing requirements: maximum speed 5 mph, vehicle to be centered between girders.

Road construction and reconstruction, pre-haul maintenance and CG-2031 Stockpile use will be restricted from October 1 to April 30 on roads CG-2030 (Station 0+00 to 135+00), CG-2030, CG-2031A, CG-2031A1, CG-2031C, CG-2031C1 and CG-2031D. See Road Plan 1-25 for additional information.

Pre-haul maintenance, rock source work and CG-2037 Stockpile use will be restricted from March 1 to August 31 on roads CG-2031 (station 135+00 to 173+95 and CG-2037. See Road Plan 1-25 and Contract Clause H-250 for additional information. The hauling of forest products will not be permitted from November 1 to April 30 unless authorized in writing by the Contract Administrator.

### ACREAGE DETERMINATION

**CRUISE METHOD:** The sale acres were determined by GPS delineation. Cruise was completed using variable plot cruise methods.

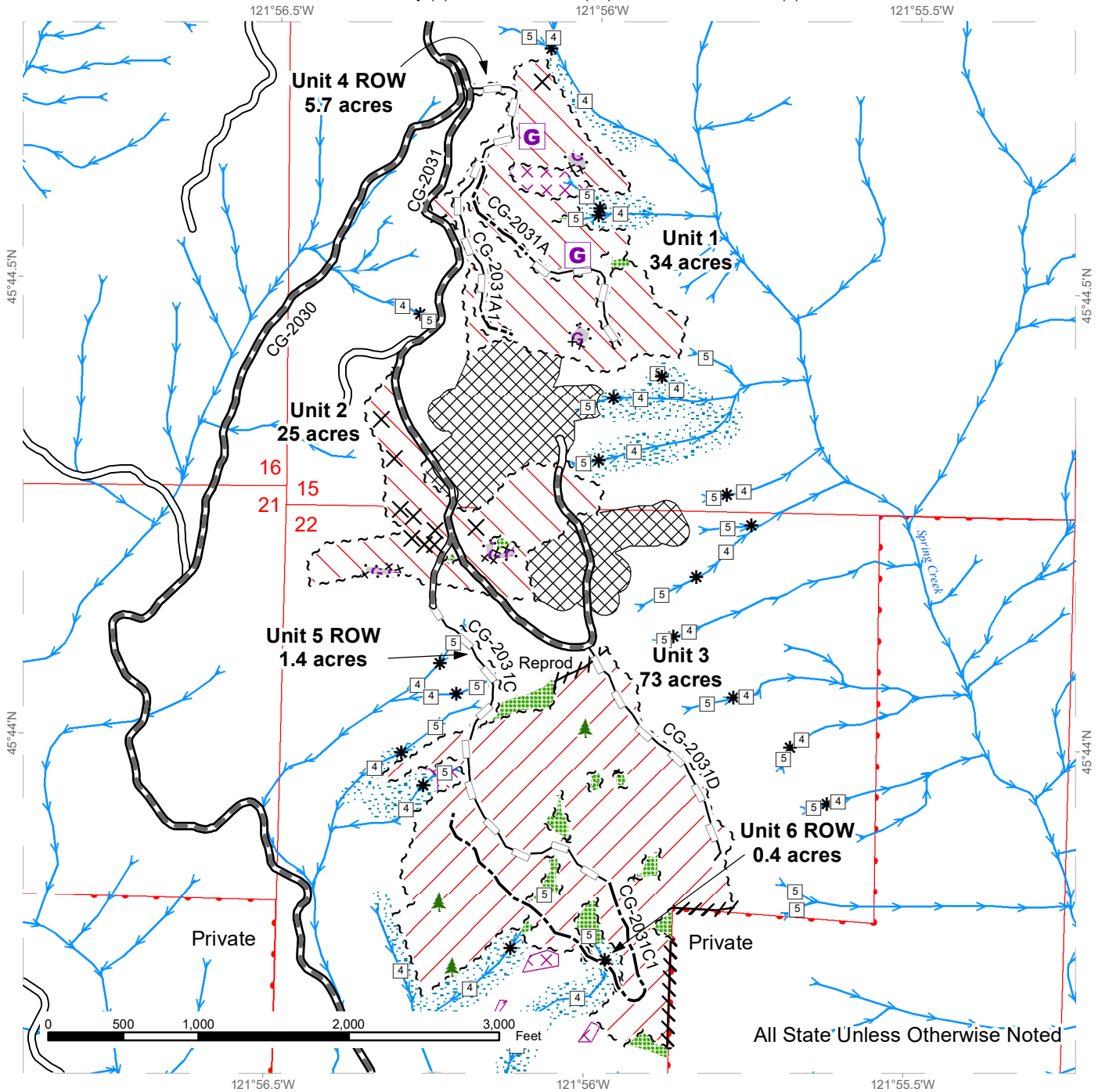
**FEES:** \$62,152.00 is due on day of sale. \$9.00 per MBF is due upon removal. These are in addition to the bid price.

**SPECIAL REMARKS:** This sale contains approximately 96 MBF DF Special Mill, 331 MBF High Quality DF 2 Saw, 219 MBF High Quality DF 3 Saw. See Cruise for additional information.

# TIMBER SALE MAP

**SALE NAME:** FIDDLEHEAD VDT VRH  
**AGREEMENT #:** 30-103982  
**TOWNSHIP(S):** T3R7E  
**TRUST(S):** Common School and Indemnity (3), Scientific School (10), State Forest Transfer (1)

**REGION:** Pacific Cascade Region  
**COUNTY(S):** Skamania  
**ELEVATION RGE:** 800-1800



All State Unless Otherwise Noted

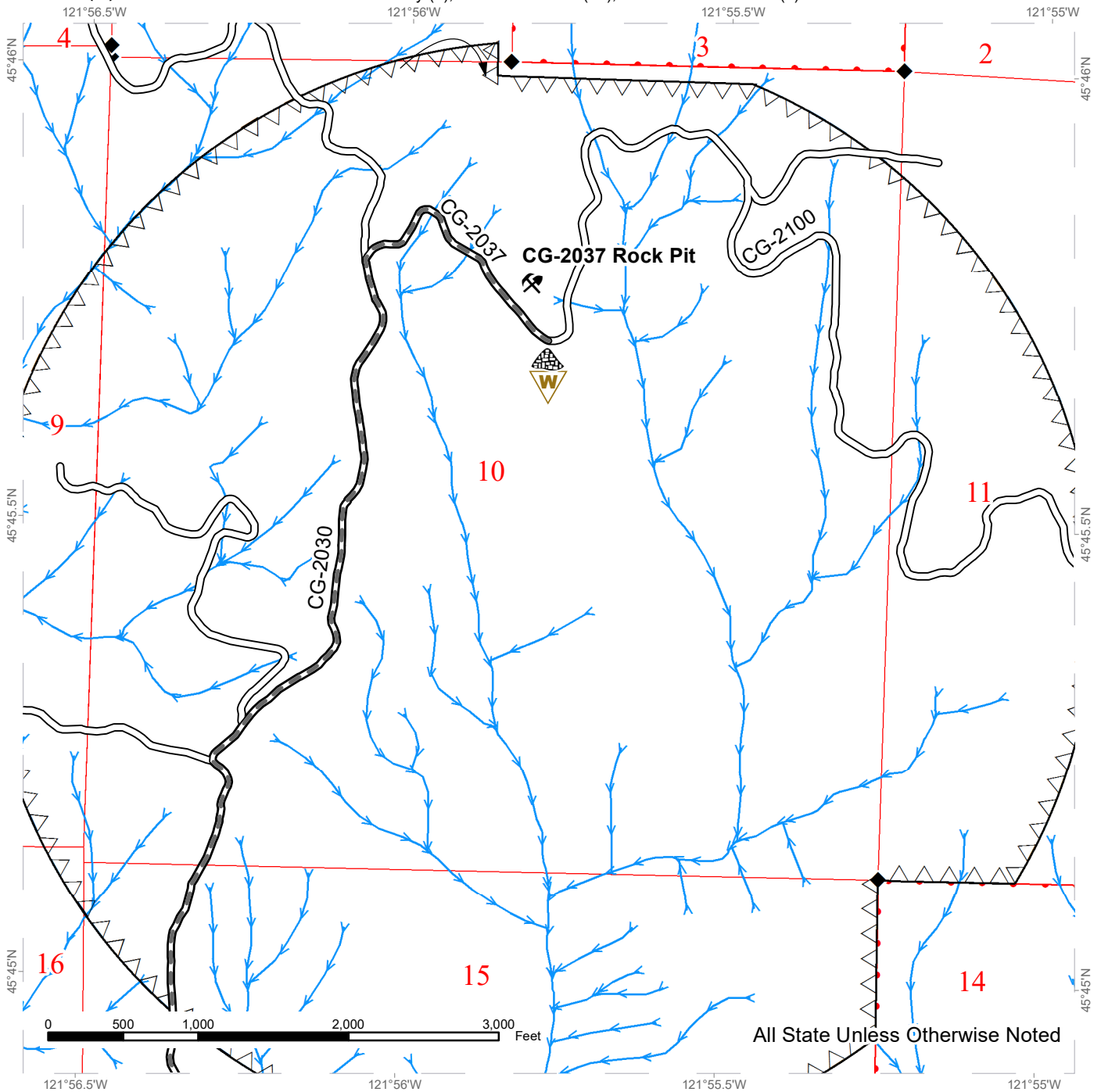
Variable Retention Harvest	Sale Boundary Tags	Stream Type
Variable Density Thinning	Special Mgmt Area	Stream Type Break
Talus and Buffer	Leave Tree Tags	Streams
Gap	Right of Way Tags	Gap
Leave Tree Area	Property Line	Take Tree
Riparian Mgt Zone	Flag Line	Leave Trees
Potentially Unstable Slopes	Existing Roads	
	Required Pre-Haul Maintenance	
	Optional Construction	
	Optional Reconstruction	



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All State Unless Otherwise Noted

	Timing Restriction		Stream Type
	Existing Roads		Stream Type Break
	Required Pre-Haul Maintenance		Streams
	Rock Pit		Survey Monument
	Stockpile		Waste Area



# DRIVING MAP

**SALE NAME:** FIDDLEHEAD VDT VRH  
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Map may not be to scale

	Timber Sale Unit
	Haul Route
	Other Road
	Distance Indicator
	Bridge
	Timing Restriction
	Milepost Markers

**DRIVING DIRECTIONS:**

From Highway 14, near mile marker 43, turn north onto SW Rock Creek Drive and travel for 0.3 miles.  
 Turn left on Foster Creek Road, which turns into Ryan Allen Road and travel for 0.8 miles.  
 Turn left on Red Bluff Road and travel for 0.3 miles.  
 At the fork, veer right on the CG-2000 and travel for 2.2 miles.  
 Turn right into the CG-2030 and travel for 2.5 miles.  
 Turn right into the CG-2031 and travel for 0.2 miles to access Unit 1.  
 Continue on the CG-2031 to access Units 2 and 3.  
 To access the CG-2037 Rock Pit, continue on the CG-2030, past the CG-2031, for 1.3 miles.  
 Turn right on the CG-2037 and continue for 0.3 miles.



**STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES**

**BILL OF SALE AND CONTRACT FOR  
FOREST PRODUCTS**

**Export Restricted MBF Scale AGREEMENT NO. 30-0103982**

**SALE NAME: FIDDLEHEAD VRH VDT**

**THE STATE OF WASHINGTON DEPARTMENT OF NATURAL  
RESOURCES, HEREINAFTER ACTING SOLELY, IN ITS PROPRIETARY  
CAPACITY, STATE, AND PURCHASER, AGREE AS FOLLOWS:**

Section G: General Terms

G-001 Definitions

The following definitions apply throughout this contract;

Bill of Sale and Contract for Forest Products: Contract between the Purchaser and the State, which sets forth the procedures and obligations of the Purchaser in exchange for the right to remove forest products from the sale area. The Bill of Sale and Contract for Forest Products may include a Road Plan for any road construction or reconstruction, where applicable.

Contract Administrator: Region Manager's designee responsible for assuring that the contractual obligations of the Purchaser are met.

Forest Product: Any material derived from the forest for commercial use.

Purchaser: The company or individual that has entered into a Bill of Sale and Contract for Forest Products with the State for the right to harvest and remove forest products from the timber sale area.

Road Construction: Includes building new and maintaining existing forest roads and associated work that may be optional or required as described in the Road Plan.

State: The Washington State Department of Natural Resources, landowner and seller of Forest Products from the timber sale area. The State is represented by the Region Manager as designated on the contract signature page. Contractual obligations to the State are enforced by the Region Manager or the designated Contract Administrator.

Subcontractor: Individual or company employed by the Purchaser to perform a portion or all of the services required by The Bill of Sale and Contract for Forest Products. The Purchaser is responsible for independently negotiating, procuring and paying for all subcontracted services rendered.

#### G-010 Products Sold and Sale Area

Purchaser was the successful bidder on August 31, 2023 and the sale was confirmed on \_\_\_\_\_. The State, as owner, agrees to sell to Purchaser, and Purchaser agrees to purchase, cut, and remove the following forest products: All timber and timber described in Schedule A, except leave trees bound by yellow "Leave Tree Area" tags, leave trees marked with blue paint, all downed timber greater than 10 inches diameter and snags bounded by the following;

Unit 1 VDT: White "Timber Sale Boundary" tags with pink flagging, CG-2031 road and pink flagging, gaps marked with blue "Special Management Area" tags with pink flagging.

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Unit 4 ROW: Orange "Right-of-Way" tags.

Unit 5 ROW: Orange "Right-of-Way" tags.

Unit 6 ROW: Orange "Right-of-Way" tags., located on approximately 140 acres on part(s) of Sections 15, and 22 all in Township 3 North, Range 7 East W.M. in Skamania County(s) as shown on the attached timber sale map and as designated on the sale area.

All forest products described above from the bole of the tree that meet or exceed 2 inches diameter inside bark on the small end are eligible for removal. Above ground components of a tree that remain as by-products after the manufacture of logs, including but not limited to tree tops, branches, limbs, needles, leaves, stumps, are not eligible for removal under the terms of this contract.

Forest products purchased under a contract that is designated as export restricted shall not be exported until processed. Forest products purchased under a contract that is designated as exportable may be exported prior to processing.

G-020 Inspection By Purchaser

Purchaser hereby warrants to the State that they have had an opportunity to fully inspect the sale area and the forest products being sold. Purchaser further warrants to the State that they enter this contract based solely upon their own judgment of the value of the forest products, formed after their own examination and inspection of both the timber sale area and the forest products being sold. Purchaser also warrants to the State that they enter this contract without any reliance upon the volume estimates, acreage estimates, appraisals, pre-bid documentation, or any other representations by the State Department of Natural Resources.

G-025 Schedules

The following attached schedules are hereby incorporated by reference:

Schedule	Title
A	Upland Enhancement Thinning Prescriptions

G-030 Contract Term

Purchaser shall remove the forest products conveyed and complete all work required by this contract prior to October 31, 2026.

G-040 Contract Term Adjustment - No Payment

Purchaser may request an adjustment in the contract term. A claim must be submitted in writing and received by the State within 30 days after the start of interruption or delay. The claim must also indicate the actual or anticipated length of interruption or delay. The State may grant an adjustment without charge only if the cause for contract term adjustment is beyond Purchaser's control. The cause must be one of the following and the adjustment may be granted only if operations or planned operations under this contract are actually interrupted or delayed:

- a. Road and bridge failures which deny access.
- b. Access road closures imposed by road owner.
- c. Excessive suspensions as provided in clause G-220.
- d. Regulatory actions not arising from Purchaser's failure to comply with this contract which will prevent timber harvest for a period less than 6 months.

G-050 Contract Term Extension - Payment

Extensions of this contract term may be granted only if, in the judgment of the State, Purchaser is acting in good faith and is endeavoring to remove the forest products conveyed. The term of this contract may be extended for a reasonable time by the State if all of the following conditions are satisfied:



- a. A written request for extension of the contract term must be received prior to the expiration date of the contract.
- b. Completion of all required roads and compliance with all contract and regulatory requirements.
- c. For the first extension, not to exceed 1 year, payment of at least 25 percent of the contract value based on the contract payment rate and advertised volume.

For the second extension, not to exceed 1 year, payment of at least 90 percent of the contract value based on the contract payment rate base and advertised volume.

The payments shall not include the initial deposit which shall be held according to the provisions of RCW 79.15.100.

- d. Payment of an amount based on 12 percent interest per annum on the unpaid portion of the timber value of the contract.

To determine the unpaid portion of the contract, multiply the contract payment rate for each item by the remaining volume for each item based on the volumes from the Timber Notice of Sale. In addition, all cash deposits that can be used for timber payments, except the initial deposit, will be deducted from the unpaid portion of the contract.

- e. Payment of \$30.00 per acre per annum for the acres on which an operating release has not been issued in Unit 3, Variable Retention Harvest. For Units 1 and 2, Variable Density Thinning Units, \$3.00 per acre per annum for the acres on which an operating release has not been issued.
- f. In no event will the extension charge be less than \$200.00.
- g. Extension payments are non-refundable.

**G-053 Surveys - Sensitive, Threatened, Endangered Species**

Whenever the State determines that a survey for sensitive, threatened, or endangered species is prudent, or when Purchaser determines a survey is prudent and the State agrees, Purchaser shall perform such surveys at Purchaser's expense and to the standards required by the State. The survey information shall be supplied to the State.

**G-060 Exclusion of Warranties**

The PARTIES AGREE that the IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE and ALL OTHER WARRANTIES EXPRESSED OR IMPLIED ARE EXCLUDED from this transaction and shall not apply to the goods sold. For example, THE FOLLOWING SPECIFIC MATTERS ARE NOT WARRANTED, and are EXCLUDED from this transaction:

- a. The MERCHANTABILITY of the forest products. The use of the term "merchantable" in any document is not intended to vary the foregoing.
- b. The CONDITION of the forest products. The forest products will be conveyed "AS IS."
- c. The ACREAGE contained within any sale area. Any acreage descriptions appearing in the timber notice of sale, timber sale contract, or other documents are estimates only, provided solely for administrative and identification purposes.
- d. The VOLUME, QUALITY, OR GRADE of the forest products. The State neither warrants nor limits the amount of timber to be harvested. The descriptions of the forest products to be conveyed are estimates only, made solely for administrative and identification purposes.
- e. The CORRECTNESS OF ANY SOIL OR SURFACE CONDITIONS, PRE-SALE CONSTRUCTION APPRAISALS, INVESTIGATIONS, AND ALL OTHER PRE-BID DOCUMENTS PREPARED BY OR FOR THE STATE. These documents have been prepared for the State's appraisal purposes only.
- f. THAT THE SALE AREA IS FREE FROM THREATENED OR ENDANGERED SPECIES or their habitat. The State is not responsible for any interference with forestry operations that result from the presence of any threatened or endangered species, or the presence of their habitat, within the sale area.
- g. THAT THE FORESTRY OPERATIONS to be performed under this contract WILL BE FREE FROM REGULATORY ACTIONS by governmental agencies. The State is not responsible for actions to enforce regulatory laws, such as the Washington Forest Practices Act (chapter 76.09 RCW), taken by the Department of Natural Resources or any other agency that may affect the operability of this timber sale.
- h. Items contained in any other documents prepared for or by the State.

G-062 Habitat Conservation Plan

The State has entered into a Habitat Conservation Plan (HCP) with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service (the Services) to address state trust land management issues relating to compliance with the Federal Endangered Species Act. The activities to be carried out under this contract are located within the State's HCP area and are subject to the terms and conditions of the HCP, and the Services' Incidental Take Permit Nos. TE812521-1 and 1168 (collectively referred to as ITP), or as amended hereafter by the Services. The ITP authorizes the incidental take of certain federally listed threatened and endangered species, as specified in the

ITP conditions. All HCP materials, including the ITP, are available for review at the State's Regional Offices and the administrative headquarters in Olympia, Washington.

By signing this contract, Purchaser agrees to comply with the terms and conditions of the ITP, and the HCP, which shall become terms of this contract. The State agrees to authorize the lawful activities of the Purchaser carried out pursuant to this contract, PROVIDED the Purchaser remains in compliance with the terms and conditions of both the HCP and ITP. The requirements set forth in this contract are intended to comply with the terms and conditions of the HCP and ITP. Accordingly, non-compliance with the terms and conditions of the HCP and ITP will render the authorization provided in this paragraph void, be deemed a breach of the contract and may subject Purchaser to liability for violation of the Endangered Species Act.

Any modifications to the contract shall be proposed in writing by Purchaser, shall continue to meet the terms and conditions of the HCP and ITP, and shall require the prior written approval of the Region Manager before taking effect.

G-063 Incidental Take Permit Notification Requirements

- a. Purchaser shall immediately notify the Contract Administrator of new locations of permit species covered by the Incidental Take Permits (ITP) that are discovered within the area covered by the State's Habitat Conservation Plan (HCP), including, but not limited to: locations of occupied murrelet habitat; spotted owl nest sites; wolves; grizzly bears; nests, communal roosts, or feeding concentrations of bald eagles; peregrine falcon nests; Columbian white-tailed deer; Aleutian Canada geese; Oregon silverspot butterflies; and additional stream reaches found to contain bull trout. Purchaser is required to notify the Contract Administrator upon discovery of any fish species found in streams or bodies of water classified as non-fish bearing. In all circumstances, notification must occur within a 24 hour time period.
- b. Upon locating any live, dead, injured, or sick specimens of any permit species covered by the ITP, Purchaser shall immediately notify the Contract Administrator. Purchaser shall notify the Contract Administrator if there is any doubt as to the identification of a discovered permit species. Purchaser may be required to take certain actions to help the Contract Administrator safeguard the well-being of any live, injured or sick specimens of any permit species discovered, until the proper disposition of such specimens can be determined by the Contract Administrator. Any such requirements will be explained to Purchaser by the Contract Administrator during the Pre-Work Conference. In all circumstances, notification must occur within a 24 hour time period.
- c. Purchaser shall refer to a specific ITP number, ITP TE812521-1 or ITP 1168 (copies which are located in the region office) in all correspondence and reports concerning permit activities.

- d. Provisions and requirements of the ITP shall be clearly presented and explained to Purchaser by Contract Administrator during the Pre-Work Conference as per contract clause G-330. All applicable provisions of the ITP and this schedule must be presented and clearly explained by Purchaser to all authorized officers, employees, contractors, or agents of Purchaser conducting authorized activities in the timber sale area. Any questions Purchaser may have about the ITP should be directed to the Contract Administrator.

G-064 Permits

Purchaser is responsible for obtaining any permits not already obtained by the State that relate to Purchaser's operation. Forest Practice Application / Hydraulic Project Approval permits obtained by the State shall be transferred to Purchaser. Purchaser is responsible for all permits, amendments and renewals.

G-065 Regulatory Disclaimer

The State disclaims any responsibility for, or liability relating to, regulatory actions by any government agency, including actions pursuant to the Forest Practices Act, Ch. 76.09 RCW that may affect the operability of the timber sale.

G-066 Governmental Regulatory Actions

- a. Risk

Purchaser shall be responsible for any increased operational costs arising from any applicable foreign or domestic governmental regulation or order that does not cause contract performance to become commercially impracticable or that does not substantially frustrate the purpose of the contract. If impracticability or frustration results from Purchaser's failure to comply with this contract, Purchaser shall remain responsible for payment of the total contract price notwithstanding the impracticability or frustration.

- b. Sale Area

When portions of the sale area become subject to a foreign or domestic governmental regulation or order that will likely prevent timber harvest for a period that will exceed the expiration date of this contract, and Purchaser has complied with this contract, the following shall apply:

- i. RCW 79.15.140 shall govern all adjustments to the contract area.

- c. Adjustment of Price

The State shall adjust the total contract price by subtracting from the total contract price an amount determined in the following manner: The State shall cause the timber sale area subject to governmental regulation or order to be measured. The State shall calculate the percentage of the total sale area subject to the governmental regulation or order. The State shall reduce the total contract price by that calculated percentage. However, variations in

species, value, costs, or other items pertaining to the affected sale area will be analyzed and included in the adjustment if deemed appropriate by the State. The State will further reduce the total contract price by the reasonable cost of unamortized roads Purchaser constructed but was unable to fully use for removing timber. A reduction in total contract price terminates all of the Purchaser's rights to purchase and remove the timber and all other interest in the affected sale area.

G-070 Limitation on Damage

In the event of a breach of any provision of this contract by the State, the exclusive remedy available to Purchaser will be limited to a return of the initial deposit, unapplied payments, and credit for unamortized improvements made by Purchaser. The State shall not be liable for any damages, whether direct, incidental or consequential.

G-080 Scope of State Advice

No advice by any agent, employee, or representative of the State regarding the method or manner of performing shall constitute a representation or warranty that said method, manner or result thereof will conform to the contract or be suitable for Purchaser's purposes under the contract. Purchaser's reliance on any State advice regarding the method or manner of performance shall not relieve Purchaser of any risk or obligation under the contract. Purchaser retains the final responsibility for its operations under this contract and State shall not be liable for any injuries resulting from Purchaser's reliance on any State advice regarding the method or manner of performance.

G-090 Sale Area Adjustment

The Parties may agree to adjustments in the sale area boundary. The cumulative changes to the sale area during the term of the contract shall not exceed more than four percent of the original sale area. If the sale area is increased, added forest products become a part of this contract and shall be paid for at the same rate and manner as other forest products under this contract.

G-100 Forest Products Not Designated

Any forest products not designated for removal, which must be removed in the course of operations authorized by the State, shall be approved and designated by the Contract Administrator. Added forest products become a part of this contract and shall be paid for at the same rate and manner as other forest products under this contract.

G-110 Title and Risk of Loss

Title to the forest products conveyed passes at confirmation of the sale. Purchaser bears the risk of loss of or damage to and has an insurable interest in the forest products in this contract from the time of confirmation of the sale of forest products. In the event of loss of or damage to the forest products after passage of title, whether the cause is foreseeable or unforeseeable, the forest products shall be paid for by Purchaser. Breach of this contract shall have no effect on this provision. Title to the forest products not removed from the sale area within the period specified in this contract shall revert to the State as provided in RCW 79.15.100.

**G-116 Sustainable Forestry Initiative® (SFI) Certification**

Forest products purchased under this contract are certified as being in conformance with the Sustainable Forestry Initiative program Standard under certificate number: PwC-SFIFM-513.

Purchaser shall have at least one person regularly on-site during active operations that have completed training according to the requirements outlined within the SFI® program Standard. Purchaser shall designate in writing the name(s) of the individual(s) who will be on-site and provide proof of their successful completion of an approved training program prior to active operations.

**G-120 Responsibility for Work**

All work, equipment, and materials necessary to perform this contract shall be the responsibility of Purchaser. Any damage to improvements, except as provided in clause G-121 or unless the State issues an operating release pursuant to clause G-280, shall be repaired promptly to the satisfaction of the State and at Purchaser's expense.

**G-121 Exceptions**

Exceptions to Purchaser's responsibility in clause G-120 shall be limited exclusively to the following. These exceptions shall not apply where road damage occurs due to Purchaser's failure to take reasonable precautions or to exercise sound forest engineering and construction practices.

The State will bear the cost to repair damages caused by a third party. In all other cases, the Purchaser shall bear responsibility for the costs as described below.

Road is defined as the road bed, including but not limited to its component parts, such as cut and fill slopes, subgrade, ditches, culverts, bridges, and cattle guards.

For the purposes of this clause, damage will be identified by the State and is defined as:

1. Failure of (a) required improvements or roads designated in clause C-050, or (b) required or optional construction completed to the point that authorization to haul has been issued;
2. Caused by a single event from forces beyond the control of Purchaser, its employees, agents, or invitees, including independent contractors; and
3. Includes, but is not limited to natural disasters such as earthquakes, volcanic eruptions, landslides, and floods.

The repair work identified by the State shall be promptly completed by Purchaser at an agreed price. The State may elect to accomplish repairs by means of State-provided resources.

For each event, Purchaser shall be solely responsible for the initial \$5,000 in repairs. For repairs in excess of \$5,000, the parties shall share equally the portion of costs between \$5,000 and \$15,000. The State shall be solely responsible for the portion of the cost of repairs that exceed \$15,000.

Nothing contained in clauses G-120 and G-121 shall be construed as relieving Purchaser of responsibility for, or damage resulting from, Purchaser's operations or negligence, nor shall Purchaser be relieved from full responsibility for making good any defective work or materials. Authorization to haul does not warrant that Purchaser built roads are free from material defect and the State may require additional work, at Purchasers expense regardless of cost, to remedy deficiencies at any time.

G-140 Indemnity

To the fullest extent permitted by law, Purchaser shall indemnify, defend and hold harmless State, agencies of State and all officials, agents and employees of State, from and against all claims arising out of or resulting from the performance of the contract. "Claim" as used in this contract means any financial loss, claim, suit, action, damage, or expense, including but not limited to attorneys' fees, attributable for bodily injury, sickness, disease or death, or injury to or destruction of tangible property including loss of use resulting therefrom. Purchasers' obligations to indemnify, defend, and hold harmless includes any claim by Purchasers' agents, employees, representatives, or any subcontractor or its employees. Purchaser expressly agrees to indemnify, defend, and hold harmless State for any claim arising out of or incident to Purchasers' or any subcontractors' performance or failure to perform the contract. Purchasers' obligation to indemnify, defend, and hold harmless State shall not be eliminated or reduced by any actual or alleged concurrent negligence of State or its agents, agencies, employees and officials. Purchaser waives its immunity under Title 51 RCW to the extent it is required to indemnify, defend and hold harmless State and its agencies, officials, agents or employees.

G-150 Insurance

Purchaser shall, at its cost and expense, buy and maintain insurance of the types and amounts listed below. Failure to buy and maintain the required insurance may result in a breach and/or termination of the contract at State's option. State may suspend Purchaser operations until required insurance has been secured.

All insurance and surety bonds should be issued by companies admitted to do business within the State of Washington and have a rating of A-, Class VII or better in the most recently published edition of Best's Reports. If an insurer is not admitted, all insurance policies and procedures for issuing the insurance policies must comply with Chapter 48.15 RCW and 284-15 WAC.

The State of Washington, Department of Natural Resources region office of sale origin shall be provided written notice before cancellation or non-renewal of any insurance referred to therein, in accord with the following specifications:

1. Insurers subject to Chapter 48.18 RCW (admitted and regulated by the Insurance Commissioner): The insurer shall give the State 45 days advance notice of cancellation or non-renewal. If cancellation is due to non-payment of premium, the State shall be given 10 days advance notice of cancellation.
2. Insurers subject to Chapter 48.15 RCW (surplus lines): The State shall be given 20 days advance notice of cancellation. If cancellation is due to non-payment of premium, the State shall be given 10 days advance notice of cancellation.

Before starting work, Purchaser shall furnish State of Washington, Department of Natural Resources with a certificate(s) of insurance, executed by a duly authorized representative of each insurer, showing compliance with the insurance requirements specified in the contract. Insurance coverage shall be obtained by the Purchaser prior to operations commencing and continually maintained in full force until all contract obligations have been satisfied or an operating release has been signed by the State.

Purchaser shall include all subcontractors as insured under all required insurance policies, or shall furnish separate certificates of insurance and endorsements for each subcontractor. Subcontractor(s) must comply fully with all insurance requirements stated herein. Failure of subcontractor(s) to comply with insurance requirements does not limit Purchaser's liability or responsibility.

The State of Washington, Department of Natural Resources, its elected and appointed officials, agents and employees shall be named as an additional insured via endorsement on all general liability, excess, umbrella, and property insurance policies.

All insurance provided in compliance with this contract shall be primary as to any other insurance or self-insurance programs afforded to or maintained by State. Purchaser waives all rights against State for recovery of damages to the extent these damages are covered by general liability or umbrella insurance maintained pursuant to this contract.

By requiring insurance herein, State does not represent that coverage and limits will be adequate to protect Purchaser and such coverage and limits shall not limit Purchaser's liability under the indemnities and reimbursements granted to State in this contract.

The limits of insurance, which may be increased as deemed necessary by State of Washington, Department of Natural Resources, shall not be less than as follows:

Commercial General Liability (CGL) Insurance. Purchaser shall maintain general liability (CGL) insurance, and, if necessary, commercial umbrella insurance with a limit of not less than \$1,000,000.00 per each occurrence. If such CGL insurance contains aggregate limits, the General Aggregate limit shall be at least twice the "each occurrence" limit. CGL insurance shall have products-completed operations aggregate limit of at least two times the "each occurrence" limit. CGL coverage shall include a Logging and Lumbering Endorsement (i.e. Logger's Broad-Form) to cover the events



that include, but are not limited to, fire suppression expenses, accidental timber trespasses, and wildfire property damage with limits of not less than \$2,000,000.00 each occurrence.

CGL insurance shall be written on Insurance Services Office (ISO) occurrence form CG 00 01 (or a substitute form providing equivalent coverage). All insurance shall cover liability arising out of premises, operations, independent contractors, products completed operations, personal injury and advertising injury, and liability assumed under an insured contract (including the tort liability of another party assumed in a business contract), and contain separation of insured (cross liability) condition.

Employer's Liability "Stop Gap" Insurance. Purchaser shall buy employers liability insurance, and, if necessary, commercial umbrella liability insurance with limits not less than \$1,000,000.00 each accident for bodily injury by accident or \$1,000,000.00 each employee for bodily injury by disease.

Workers' Compensation Coverage. Purchaser shall comply with all State of Washington workers' compensation statutes and regulations. Workers' compensation coverage shall be provided for all employees of Purchaser and employees of any subcontractor or sub-subcontractor. Coverage shall include bodily injury (including death) by accident or disease, which exists out of or in connection with the performance of this contract. Except as prohibited by law, Purchaser waives all rights of subrogation against State for recovery of damages to the extent they are covered by workers' compensation, employer's liability, commercial general liability, or commercial umbrella liability insurance.

If Purchaser, subcontractor or sub-subcontractor fails to comply with all State of Washington workers' compensation statutes and regulations and State incurs fines or is required by law to provide benefits to or obtain coverage for such employees, Purchaser shall indemnify State. Indemnity shall include all fines, payment of benefits to Purchaser or subcontractor employees, or their heirs or legal representatives, and the cost of effecting coverage on behalf of such employees.

Business Auto Policy (BAP). Purchaser shall maintain business auto liability and, if necessary, commercial umbrella liability insurance with a limit not less than \$1,000,000.00 per accident. Such insurance shall cover liability arising out of "Any Auto". Business auto coverage shall be written on ISO form CA 00 01, or substitute liability form providing equivalent coverage. If necessary the policy shall be endorsed to provide contractual liability coverage and cover a "covered pollution cost or expense" as provided in the 1990 or later editions of CA 00 01. Purchaser waives all rights against State for the recovery of damages to the extent they are covered by business auto liability or commercial umbrella liability insurance.

#### G-160 Agents

The State's rights and duties will be exercised by the Region Manager at Castle Rock, Washington. The Region Manager will notify Purchaser in writing who is responsible for administering the contract. The Region Manager has sole authority to waive,

modify, or amend the terms of this contract in the manner prescribed in clause G-180. No agent, employee, or representative of the State has any authority to bind the State to any affirmation, representation, or warranty concerning the forest products conveyed beyond the terms of this contract.

Purchaser is required to have a person on site during all operations who is authorized to receive instructions and notices from the State. Purchaser shall inform the State in writing who is authorized to receive instructions and notices from the State, and any limits to this person's authority.

G-170 Assignment and Delegation

No rights or interest in this contract shall be assigned by Purchaser without prior written permission of the State. Any attempted assignment shall be void and ineffective for all purposes unless made in conformity with this paragraph. Purchaser may perform any duty through a delegate, but Purchaser is not thereby relieved of any duty to perform or any liability. Any assignee or delegate shall be bound by the terms of the contract in the same manner as Purchaser.

G-180 Modifications

Waivers, modifications, or amendments of the terms of this contract must be in writing signed by Purchaser and the State.

G-190 Contract Complete

This contract is the final expression of the Parties' agreement. There are no understandings, agreements, or representations, expressed or implied, which are not specified in this contract.

G-200 Notice

Notices required to be given under the following clauses shall be in writing and shall be delivered to Purchaser's authorized agent or sent by certified mail to Purchaser's address of record:

G-210 Violation of Contract

G-220 State Suspends Operations

All other notices required to be given under this contract shall be in writing and delivered to the authorized agent or mailed to the Party's post office address. Purchaser agrees to notify the State of any change of address.

G-210 Violation of Contract

- a. If Purchaser violates any provision of this contract, the Contract Administrator, by written notice, may suspend those operations in violation. If the violation is capable of being remedied, Purchaser has 30 days after receipt of a suspension notice to remedy the violation. If the violation cannot be remedied (such as a violation of WAC 240-15-015) or Purchaser fails to remedy the violation within 30 days after receipt of a suspension notice, the

State may terminate the rights of Purchaser under this contract and collect damages.

- b. If the contract expires pursuant to clause G-030 or G-031 without Purchaser having performed all its duties under this contract, Purchaser's right to operate is terminated and Purchaser shall not have the right to remedy the breach. This provision shall not relieve Purchaser of any payment obligations.
- c. The State has the right to remedy the breach in the absence of any indicated attempt by Purchaser or if Purchaser is unable, as determined by the State, to remedy the breach. Any expense incurred by the State shall be charged to Purchaser and shall be paid within 30 days of receipt of billing.
- d. If Purchaser's violation is a result of a failure to make a payment when due, in addition to a. and b. above, interest shall accrue on the unpaid balance at 12 percent per annum, beginning the date payment was due.

#### G-220 State Suspends Operations

The Contract Administrator may suspend any operation of Purchaser under this contract when the State is suffering, or there is a reasonable expectation the State will suffer environmental, monetary, or other damage if the operation is allowed to continue.

Purchaser shall be in breach of this contract if the operation continues after the suspension notice or if the operation resumes without prior approval and notice from the Contract Administrator.

Purchaser may request a modification of a suspension within 30 days of the start of suspension through the dispute resolution process in clause G-240. If this process results in a finding that the suspension exceeded the time reasonably necessary to stop or prevent damage to the State, Purchaser is entitled to request a contract term adjustment under clause G-040.

If it reasonably appears that the damage that the State is suffering, or can reasonably be expected to suffer if the operation is allowed to continue, will prevent harvest for a period that will exceed 6 months, and Purchaser has complied with this contract, the provisions of clause G-066 shall govern just as if the harvest was prevented by an applicable foreign or domestic governmental regulation or order.

#### G-230 Unauthorized Activity

Any cutting, removal, or damage of forest products by Purchaser, its employees, agents, or invitees, including independent contractors, in a manner inconsistent with the terms of this contract or State law, is unauthorized. Such activity may subject Purchaser to liability for triple the value of said forest products under RCW 79.02.320 or RCW 79.02.300 and may result in prosecution under RCW 79.02.330 or other applicable statutes.

**G-240 Dispute Resolution**

The following procedures apply in the event of a dispute regarding interpretation or administration of this contract and the parties agree that these procedures must be followed before a lawsuit can be initiated.

- a. In the event of a dispute, Purchaser must make a written request to the Region Manager for resolution prior to seeking other relief.
- b. The Region Manager will issue a written decision on Purchaser's request within ten business days.
- c. Within ten business days of receipt of the Region Manager's decision, Purchaser may make a written request for resolution to the Deputy Supervisor - Uplands of the Department of Natural Resources.
- d. Unless otherwise agreed, a conference will be held by the Deputy Supervisor - Uplands within 30 calendar days of the receipt of Purchaser's request for review of the Region Manager's written decision. Purchaser and the Region Manager will have an opportunity to present their positions. The Deputy Supervisor - Uplands will issue a decision within a reasonable time of being presented with both Parties' positions.

**G-250 Compliance with All Laws**

Purchaser shall comply with all applicable statutes, regulations and laws, including, but not limited to; chapter 27.53 RCW, chapter 68.50 RCW, WAC 240-15 and WAC 296-54. Failure to comply may result in forfeiture of this contract.

**G-260 Venue**

This contract shall be governed by the laws of the State of Washington. In the event of a lawsuit involving this contract, venue shall be proper only in Thurston County Superior Court.

**G-270 Equipment Left on State Land**

All equipment owned or in the possession of Purchaser, its employees, agents, or invitees, including independent contractors, shall be removed from the sale area and other State land by the termination date of this contract. Equipment remaining unclaimed on State land 60 days after the expiration of the contract period is subject to disposition as provided by law. Purchaser shall pay to the State all costs of moving, storing, and disposing of such equipment. The State shall not be responsible for any damages to or loss of the equipment or damage caused by the moving, storing or disposal of the equipment.

**G-280 Operating Release**

An operating release is a written document, signed by the State and Purchaser, indicating that Purchaser has been relieved of certain rights or responsibilities with regard to the entire or a portion of the timber sales contract. Purchaser and State may agree to an operating release for this sale, or portion of this sale, prior to the contract

expiration, when all contract requirements pertaining to the release area have been satisfactorily completed. Upon issuance of a release, Purchaser's right to cut and remove forest products on the released area will terminate.

G-310 Road Use Authorization

Purchaser is authorized to use the following State roads and roads for which the State has acquired easements and road use permits; CG-2000, CG-2030, CG-2031, CG-2031A, CG-2031A1, CG-2031C, CG-2031C1, CG-2031D, CG-2037. The State may authorize in writing the use of other roads subject to fees, restrictions, and prior rights.

G-330 Pre-work Conference

Purchaser shall arrange with the Contract Administrator to review this contract and to examine the sale area before beginning any operations. A plan of operations shall be developed and agreed upon by the Contract Administrator and Purchaser before beginning any operations. To the extent that the plan of operations is inconsistent with the contract, the terms of the contract shall prevail. State's acceptance and approval of Purchaser's plan of operations shall not be construed as any statement or warranty that the plan of operations is adequate for Purchaser's purposes or complies with applicable laws.

G-340 Preservation of Markers

Any legal land subdivision survey corners and witness objects are to be preserved. If such are destroyed or disturbed, the Purchaser shall, at the Purchaser's own expense, re-establish them through a licensed land surveyor in accordance with U.S. General Land Office standards. Corners and/or witness objects that must be disturbed or destroyed in the process of road construction or logging shall be adequately referenced and/or replaced in accordance with RCW 58.24.040(8). Such references must be approved by the Contract Administrator prior to removal of said corners and/or witness objects.

G-360 Road Use Reservation

The State shall have the right to use, without charge, all existing roads and any road constructed or reconstructed on State lands by Purchaser under this contract. The State may extend such rights to others. If the State grants such rights to others, the State shall require performance or payment, as directed by the State, for their proportionate share of maintenance based on their use.

G-370 Blocking Roads

Purchaser shall not block the CG-2000, CG-2030, unless authority is granted in writing by the Contract Administrator.

G-410 Judgment Requirements

Purchaser agrees to comply with the attached terms and conditions of Condemnation judgment(s) in Superior Court of the State of Washington for Skamania County, numbered 4395-C, dated February 11, 1966.

G-430 Open Fires

Purchaser shall not set, or allow to be set by Purchaser's employees, agents, invitees and independent contractors, any open fire at any time of the year without first obtaining permission, in writing, from the Contract Administrator.

G-450 Encumbrances

This contract and Purchaser's activities are subject to the following:

DATA MISSING

Section P: Payments and Securities

P-010 Initial Deposit

Purchaser paid DATA MISSING initial deposit, which will be maintained pursuant to RCW 79.15.100(3). If the operating authority on this contract expires without Purchaser's payment of the full amount specified in the 'Payment for Forest Products' clause, the initial deposit will be immediately forfeited to the State, and will be offset against Purchaser's remaining balance due. Any excess initial deposit funds not needed to ensure full payment of the contract price, or not needed to complete any remaining obligations of the Purchaser existing after contract expiration, will be refunded to the Purchaser.

P-021 Payment for Forest Products

Purchaser agrees to pay the following rates per MBF Scribner net log scale for forest products conveyed and cut or removed from the sale area plus \$62,000.00 on day of sale and \$9.00 per MBF upon removal in fees. Fees collected shall be retained by the state unless the contract is adjusted via the G-066 clause.

DATA MISSING

Species that are conveyed but are not listed in the table above shall be paid for at a rate to be determined by the State.

Utility logs, special cull and peelable cull logs of all species, included on loads of logs that are required to be removed and scaled per clause H-150 will be paid for on an adjusted gross scale basis at the rate of \$20.00 per MBF plus fees.

P-040 Weighing and Scaling Costs

Purchaser agrees to pay for all scaling and weighing costs for logs and other products sold under this contract. Purchaser also agrees to pay for all costs associated with the transmission and reporting of scale or weight data.

P-045 Guarantee of Payment

Purchaser will pay for forest products prior to cutting or will guarantee payment by posting an approved payment security. The amount of cash or payment security shall be determined by the State and shall equal or exceed the value of the cutting proposed by Purchaser.

P-050 Billing Procedure

The State will compute and forward to Purchaser statements of charges provided for in the contract. Purchaser shall deliver payment to the State on or before the date shown on the billing statement.

P-070 Payment for Products: Damage, Theft, Loss, or Mismatch

Forest products included in this agreement which are destroyed, damaged, stolen, lost, or mismatched shall be paid for by Purchaser on demand of the State. The rates contained in clause P-021 shall apply.

P-080 Payment Account Refund

Advance payments made under P-045 or P-045.2 remaining on account above the value for the charges shall be returned to Purchaser within 30 days following the final report of charges. Refunds not made within the 30 day period will accrue interest at the interest rate, as established by WAC 332-100-030, computed on a daily basis until paid.

P-090 Performance Security

Purchaser agrees to furnish, within 30 days of the confirmation date, security acceptable to the State in the amount of \$0.00. The Security provided shall guarantee performance of all provisions of this contract and payment of any damages caused by operations under this contract or resulting from Purchaser's noncompliance with any rule or law. Acceptable performance security may be in the form of a performance bond, irrevocable letter of credit, cash, savings or certificate of deposit account assignments, and must name the State as the obligee or beneficiary. A letter of credit must comply with Title 62A RCW, Article 5. Performance security must remain in full force over the duration of the contract length. Surety bonds issued shall conform to the issuance and rating requirements in clause G-150. The State shall retain the performance security pursuant to RCW 79.15.100. Purchaser shall not operate unless the performance security has been accepted by the State. If at any time the State decides that the security document or amount has become unsatisfactory, Purchaser agrees to suspend operations and, within 30 days of notification, to replace the security with one acceptable to the State or to supplement the amount of the existing security.

P-100 Performance Security Reduction

The State may reduce the performance security after an operating release has been issued if the State determines that adequate security exists for any remaining obligations of Purchaser.

Section L: Log Definitions and Accountability

L-010 Forest Products Conveyed

Forest products conveyed are all logs or parts of logs described by the 'Products Sold and Sale Area' (G-010) clause meeting the removal requirements listed in the 'Required Removal of Forest Products' (H-150) clause.

## L-020 Short Logs - Peeler Blocks

Logs or parts of logs which are removed from the sale area that fail to meet the minimum gross length requirements shall be scaled and graded as short logs or peeler blocks. Such material shall be paid for at the forest products rates specified in this contract.

## L-060 Load Tickets

Purchaser shall complete and use load tickets as directed by the Contract Administrator and, if required, use other identification as directed by the State to ensure accounting of forest products removed from the sale area. A load ticket must be fixed, as designated by the Contract Administrator, to each truck and trailer load prior to leaving the landing.

Purchaser shall account for all load tickets issued by the Contract Administrator and return unused tickets at termination of the contract, or as otherwise required by the Contract Administrator. Unused tickets not returned shall be subject to liquidated damages per clause D-030.

The State may also treat load tickets either not accounted for or not returned as lost forest products per clause P-070. All costs associated with computing the billings for lost forest products shall be borne by Purchaser

## L-071 Log and Load Reporting Service

This contract requires the use of a State approved third party Log and Load Reporting Service (LLRS). Purchaser shall ensure log volume measurement data and/or load and weight data is received by the LLRS within 1 business day of logs being measured or weighed. Purchaser agrees to pay the LLRS for log and load data supplied to the State.

If during the term of this contract, the State discontinues use of the LLRS, the State will notify the Purchaser in writing and the Purchaser will then be responsible to send log scale and/or weight information to the State.

## L-080 Scaling Rules

Determination of volume and grade of any forest products shall be conducted by a state approved third party scaling organization and in accordance with the Westside log scaling and grading rules and Scribner Volume Table, revised July 1, 1972, contained in the Northwest Log Rules Eastside and Westside Log Scaling Handbook (developed and produced by the Northwest Log Rules Advisory Group) and in effect on the date of confirmation of this contract.

Special scaling specifications shall be noted on the State's Brand Designation form which is hereby incorporated to this contract by reference.

## L-110 State Approval of Log Scaling and Weighing Locations

Forest Product measurement and weighing facilities required by this contract must be approved by the State. Forest products sold under the contract which require log scaling shall be scaled, measured, or counted by a State approved third party log scaling



organization. Forest products sold under the contract which require weighing shall be weighed at a location that meets Washington State Department of Agriculture approval.

Prior to forest products being hauled, the Contract Administrator must authorize in writing the use of State approved measurement and/or weighing facilities that are at or enroute to final destinations. Forest products from this sale shall be measured or weighed at facilities, which are currently approved for use by the State and are currently authorized for this sale. The State reserves the right to verify load volume and weights with State employees or contractors at the State's own expense. The State reserves the right to revoke the authorization of previously approved measurement locations.

L-120 Long Log Taper Distribution

Forest products over 40 feet long plus trim shall be segment scaled and the lower segment diameters shall be determined using actual taper. In order to utilize taper rules for determining segment diameters for poles and pilings greater than 40 feet in length plus trim, Purchaser must request use of a Pole and Piling Scaling Specification Agreement on file in the region office. Approval for usage of a special Pole and Piling Scaling Specification Agreement may be granted at the sole discretion of the State.

Following State approval for usage of the Pole and Piling Scaling Specification Agreement, the Brand Designation form shall be amended to incorporate the long log taper rules. The volume reported by the scaling organization for forest products over 40 feet plus trim will be expanded by 5 percent and the additional 5 percent volume shall be billed to the purchaser at the contract rate.

L-130 Conversion Factors

Forest products removed from the sale area that are not measured in units specified in the 'Payment for Forest Products' clause of this contract shall be converted to board feet using Department of Natural Resources' standard conversion factors.

Section H: Harvesting Operations

H-010 Cutting and Yarding Schedule

Ground Based Yarding will not be permitted from November 1 to April 30 unless authorized in writing by the Contract Administrator.

H-012 Leave Tree Damage Definition

Leave trees are trees required for retention within the sale boundary. Purchaser shall protect leave trees from being cut, damaged, or removed during operations.

Leave tree damage exists when more than 5 percent of the leave trees are damaged in a unit and when one or more of the following criteria occur as a result of Purchaser's operation, as determined by the Contract Administrator:

- a. A leave tree has one or more scars on its trunk exposing the cambium layer, which in total exceeds 100 square inches.

- b. A leave tree top is broken or the live crown ratio is reduced below 30 percent.
- c. A leave tree has more than 1/3 of the circumference of its root system injured such that the cambium layer is exposed.

If the Contract Administrator determines that a leave tree has been cut or damaged, the Purchaser may be required to pay liquidated damages for Excessive Leave Tree Damage as detailed in clause D-040.

#### H-013 Reserve Tree Damage Definition

Reserve trees are trees required and designated for retention within the sale boundary. Purchaser shall protect reserve trees from being cut, damaged, or removed during operations.

Reserve tree damage exists when one or more of the following criteria occur as a result of Purchaser's operation, as determined by the Contract Administrator:

- a. A reserve tree has one or more scars on its trunk exposing the cambium layer, which in total exceeds 100 square inches.
- b. A reserve tree top is broken or the live crown ratio is reduced below 30 percent.
- c. A reserve tree has more than 1/3 of the circumference of its root system injured such that the cambium layer is exposed.

If the Contract Administrator determines that a reserve tree has been cut or damaged, the Purchaser shall provide a replacement reserve tree of like condition, size, and species within the sale unit containing the damaged leave tree, as approved by the Contract Administrator. Purchaser may be required to pay liquidated damages for Excessive Reserve Tree Damage as detailed in clause D-041.

Removal of designated reserve trees from the sale area is unauthorized, and may invoke the use of the G-230 'Unauthorized Activity' clause. Purchaser is required to leave all cut or damaged reserve trees on site.

#### H-015 Skid Trail Requirements

A skid trail is defined as an area that is used for more than three passes by any equipment.

Purchaser shall comply with the following during the yarding operation:

- a. Skid trails will not exceed 12 feet in width, including rub trees.
- b. Skid trails shall not cover more than 10 percent of the total acreage on one unit.

- c. Skid trail location will be pre-approved by the Contract Administrator.
- d. Except for rub trees, skid trails shall be felled and yarded prior to the felling of adjacent timber.
- e. Rub trees shall be left standing until all timber tributary to the skid trail has been removed.
- f. Excessive soil damage is not permitted. Excessive soil damage is described in clause H-017.
- g. Skid trails will be water barred at the time of completion of yarding, if required by the Contract Administrator.

Purchaser shall not deviate from the requirements set forth in this clause without prior written approval from the Contract Administrator.

#### H-017 Preventing Excessive Soil Disturbance

Operations may be suspended when soil rutting exceeds 12 inches as measured from the natural ground line. To reduce soil damage, the Contract Administrator may require water bars to be constructed, grass seed to be placed on exposed soils, or other mitigation measures. Suspended operations shall not resume unless approval to do so has been given, in writing, by the Contract Administrator.

#### H-025 Timing Requirements for Timber Removal

All timber must be removed within 30 days of being felled.

#### H-030 Timber Falling

Trees shall be felled and logs shall be bucked to obtain the greatest practicable utilization of forest products and other valuable materials conveyed.

#### H-035 Fall Trees Into Sale Area

Trees shall be felled into the sale area unless otherwise approved by the Contract Administrator.

#### H-040 Purchaser Harvest Plan

Purchaser shall, as part of the plan of operations, prepare an acceptable harvest plan for all units. The plan shall address the felling, bucking and yarding, which are part(s) of this contract. The harvest plan shall be approved by the Contract Administrator prior to beginning the harvest operation. Purchaser shall not deviate from the harvest plan without prior written approval by the Contract Administrator.

#### H-052 Branding and Painting

Forest products shall be branded with a brand furnished by the State prior to removal from the landing. All purchased timber shall be branded in a manner that meets the

requirements of WAC 240-15-030(2)(a)(i). All timber purchased under a contract designated as export restricted shall also be painted in a manner that meets the requirements of WAC 240-15-030(2)(a)(ii).

For pulp loads purchased under a contract designated as export restricted, Purchaser shall brand at least 3 logs with legible brands at one end. Also, 10 logs shall be painted at one end with durable red paint.

H-060 Skid Trail Locations

Locations of skid trails must be marked by Purchaser and approved by the Contract Administrator prior to the felling of timber.

H-080 Snags Not to be Felled

Snags not required to be felled for safety reasons may be left standing. Snags felled for safety reasons shall not be removed and must remain where felled.

H-110 Stump Height

Trees shall be cut as close to the ground as practicable. Stump height shall not exceed 12 inches in height measured on the uphill side, or 2 inches above the root collar, whichever is higher.

H-120 Harvesting Equipment

Forest products sold under this contract shall be harvested and removed using cable systems, including cable assist, shovel, forwarder and tracked skidder. Authority to use other equipment or to operate outside the equipment specifications detailed above must be approved in writing by the State.

H-125 Log Suspension Requirements

Lead-end suspension is required for all yarding activities.

H-126 Tailholds on State Land

If Purchaser tailholds on State land, methods to minimize damage to live trees outside the sale area shall be employed and must be approved in writing by the Contract Administrator.

H-127 Tailholds on Private Land

If Purchaser chooses to tailhold on private property, Purchaser shall obtain permit(s) and assumes responsibility for all costs and damages associated with the permit(s). Purchaser must provide the State with a copy of the executed permit(s) or a letter from the landowner indicating that a satisfactory tailhold permit(s) has been consummated between Purchaser and the landowner.

H-130 Hauling Schedule

The hauling of forest products will not be permitted from November 1 to April 30 unless authorized in writing by the Contract Administrator.

H-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

- a. Active Haul Routes will be posted with CB channels by Purchaser.
- b. Ground based yarding equipment shall only operate during dry soil conditions.
- c. Ground based yarding equipment will not be permitted on sustained slopes over 40 percent.
- d. Cable assist operations will not be permitted on slopes over 70 percent.
- e. Cable-assist will only be allowed in areas where a written harvest plan has been provided to the CA and the CA has provided written approval for cable-assist logging to occur.
- f. Areas of root rot identified by the fallers or the Contract Administrator shall be marked around the perimeter by high stumping or marking the top of the stump with an "X" in Unit 3.

Permission to do otherwise must be granted in writing by the Contract Administrator.

#### H-141 Additional Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

- a. The Rock Creek bridge load ratings on the CG-2030: U80 (wheeled machines and log trucks) = 80 ton load limit with controlled crossing requirements. L90 (tracked machine) = 70 ton load limit with controlled crossing requirements. Controlled crossing requirements: maximum speed 5 mph, vehicle to be centered between girders.
- b. Within shovel logging areas, the shovel operator shall break up concentrations of logging debris greater than 10 feet by 10 feet to allow exposure of natural soils to ensure proper reforestation.
- c. Any and all snags cut because of safety concerns cannot be removed and must remain where they were felled.

Permission to do otherwise must be granted in writing by the State.

#### H-142 Wildlife Timing Restrictions

The following wildlife timing restrictions apply to this contract and shall be in place in the locations shown on the attached timber sale map.

- a. Northern Spotted Owl - Timing restrictions are described as no operation of heavy equipment within the critical nesting season (March 1 to August 31). Heavy equipment is identified as felling, yarding, and loading

equipment for logging, and road maintenance and construction equipment in CG-2037 Rock Pit.

Permission to do otherwise must be granted in writing by the State

H-150 Required Removal of Forest Products

Purchaser shall remove from the sale area and present for scaling or weighing all forest products conveyed in the G-010 clause that meet the following minimum dimensions:

Species	Net bd ft	Log length (ft)	Log dib
Conifer	10	12	5
Hardwood	20	16	5

The State may treat failure to remove forest products left on the sale area that meet the above specifications as a breach of this contract. At the State's option, forest products that meet the above specifications and are left on the sale area may be scaled for volume or measured and converted to weight by the State or a third party scaling organization and billed to Purchaser at the contract payment rate. All costs associated with scaling, measuring and computing the billing will be borne by the Purchaser.

H-157 Optional Removal of Forest Products Not Designated

If in the course of operations, Purchaser decides to remove forest products that are below the minimum designated removal specifications per the 'Required Removal of Forest Products' (H-150), the payment rates in clause P-027 shall apply.

Forest products designated as optional shall be decked separately from forest products designated as required for removal. Prior to removal from the sale area, optional forest products as described in this clause must be inspected and approved by the Contract Administrator. Optional forest products may not be mixed with forest products that are required for removal by this contract and shall be removed from the sale area in separate truck loads using load tickets specified by the Contract Administrator.

All material removed under this clause is subject to the same log and load accountability rules as defined in the Log Definitions and Accountability section of this contract. Purchaser shall follow the payment procedures as required in the P-052 clause and will submit a separate summary report for all forest products removed from the sale area under the authority of this clause.

H-160 Mismanufacture

Mismanufacture is defined as forest products remaining on the sale area that would have met the specifications in clause H-150 if bucking lengths had been varied to include such products.

The State may treat mismanufacture as a breach of this contract. At the State's option, forest products that are left on the sale area may be scaled for volume by the State or a third party scaling organization and billed to Purchaser at the contract payment rate. All costs associated with scaling and computing the billing will be borne by Purchaser.

H-180 Removal of Specialized Forest Products or Firewood

Prior to the removal of conveyed specialized forest products or firewood from the sale area, Purchaser and the State shall agree in writing to the method of accounting for/and removal of such products.

H-190 Completion of Settings

Operations begun on any setting of the sale area shall be completed before any operation begins on subsequent settings unless authorized in writing by the Contract Administrator.

H-220 Protection of Residual or Adjacent Trees

Unless otherwise specified by this contract, the Contract Administrator shall identify damaged adjacent or leave trees that shall be paid for according to clause G-230.

H-230 Tops and Limbs Outside the Sale Boundary

Tops and limbs outside the sale boundary as a result of Purchaser's operation shall be removed concurrently with the yarding operation unless otherwise directed by the Contract Administrator.

Section C: Construction and Maintenance

C-040 Road Plan

Road construction and associated work provisions of the Road Plan for this sale, dated 11/2/2022 are hereby made a part of this contract.

C-050 Purchaser Road Maintenance and Repair

Purchaser shall perform work at their own expense on CG-2030, CG-2031, CG-2031A, CG-2031A1, CG-2031C, CG-2031C1, CG-2031D and CG-2037 roads. All work shall be completed to the specifications detailed in the Road Plan.

C-060 Designated Road Maintainer

If required by the State, Purchaser shall perform maintenance and replacement work as directed by the Contract Administrator on all roads not listed in Clause C-050. Purchaser shall furnish a statement in a form satisfactory to the State showing the costs incurred while performing this work. Costs shall be based on the rates set forth in the equipment rate schedule on file at the Region office or Engineering Division in Olympia. The State shall reimburse Purchaser for said costs within 30 days of receipt and approval of the statement.

C-080 Landing Locations Approved Prior to Construction

Landings shall be marked by Purchaser and approved by the Contract Administrator prior to construction.

C-140 Water Bars

Purchaser shall, as directed by the Contract Administrator, construct water bars across haul roads, skid trails and fire trails as necessary to control soil erosion and water pollution.

Section S: Site Preparation and Protection

S-001 Emergency Response Plan

An Emergency Response Plan (ERP) shall be provided to the Contract Administrator containing but not limited to, valid contact numbers and procedures for medical emergencies, fire, hazardous spills, forest practice violations and any unauthorized or unlawful activity on or in the vicinity of the sale area. The Contract Administrator and the State shall be promptly notified whenever an incident occurs requiring an emergency response.

The ERP must be presented for inspection at the prework meeting and kept readily available to all personnel, including subcontractors, on site during active operations.

S-010 Fire Hazardous Conditions

Purchaser acknowledges that operations under this Contract may increase the risk of fire. Purchaser shall conduct all operations under this agreement following the requirements of WAC 332-24-005 and WAC 332-24-405 and further agrees to use the highest degree of care to prevent uncontrolled fires from starting.

In the event of an uncontrolled fire, Purchaser agrees to provide equipment and personnel working at the site to safely and effectively engage in first response fire suppression activity.

Purchaser's failure to effectively engage in fire-safe operations is considered a breach and may result in suspension of operations.

S-030 Landing Debris Clean Up

Landing debris shall be disposed of in a manner approved in writing by the Contract Administrator.

S-035 Logging Debris Clean Up

Slash and debris created from harvest activities shall be treated in a manner approved in writing by the Contract Administrator.

S-050 Cessation of Operations for Low Humidity

When the humidity is 30 percent or lower on the sale area, all operations must cease unless authority to continue is granted by the State in writing.

S-060 Pump Truck or Pump Trailer

Purchaser shall provide a fully functional pump truck or pump trailer equipped to meet the specifications of WAC 332-24-005 and WAC 332-24-405 during the "closed



season" or as extended by the State and shall provide trained personnel to operate this equipment on the sale area during all operating periods.

S-070 Water Supply

Purchaser shall provide, during the "closed season", a water supply with a minimum capacity of 1000 gallons for rapid filling of pump trucks or trailers at a location designated by the Contract Administrator.

S-100 Stream Cleanout

Slash or debris which enters any stream as a result of operations under this contract and which is identified by the Contract Administrator shall be removed and deposited in a stable position. Removal of slash or debris shall be accomplished in a manner that avoids damage to the natural stream bed and bank vegetation.

S-130 Hazardous Materials

a. Hazardous Materials and Waste - Regulatory Compliance

Purchaser is responsible for understanding and complying with all applicable local, state, and federal hazardous material/waste laws and regulations for operations conducted under this contract. Such regulations pertain to, but may not be limited to, hazardous material storage, handling and transport, personnel protection, release notification and emergency response, cleanup, and waste disposal.

Purchaser shall be responsible for restoring the site in the event of a spill or other releases of hazardous material/waste during operations conducted under this contract.

b. Hazardous Materials Spill Prevention

All operations shall be conducted in a manner that avoids the release of hazardous materials, including petroleum products, into the environment (water, air or land).

c. Hazardous Materials Spill Containment, Control and Cleanup

If safe to do so, Purchaser shall take immediate action to contain and control all hazardous material spills. Purchaser shall ensure that enough quick response spill kits capable of absorbing 10 gallons of oil, coolant, solvent or contaminated water are available on site to quickly address potential spills from any piece of equipment at all times throughout active operations. If large quantities of bulk fuel/other hazardous materials are stored on site, Purchaser must be able to effectively control a container leak and contain & recover a hazmat spill equal to the largest single on site storage container volume. (HAZWOPER reg. 29CFR 1910.120 (j) (1) (vii)).

d. Hazardous Material Release Reporting

Releases of oil or hazardous materials to the environment must be reported according to the State Department of Ecology (ECY). It is the responsibility of the Purchaser to have all emergency contact information readily available and a means of remote communication for purposes of quick notification. In the event of a spill covered in part a., the Purchaser is responsible for immediately notifying all the following:

- Department of Emergency Management at 1-800-258-5990
- National Response Center at 1-800-424-8802
- Appropriate Department of Ecology (ECY) at 1-800-645-7911
- DNR Contract Administrator

S-131 Refuse Disposal

As required by RCW 70.93, All Purchaser generated refuse shall be removed from state lands for proper disposal prior to termination of this contract. No refuse shall be burned, buried or abandoned on state forest lands. All refuse shall be transported in a manner such that it is in compliance with RCW 70.93 and all loads or loose materials shall be covered/secured such that these waste materials are properly contained during transport.

Section D: Damages

D-010 Liquidated Damages

The clauses in the DAMAGES section of this contract provide for payments by Purchaser to the State for certain breaches of the terms of this contract. These payments are agreed to as liquidated damages and not as penalties. They are reasonable estimates of anticipated harm to the State caused by Purchaser's breach. These liquidated damages provisions are agreed to by the State and Purchaser with the understanding of the difficulty of proving loss and the inconvenience or infeasibility of obtaining an adequate remedy. These liquidated damages provisions provide greater certainty for the Purchaser by allowing the Purchaser to better assess its responsibilities under the contract.

D-020 Failure to Remove Forest Products

Purchaser's failure to remove all or part of the forest products sold in this agreement prior to the expiration of the contract term results in substantial injury to the State. The value of the forest products sold at the time of breach is not readily ascertainable. Purchaser's failure to perform disrupts the State's management plans, the actual cost of which is difficult to assess. A resale involves additional time and expense and is not an adequate remedy. Therefore, Purchaser agrees to pay the State as liquidated damages a sum calculated using the following formula:

$$LD = .35V-ID-P+C+A$$

Where:

- LD = Liquidated Damage value.
- V = The unremoved value at the date of breach of contract. The value is determined by subtracting the removal volume to date from the State's cruise volume multiplied by the contract bid rates.
- ID = Initial Deposit paid at date of contract that has not been applied to timber payments.
- P = Advance payments received but not yet applied to specific contract requirements.
- C = Charges assessed for contract requirements completed prior to breach of contract but not paid for.
- A = Administrative Fee = \$2,500.00.

The above formula reflects the Purchaser's forfeiture of the initial deposit in accordance with clause P-010 by deducting the initial deposit from the amount owed. In no event shall the liquidated damages be less than zero. Interest on the liquidated damage is owed from the date of breach until final payment, calculated using the following formula:  $\text{Interest} = r \times \text{LD} \times N$ .

Where:

- r = daily equivalent of an annual interest at current interest rate as established by WAC 332-100-030.
- LD = Liquidated damage value.
- N = Number of days from date of breach to date payment is received.

#### D-030 Inadequate Log Accountability

Removal of forest products from the sale area without adequate branding and/or valid load tickets attached to the load and scaling forest products in a location other than the facility approved by the State can result in substantial injury to the State. Failure to properly account for loads and scaling and/or weighing information can result in loss to the State. The potential loss from not having proper branding, ticketing, scaling and/or weighing location and accountability is not readily ascertainable. Purchaser's failure to perform results in a loss of log weight and scale accountability, increases the potential for unauthorized removal of forest products, and increases the State's administration costs, the actual costs of which are difficult to assess.

Enforcement actions for unauthorized removal of forest products for each improperly branded load, improperly ticketed load, lost or unaccounted for tickets, or use of a facility not authorized for this sale or improper submission of scaling data are impractical, expensive, time consuming and are not an adequate remedy. Therefore, Purchaser agrees to pay the State, as liquidated damages, a sum of \$100 each time a

load of logs does not have branding as required in the contract, \$250 each time a load of logs does not have a load ticket as required by the contract, \$250 each time a load ticket has not been filled out as required by the plan of operations, \$250 each time a load is weighed or scaled at a location not approved as required under this contract, \$250 each time a log ticket summary report is not submitted properly, and if a third party Log and Load Reporting Service is required, \$250 each time scaling or weight data is not properly submitted to the Log and Load Reporting Service per clause L-071, and \$250 each unused ticket that is not returned to the State, for any reason.

D-040 Leave Tree Excessive Damage

When Purchaser's operations exceed the damage limits set forth in clause H-012, Leave Tree Damage Definition, the trees damaged result in substantial injury to the State. The value of the damaged leave trees at the time of the breach is not readily ascertainable. Therefore, Purchaser agrees to pay the State as liquidated damages at the rate of \$1,000.00 per tree for all damaged trees in Unit 1 and Unit 2.

D-041 Reserve Tree Excessive Damage

When Purchaser's operations exceed the damage limits set forth in clause H-013, Reserve Tree Damage Definition, and when the Contract Administrator determines that a suitable replacement for a damaged reserve tree is not possible, the damaged trees result in substantial injury to the State. The value of the damaged reserve trees at the time of the breach is not readily ascertainable. Therefore, the Purchaser agrees to pay the State as liquidated damages at the rate of \$1,000.00 per tree for all damaged reserve trees that are not replaced in Unit 3.

SIGNATURES

This agreement may be executed in any number of counterparts (including by electronic mail in portable document format (.pdf), or by facsimile) each of which shall be deemed an original but all of which, when taken together, shall constitute one and the same Agreement binding on all parties.

IN WITNESS WHEREOF, the Parties hereto have entered into this contract.

STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

\_\_\_\_\_  
Purchaser

\_\_\_\_\_  
Eric Wisch

\_\_\_\_\_  
Print Name

Pacific Cascade Region Manager

Date: \_\_\_\_\_

Date: \_\_\_\_\_

Address: \_\_\_\_\_

CORPORATE ACKNOWLEDGEMENT  
(Required for both LLC and Inc. Entities)

STATE OF \_\_\_\_\_ )

COUNTY OF \_\_\_\_\_ )

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me personally appeared \_\_\_\_\_

\_\_\_\_\_ to me known to be the \_\_\_\_\_ of the corporation that executed the within and foregoing instrument and acknowledged said instrument to be the free and voluntary act and deed of the corporation, for the uses and purposes therein mentioned, and on oath stated that (he/she was) (they were) authorized to execute said instrument.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year first above written.

\_\_\_\_\_  
Notary Public in and for the State of

\_\_\_\_\_

My appointment expires \_\_\_\_\_

**Schedule A**  
**Upland Enhancement Thinning Prescriptions**

UPLAND ENHANCEMENT THINNING PRESCRIPTIONS

Variable Density Thinning (VDT) prescription for Units 1 & 2

Harvest only Douglas-fir (DF) trees, except in designated gaps, unless approved by CA.

The thinning activity will be a thinning from below, retaining the most dominant trees on the site. The residual basal area should be 140 sq.ft./acre.

Within the thinning unit, the following shall apply:

- Trees marked with a ring of blue paint are leave trees that shall not be cut.
- Trees marked with a ring of orange paint are take trees that are required to be cut. Orange-painted trees should be cut first, and then other trees may be cut to achieve the 140 sq.ft./acre basal area target.
- Gaps are marked with blue “Special Management Area” tags and pink flagging facing inside the gap; along with one strand of pink flagging facing outside the gap.
  - o All trees within gaps shall be harvested except for blue painted leave trees.
- Skips are marked with yellow “Leave Tree Area” tags and pink flagging facing outside the skip.
  - o Timber in skips shall not be cut. Yarding through skips will not be permitted.
- Logging damage to advanced conifer regeneration shall be avoided where operationally feasible.
- All snags felled for safety reasons must remain on-site and shall be left as close as possible to their original location.

## PRE-CRUISE NARRATIVE

Sale Name: <b>Fiddlehead</b>	Region: <b>Pacific Cascade</b>
Agreement #: <b>30-103982</b>	District: Yacolt
Contact Forester: Anchal Rikhi Phone / Location: (360) 355-0347	County(s): Skamania, Choose a county
Alternate Contact: Glynis Gordon Phone / Location: (360) 791-4340	Other information: <a href="#">Click here to enter text.</a>

Type of Sale: MBF Scale	
Harvest System: Ground based <a href="#">Click here to enter text.</a>	65%
Harvest System: Uphill Cable <a href="#">Click here to enter text.</a>	24%
Enter % of sale acres	
Harvest System: Cable thinning <a href="#">Click here to enter text.</a>	11%

### UNIT ACREAGES AND METHOD OF DETERMINATION:

Unit #  Harvest R/W or RMZ WMZ	Legal Description (Enter only one legal for each unit)  Sec/Twp/Rng	Grant or Trust	Gross Proposal Acres	Deductions from Gross Acres (No harvest acres)				Net Harvest Acres	Acreage Determination  (List method and error of closure if applicable)
				RMZ/ WMZ Acres	Leave Tree Acres	Existing Road Acres	Other Acres (describe)		
1	Sec 15 / T03N R07E	03	53.3	10.3	0.0	0.0	6.9 (talus) 2.1 (PUS)	34.0	GPS (Trimble)
2	Sec 15, 22 / T03N R07E	01, 03	52.5	5.1	0	0.5	22.2 (talus)	24.7	GPS (Trimble)
3	Sec 22 / T03N R07E	01, 10	97.1	16.8	5.3	0.0	1.6 (PUS)	73.4	GPS (Trimble)
4 (RO W)	Sec 15 / T03N R07E	03	5.7	0.0	0.0	0.0	0.0	5.7	GPS (Trimble)
5 (RO W)	Sec 22 / T03N R07E	01	1.4	0.0	0.0	0.0	0.0	1.4	GPS (Trimble)
6 (RO)	Sec 22 / T03N R07E	10	0.4	0.0	0.0	0.0	0.0	0.4	GPS (Trimble)



W)									
TOTAL ACRES			210.4	32.2	5.3	0.5	32.8	139.6	

**HARVEST PLAN AND SPECIAL CONDITIONS:**

Unit #	Harvest Prescription: (Leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
1	Unit 1 is a Variable Density Thinning bounded by white "Timber Sale Boundary" tags, pink flagging, and the CG-2031 road.	Gaps are bounded by blue "Special Management Area" tags and pink flagging facing inside the gap; along with one strand of pink flagging facing outside the gap. Take trees are marked with a ring of orange paint. Leave trees are marked with a ring of blue paint.	Thin from below to a residual basal area of 140 sq. ft./acre
2	Unit 2 is a Variable Density Thinning bounded by white "Timber Sale Boundary" tags, pink flagging, and the CG-2031 road.	Gaps are bounded by blue "Special Management Area" tags and pink flagging facing inside the gap; along with one strand of pink flagging facing outside the gap. Take trees are marked with a ring of orange paint. Leave trees are marked with a ring of blue paint.	Thin from below to a residual basal area of 140 sq. ft./acre
3	Unit 3 is a Variable Retention Harvest bounded by white "Timber Sale Boundary" tags and pink flagging. Property lines are marked with orange t-posts and pink flagging. Timber type changes are marked with pink flagging. Clumped leave trees are bounded by yellow "Leave Tree Area" tags and pink flagging. Individual leave trees are marked with a ring of blue paint.		679 clumped and scattered leave trees

4	Unit 4 is a Right-of-Way Harvest bounded by orange "Right-of-Way" tags and orange flagging. Road centerlines are marked with orange flagging.		
5	Unit 5 is a Right-of-Way Harvest currently unmarked. Road centerlines are marked with orange flagging.		
6	Unit 6 is a Right-of-Way Harvest bounded by orange "Right-of-Way" tags and orange flagging. Road centerlines are marked with orange flagging.		

**OTHER PRE-CRUISE INFORMATION:**

Unit #	Primary,secondary Species / Estimated Volume (MBF)	Access information (Gates, locks, etc.)	Photos, traverse maps required
1	DF, WH / 238 MBF		
2	DF, WH / 173 MBF		
3	DF, WH / 1906 MBF		
4	DF / 148 MBF		
5	DF / 36 MBF		
6	DF / 10 MBF		
TOTAL MBF	2511 MBF		

**REMARKS:**

From Highway 14, near mile marker 43, turn north onto SW Rock Creek Drive and travel for 0.3 miles. Turn left on Foster Creek Road, which turns into Ryan Allen Road, and travel for 0.8 miles. Turn left on Red Bluff Road and travel for 0.3 miles. At the fork, veer right on the CG-2000 and travel for 2.2 miles. Turn right onto the CG-2030 and travel for 2.5 miles. Turn right on the CG-2031 and travel for 0.2 miles to access the Unit 1. Continue on the CG-2031 to access Units 2 and 3.

<b>Prepared By:</b> Anchal Rikhi <b>Date:</b> 8/25/2022	<b>Title:</b> State Lands Forester 2	<b>CC:</b>
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## Timber Sale Cruise Report FIDDLEHEAD

**Sale Name:** FIDDLEHEAD VDT VRH

**Sale Type:** LUMP SUM

**Region:** PACIFIC CASC

**District:** YACOLT

**Lead Cruiser:** Blake Warnstadt

**Other Cruisers:** DBuchanan,

**Cruise Narrative:**

Location: The FIDDLEHEAD Timber Sale is located 6 miles Northwest of Stevenson and accessed via the CG-2031 Rd off Red Bluff Road.

Cruise Design: Units 1 and 2 were cruised to thin to a basal area of 140 using a 40 BAF with a cruise to count ratio of 1:1. Unit 3 was cruised using a 46.94 BAF on DF and WH and a 40 BAF on hardwoods and RC with a cruise to count ratio of 2:3. All ROW Units were cruised using 1/20 acre fixed plots. DF was cruised to 40 foot preferred log lengths. Hardwoods were cruised to 30 foot preferred lengths.

Timber Quality: Unit 1 DF average DBH 12.2" with a good mix of domestic and high quality B logs. Unit 2 DF average DBH 14.1" with a good mix of domestic and high quality B logs. Unit 3 is a little older- DF averages 19.8" and has a good amount of domestic and high quality B logs with some SM available. There are scattered MA throughout the sale averaging 10 inches in diameter. There is a trace amount of small diameter RA available near old road grades. There are poles available on this sale but may face transportation challenges.

All ROW features are similar to Units 1 and 2. Observed defect: trees look good with a moderate amount of spike knot a small amount of old bear damage. There is a small amount of root rot throughout and witnessed 1 DF live with conks in Unit 3.

Logging and Stand Conditions: Fiddlehead is generally SW and SE facing, moderately sloped with rocky soil. This sale is estimated to be 65% ground based logging and 35% uphill cable.

General Remarks:

### Timber Sale Notice Volume (MBF)

Sp	DBH	Rings/In	Age	MBF Volume by Grade					
				All	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	18.3	7.1		3,476	96	1,908	1,130	316	26
MA	12.1			169		11	33	126	
RA	8.0			10				10	
WH	13.0			1				1	
ALL	16.9	7.1		3,656	96	1,919	1,163	453	26

**Timber Sale Notice Weight (tons)**

Sp	Tons by Grade					
	All	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	26,059	580	12,986	9,539	2,766	187
MA	1,622		89	262	1,270	
RA	61				61	
WH	19				19	
ALL	27,761	580	13,076	9,801	4,117	187

**Timber Sale Overall Cruise Statistics (Cut + Leave Trees)**

BA (sq ft/acre)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR SE (%)	Net Vol (bf/acre)	Vol SE (%)
241.3	3.0	138.5	2.1	33,483	3.8

**Timber Sale Unit Cruise Design**

Unit	Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
FIDDLEHEAD U1	B1C: VR, 1 BAF (40) Measure/Count Plots, Sighting Ht = 4.5 ft	34.0	33.7	32	16	0
FIDDLEHEAD U2	B1C: VR, 1 BAF (40) Measure/Count Plots, Sighting Ht = 4.5 ft	24.7	24.7	24	12	0
FIDDLEHEAD U3	B2C: VR, 2 BAF (46.94, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	73.4	78.2	75	30	0
FIDDLEHEAD ROW U4	FX: FR plots (20 tree / acre expansion)	5.7	6.0	6	6	0
FIDDLEHEAD ROW U5	FX: FR plots (20 tree / acre expansion)	1.4	1.4	3	3	0
FIDDLEHEAD ROW U6	FX: FR plots (20 tree / acre expansion)	0.4	0.4	2	2	0
All		139.6	144.3	142	69	0

**Timber Sale Log Grade x Sort Summary**

Sp	Status	Grade	Sort	Dia	Len	BF Gross	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	Domestic	16.3	40	11,748	11,194	4.7	10,729.6	1,562.7
DF	LIVE	2 SAW	HQ-A	14.6	40	216	216	0.0	189.1	30.1
DF	LIVE	2 SAW	HQ-B	16.4	40	2,196	2,155	1.9	1,974.2	300.8
DF	LIVE	2 SAW	Pole	14.1	40	106	106	0.0	93.3	14.9
DF	LIVE	3 SAW	Domestic	8.6	38	6,593	6,386	3.1	7,637.8	891.5

Sp	Status	Grade	Sort	Dia	Len	BF Gross	BF Net	Defect %	Tons	MBF Net
DF	LIVE	3 SAW	HQ-B	9.5	40	1,584	1,570	0.9	1,724.0	219.1
DF	LIVE	3 SAW	Pole	7.9	40	141	141	0.0	177.0	19.7
DF	LIVE	4 SAW	Domestic	5.4	30	2,230	2,201	1.3	2,701.1	307.2
DF	LIVE	4 SAW	Pole	5.2	27	61	61	0.0	65.2	8.5
DF	LIVE	CULL	Cull	6.3	6	200	0	100.0	0.0	0.0
DF	LIVE	SPECIAL MILL	HQ-A	17.5	40	692	684	1.1	580.4	95.5
DF	LIVE	UTILITY	Pulp	6.5	14	183	183	0.2	186.9	25.5
MA	LIVE	2 SAW	Domestic	13.4	30	90	76	15.8	89.4	10.6
MA	LIVE	3 SAW	Domestic	10.9	30	258	234	9.2	262.1	32.7
MA	LIVE	4 SAW	Domestic	5.7	31	1,008	901	10.7	1,270.1	125.8
MA	LIVE	CULL	Cull	5.1	4	10	0	100.0	0.0	0.0
RA	LIVE	4 SAW	Domestic	5.0	26	72	72	0.4	61.2	10.0
WH	LIVE	4 SAW	Domestic	5.0	26	10	10	0.0	19.1	1.4

### Timber Sale Log Sort x Diameter Bin Summary

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 7	LIVE	Cull	5.5	6	0	100.0	0.0	0.0
DF	5 - 7	LIVE	Pulp	5.5	13	124	0.3	108.6	17.3
DF	5 - 7	LIVE	Domestic	5.8	33	4,043	1.6	4,959.2	564.5
DF	5 - 7	LIVE	Pole	6.1	32	149	0.0	182.1	20.8
DF	8 - 11	LIVE	Pole	8.2	40	53	0.0	60.1	7.4
DF	8 - 11	LIVE	Pulp	9.0	14	53	0.0	71.6	7.4
DF	8 - 11	LIVE	Cull	9.4	5	0	100.0	0.0	0.0
DF	8 - 11	LIVE	HQ-B	9.5	40	1,570	0.9	1,724.0	219.1
DF	8 - 11	LIVE	Domestic	9.7	37	4,538	3.6	5,372.5	633.5
DF	12 - 19	LIVE	Pulp	12.8	15	6	0.0	6.7	0.9
DF	12 - 19	LIVE	Pole	14.1	40	106	0.0	93.3	14.9
DF	12 - 19	LIVE	Domestic	14.8	40	7,270	4.8	7,363.5	1,014.9
DF	12 - 19	LIVE	HQ-B	14.8	40	1,552	2.2	1,485.7	216.7
DF	12 - 19	LIVE	HQ-A	16.3	40	776	1.0	672.3	108.3
DF	20+	LIVE	HQ-A	20.2	40	124	0.0	97.2	17.3
DF	20+	LIVE	Cull	21.3	16	0	100.0	0.0	0.0
DF	20+	LIVE	HQ-B	22.5	40	603	1.0	488.5	84.1
DF	20+	LIVE	Domestic	22.7	40	3,929	4.7	3,373.3	548.6
MA	5 - 7	LIVE	Cull	5.1	4	0	100.0	0.0	0.0
MA	5 - 7	LIVE	Domestic	5.4	31	790	9.8	1,107.1	110.2
MA	8 - 11	LIVE	Domestic	10.0	30	346	11.7	425.1	48.2

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
MA	12 - 19	LIVE	Domestic	13.2	30	76	15.8	89.4	10.6
RA	5 - 7	LIVE	Domestic	5.0	24	72	0.4	61.2	10.0
WH	5 - 7	LIVE	Domestic	5.0	26	10	0.0	19.1	1.4

## Cruise Unit Report FIDDLEHEAD U1

### Unit Sale Notice Volume (MBF): FIDDLEHEAD U1

Sp	DBH	Rings/In	Age	MBF Volume by Grade				Utility
				All	2 Saw	3 Saw	4 Saw	
DF	12.6	8.0		346	34	239	65	8
MA	8.4			34			34	
ALL	11.7	8.0		380	34	239	99	8

### Unit Cruise Design: FIDDLEHEAD U1

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (40) Measure/Count Plots, Sighting Ht = 4.5 ft	34.0	33.7	32	16	0

### Unit Cruise Summary: FIDDLEHEAD U1

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
RC		2	0.1	0
WH		2	0.1	0
DF	34	171	5.3	1
MA	5	9	0.3	0
ALL	39	184	5.8	1

### Unit Cruise Statistics (Cut + Leave Trees): FIDDLEHEAD U1

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
RC	2.5	565.7	100.0						
WH	2.5	565.7	100.0						
DF	213.8	37.3	6.6	127.2	19.3	3.3	27,181	42.0	7.4
MA	11.3	206.6	36.5	100.5	45.5	20.3	1,130	211.6	41.8
ALL	230.0	31.5	5.6	125.8	22.8	3.6	28,940	38.9	6.7

### Unit Summary: FIDDLEHEAD U1

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	28	ALL	12.2	61	99	9,223	8,901	3.5	86.2	70.0	20.0	302.6

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	POLE	6	ALL	14.1	77	97	1,318	1,272	3.5	9.2	10.0	2.7	43.2
DF	LIVE	LEA	55	ALL	16.7	79	103	17,623	17,008	3.5	87.9	133.8	32.7	578.3
MA	LIVE	CUT	5	ALL	9.1	39	77	1,094	1,005	8.2	22.1	10.0	3.3	34.2
MA	LIVE	LEA	1	ALL	8.0	45	54	137	126	8.2	3.6	1.3	0.4	4.3
RC	LIVE	LEA	2	ALL	6.8	33	39				9.9	2.5	1.0	
WH	LIVE	LEA	1	ALL	15.0	74	92				2.0	2.5	0.6	
ALL	LIVE	CUT	33	ALL	11.6	56	95	10,317	9,906	4.0	108.3	80.0	23.4	336.8
ALL	LIVE	POLE	6	ALL	14.1	77	97	1,318	1,272	3.5	9.2	10.0	2.7	43.2
ALL	LIVE	LEA	59	ALL	15.8	74	95	17,760	17,133	3.5	103.4	140.0	34.8	582.5
ALL	ALL	ALL	98	ALL	13.8	65	95	29,395	28,311	3.7	220.9	230.0	60.8	962.6



## Cruise Unit Report FIDDLEHEAD U2

### Unit Sale Notice Volume (MBF): FIDDLEHEAD U2

Sp	DBH	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
DF	14.1	6.0		311	17	217	76	1
MA	8.0			13			13	
RA	8.0			3			3	
ALL	13.0	6.0		326	17	217	91	1

### Unit Cruise Design: FIDDLEHEAD U2

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (40) Measure/Count Plots, Sighting Ht = 4.5 ft	24.7	24.7	24	12	0

### Unit Cruise Summary: FIDDLEHEAD U2

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	33	147	6.1	1
MA	2	4	0.2	0
RA	1	1	0.0	0
ALL	36	152	6.3	1

### Unit Cruise Statistics (Cut + Leave Trees): FIDDLEHEAD U2

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
DF	245.0	26.1	5.3	119.8	23.8	4.1	29,350	35.3	6.7
MA	6.7	338.8	69.2	80.2	0.0	0.0	535	338.8	69.2
RA	1.7	489.9	100.0	60.2	0.0	0.0	100	489.9	100.0
ALL	253.3	24.9	5.1	118.4	25.6	4.3	29,985	35.7	6.6

### Unit Summary: FIDDLEHEAD U2

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	32	ALL	13.5	71	93	12,818	12,379	3.4	104.0	103.3	28.1	305.8
DF	LIVE	POLE	1	ALL	16.0	78	98	207	200	3.4	1.2	1.7	0.4	4.9

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	LEA	41	ALL	18.8	82	105	17,366	16,772	3.4	72.6	140.0	32.3	414.3
MA	LIVE	CUT	2	ALL	8.4	27	42	535	535	0.0	17.3	6.7	2.3	13.2
RA	LIVE	CUT	1	ALL	8.0	21	29	100	100	0.0	4.8	1.7	0.6	2.5
ALL	LIVE	POLE	1	ALL	16.0	78	98	207	200	3.4	1.2	1.7	0.4	4.9
ALL	LIVE	CUT	35	ALL	12.7	63	83	13,453	13,014	3.3	126.1	111.7	31.0	321.4
ALL	LIVE	LEA	41	ALL	18.8	82	105	17,366	16,772	3.4	72.6	140.0	32.3	414.3
ALL	ALL	ALL	77	ALL	15.2	70	91	31,026	29,985	3.4	199.9	253.3	63.7	740.6

## Cruise Unit Report FIDDLEHEAD U3

### Unit Sale Notice Volume (MBF): FIDDLEHEAD U3

Sp	DBH	Rings/In	Age	MBF Volume by Grade					
				All	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	19.8			2,616	96	1,793	570	142	15
MA	13.7			110		10	27	72	
RA	8.0			7				7	
WH	13.0			1				1	
ALL	18.2			2,734	96	1,803	597	223	15

### Unit Cruise Design: FIDDLEHEAD U3

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2C: VR, 2 BAF (46.94, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	73.4	78.2	75	30	0

### Unit Cruise Summary: FIDDLEHEAD U3

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	141	348	4.6	0
MA	26	48	0.6	0
RA	1	2	0.0	0
WH	1	1	0.0	0
ALL	169	399	5.3	0

### Unit Cruise Statistics (Cut + Leave Trees): FIDDLEHEAD U3

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
DF	217.8	49.0	5.7	163.6	31.6	2.7	35,637	58.3	6.3
MA	25.6	161.7	18.7	58.3	44.1	8.6	1,492	167.6	20.6
RA	1.2	610.2	70.5	85.9	0.0	0.0	100	610.2	70.5
WH	0.6	866.0	100.0	30.4	0.0	0.0	19	866.0	100.0
ALL	245.2	41.1	4.7	151.9	41.0	3.2	37,248	58.0	5.7

**Unit Summary: FIDDLEHEAD U3**

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	139	ALL	19.8	78	100	37,010	35,432	4.3	101.3	216.5	48.7	2,600.7
DF	LIVE	POLE	2	ALL	22.1	88	112	214	205	4.3	0.5	1.3	0.3	15.0
MA	LIVE	CUT	26	ALL	13.7	42	52	1,727	1,492	13.6	25.0	25.6	6.9	109.5
RA	LIVE	CUT	1	ALL	8.0	29	47	100	100	0.0	3.3	1.2	0.4	7.3
WH	LIVE	CUT	1	ALL	13.0	27	32	19	19	0.0	0.7	0.6	0.2	1.4
ALL	LIVE	CUT	167	ALL	18.5	70	89	38,856	37,043	4.7	130.3	243.9	56.2	2,718.9
ALL	LIVE	POLE	2	ALL	22.1	88	112	214	205	4.3	0.5	1.3	0.3	15.0
ALL	ALL	ALL	169	ALL	18.5	70	90	39,070	37,248	4.7	130.8	245.2	56.4	2,734.0

## Cruise Unit Report FIDDLEHEAD ROW U4

### Unit Sale Notice Volume (MBF): FIDDLEHEAD ROW U4

Sp	DBH	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
DF	14.7			167	43	95	28	1
MA	12.6			8		4	4	
ALL	14.6			175	43	99	33	1

### Unit Cruise Design: FIDDLEHEAD ROW U4

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
FX: FR plots (20 tree / acre expansion)	5.7	6.0	6	6	0

### Unit Cruise Summary: FIDDLEHEAD ROW U4

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	52	54	9.0	0
MA	2	4	0.7	0
ALL	54	58	9.7	0

### Unit Cruise Statistics (Cut + Leave Trees): FIDDLEHEAD ROW U4

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
DF	212.8	22.5	9.2	137.7	17.1	2.4	29,303	28.2	9.5
MA	11.5	244.9	100.0	121.5	0.2	0.2	1,400	244.9	100.0
ALL	224.3	26.4	10.8	136.9	16.9	2.3	30,703	31.4	11.0

### Unit Summary: FIDDLEHEAD ROW U4

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	46	ALL	14.9	72	108	27,394	26,542	3.1	159.2	192.8	49.9	151.3
DF	LIVE	POLE	6	ALL	13.6	81	102	2,850	2,761	3.1	19.9	20.1	5.4	15.7
MA	LIVE	CUT	2	ALL	12.6	61	85	1,527	1,400	8.3	13.3	11.5	3.2	8.0
ALL	LIVE	CUT	48	ALL	14.7	71	106	28,920	27,942	3.4	172.5	204.3	53.2	159.3
ALL	LIVE	POLE	6	ALL	13.6	81	102	2,850	2,761	3.1	19.9	20.1	5.4	15.7
ALL	ALL	ALL	54	ALL	14.6	72	105	31,770	30,703	3.4	192.4	224.3	58.6	175.0

## Cruise Unit Report FIDDLEHEAD ROW U5

### Unit Sale Notice Volume (MBF): FIDDLEHEAD ROW U5

Sp	DBH	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
DF	14.2			20	8	7	4	0
MA	13.0			2		1	1	
RA	8.0			0			0	
ALL	13.8			21	8	8	5	0

### Unit Cruise Design: FIDDLEHEAD ROW U5

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
FX: FR plots (20 tree / acre expansion)	1.4	1.4	3	3	0

### Unit Cruise Summary: FIDDLEHEAD ROW U5

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	18	18	6.0	0
MA	3	3	1.0	0
RA	1	1	0.3	0
ALL	22	22	7.3	0

### Unit Cruise Statistics (Cut + Leave Trees): FIDDLEHEAD ROW U5

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
DF	132.1	21.8	12.6	105.9	25.1	5.9	13,993	33.3	13.9
MA	18.4	98.9	57.1	60.5	50.2	29.0	1,113	110.9	64.0
RA	2.3	173.2	100.0	60.2	0.0	0.0	140	173.2	100.0
ALL	152.9	32.7	18.9	99.7	28.6	6.1	15,247	43.5	19.9

### Unit Summary: FIDDLEHEAD ROW U5

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	18	ALL	14.2	52	74	14,847	13,993	5.7	120.1	132.1	35.1	19.6
MA	LIVE	CUT	3	ALL	13.0	38	53	1,407	1,113	20.9	20.0	18.4	5.1	1.6
RA	LIVE	CUT	1	ALL	8.0	24	36	167	140	16.0	6.7	2.3	0.8	0.2
ALL	LIVE	CUT	22	ALL	13.8	49	69	16,420	15,247	7.1	146.8	152.9	41.0	21.3

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
ALL	ALL	ALL	22	ALL	13.8	49	69	16,420	15,247	7.1	146.8	152.9	41.0	21.3

## Cruise Unit Report FIDDLEHEAD ROW U6

### Unit Sale Notice Volume (MBF): FIDDLEHEAD ROW U6

Sp	DBH	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
DF	23.5			17	14	2	0	0
MA	14.6			3	0	1	1	
ALL	19.5			19	14	3	2	0

### Unit Cruise Design: FIDDLEHEAD ROW U6

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
FX: FR plots (20 tree / acre expansion)	0.4	0.4	2	2	0

### Unit Cruise Summary: FIDDLEHEAD ROW U6

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	7	7	3.5	0
MA	7	7	3.5	0
ALL	14	14	7.0	0

### Unit Cruise Statistics (Cut + Leave Trees): FIDDLEHEAD ROW U6

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
DF	210.0	60.3	42.6	197.4	26.5	10.0	41,450	65.8	43.8
MA	81.0	76.7	54.2	81.4	28.2	10.7	6,590	81.7	55.2
ALL	291.0	22.2	15.7	165.1	35.3	9.4	48,040	41.7	18.3

### Unit Summary: FIDDLEHEAD ROW U6

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	6	ALL	24.2	90	115	39,153	37,963	3.0	60.2	192.4	39.1	15.2
DF	LIVE	POLE	1	ALL	18.0	90	114	3,597	3,487	3.0	10.0	17.7	4.2	1.4
MA	LIVE	CUT	7	ALL	14.6	50	66	7,540	6,590	12.6	69.7	81.0	21.2	2.6
ALL	LIVE	POLE	1	ALL	18.0	90	114	3,597	3,487	3.0	10.0	17.7	4.2	1.4
ALL	LIVE	CUT	13	ALL	19.6	68	88	46,693	44,553	4.6	129.9	273.4	60.3	17.8
ALL	ALL	ALL	14	ALL	19.5	70	90	50,290	48,040	4.5	139.9	291.0	64.5	19.2





Forest Practices Application/Notification  
Notice of Decision

FPA/N No: 2941401

Effective Date: 5/25/2023

Expiration Date: 5/25/2026

Shut Down Zone: 660 ; .

EARR Tax Credit:  Eligible  Non-eligible

Reference: Fiddlehead Timber Sale

30-103982

Decision

- Notification Accepted Operations shall not begin before the effective date.
- Approved This Forest Practices Application is subject to the conditions listed below.
- Disapproved This Forest Practices Application is disapproved for the reasons listed below.
- Withdrawn Applicant has withdrawn the Forest Practices Application/Notification (FPA/N).
- Closed All forest practices obligations are met.

FPA/N Classification

Class II  Class III  Class IVG  Class IVS

Number of Years Granted on Multi-Year Request

4 years  5 years

Conditions on Approval/Reasons for Disapproval

No additional conditions.

NOTE:

Refer to WAC 222-24-030(4) for stabilizing soils after construction.

Issued By: Michael Rutledge

Region: Pacific Cascade Region

Title: Forest Practices Forester

Date: 5/25/2023

Copies to:  Landowner, Timber Owner and Operator

Issued in person:  LO  TO  OP

By:

Date:

5/25/2023

**Appeal Information**

You have thirty (30) days to *file* (i.e., *actually deliver*) an appeal in writing of this Decision and any related State Environmental Policy Act (SEPA) determinations to the Pollution Control Hearings Board, the Attorney General's Office, and the Department of Natural Resources' region office. See RCW 76.09.205. The appeal period starts when the applicant receives this decision, which usually happens electronically on the date indicated below.

You must file your appeal at all three addresses below:

<b>Pollution Control Hearings Board</b>	<b>Office of the Attorney General Natural Resources Division</b>	<b>Department Of Natural Resources Pacific Cascade Region</b>
<u>Physical Address</u> 1111 Israel Road, SW Suite 301 Tumwater, WA 98501	<u>Physical Address</u> 1125 Washington Street, SE Olympia, WA 98504	<u>Physical Address</u> 601 Bond Rd Castle Rock WA 98611
<u>Mailing address</u> Post Office Box 40903 Olympia, WA 98504-0903	<u>Mailing Address</u> Post Office Box 40100 Olympia, WA 98504-0100	<u>Mailing Address</u> Post Office Box 280 Castle Rock, WA 98611-0280

Information regarding the Pollution Control Hearings Board can be found at: <https://eluh0.wa.gov>

**Other Applicable Laws**

Operating as described in this application/notification does not ensure compliance with the Endangered Species Act, or other federal, state, or local laws.

**Transfer of Forest Practices Application/Notification (WAC 222-20-010)**

Use the "Notice of Transfer of Approved Forest Practices Application/Notification" form. This form is available at region offices and on the Forest Practices website <https://www.dnr.wa.gov/programs-and-services/forest-practices/review-applications-foars/forest-practices-forms-and>. Notify DNR of new Operators within 48 hours.

**Continuing Forestland Obligations (RCW 76.09.060, RCW 76.09.070, RCW 76.09.390, and WAC 222-20-055)**

Obligations include reforestation, road maintenance and abandonment plans, conversions of forestland to non- forestry use and/or harvest strategies on perennial non-fish habitat (Type Np) waters in Eastern Washington.

Before the sale or transfer of land or perpetual timber rights subject to continuing forest and obligations, the seller must notify the buyer of such an obligation on a form titled "Notice of Continuing Forest Land Obligation". The seller and buyer must both sign the "Notice of Continuing Forest Land Obligation" form and send it to the DNR Region Office for retention. This form is available at DNR region offices.

If the seller fails to notify the buyer about the continuing forestland obligation, the seller must pay the buyer's costs related to continuing forestland obligations, including all legal costs and reasonable attorneys' fees incurred by the buyer in enforcing the continuing forestland obligation against the seller.

Failure by the seller to send the required notice to DNR at the time of sale will be prima facie evidence in an action by the buyer against the seller for costs related to the continuing forestland obligation prior to sale.

**DNR Declaration of Mailing**

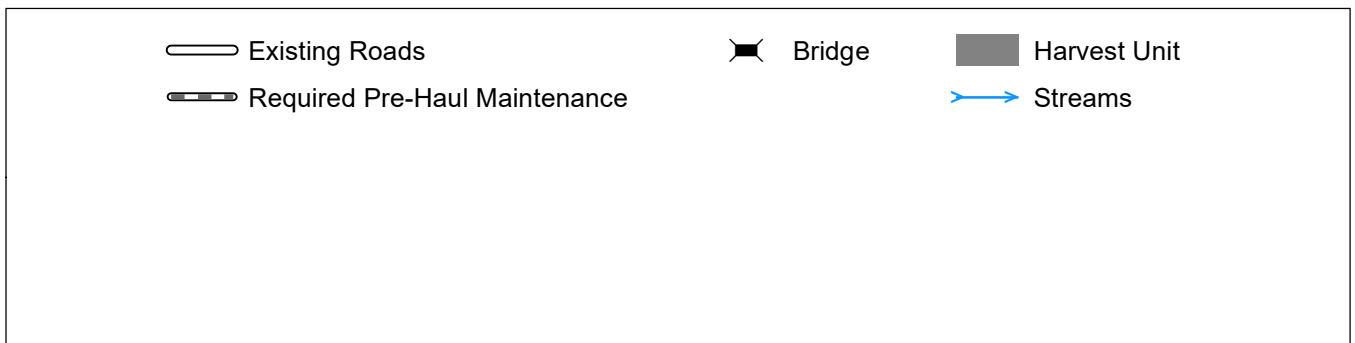
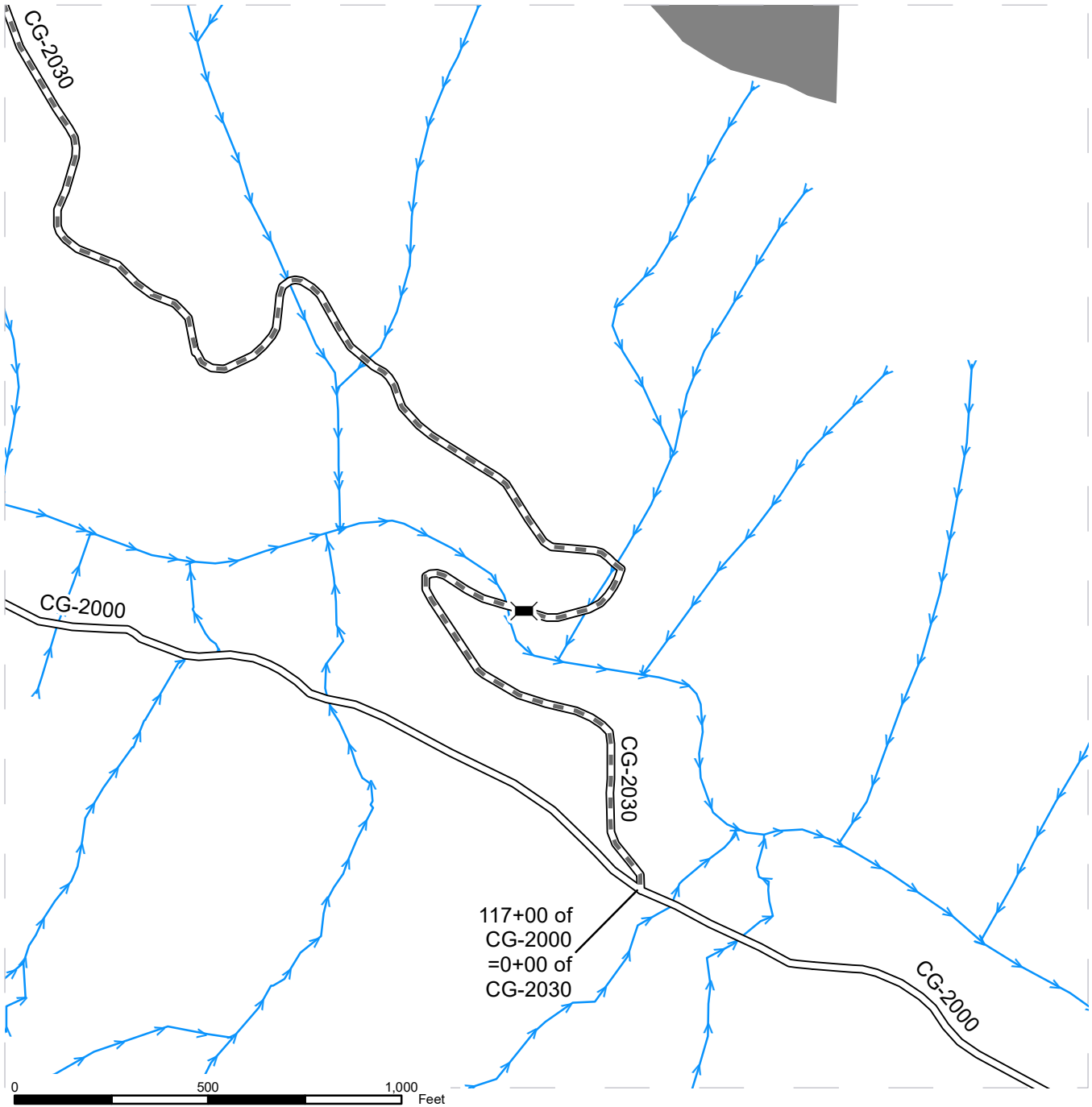
I, \_\_\_\_\_, caused the Notice of Decision for FPA/N No. Enter FPA/N No. to be placed in the United States mail at Castle Rock, WA, postage paid. I declare under penalty of perjury of the laws of the State of Washington, that the foregoing is true and correct.

\_\_\_\_\_ Castle Rock, WA \_\_\_\_\_  
 (Date) (City & State where signed) (Signature)

# ROAD PLAN MAP

**SALE NAME:** FIDDLEHEAD VDT VRH  
**AGREEMENT#:** None  
**TOWNSHIP(S):** T3R7E  
**TRUST(S):** Common School and Indemnity (3), Scientific School (10), State Forest Transfer (1)

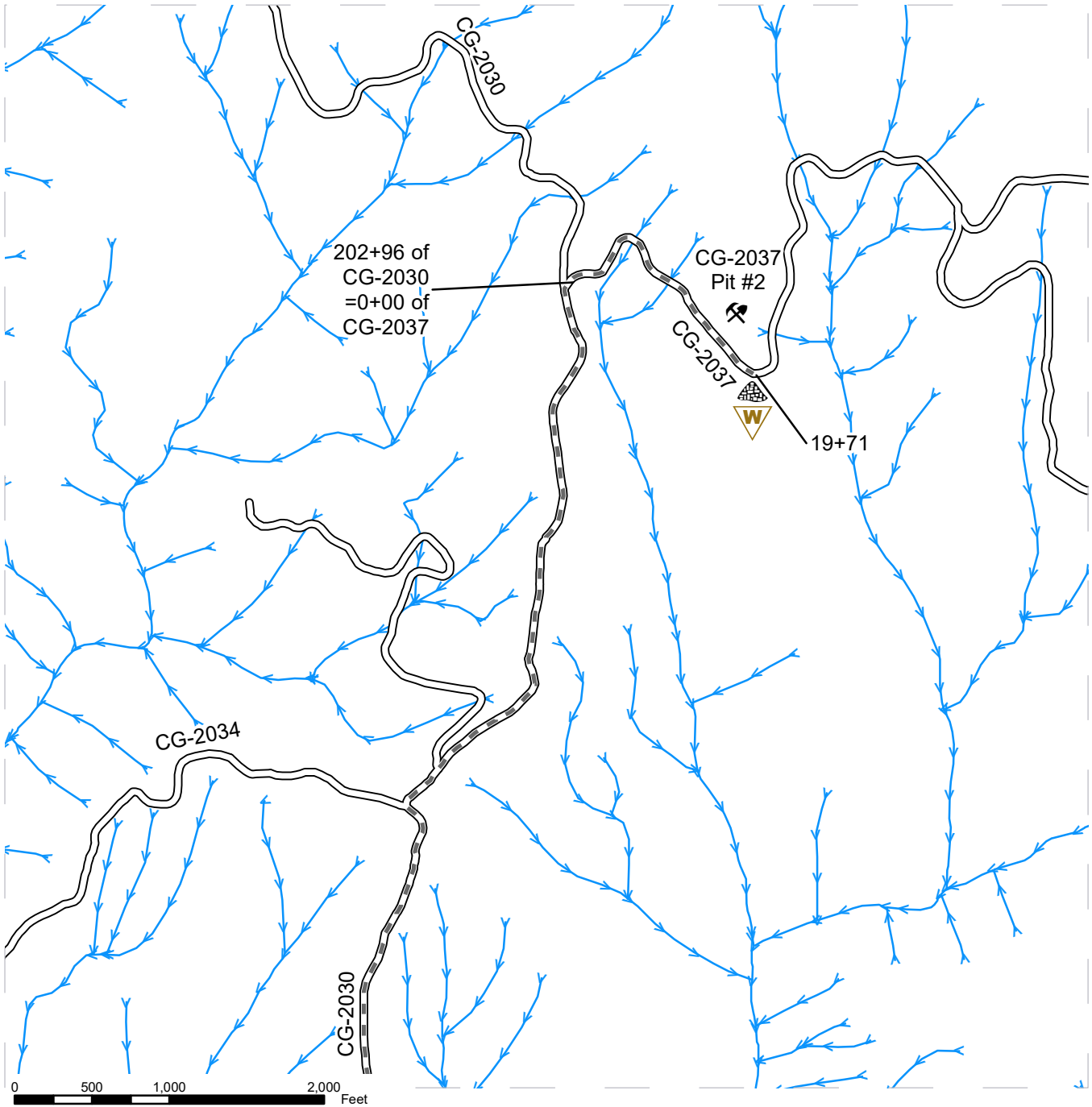
**REGION:** Pacific Cascade Region  
**COUNTY(S):** Skamania  
**ELEVATION RGE:** 800-1800









# ROAD PLAN MAP

**SALE NAME:** FIDDLEHEAD VDT VRH  
**AGREEMENT#:** None  
**TOWNSHIP(S):** T3R7E  
**TRUST(S):** Common School and Indemnity (3), Scientific School (10), State Forest Transfer (1)

**REGION:** Pacific Cascade Region  
**COUNTY(S):** Skamania  
**ELEVATION RGE:** 800-1800

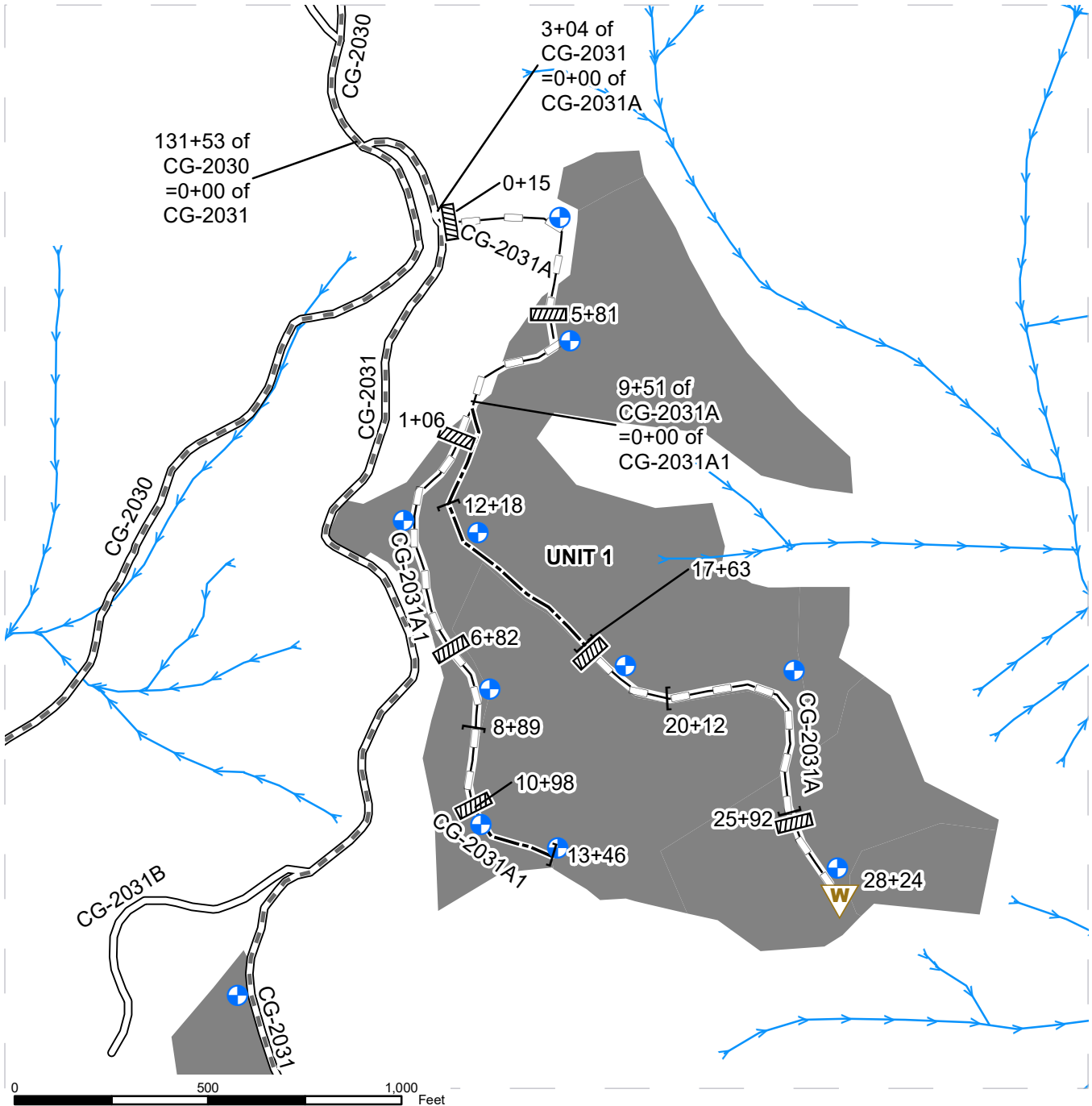


 Existing Roads	 Rock Pit
 Required Pre-Haul Maintenance	 Stockpile
	 Waste Area
	 Streams

# ROAD PLAN MAP

**SALE NAME:** FIDDLEHEAD VDT VRH  
**AGREEMENT#:** None  
**TOWNSHIP(S):** T3R7E  
**TRUST(S):** Common School and Indemnity (3), Scientific School (10), State Forest Transfer (1)

**REGION:** Pacific Cascade Region  
**COUNTY(S):** Skamania  
**ELEVATION RGE:** 800-1800



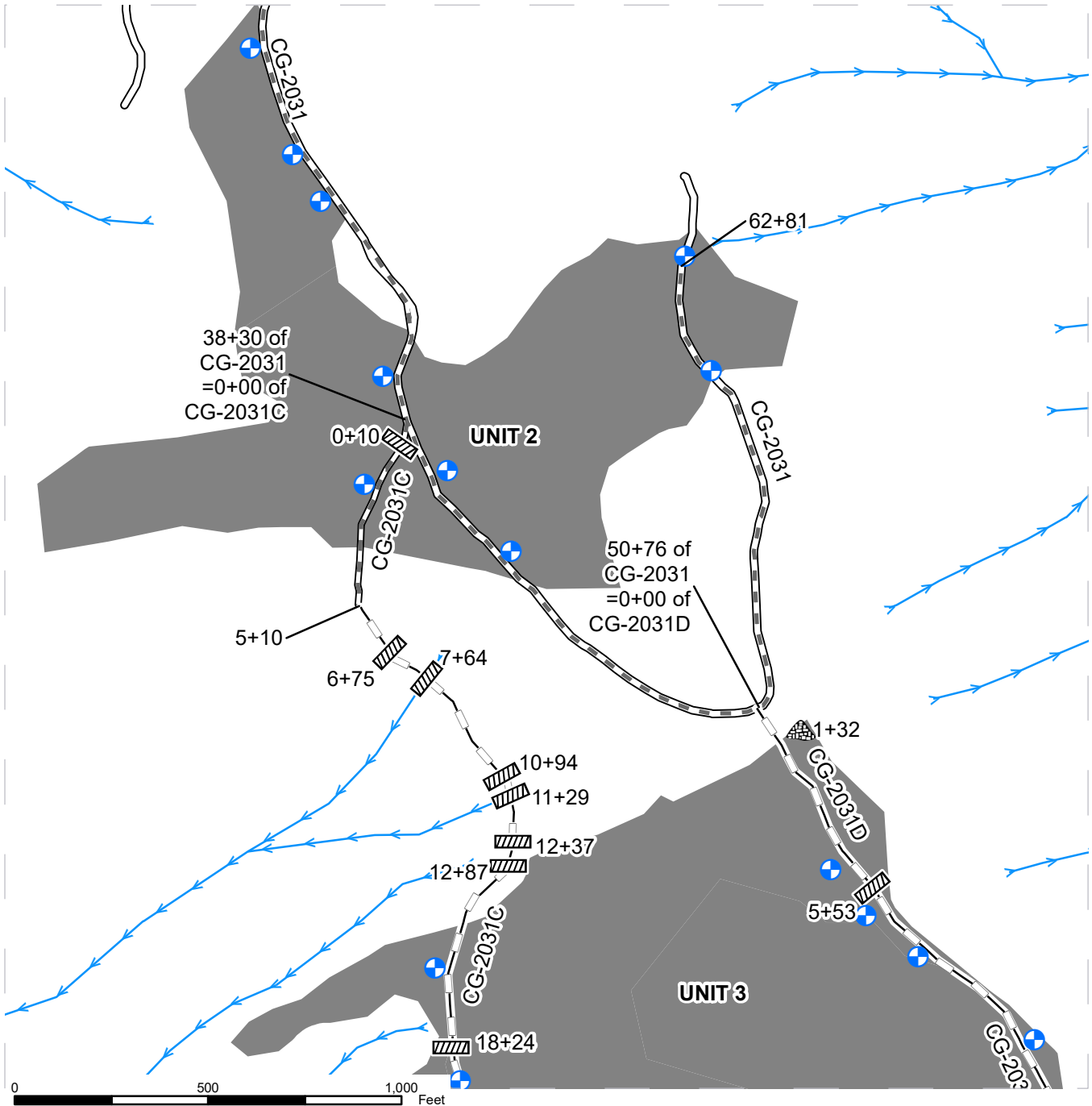
Existing Roads	End Haul	Harvest Unit
Required Pre-Haul Maintenance	Culvert	Streams
Optional Construction	Landing - Proposed	
Optional Reconstruction	Waste Area	



# ROAD PLAN MAP

SALE NAME: FIDDLEHEAD VDT VRH  
 AGREEMENT#: None  
 TOWNSHIP(S): T3R7E  
 TRUST(S): Common School and Indemnity (3), Scientific School (10), State Forest Transfer (1)

REGION: Pacific Cascade Region  
 COUNTY(S): Skamania  
 ELEVATION RGE: 800-1800



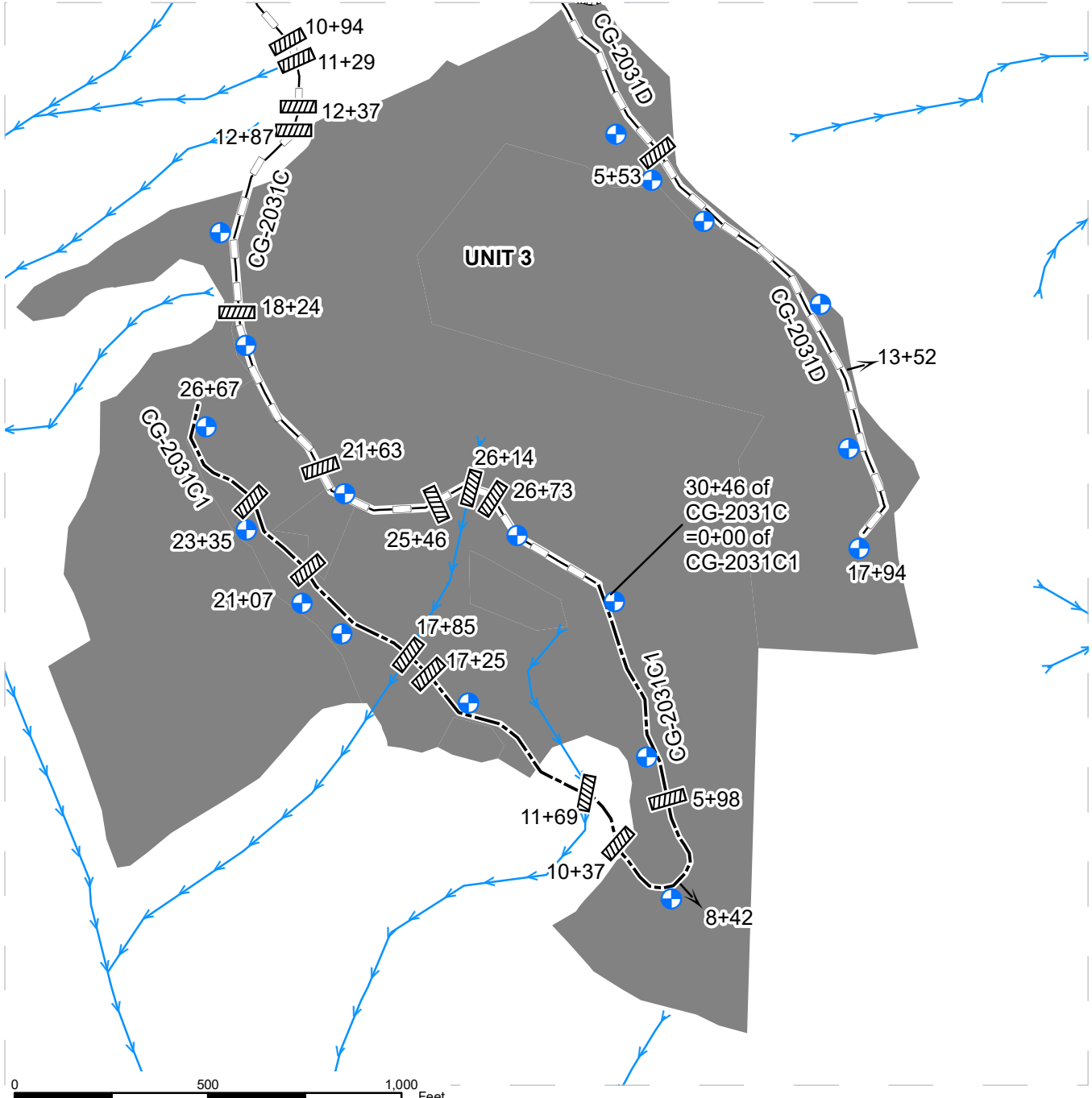
Existing Roads	Culvert	Harvest Unit
Required Pre-Haul Maintenance	Landing - Proposed	Streams
Optional Reconstruction	Stockpile	



# ROAD PLAN MAP

SALE NAME: FIDDLEHEAD VDT VRH  
 AGREEMENT#: None  
 TOWNSHIP(S): T3R7E  
 TRUST(S): Common School and Indemnity (3), Scientific School (10), State Forest Transfer (1)

REGION: Pacific Cascade Region  
 COUNTY(S): Skamania  
 ELEVATION RGE: 800-1800



Optional Construction	Ditchout	Harvest Unit
Optional Reconstruction	Culvert	Streams
Landing - Proposed	Stockpile	



STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

FIDDLEHEAD VDT VRH TIMBER SALE ROAD PLAN  
SKAMANIA COUNTY  
THREE CORNER ROCK UNIT, YACOLT DISTRICT  
PACIFIC CASCADE REGION

AGREEMENT NO.: 30-103982

STAFF ENGINEER: DAVID STONE

DRAWN & COMPILED BY: ALICIA COMPTON  
& DAVID STONE

SECTION 0 – SCOPE OF PROJECT

**0-1 ROAD PLAN SCOPE**

Clauses in this road plan apply to all road related work, including landings and rock source development, unless otherwise noted.

**0-2 REQUIRED ROADS**

The specified work on the following roads is required.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
CG-2030	0+00 to 202+96	Pre-haul Maintenance
CG-2031	0+00 to 62+81	Pre-haul Maintenance
CG-2031C	0+00 to 5+10	Pre-haul Maintenance
CG-2037	0+00 to 19+71	Pre-haul Maintenance

**0-3 OPTIONAL ROADS**

The specified work on the following roads is not required. Any optional roads built by the Purchaser must meet all the specifications in the road plan.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
CG-2031A	0+00 to 9+51	Reconstruction
CG-2031A	9+51 to 17+63	Construction
CG-2031A	17+63 to 28+24	Reconstruction
CG-2031A1	0+00 to 10+98	Reconstruction
CG-2031A1	10+98 to 13+46	Construction
CG-2031C	5+10 to 30+46	Reconstruction
CG-2031C1	0+00 to 26+67	Construction
CG-2031D	0+00 to 17+94	Reconstruction

**0-4 CONSTRUCTION**

Construction includes, but is not limited to: clearing; grubbing; right-of-way debris disposal; excavation and embankment to sub-grade; turnout, turnaround and landing construction; acquisition and installation of drainage structures; shaping subgrade; manufacture and application of rock; compaction of earthwork and rock; and acquisition and application of erosion control materials.



**0-5 RECONSTRUCTION**

This project includes, but is not limited to the following reconstruction requirements:

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
CG-2031A	0+00 to 9+51	Clear, grub, widen subgrade, excavate ditchlines, grade, shape, and compact subgrade surface in accordance to TYPICAL SECTION SHEET. Right-of-way debris disposal. Compact earthwork. Reconstruct road grade according to stakes and reference points marked in the field. Acquire and install drainage structures in accordance to CULVERT LIST. Manufacture and apply rock in accordance to ROCK LIST. Grade, shape, and compact rock.
CG-2031A	17+63 to 28+24	
CG-2031A1	0+00 to 10+98	
CG-2031C	5+10 to 30+46	
CG-2031D	0+00 to 17+94	

**0-6 PRE-HAUL MAINTENANCE**

This project includes, but is not limited to the following pre-haul maintenance requirements:

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
CG-2030	0+00 to 202+96	Grade, shape, and compact existing surface in accordance to TYPICAL SECTION SHEET. Manufacture and apply rock in accordance to ROCK LIST. Grade, shape, and compact rock. Clean and widen ditchlines in accordance to TYPICAL SECTION SHEET at locations specified in Clause 2-7. Acquire and install drainage structures in accordance to CULVERT LIST.
CG-2031	0+00 to 62+81	
CG-2031C	0+00 to 5+10	
CG-2037	0+00 to 19+71	

**0-9 DECOMMISSIONING**

This project includes decommissioning listed in Clause 9-20 ROAD DECOMMISSIONING.

**0-10 ABANDONMENT**

This project includes abandonment listed in Clause 9-21 ROAD ABANDONMENT.

**0-12 DEVELOP ROCK SOURCE**

Purchaser may develop an existing rock source. Rock source development will involve requirements listed in the ROCK SOURCE DEVELOPMENT PLAN. Work for developing rock sources is listed in Section 6 ROCK AND SURFACING.

SECTION 1 – GENERAL

**1-1 ROAD PLAN CHANGES**

If the Purchaser desires a change from this road plan including, but not limited to, relocation, extension, change in design, or adding roads; a revised road plan must be submitted in writing to the Contract Administrator for consideration. Before work begins, Purchaser shall obtain approval from the State for the submitted plan.

**1-2 UNFORESEEN CONDITIONS**

Quantities established in this road plan are minimum acceptable values. Additional quantities required by the state due to unforeseen conditions, or Purchaser's choice of construction season or techniques will be at the Purchaser's expense. Unforeseen conditions include, but are not limited to, solid subsurface rock, subsurface springs, saturated ground, and unstable soils.

**1-3 ROAD DIMENSIONS**

Purchaser shall perform road work in accordance with the dimensions shown on the TYPICAL SECTION SHEET and the specifications within this road plan, unless controlled by construction stakes or design data (plan, profile, and cross-sections).

**1-4 ROAD TOLERANCES**

Purchaser shall perform road work within the tolerances listed below. The tolerance class for each road is listed on the TYPICAL SECTION SHEET.

<u>Tolerance Class</u>	<u>A</u>	<u>B</u>	<u>C</u>
Road and Subgrade Width (feet)	+1.5	+1.5	+2.0
Subgrade Elevation (feet +/-)	0.5	1.0	2.0
Centerline alignment (feet lt./rt.)	1.0	1.5	3.0

**1-6 ORDER OF PRECEDENCE**

Any conflict or inconsistency in the road plan will be resolved by giving the documents precedence in the following order:

1. Addenda.
2. Designs or Plans. On designs and plans, figured dimensions shall take precedence over scaled dimensions.
3. Road Plan Clauses.
4. Typical Section Sheet.
5. Standard Lists.
6. Standard Details.
7. Road Plan maps.

In case of any ambiguity or dispute over interpreting the road plan, the Contract Administrator's or designee's decision will be final.

**1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS**

Purchaser shall repair or replace all materials, roadway infrastructure, and road components damaged during road work or operation activities. The Contract Administrator will direct repairs and replacements. Repairs to structural materials must be made in accordance with the manufacturer's recommendation, and may not begin without written approval from the Contract Administrator.

**1-9 DAMAGED METALLIC COATING**

Any cut ends, or damaged galvanized or aluminized coating on existing or new bridge components, culverts, downspouts, and flumes must be cleaned and treated with a minimum of two coats of zinc rich paint or cold galvanizing compound.

**1-15 ROAD MARKING**

Purchaser shall perform road work in accordance with the state’s marked location. All road work is marked as follows:

- Construction and Reconstruction roads: Centerline stakes with orange flagging, orange paint, and aluminum reference tags.
- Pre-haul Maintenance roads: Orange paint and aluminum reference tags.

**1-16 CONSTRUCTION STAKES SET BY STATE**

The Purchaser shall construct the following roads in accordance with the construction stakes and reference points set in the field for grade and alignment. Prior to road construction Purchaser shall reset slope stakes after right-of-way has been cleared.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
CG-2031C	6+75 to 14+57	Centerline stakes, slope stakes, and RPs

**1-18 REFERENCE POINT DAMAGE**

Purchaser shall reset reference points (RPs) that were moved or damaged at any time during construction to their original locations. Excavation and embankment may not proceed on road segments controlled by said RPs until Purchaser resets all moved or damaged RPs.

**1-21 HAUL APPROVAL**

Purchaser shall not use roads under this road plan for timber hauling, rock hauling, or right-of-way hauling, without written approval from the Contract Administrator.

**1-22 WORK NOTIFICATIONS**

Purchaser shall notify the Contract Administrator a minimum of 5 calendar days before work begins.

**1-23 ROAD WORK PHASE APPROVAL**

Purchaser shall obtain written approval from the Contract Administrator upon completion of each of the following phases of road work:

- Subgrade construction and drainage installation
- Waste area construction
- Subgrade compaction
- Rock pit development
- Rock application and compaction

**1-25 ACTIVITY TIMING RESTRICTION**

The specified activities are not allowed during the listed closure periods unless authorized in writing by the Contract Administrator. Restrictions for hauling forest products are specified in Contract Clause H-130 Hauling Schedule.

<u>Road</u>	<u>Activity</u>	<u>Closure Period</u>
CG-2030 (0+00 to 135+00), CG-2031, CG-2031A, CG-2031A1, CG-2031C, CG-2031C1, & CG-2031D	Construction, Reconstruction, Pre-haul Maintenance, & CG-2031D Stockpile use	October 1 to April 30
CG-2030 (135+00 to 202+96), & CG-2037	Pre-haul Maintenance, Rock Source Work, & CG-2037 Stockpile use	March 1 to August 31

**1-26 OPERATING DURING CLOSURE PERIOD**

If permission is granted to operate during a closure period listed in Clause 1-25 ACTIVITY TIMING RESTRICTION Purchaser shall provide a maintenance plan to include further protection of state resources. Purchaser shall obtain written approval from the Contract Administrator for the maintenance plan, and shall put preventative measures in place before operating during the closure period. Purchaser is required to maintain all haul roads at their own expense including those listed in Contract Clause C-060 DESIGNATED ROAD MAINTAINER. If other operators are using, or desire to use these designated maintainer roads, a joint operating plan must be developed. All parties shall follow this plan.

**1-29 SEDIMENT RESTRICTION**

Purchaser shall not allow silt-bearing runoff to enter any streams.

**1-30 CLOSURE TO PREVENT DAMAGE**

In accordance with Contract Clause G-220 STATE SUSPENDS OPERATION, the Contract Administrator will suspend road work or hauling right-of-way timber, forest products, or rock under the following conditions:

- Wheel track rutting exceeds 4 inches on jaw run roads.
- Wheel track rutting exceeds 2 inches on crushed rock roads.
- Wheel track rutting exceeds 2 inches on native surface roads.
- Surface or base stability problems persist.
- Weather is such that satisfactory results cannot be obtained in an area of operations.
- When, in the opinion of the Contract Administrator excessive road damage or rutting may occur.

Operations must stop unless authority to continue working or hauling is granted in writing by the Contract Administrator. In the event that surface or base stability problems persist, Purchaser shall cease operations, or perform corrective maintenance or repairs, subject to specifications within this road plan.

**1-32 BRIDGE AND ASPHALT SURFACE RESTRICTION**

The use of metal tracked equipment is not allowed on bridge or asphalt surfaces at any time. If Purchaser must run equipment on bridge or asphalt surfaces, then rubber tired equipment or other methods, approved in writing by Contract Administrator, must be used. Other methods must meet the following criteria: Material utilized to protect the deck surface from tracked equipment damage must be of substantial thickness, durability and width to support the machine weight and prevent grousers from touching the bridge deck and asphalt surfaces.

If tracked equipment is used on bridge or asphalt surfaces, Purchaser shall immediately cease all road construction and hauling operations. Purchaser shall remove any dirt, rock, or other material tracked or spilled on the bridge or asphalt surfaces and have surfaces evaluated by the District Engineer or their designee for any damage caused by transporting equipment. Any damage to the surfaces will be repaired, at the Purchaser's expense, as directed by the Contract Administrator.

**1-33 SNOW PLOWING RESTRICTION**

Snowplowing will be allowed after the execution of a SNOW PLOWING AGREEMENT, which is available from the Contract Administrator upon request. Purchaser shall request a SNOW PLOWING AGREEMENT each time plowing occurs. If damage occurs while plowing, further permission to plow may be revoked by the Contract Administrator.

**1-40 ROAD APPROACHES TO COUNTY ROADS AND STATE HIGHWAYS**

Purchaser shall immediately remove any mud, dirt, rock, or other material tracked or spilled on to county roads and state highways.

If additional damage to the surface, signs, guardrails, etc. occurs then the damage will be repaired, at the Purchaser's expense, as directed by the Contract Administrator when authorized by the county or WSDOT.

SECTION 2 – MAINTENANCE

**2-1 GENERAL ROAD MAINTENANCE**

Purchaser shall maintain all roads used under this contract in accordance with the FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS for the entire term of this contract. Maintenance is required even during periods of inactivity.

**2-2 ROAD MAINTENANCE – PURCHASER MAINTENANCE**

Purchaser shall perform maintenance on roads listed in Contract Clause C-050 PURCHASER ROAD MAINTENANCE AND REPAIR in accordance with FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS.

**2-3 ROAD MAINTENANCE – DESIGNATED MAINTAINER**

Purchaser may be required to perform maintenance on roads listed in Contract Clause C-060 DESIGNATED ROAD MAINTAINER as directed by the Contract Administrator. Purchaser shall maintain roads in accordance with FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS.

**2-4 PASSAGE OF LIGHT VEHICLES**

Purchaser shall maintain the following roads in a condition that will allow the passage of light administrative vehicles.

<u>Road</u>	<u>Stations</u>
CG-2030	0+00 to 202+96
CG-2031	0+00 to 62+81
CG-2037	0+00 to 19+71

**2-5 MAINTENANCE GRADING – EXISTING ROAD**

Purchaser shall use a grader to shape the existing surface before applying rock.

**2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS**

On the following roads, Purchaser shall clean ditches, headwalls, and catchbasins. Pulling ditch material across the road or mixing in with the road surface is not allowed. Scatter material down slope outside of cleared right-of-way.

<u>Road</u>	<u>Stations</u>
CG-2030	0+00 to 202+96
CG-2031	0+00 to 62+81
CG-2031C	0+00 to 5+10
CG-2037	0+00 to 19+71

**SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL**

**3-5 CLEARING**

Purchaser shall fall all vegetative material larger than 2 inches DBH or over 5 feet high between the marked right-of-way boundaries and within waste and debris areas, or if not marked in the field, between the clearing limits specified on the TYPICAL SECTION SHEET. Clearing must be completed before starting excavation and embankment.

**3-7 RIGHT-OF-WAY DECKING**

Purchaser shall deck all right-of-way timber. Decks must be parallel to the road centerline and placed within the cleared right-of-way. Decks must be free of dirt, limbs, and other right-of-way debris, and removable by standard log loading equipment from the roadbed.

**3-8 PROHIBITED DECKING AREAS**

Purchaser shall not deck right-of-way timber in the following areas:

- Within the grubbing limits.
- Within 50 feet of any stream.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- On slopes greater than 45%.
- Against standing trees.
- On slopes above a cut bank.

**3-10 GRUBBING**

Purchaser shall remove all stumps between the grubbing limits specified on the TYPICAL SECTION SHEET. Purchaser shall also remove stumps with undercut roots outside the grubbing limits. Stumps over 22 inches diameter must be split. Stumps over 40 inches must be quartered. Grubbing must be completed before starting excavation and embankment.

**3-12 STUMP PLACEMENT**

Purchaser shall place grubbed stumps outside of the clearing limits as directed by the Contract Administrator and in compliance with all other clauses in this road plan. Stumps must be positioned upright, with root wads in contact with the forest floor on stable locations

**3-14 STUMPS WITHIN DESIGNATED WASTE AREAS**

Purchaser is not required to remove stumps within waste areas if they are cut flush with the ground.

**3-20 ORGANIC DEBRIS DEFINITION**

Organic debris is defined as all vegetative material not eligible for removal by Contract Clause G-010 PRODUCTS SOLD AND SALE AREA or G-011 RIGHT TO REMOVE FOREST PRODUCTS AND CONTRACT AREA, that is larger than one cubic foot in volume within the clearing and waste area limits.

**3-21 DISPOSAL COMPLETION**

Purchaser shall remove organic debris from the road surface, ditchlines, and culvert inlets and outlets. Purchaser shall complete all disposal of organic debris, before subgrade approval.

**3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS**

Waste areas for organic debris are located as listed below and at areas approved in writing by the Contract Administrator.

<u>Road</u>	<u>Disposal Location</u>
CG-2031A & CG-2031A1	Station 28+24
CG-2037 Pit #2	On the Right side of the CG-2037 at station 19+71

**3-23 PROHIBITED DISPOSAL AREAS**

Purchaser shall not place organic debris in the following areas:

- Within 50 feet of a cross drain culvert.
- Within 100 feet of a live stream, or wetland.
- On road subgrades, or excavation and embankment slopes.
- On slopes greater than 45%.
- Within the operational area for cable landings where debris may shift or roll.
- On locations where brush can fall into the ditch or onto the road surface.
- Against standing timber.
- On slopes above a cut bank.

**3-24 BURYING ORGANIC DEBRIS RESTRICTED**

Purchaser shall not bury organic debris unless otherwise stated in this plan.

**3-25 SCATTERING ORGANIC DEBRIS**

Purchaser shall scatter organic debris outside of the clearing limits in natural openings downhill side of the road, unless otherwise detailed in this road plan and as directed by the Contract Administrator.

**3-32 END HAULING ORGANIC DEBRIS**

On the following roads and on slopes greater than 45%, Purchaser shall end haul or push organic debris to the designated waste areas specified in Clause 3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS, or to a waste area located by the Contract Administrator.

<u>Road</u>	<u>Stations</u>
CG-2031A	12+18 to 17+63 & 20+12 to 25+92
CG-2031A1	8+89 to 13+46

**SECTION 4 – EXCAVATION**

**4-2 PIONEERING**

Pioneering may not extend past construction that will be completed during the current construction season. Pioneering may not extend more than 1000 feet beyond completed construction unless approved in writing by the Contract Administrator. In addition, the following actions must be taken as pioneering progresses:

- Drainage must be provided on all uncompleted construction.
- Road pioneering operations may not undercut the final cut slope or restrict drainage.
- Culverts at live stream crossings must be installed during pioneering operations prior to embankment.

**4-3 ROAD GRADE AND ALIGNMENT STANDARDS**

Purchaser shall follow these standards for road grade and alignment:

- Grade and alignment must have smooth continuity, without abrupt changes in direction.
- Maximum grades may not exceed 18 percent favorable and 13 percent adverse.
- Minimum curve radius is 60 feet at centerline.
- Maximum grade change for sag vertical curves is 6% in 100 feet.
- Maximum grade change for crest vertical curves is 4% in 100 feet.

**4-4 SWITCHBACK STANDARDS**

A switchback is defined as a curved segment of road between a beginning and end of the same curve, where the change of traffic travel direction is greater than 90 degrees. Purchaser shall follow these standards for switchbacks:

- Maximum adverse grades for switchbacks is 10% of the curve radius.
- Maximum favorable grades for switchbacks is 12%.
- Maximum transition grades entering and leaving switchbacks is a 5% grade change.
- Transition grades required to meet switchback grade limitations must be constructed on the tangents preceding and departing from the switchbacks.



**4-5 CUT SLOPE RATIO**

Purchaser shall construct excavation slopes no steeper than shown on the following table, unless construction staked or designed:

<u>Material Type</u>	<u>Excavation Slope Ratio</u>	<u>Excavation Slope Percent</u>
Common Earth (on side slopes up to 55%)	1:1	100
Common Earth (56% to 70% side slopes)	¾:1	133
Common Earth (on slopes over 70%)	½:1	200
Fractured or loose rock	½:1	200
Hardpan or solid rock	¼:1	400

**4-6 EMBANKMENT SLOPE RATIO**

Purchaser shall construct embankment slopes no steeper than shown on the following table:

<u>Material Type</u>	<u>Embankment Slope Ratio</u>	<u>Embankment Slope Percent</u>
Sandy Soils	2:1	50
Common Earth and Rounded Gravel	1½:1	67
Angular Rock	1¼:1	80

**4-7 SHAPING CUT AND FILL SLOPE**

Purchaser shall construct excavation and embankment slopes to a uniform line and left rough for easier revegetation.

**4-8 CURVE WIDENING**

The minimum widening placed on the inside of curves is:

- 6 feet for curves of 50 to 79 feet radius.
- 4 feet for curves of 80 to 100 feet radius.

**4-9 EMBANKMENT WIDENING**

The minimum embankment widening is:

- 2 feet for embankment heights at centerline of 3 to 6 feet.
- 4 feet for embankment heights at centerline of greater than 6 feet.

Purchaser shall apply embankment widening equally to both sides of the road to achieve the required width.

**4-10 WIDEN THE EXISTING SUBGRADE**

On the following roads, Purchaser shall widen the subgrade and fill slopes to the dimensions shown on the TYPICAL SECTION SHEET. If necessary, Purchaser shall reconstruct excavation slopes to provide sufficient width for the road surface and any ditches and turnouts.

<u>Road</u>	<u>Stations</u>
CG-2031A	0+00 to 9+51 & 17+63 to 28+24
CG-2031A1	0+00 to 10+98
CG-2031C	5+10 to 30+46
CG-2031D	0+00 to 17+94

**4-12 FULL BENCH CONSTRUCTION**

On the following roads, and where side slopes exceed 45%, Purchaser shall use full bench construction for the entire subgrade width. Purchaser shall end haul waste material to the location specified in Clause 4-37 WASTE AREA LOCATION.

<u>Road</u>	<u>Full Bench Location</u>	<u>Comments</u>
CG-2031A	12+18 to 17+63 & 20+12 to 25+92	End haul all material. Material that is devoid of organic debris may be used as fill embankment.
CG-2031A1	8+89 to 13+46	

**4-21 TURNOUTS**

Purchaser shall construct non designated turnouts intervisible with a maximum distance of 1000 feet between turnouts. Locations may be adjusted to fit the final subgrade alignment and sight distances. Locations changes are subject to written approval by the Contract Administrator. Minimum dimensions are shown on the ROCK LIST.

**4-22 TURNAROUNDS**

Turnarounds must be no larger than 30 feet long and 30 feet wide. Locations are subject to written approval by the Contract Administrator.

**4-25 DITCH CONSTRUCTION AND RECONSTRUCTION**

Purchaser shall construct and reconstruct ditches into the subgrade as specified on the TYPICAL SECTION SHEET. Ditches must be constructed concurrently with construction of the subgrade.

**4-28 DITCH DRAINAGE**

Ditches must drain to cross-drain culverts or ditchouts.

**4-29 DITCHOUTS**

Purchaser shall construct ditchouts as identified on the CULVERT LIST and as directed by the Contract Administrator. Ditchouts must be constructed in a manner that diverts ditch water onto the forest floor and must have excavation backslopes no steeper than a 1:1 ratio.

**4-35 WASTE MATERIAL DEFINITION**

Waste material is defined as all dirt, rock, mud, or related material that is extraneous or unsuitable for construction material. Waste material, as used in Section 4 EXCAVATION, is not organic debris.

**4-36 DISPOSAL OF WASTE MATERIAL**

Purchaser may sidecast waste material on side slopes up to 45% if the waste material is compacted and free of organic debris. On side slopes greater than 45%, all waste material must be end hauled or pushed to the designated embankment sites and waste areas identified in Clause 4-37 WASTE AREA LOCATION.

**4-37 WASTE AREA LOCATION**

Purchaser shall deposit waste material in the listed designated areas. Additional waste areas may also be identified or approved by the Contract Administrator. The amount of material allowed in a waste area is at the discretion of the Contract Administrator.

<u>Road</u>	<u>Waste Area Location</u>	<u>Comments</u>
CG-2031A & CG-2031A1	CG-2031A Station 28+24	Pile Organic material separately from all other waste
CG-2037 Pit #2	On the Right side of the CG-2037 at station 19+71	

**4-38 PROHIBITED WASTE DISPOSAL AREAS**

Purchaser shall not deposit waste material in the following areas, except as otherwise specified in this plan:

- Within 50 feet of a cross drain culvert.
- Within 100 feet of a live stream or wetland.
- Within a riparian management zone.
- Within a wetland management zone.
- On side slopes steeper than 45%.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Within the operational area for cable landings.
- Against standing timber.

**4-48 NATIVE MATERIAL**

Native material consists of naturally occurring material that is free of organic debris, trash, and rocks greater than 4 inches in any dimension.

**4-55 ROAD SHAPING**

Purchaser shall shape the subgrade and surface as shown on the TYPICAL SECTION SHEET. The subgrade and surface shape must ensure runoff in an even, un-concentrated manner, and must be uniform, firm, and rut-free.

**4-56 DRY WEATHER SHAPING**

The Contract Administrator may require the application of water to facilitate shaping activities. The method of water application is subject to written approval by the Contract Administrator.

**4-60 FILL COMPACTION**

Purchaser shall compact all embankment and waste material in accordance with the COMPACTION LIST by routing equipment over the entire width of each lift. A plate compactor must be used for areas specifically requiring keyed embankment construction and for embankment, waste area, and segments too narrow to accommodate equipment.

**4-61 SUBGRADE COMPACTION**

Purchaser shall compact constructed and reconstructed subgrades in accordance with the COMPACTION LIST by routing equipment over the entire width except ditch. Purchaser shall obtain written approval from the Contract Administrator for subgrade compaction before rock application and timber haul.

**4-62 DRY WEATHER COMPACTION**

The Contract Administrator may require the application of water to facilitate compaction activities. The method of water application is subject to written approval by the Contract Administrator.

**4-63 EXISTING SURFACE COMPACTION**

Purchaser shall compact maintained road surfaces in accordance with the COMPACTION LIST by routing equipment over the entire width.

SECTION 5 – DRAINAGE

**5-5 CULVERTS**

Purchaser shall install culverts as part of this contract. Culverts must be installed concurrently with subgrade work and must be installed before subgrade compaction and rock application. Culvert locations and the minimum requirements for culvert length and diameter are designated on the CULVERT LIST. Culvert, downspout, and flume lengths may be adjusted to fit as-built conditions and may not terminate directly on unprotected soil. Culverts must be new material and meet the specifications in Clauses 10-15 through 10-24. Culverts 36 inches and greater in diameter shall be made of corrugated steel.

**5-6 CULVERT TYPE**

Purchaser shall install culverts made of steel or plastic in accordance with Clauses 10-15 through 10-24.

**5-10 CULVERT MARKER INSTALLATION**

At road locations listed on the CULVERT LIST marked Y, Purchaser shall provide and install culvert markers at the inlet in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL.

**5-12 UNUSED MATERIALS STATE PROPERTY**

On required roads, any materials listed on the CULVERT LIST that are not installed will become the property of the state. Purchaser shall stockpile materials as directed by the Contract Administrator.

**5-15 CULVERT INSTALLATION**

Culvert installation must be in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL, LIVE STREAM INSTALLATION PROCEDURE DETAIL and the National Corrugated Metal Pipe Association's "Installation Manual for Corrugated Steel Drainage Structures" the Corrugated Polyethylene Pipe Association's "Recommended Installation Practices for Corrugated Polyethylene Pipe and Fittings". Corrugated Polyethylene pipe must be installed in a manner consistent with the manufacturer's recommendations.

**5-16 APPROVAL FOR LARGER CULVERT INSTALLATION**

Purchaser shall obtain written approval from the Contract Administrator for the installation of culverts 36 inches in diameter and over before backfilling.

**5-17 CROSS DRAIN SKEW AND SLOPE**

Cross drains, on road grades in excess of 3%, must be skewed at least 30 degrees from perpendicular to the road centerline, except where the cross drain is at the low point in the road culverts will not be skewed. Cross drain culverts must be installed at a slope steeper than the incoming ditch grade, but not less than 3% or more than 10%.

**5-18 CULVERT DEPTH OF COVER**

All culverts must be installed with a compacted depth of cover over the top of the culvert, as recommended by the culvert manufacturer for the type and size of the pipe.

**5-20 ENERGY DISSIPATERS**

Purchaser shall install energy dissipaters in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all culverts on the CULVERT LIST that specify the placement of rock. Energy dissipater installation is subject to approval by the Contract Administrator. The type of energy dissipater and the amount of material must be consistent with the specifications listed on the CULVERT LIST. Placement must with a zero-drop-height only. No placement by end dumping or dropping of rock is allowed.

**5-25 CATCH BASINS**

Purchaser shall construct catch basins in accordance with CULVERT AND DRAINAGE SPECIFICATION DETAIL. Minimum dimensions of catch basins are 3 feet wide and 4 feet long with back slopes consistent with Clause 4-5 CUT SLOPE RATIO.

**5-26 HEADWALLS FOR CROSS DRAIN CULVERTS**

Purchaser shall construct headwalls in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all cross drain culverts. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets. Minimum specifications require that rock be placed at a width of one culvert diameter on each side of the culvert opening, and to a height of one culvert diameter above the top of the culvert. Rock may not restrict the flow of water into culvert inlets or catch basins. Rock must be set in place by machine. Placement must be with a zero-drop-height only. No placement by end dumping or dropping of rock is allowed. Rock type must meet the specifications in Clause 6-50 LIGHT LOOSE RIP RAP.

**5-27 ARMORING FOR STREAM CROSSING CULVERTS**

At the following culverts, Purchaser shall place rock in conjunction with construction of the embankment. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets as designated on the CULVERT LIST and as directed by the Contract Administrator. Rock may not restrict the flow of water into culvert inlets or catch basins. Rock must be set in place by machine. Placement must be with a zero-drop-height only. No placement by end dumping or dropping of rock is allowed. Rock type must meet the specifications in Clauses 6-50 LIGHT LOOSE RIP RAP and 6-51 HEAVY LOOSE RIP RAP.

<u>Road</u>	<u>Stations</u>	<u>Rock Type</u>
CG-2031C	7+64, 11+29, 12+87, & 26+14	HEAVY LOOSE RIP RAP
CG-2031C1	11+69, & 17+85	HEAVY LOOSE RIP RAP

**5-33 NATIVE SURFACE ROADS**

If overwintered, native surface roads must be waterbarred by October 1. Purchaser shall construct waterbars according to the attached NON-DRIVABLE WATERBAR DETAIL at a maximum spacing that will produce a vertical distance of no more than 10 feet between waterbars or between natural drainage paths, and with a maximum spacing of 200 feet.

**SECTION 6 – ROCK AND SURFACING**

**6-2 ROCK SOURCE ON STATE LAND**

Rock used in accordance with the quantities on the ROCK LIST may be obtained from the following source on state land at no charge to the Purchaser. Purchaser shall obtain written approval from the Contract Administrator for the use of material from any other source. If other operators are using, or desire to use the rock source, a joint operating plan must be developed. All parties shall follow this plan. Purchaser shall notify the Contract Administrator a minimum of 5 business days before starting any operations in the listed locations.

<u>Source</u>	<u>Location</u>
CG-2037 Pit #2	N½ Sec. 10, T03N, R07E, W.M.

**6-3 ROCK SOURCE STATE LAND, EXISTING STOCKPILE**

Rock used in accordance with the quantities on the ROCK LIST and CULVERT LIST may be obtained from the following existing stockpiles on state land at no charge to the Purchaser. Other stockpiles may not be used without prior written approval from the Contract Administrator.

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
CG-2031D Stockpile	Station 1+32 on the CG-2031D	2 ½ - Inch Minus Crushed Rock
CG-2037 Stockpile	Station 19+71 on the CG-2037	3" JAW RUN ROCK

**6-5 ROCK FROM COMMERCIAL SOURCE**

Rock used in accordance with the quantities on the ROCK LIST may be obtained from any commercial source at the Purchaser's expense. Rock sources are subject to written approval by the Contract Administrator before their use.

**6-10 ROCK SOURCE DEVELOPMENT PLAN BY STATE**

Purchaser shall conduct rock source development and use at the following sources, in accordance with the written ROCK SOURCE DEVELOPMENT PLAN prepared by the state and included in this road plan. Upon completion of operations, the rock source must be left in the condition specified in the ROCK SOURCE DEVELOPMENT PLAN, and approved in writing by the Contract Administrator. Purchaser shall notify the Contract Administrator a minimum of 5 business days before starting any operations in the rock source.

<u>Source</u>	<u>Location</u>
CG-2037 Pit #2	N½ Sec. 10, T03N, R07E, W.M.

**6-22 FRACTURE REQUIREMENT FOR ROCK**

A minimum of 50% by visual inspection of coarse aggregate must have at least one fractured face. Coarse aggregate is the material greater than 1/4-inch in size.

**6-23 ROCK GRADATION TYPES**

Purchaser shall provide or manufacture rock in accordance with the types and amounts listed in the ROCK LIST. Rock must meet the following specifications for gradation and uniform quality during manufacture and placement into a stockpile. The exact point of evaluation for conformance to specifications will be determined by the Contract Administrator. Purchaser shall provide a sieve analysis upon request from the Contract Administrator. Gradation specifications in Clause 6-28, 6-34, 6-50, 6-51 and the Rock Crushing Compliance Procedure.

**6-28 1 ¼-INCH MINUS CRUSHED ROCK**

% Passing 1 ¼" square sieve	100%
% Passing 5/8" square sieve	55 - 75%
% Passing U.S. #4 sieve	20 - 50%

Of the fraction passing the No. 4 sieve, 40% to 60% must pass the No. 10 sieve.

The portion of aggregate retained on the No. 4 sieve may not contain more than 0.2 percent organic debris and trash. All percentages are by weight.

**6-34 3-INCH JAW RUN ROCK**

% Passing 3" square sieve	100%
% Passing 1 ½" square sieve	45 - 65%

Ballast rock must be 100% equal to, or smaller than, 3 inches in at least one dimension. Rock may contain no more than 5 percent organic debris and trash. All percentages are by weight.

**6-50 LIGHT LOOSE RIP RAP**

Light loose rip rap must consist of angular, hard, sound, and durable stone. It must be free from segregation, seams, cracks, and other defects tending to destroy its resistance to weather. Light loose rip rap must be free of rock fines, soil, organic debris or other extraneous material, and must meet the following requirements:

<u>Quantity</u>	<u>Approximate Size Range</u>
20% to 90%	18" - 28"
15% to 80%	8" - 18"
10% to 20%	3" - 8"

**6-51 HEAVY LOOSE RIP RAP**

Heavy loose rip rap must consist of angular, hard, sound, and durable stone. It must be free from segregation, seams, cracks, and other defects tending to destroy its resistance to weather. Heavy loose rip rap must be free of rock fines, soil, organic debris or other extraneous material, and must meet the following requirements:

<u>Quantity</u>	<u>Size Range</u>
30% to 90%	28" - 36"
30% to 70%	18" - 28"
20% to 50%	8" - 18"
10% to 20%	3" - 8"

**6-55 ROCK APPLICATION MEASURED BY COMPACTED DEPTH**

Measurement of specified rock depths, are defined as the compacted depths using the compaction methods required in this road plan. Estimated quantities specified in the ROCK LIST are loose yards. Purchaser shall apply adequate amounts of rock to meet the specified rock depths. Specified rock depths are minimum requirements and are not subject to reduction. Unless otherwise stated in Clause 6-75 OPTIONAL ROCK EXCEPTION.

**6-56 ROCK MEASUREMENT BY TRUCK VOLUME**

Measurement of Spot Rocking, Landing, Junction, and Rip Rap Rock is on a cubic yard truck measure basis. The Contract Administrator will measure each truck box before rock hauling. An average of such volumes for each truck will be used to tally the volume hauled. The Contract Administrator may periodically require that a load be flattened off and its volume calculated. Purchaser shall maintain load tally sheets for each truck as shown in ROCK ACCOUNTABILITY DETAIL and shall give them to the Contract Administrator or mail them to the Pacific Cascade Region Office on a weekly basis during rocking operations.

**6-65 ROCK STOCKPILE LOCATION**

Purchaser shall stockpile rock as listed below. Rock stockpiles must be in accordance Clause 6-67 ROCK STOCKPILE SPECIFICATIONS. Rock stockpiles must be in accordance with Clause 11-1 STOCKPILE SPECIFICATIONS AND DIMENSIONS.

<u>Rock Source</u>	<u>Rock Type</u>	<u>Quantity (c.y.)</u>	<u>Stockpile Location</u>
CG-2037 Pit #2	1 ¼ Inch Minus	2,004	On the Right side of the CG-2037 at station 19+71

**6-67 ROCK STOCKPILE SPECIFICATIONS**

Rock stockpiles listed in Clause 6-65 ROCK STOCKPILE LOCATION must meet the following specifications:

Before placing aggregates upon the stockpile site, the site must be cleared of vegetation, trees, stumps, brush, rocks, or other debris and the ground leveled to a smooth, firm, uniform surface.

When completed, the stockpile must be neat and regular in shape. The stockpile height is limited to a maximum of 15 feet. Stockpiles in excess of 200 cubic yards must be built up in layers of not more than 5 feet deep. Stockpile layers must be constructed by trucks, clamshells, or other methods approved in writing by the Contract Administrator. Each layer must be completed over the entire area of the pile before depositing aggregates in the next layer. The aggregates may not be dumped so that they run down and over the lower layers in the stockpile. The method of dropping from a bucket or spout in one location to form a cone shaped pile is not allowed.

Stockpiles of different types or sizes of aggregate must be spaced far enough apart, or separated by suitable walls or partitions, to prevent the mixing of the aggregates.

**6-70 APPROVAL BEFORE ROCK APPLICATION**

Purchaser shall obtain written approval from the Contract Administrator for completed subgrade and drainage installation, including inlet and outlet armor and subgrade compaction, before rock application.



**6-71 ROCK APPLICATION**

Purchaser shall apply rock in accordance with the specifications and quantities shown on the ROCK LIST. Rock must be spread, shaped, and compacted full width concurrent with rock hauling operations. Road surfaces must be compacted in accordance with the COMPACTION LIST by routing equipment over the entire width.

**6-73 ROCK FOR WIDENED PORTIONS**

Purchaser shall apply rock to turnarounds, turnouts, and areas with curve widening to the same depth and specifications as the traveled way.

**6-75 OPTIONAL ROCK EXCEPTION**

On the following roads, if hauling takes place from June 1 to September 30 the Purchaser may place less rock than shown on the ROCK LIST when approved in writing by the Contract Administrator.

If less rock is applied, Purchaser shall submit a written plan, for approval, describing how these roads will be constructed, used, maintained, and treated post-haul. Purchaser shall meet post-haul specifications in Section 9 POST-HAUL ROAD WORK, the FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS, or other conditions of the approved plan.

<u>Road</u>	<u>Stations</u>
CG-2031D	0+00 to 17+94

**6-76 DRY WEATHER ROCK COMPACTION**

The Contract Administrator may require the application of water to facilitate compaction of the rock surfacing. The method of water application is subject to approval by the Contract Administrator.

**SECTION 8 – EROSION CONTROL**

**8-2 PROTECTION FOR EXPOSED SOIL**

Purchaser shall provide and evenly spread a 4-inch layer of straw to all exposed soils within 100 feet of a stream or wetland. Soils must be covered before the first anticipated storm event. Soils may not sit exposed during any rain event.

**8-15 REVEGETATION**

Purchaser shall spread grass seed on all exposed soils within the grubbing limits resulting from road work activities using. Other methods of covering must be approved in writing by the Contract Administrator.

<u>Road</u>	<u>Location</u>	<u>Qty (lbs)*</u>	<u>Abandonment/ Decommissioning</u>
CG-2030	Ditchline work 0+00 to 202+96	44.6	
CG-2031	Ditchline work 0+00 to 50+76, Clearing 50+76 to 62+81, & Landings	19.2	
CG-2031C	Ditchline work 0+00 to 5+10, & Landing	2.9	
CG-2037	Ditchline work 0+00 to 19+71, & Waste Area	8.0	
CG-2031A	0+00 to 28+24, & Waste Area	57.8	52.0
CG-2031A1	0+00 to 13+46	23.2	24.8
CG-2031C	5+10 to 30+46	38.4	79.2
CG-2031C1	0+00 to 26+67	44.0	110.4
CG-2031D	0+00 to 17+94	30.2	
CG-2037 Pit #2	Pit perimeter, Access Road and Bench	6.3	

\*Quantities are estimates only. Actual quantities may vary and are the responsibility of the Purchaser.

**8-16 REVEGETATION SUPPLY**

The Purchaser shall provide the grass seed.

**8-17 REVEGETATION TIMING**

Purchaser shall revegetate during the first available opportunity after road work is completed. Soils may not be allowed to sit exposed for longer than one month without receiving revegetation treatment unless otherwise approved in writing by the Contract Administrator.

**8-19 ASSURANCE FOR SEEDED AREA**

Purchaser shall ensure the growth of a uniform and dense crop at least 75% coverage of 3-inch tall grass. Purchaser shall reapply the grass seed in areas that have failed to germinate or have been damaged through any cause, restore eroded or disturbed areas, clean up and properly dispose of eroded materials, and reapply the grass seed at no additional cost to the state.

**8-25 GRASS SEED**

Purchaser shall evenly spread the seed mixture listed below on all exposed soil inside the grubbing limits at a rate of 40 pounds per acre of exposed soil. Grass seed must meet the following specifications:

1. Weed seed may not exceed 0.5% by weight.
2. All seed species must have a minimum 90% germination rate, unless otherwise specified.
3. Seed must be certified.
4. Seed must be furnished in standard containers showing the following information:
  - a. Common name of seed
  - b. Net weight
  - c. Percent of purity
  - d. Percentage of germination
  - e. Percentage of weed seed and inert material
5. Seed must conform to the following mixture unless a comparable mix is approved in writing by the Contract Administrator.

<u>Kind and Variety of Seed in Mixture</u>	<u>% by Weight</u>	<u>Minimum % germination</u>
Perennial Rye	25-35	90
Red Fescue	40-50	90
Highland Bent	5-15	85
Red and White Clover	10-20	90
Inert and Other Crop	0.5	

**SECTION 9 – POST-HAUL ROAD WORK**

**9-1 EARTHEN BARRICADES**

Purchaser shall construct barricades in accordance with the EARTHEN BARRICADE DETAIL.

<u>Road</u>	<u>Stations</u>
CG-2031A	0+15
CG-2031C	5+10

**9-2 CULVERT REMOVAL FROM LIVE STREAM**

On the following road, Purchaser shall remove existing culverts from live streams and leave the resulting channel open with excavation slope and excavated channel width as specified. Excavated material shall be placed and compacted in a location that will not erode into a stream. Culvert removal from live streams must be in accordance with the LIVE STREAM CULVERT REMOVAL PROCEDURE DETAIL, FILL REMOVAL DETAIL, TYPICAL ABANDONMENT/DEACTIVATED STEAM CROSSING DETAIL, and SETTLING POND AND PUMP DETAIL.

<u>Road</u>	<u>Stations</u>	<u>Excavated Channel Width</u>	<u>Slope Ratio</u>	<u>Comments</u>
CG-2031C	7+64	2.0 feet	1 ½:1	Remove fill to native channel depth
CG-2031C	11+29	2.0 feet	1 ½:1	Remove fill to native channel depth
CG-2031C	12+87	2.0 feet	1 ½:1	Remove fill to native channel depth
CG-2031C	26+14	2.0 feet	1 ½:1	Remove fill to native channel depth
CG-2031C1	11+69	3.0 feet	1 ½:1	Remove fill to native channel depth
CG-2031C1	17+85	2.0 feet	1 ½:1	Remove fill to native channel depth

**9-3 CULVERT MATERIAL REMOVED FROM STATE LAND**

Culverts removed from roads become the property of the Purchaser and must be removed from state land.

**9-5 POST-HAUL MAINTENANCE**

Purchaser shall perform post-haul maintenance in accordance with the FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS.

**9-10 LANDING DRAINAGE**

Purchaser shall provide for drainage of the landing surface.

**9-11 LANDING EMBANKMENT**

Purchaser shall slope landing embankments to the original construction specifications.

**9-12 LANDING EMBANKMENT REMOVAL**

Purchaser shall reduce or relocate the landing embankment. Place excavated material in a waste area designated by the Contract Administrator.

**9-20 ROAD DECOMMISSIONING**

The following roads shall be decommissioned by the Purchaser at the termination of use.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
CG-2031A	0+00 to 28+24	LIGHT
CG-2031A1	0+00 to 13+46	LIGHT

## 9-21 ROAD ABANDONMENT

Purchaser shall abandon the following roads before the termination of this contract by the specified date. Work must be in accordance with the ROAD ABANDONMENT CROSS SECTIONS DETAIL.

<u>Road</u>	<u>Stations</u>	<u>Type</u>	<u>Date</u>
CG-2031C	5+10 to 30+46	LIGHT	Before the termination of this contract
CG-2031C1	0+00 to 26+67	LIGHT	Before the termination of this contract

## 9-22 LIGHT DECOMMISSIONING AND ABANDONMENT

### LIGHT DECOMMISSIONING:

- Remove road shoulder berms except as directed.
- Outslope surface at a minimum of 6 percent and fill in ditchline.
- Construct non-drivable waterbars according to the attached NON-DRIVABLE WATERBAR DETAIL at a maximum spacing which will produce a vertical drop of no more than 10 feet between waterbars or between natural drainage paths and with a maximum spacing of 200 feet, or as marked in the field.
- Place a waterbar within 20 feet of a culvert inlet to channel water away from inlet.
- Skew waterbars at least 30 degrees from perpendicular to the road centerline on roads in excess of 3 percent grade.
- Key waterbars into the cut-slope. Waterbars shall be outsloped to provide positive drainage. Outlets shall be on stable locations.
- Leave all cross drain culverts in place. Prevent water from flowing into culvert inlet by filling in catch basin with local material. Culvert inlet and inlet marker should remain free of damage.
- Block roads with earthen barricades according to the attached EARTHEN BARRICADE DETAIL.
- Apply grass seed concurrently with abandonment to all exposed soil within the old roadway limits and in accordance with Section 8 EROSION CONTROL.

### LIGHT ABANDONMENT:

- Remove road shoulder berms except as directed.
- Rip the surface to a minimum depth of 10 inches
- Construct non-drivable waterbars according to the attached NON-DRIVABLE WATERBAR DETAIL at a maximum spacing which will produce a vertical drop of no more than 10 feet between waterbars or between natural drainage paths and with a maximum spacing of 200 feet, or as marked in the field.
- Place a waterbar within 20 feet of a culvert inlet to channel water away from inlet.
- Skew waterbars at least 30 degrees from perpendicular to the road centerline on roads in excess of 3 percent grade.
- Key waterbars into the cut-slope to intercept the ditch. Waterbars shall be outsloped to provide positive drainage. Outlets shall be on stable locations.
- Remove culverts and leave the resulting trench open. The removed fill material shall be placed and compacted in a location that will not erode into any Type 1 through 5 waters or wetlands. Slope all trench walls and approach embankments no steeper than 1.5:1.
- Remove live stream culverts in accordance with Clause 9-2 CULVERT REMOVAL FROM LIVE STREAMS.
- Scatter woody debris onto abandoned road surfaces.
- Block roads with earthen barricades according to the attached EARTHEN BARRICADE DETAIL.
- Apply grass seed concurrently with abandonment to all exposed soil within the old roadway limits and in accordance with Section 8 EROSION CONTROL.
- Provide and evenly spread a 4-inch layer of straw to all exposed soils within 100 feet of a stream.

## SECTION 10 MATERIALS

### 10-15 CORRUGATED STEEL CULVERT

Metallic coated steel culverts must meet AASHTO M-36 (ASTM A-760) specifications. Culverts must be must be aluminized (aluminum type 2 coated meeting AASHTO M-274).

### 10-17 CORRUGATED PLASTIC CULVERT

Polyethylene culverts must meet AASHTO M-294 specifications, or ASTM F-2648 specifications for recycled polyethylene. Culverts must be Type S – double walled with a corrugated exterior and smooth interior.

### 10-21 METAL BAND

Metal coupling and end bands must meet the AASHTO specification designated for the culvert and must have matching corrugations. Culverts 24 inches and smaller must have bands with a minimum width of 12 inches. Culverts over 24 inches must have bands with a minimum width of 24 inches.

### 10-22 PLASTIC BAND

Plastic coupling and end bands must meet the AASHTO specification designated for the culvert. Only fittings supplied or recommended by the culvert manufacturer may be used. Couplings must be split coupling band. Split coupling bands must have a minimum of four corrugations, two on each side of the pipe joint.

### 10-23 RUBBER CULVERT GASKETS

Rubber gaskets must be continuous closed cell, synthetic expanded rubber gaskets conforming to the requirements of ASTM D 1056. Rubber gaskets must be used with all corrugated metal pipe coupling bands on culvert diameters 42 inches and greater.

### 10-24 GAUGE AND CORRUGATION

Metal culverts must conform to the following specifications for gage and corrugation as a function of diameter.

<u>Diameter</u>	<u>Gauge</u>	<u>Corrugation</u>
18"	16 (0.064")	2 <sup>2</sup> / <sub>3</sub> " X 1/2"
24" to 48"	14 (0.079")	2 <sup>2</sup> / <sub>3</sub> " X 1/2"

## SECTION 11 SPECIAL NOTES

### 11-1 ROCK STOCKPILE SPECIFICATIONS AND DIMENSIONS

Before placing aggregates upon the stockpile site, the site shall be cleared of vegetation, trees, stumps, brush, rocks, or other debris and the ground leveled to a smooth, firm, uniform surface sloped at 2 percent and ditched as required.

Stockpile location shall be approved in writing by the Contract Administrator, prior to any stockpile aggregate placement.

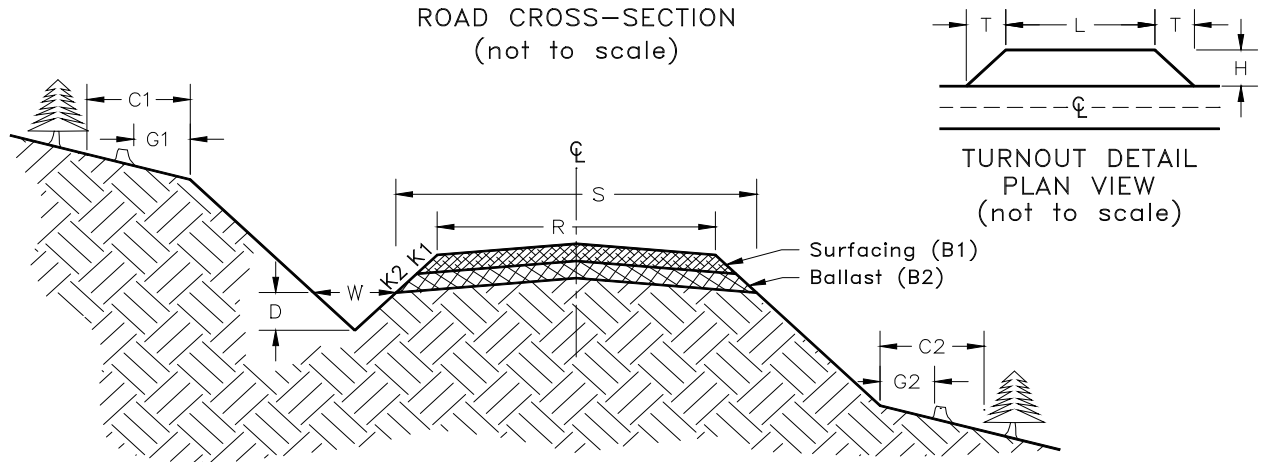
The piles, when completed, shall be neat and uniform in shape. Pushing aggregates into piles with a bulldozer shall not be permitted.

Construct one stockpile at Station 19+71 on the CG-2037 road as shown at the location on the Road Plan Map.

The stockpile of 1½ Inch minus crushed rock shall have a base of 76.0' x 73.0', 1-1/3:1 sloped sides with a height of 15 feet, and a top dimension of 36.2' x 33.2'.

The stockpile shall have all sides and top uniform. Side slopes are based on 37 degrees, which is equivalent to 1.3:1 ratio, or approximately 75 percent.

# TYPICAL SECTION SHEET

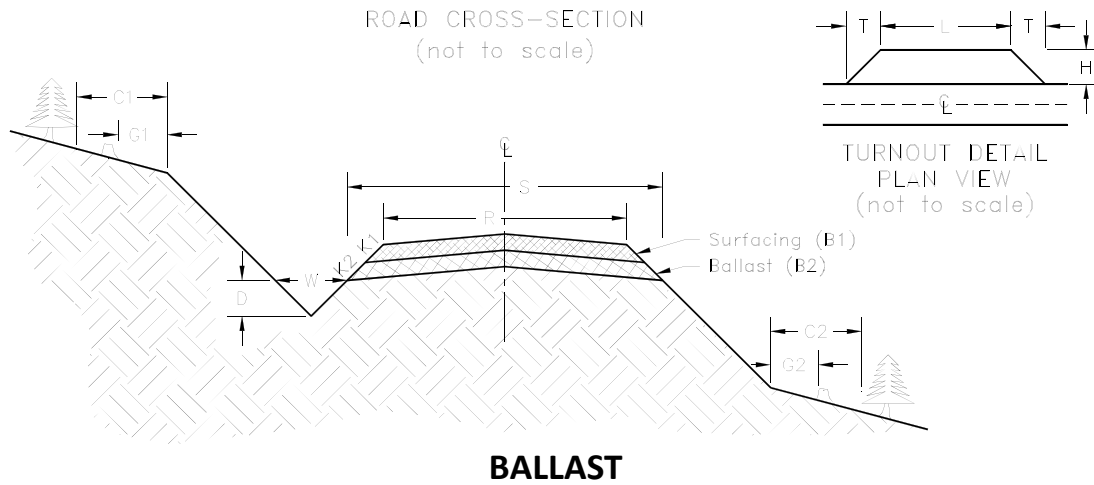


Road Number	From Station	To Station	Tolerance Class	Subgrade Width (feet)	Road Width (feet)	Ditch		Crown at CL (%)	Grubbing Limits (feet)		Clearing Limits (feet)	
						Width (feet)	Depth (feet)		G1	G2	C1	C2
				S	R	W	D		G1	G2	C1	C2
CG-2030	0+00	202+96	A	--	12	3	1	4	NA	NA	NA	NA
CG-2031	0+00	50+76	A	--	12	3	1	4	NA	NA	NA	NA
CG-2031	50+76	62+81	B	--	12	4 % Outslope – no ditch			3 from edge of S		10 from edge of S	
CG-2031C	0+00	5+10	A	--	12	3	1	4	NA	NA	NA	NA
CG-2037	0+00	19+71	A	--	12	3	1	4	NA	NA	NA	NA
* CG-2031A	0+00	28+24	C	16	12	3	1	4	3	3	ROW TAGS	
* CG-2031A1	0+00	13+46	C	16	12	3	1	4	3	3	ROW TAGS	
* CG-2031C	5+10	15+00	C	16	12	3	1	4	3	3	ROW TAGS	
* CG-2031C	15+00	30+46	C	16	12	3	1	4	3	3	5	5
* CG-2031C1	0+00	26+67	C	16	12	3	1	4	3	3	5	5
* CG-2031D	0+00	17+94	C	16	12	3	1	4	3	3	5	5

\* Optional Roads



**ROCK LIST**  
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Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth (inches)	C.Y./ Station	# of Stations	C.Y. Subtotal	Rock Source	Turnout		
									Length (feet)	Width (feet)	Taper (feet)
			K2	B2					L	H	T
<b>3" JAW RUN</b>											
CG-2031A	0+00	28+24	1½:1	9	46	28.24	1,299	CG-2037 Pit#2			
CURVE	--	--	1½:1	9	--	--	66				
WIDENING	--	--	1½:1	9	--	--	66				
TURNOUT	--	--	1½:1	9	28/TO	3 TO's	84		50	10	25
JUNCTION	0+00		--	--	--	--	20				
LANDING	--	--	--	--	41/Landing	6 Landings	246				
CG-2031A1	0+00	13+46	1½:1	9	46	13.46	619				
CURVE	--	--	1½:1	9	--	--	31				
WIDENING	--	--	1½:1	9	--	--	31				
TURNOUT	--	--	1½:1	9	28/TO	1 TO's	28		50	10	25
JUNCTION	0+00		--	--	--	--	12				
CG-12031C	5+10	30+46	1½:1	9	46	25.36	1,167				
CURVE	--	--	1½:1	9	--	--	59				
WIDENING	--	--	1½:1	9	--	--	59				
TURNOUT	--	--	1½:1	9	28/TO	3 TO's	84	50	10	25	
JUNCTION	0+00		--	--	--	--	12				
LANDING	--	--	--	--	41/Landing	4 Landings	164				
CG-2031C1	0+00	26+67	1½:1	9	46	26.67	1,227				
CURVE	--	--	1½:1	9	--	--	62				
WIDENING	--	--	1½:1	9	--	--	62				
TURNOUT	--	--	1½:1	9	28/TO	3 TO's	84	50	10	25	
JUNCTION	0+00		--	--	--	--	12				
LANDING	--	--	--	--	41/Landing	8 Landings	328				

ROCK LIST  
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**BALLAST CONTINUED**

Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth (inches)	C.Y./ Station	# of Stations	C.Y. Subtotal	Rock Source	Turnout		
									Length (feet)	Width (feet)	Taper (feet)
			K2	B2					L	H	T
					<b>3" JAW RUN</b>			<b>CG-2037 Pit #2</b>	50	10	25
* CG-2031D	0+00	17+94	1½:1	9	46	17.94	825				
* CURVE WIDENING	--	--	1½:1	9	--	--	42				
* TURNOUT	--	--	1½:1	9	28/TO	2 TO's	56				
* JUNCTION		0+00	--	--	--	--	12				
* LANDING	--	--	--	--	41/Landing	6 Landings	242				
CG-2031C LANDING	--	--	--	--	41/Landing	1 Landing	41				
					<b>3" JAW RUN</b>			<b>CG-2037 Stockpile</b>			
CG-2031 LANDING	--	--	--	--	41/Landing	8 Landings	328				
CG-20301A1 LANDING	--	--	--	--	41/Landing	4 Landings	164				

\*Optional Rock see Clause 6-75

Required JAW RUN BALLAST TOTAL **6,137** Cubic Yards  
Optional JAW RUN BALLAST TOTAL **1,177** Cubic Yards

ROCK LIST  
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**SURFACE**

Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth (inches)	C.Y./ Station	# of Stations	C.Y. Subtotal	Rock Source	Turnout		
									Length (feet)	Width (feet)	Taper (feet)
			K1	B1					L	H	T
CG-2030	0+00	202+96	SPOT ROCK				500	CG-2037 #2 Pit			
CG-2031	0+00	50+76	SPOT ROCK				150				
CG-2031C	0+00	5+10	SPOT ROCK				50				
CG-2037	0+00	19+71	SPOT ROCK				150				
CG-2037		19+71	STOCKPILE				2,004				
					<b>1 1/4-INCH MINUS</b>						
CG-2031	50+76	62+81	SPOT ROCK				250	CG-2031D Stockpile			
					<b>2 1/2-INCH MINUS</b>						

Required 1 1/4 -INCH MINUS CRUSHED SURFACE TOTAL **2,854** Cubic Yards  
 Required 2 1/2 -INCH MINUS CRUSHED SURFACE TOTAL **250** Cubic Yards

ROCK LIST  
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**RIP-RAP**

Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth	C.Y./ Station	# of Stations	C.Y. Total	Rock Source
			K1	B1				
								<b>CG-2037 #2 Pit, or Rock found during excavation on road Construction and Reconstruction</b>
						<b>LIGHT LOOSE RIPRAP</b>		
Culvert headwall, energy dissipators and armor								
CG-2031A Culverts	--	--	--	--	--	--	9.5	
CG-2031A1 Culverts	--	--	--	--	--	--	10.5	
CG-2031C Culverts	--	--	--	--	--	--	35.0	
CG-2031C1 Culverts	--	--	--	--	--	--	16.0	
CG-2031D Culverts	--	--	--	--	--	--	1.0	
						<b>HEAVY LOOSE RIPRAP</b>		
CG-2031C Culverts	--	--	--	--	--	--	76.0	
CG-2031C1 Culverts	--	--	--	--	--	--	30.0	

LIGHT LOOSE RIPRAP TOTAL 72.0 Cubic Yards  
HEAVY LOOSE RIPRAP TOTAL 106.0 Cubic Yards

## CULVERT LIST

Road Number	Location	Culvert			Armoring (Cubic Yards)			Backfill Material	Bedding Material	Culvert Marker (Y/N)	Remarks
		Dia. (inches)	Length (feet)	Type	Inlet	Outlet	Type				
CG-2031A	0+15	18	50	XX	0.5	0.5	LL	NT	NT	Y	Cross drain – install in existing ditchline
	5+81	18	30	XX	0.5	2.0	LL	NT	NT	Y	Cross drain –no skew
	17+63	18	30	XX	0.5	3.0	LL	NT	NT	Y	Cross drain
	25+92	18	30	XX	0.5	2.0	LL	NT	NT	Y	Cross drain –no skew
CG-2031A1	1+06	18	30	XX	0.5	2.0	LL	NT	NT	Y	Cross drain
	6+82	18	30	XX	0.5	2.0	LL	NT	NT	Y	Cross drain
	10+98	18	30	XX	0.5	5.0	LL	NT	NT	Y	Cross drain
CG-2031C	0+10	18	40	XX	0.5	0.5	LL	NT	NT	Y	Cross drain
	6+75	18	30	XX	0.5	5.0	LL	NT	NT	N	Cross drain
	7+64	24	36	XX	2.0	20.0	HL	NT	NT	N	T5 Creek
	10+94	18	30	XX	0.5	5.0	LL	NT	NT	N	Cross drain – no skew
	11+29	24	36	XX	2.0	20.0	HL	NT	NT	N	T5 Creek
	12+37	18	38	XX	0.5	0.5	LL	NT	NT	N	Cross drain
	12+87	24	36	XX	2.0	20.0	HL	NT	NT	N	T5 Creek
	18+24	18	30	XX	0.5	5.0	LL	NT	NT	N	Cross drain
	21+63	18	30	XX	0.5	5.0	LL	NT	NT	N	Cross drain –no skew
	25+46	18	30	XX	0.5	5.0	LL	NT	NT	N	Cross drain
	26+14	30	40	XX	4.0	6.0	HL	NT	NT	N	T5 Creek
	26+73	18	30	XX	0.5	0.5	LL	NT	NT	N	Cross drain
CG-2031C1	5+98	18	30	XX	0.5	5.0	LL	NT	NT	N	Cross drain
	8+42	--	--	--	--	--	--	--	--	--	Ditchout left
	10+37	18	30	XX	0.5	1.0	LL	NT	NT	N	Cross drain
	11+69	36	40	AM	8.0	10.0	HL	NT	NT	N	T4 Creek
	17+25	18	30	XX	0.5	0.5	LL	NT	NT	N	Cross drain
	17+85	30	40	XX	4.0	8.0	HL	NT	NT	N	T5 Creek
	21+07	18	30	XX	0.5	5.0	LL	NT	NT	N	Cross drain – no skew
	23+35	18	30	XX	0.5	2.0	LL	NT	NT	N	Cross drain – no skew
CG-2031D	5+53	18	30	XX	0.5	0.5	LL	NT	NT	Y	Cross drain
	13+52	--	--	--	--	--	--	--	--	--	Ditchout left

**Key:**

- CR - Crushed Rock – 1 ¼ " minus
- NT - Native (bank run)
- SR - Shot Rock
- LL - Light Loose Riprap
- HL - Heavy Loose Riprap
- GM - Galvanized Metal
- PD - Polyethylene Pipe Dual Wall
- AM - Aluminized Metal
- XX - PD or GM

## COMPACTION LIST

Road	From Station	To Station	Type	Max Depth Per Lift (inches)	Equipment Type	Equipment Weight (lbs)	Minimum Number of Passes	Maximum Operating Speed (mph)
All Waste Areas	All	All	Waste Area	12	Excavation	28,000	3	--
All roads	All	All	Embankment	12	Excavation	28,000	4	--
All roads	All	All	Subgrade	12	Vibratory Smooth Drum	20,000	4	5
All roads	All	All	3 " Jaw Run	12	Vibratory Grid	20,000	4	5
All roads	All	All	1 1/4" Minus	6	Vibratory Smooth Drum	20,000	4	5

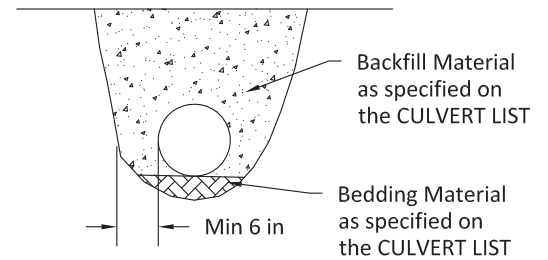
**CULVERT AND DRAINAGE SPECIFICATION DETAIL**  
PAGE 1 OF 2

**INSTALLATION REQUIREMENTS:**

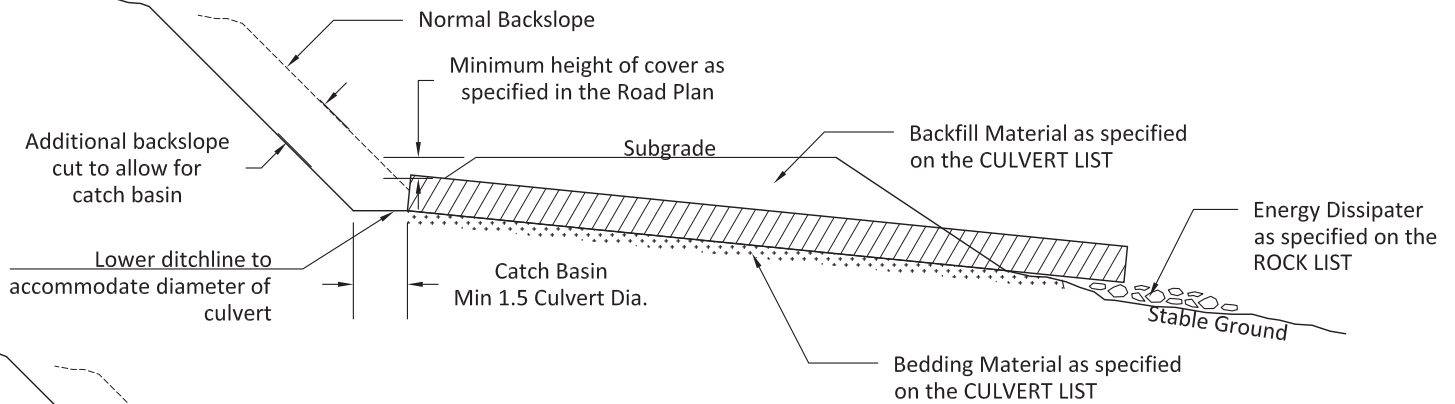
1. Proper preparation of foundation and placement of any required bedding material shall precede the installation of all culverts. This includes necessary leveling of the native trench bottom and compaction of required bedding material to form a uniform, dense, unyielding base. The pipe must be uniformly supported along the barrel.
2. Backfill material shall be compacted under the culvert haunches, around the sides, and above the culvert in accordance with the COMPACTION LIST.

ALL DRAWINGS ARE NOT TO SCALE

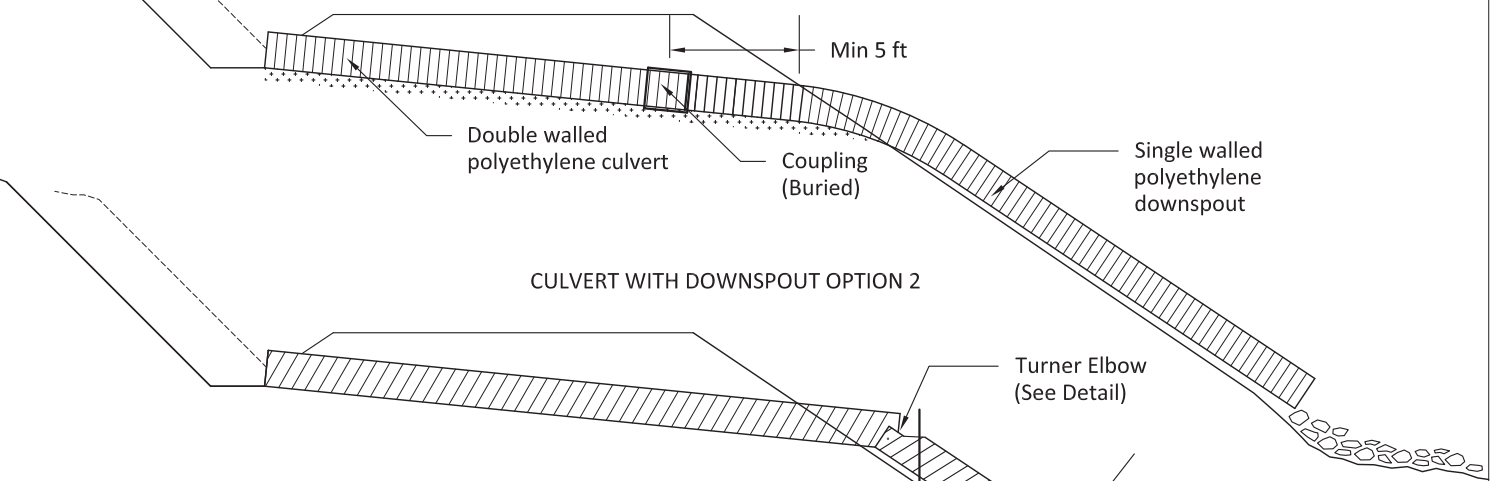
**CROSS SECTION**



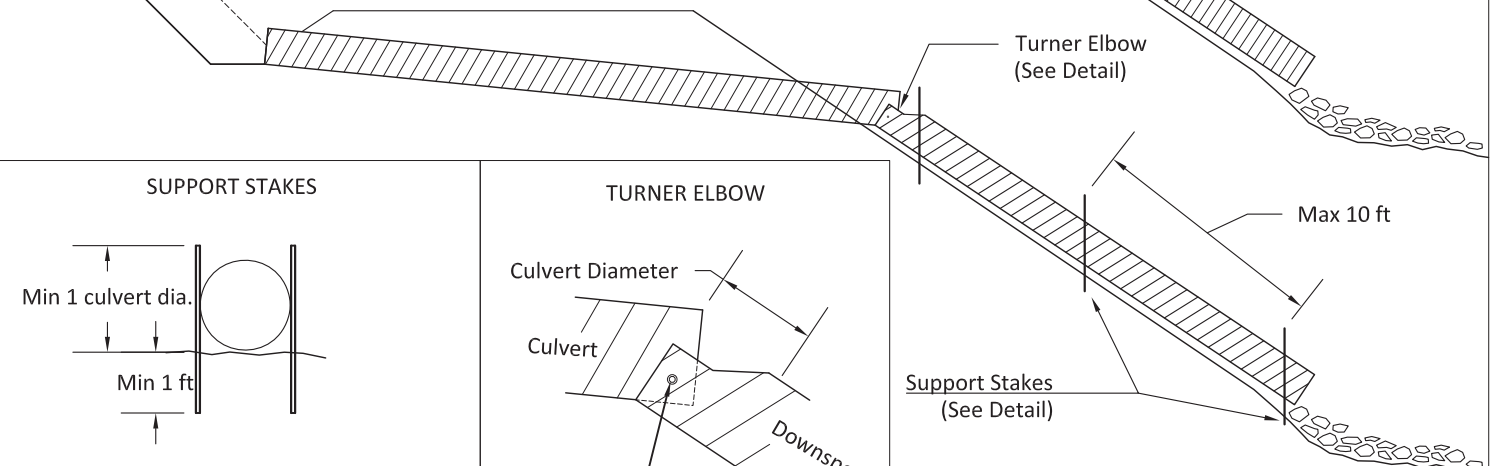
**CULVERT PROFILE (TYPICAL)**



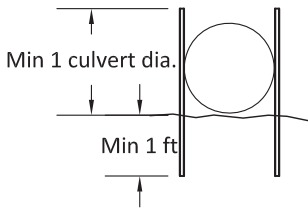
**CULVERT WITH DOWNSPOUT OPTION 1**



**CULVERT WITH DOWNSPOUT OPTION 2**

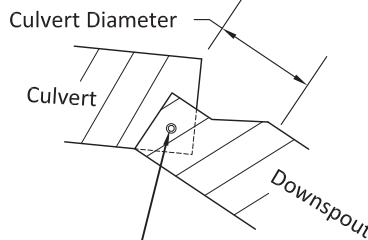


**SUPPORT STAKES**



Stake Material: T-post with rust protection coating.  
Connections: Bolt support stakes to the culvert with  $\frac{5}{8}$ " u-bolts, with washers on both the inside and outside of the culvert.  
Alternative staking methods may be approved, in writing, by the Contract Administrator.

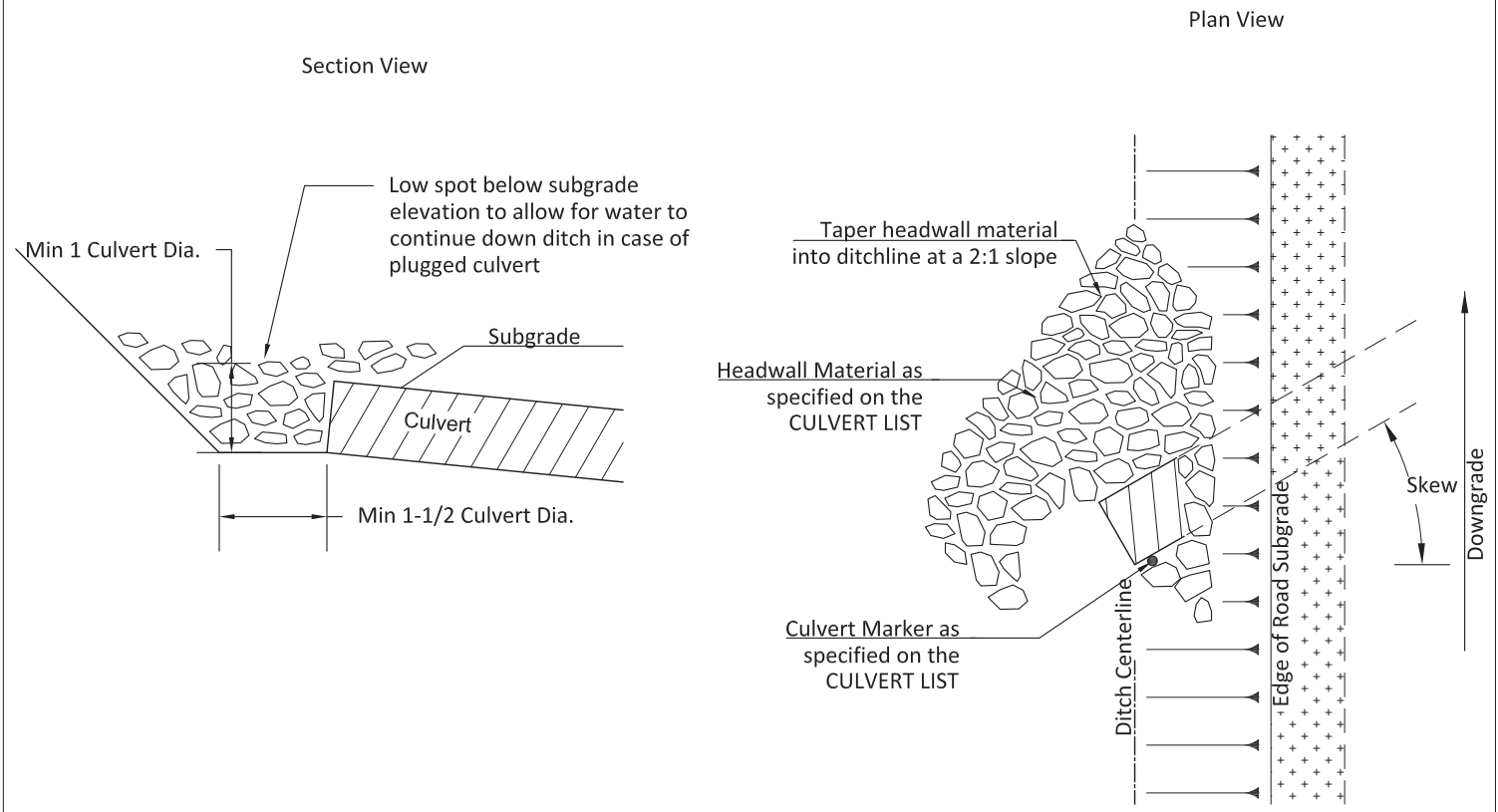
**TURNER ELBOW**



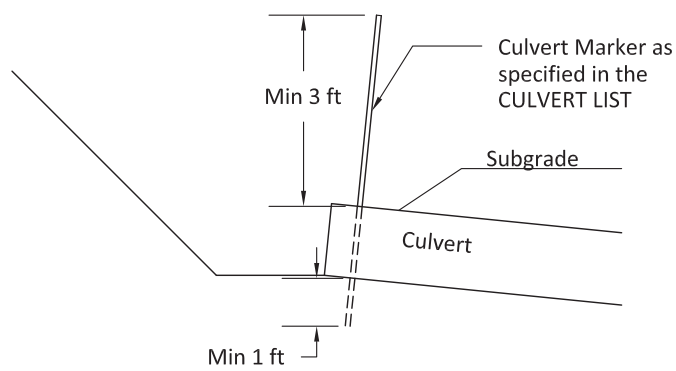
Bolted with  $\frac{5}{8}$ " galvanized bolts and washers (both sides)  
Downspout must be 6 inches larger in diameter than the culvert.

**CULVERT AND DRAINAGE SPECIFICATION DETAIL**  
**PAGE 2 OF 2**

**HEADWALLS**

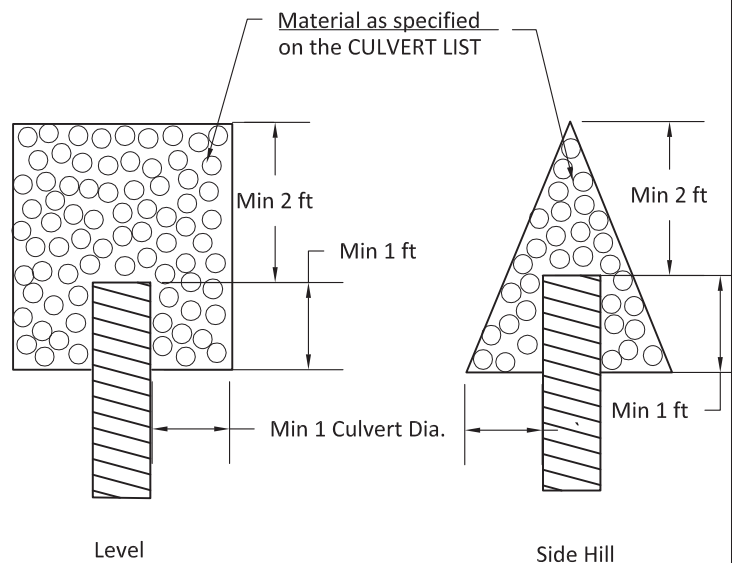


**CULVERT MARKERS**



Culvert Marker Material: 1 Inch I.D., Schedule 40 PVC Pipe, White. Marker must be capped on the top.  
 Culvert Marker Placement: Place on uphill side of culvert, between corrugations if possible.  
 Alternative culvert marker types may be approved, in writing, by the Contract Administrator.

**ENERGY DISSIPATORS**



Min Energy Dissipater Depth: 1 Culvert Dia.



## FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

### Page 1 of 2

#### Cuts and Fills

- Maintain slope lines to a stable gradient compatible with the cut slope/fill slope ratios. Remove slides from ditches and the roadway. Repair fill-failures, in accordance with Clause 4-6 EMBANKMENT SLOPE RATIO, with selected material or material approved by the Contract Administrator. Remove overhanging material from the top of cut slopes.
- Waste material from slides or other sources shall be placed and compacted in stable locations identified in the road plan or approved by the Contract Administrator, so that sediment will not deliver to any streams or wetlands.
- Slide material and debris shall not be mixed into the road surface materials, unless approved by the Contract Administrator.

#### Surface

- Grade and shape the road surface, turnouts, and shoulders to the original shape on the TYPICAL SECTION SHEET to provide a smooth, rut-free traveled surface and maintain surface water runoff in an even, unconcentrated manner.
- Blading shall not undercut the backslope or cut into geotextile fabric on the road.
- If required by the Contract Administrator, water shall be applied as necessary to control dust and retain fine surface rock.
- Surface material shall not be bladed off the roadway. Replace surface material when lost or worn away, or as directed by the Contract Administrator.
- Remove shoulder berms, created by grading, to facilitate drainage, except as marked or directed by the Contract Administrator.
- For roads with geotextile fabric: spread surface aggregate to fill in soft spots and wheel ruts (barrel spread) to prevent damage to the geotextile fabric.

#### Drainage

- Prevent silt bearing road surface and ditch runoff from delivering sediment to any streams or wetlands.
- Maintain rolling dips and drivable waterbars as needed to keep them functioning as intended.
- Maintain headwalls to the road shoulder level with material that will resist erosion.
- Maintain energy dissipaters at culvert outlets with non-erodible material or rock.
- Keep ditches, culverts, and other drainage structures clear of obstructions and functioning as intended.
- Inspect and clean culverts at least monthly, with additional inspections during storms and periods of high runoff. This shall be done even during periods of inactivity.

# FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

Page 2 of 2

## Preventative Maintenance

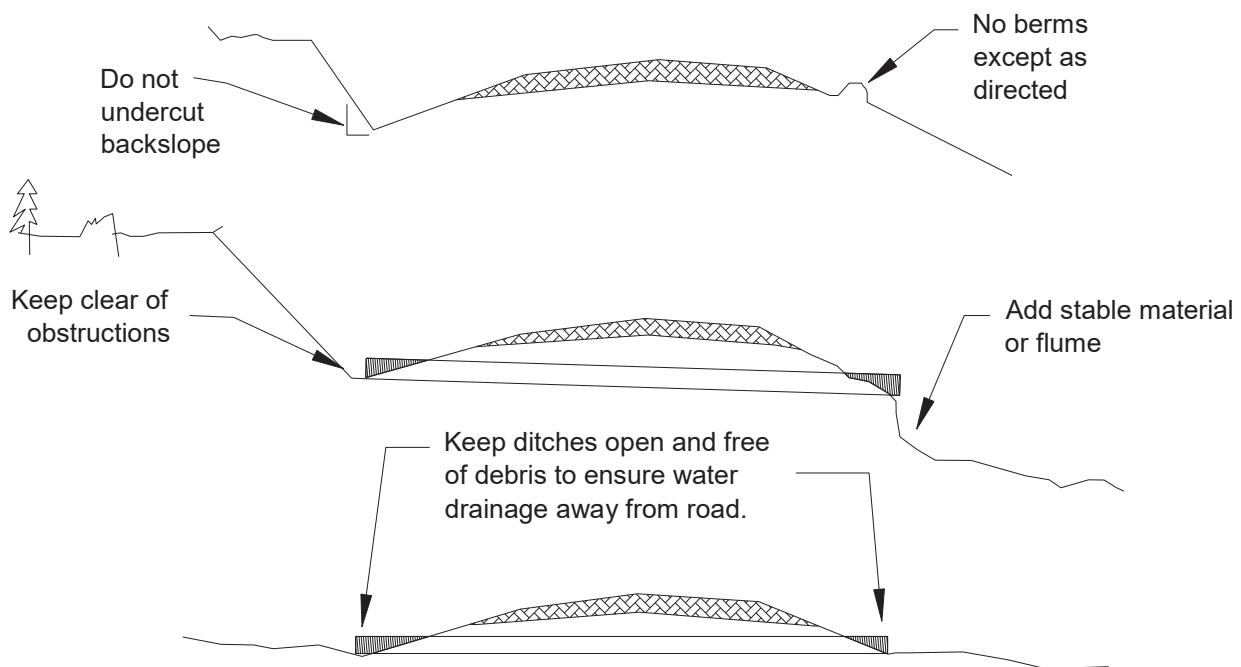
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

## Termination of Use or End of Season

- At the conclusion of logging operations, ensure all conditions of these specifications have been met.

## Debris

- Remove fallen timber, limbs, and stumps from the slopes, roadway, ditchlines, and culvert inlets.



## LIVE STREAM INSTALLATION PROCEDURE

Order of work is as follows, deviations shall be approved, in writing, by the Contract Administrator.

- 1) Purchaser shall notify the State of intent to start project, and a pre-work conference shall be held before move in of equipment. State will designate a representative that will remain on site at all times when work is being performed in creek channel.
- 2) Work period shall be restricted to the permitted times stated in an approved FPA. Work period on Np and Ns streams that are not covered by an FPA shall be permitted only during the dry weather seasonal low flow period between June 1 and October 1; any work outside of this timing restriction may be granted in writing by the Contract Administrator only during unseasonably low flows.
- 3) Assemble the items on the Materials List onsite before proceeding.
- 4) Set up pumps (one as backup).
- 5) Dam up stream with sandbags and line floor of dam with plastic (to prevent sub-surface water flow), place clean rock on plastic to hold in place, and key leading edge of plastic into channel bottom - see SETTLING POND AND PUMP DETAIL. Build a settling pond at culvert outlet. Fill may need to be removed before the settling pond installation due to space limitations. Pump clean water at catch basin around work site and back into stream. Dirty water shall be pumped away from site and onto forest floor a minimum of 200 feet from live streams. Silt fence shall be erected at base of fill slope and bottom edge of fence shall be keyed into slope and held in place with rocks to prevent water from flowing under the silt fence.
- 6) Remove remainder of fill and culvert.
- 7) Remove settling pond.
- 8) Cover exposed soils within 100 feet of all live streams with straw (minimum depth of 4 inches) and grass seed.

### Materials List:

- 3 pumps, (one as a backup) The clean water pump (dam at culvert catch basin) shall have a minimum capacity of 1200 gallons per minute. The dirty water pump (settling pond) and the backup pump shall each have a minimum capacity of 600 gpm. Culvert removal should not start during rain or threat of rain;
- plastic sheet;
- silt fence and stakes;
- bales of straw

## LIVE STREAM REMOVAL PROCEDURE

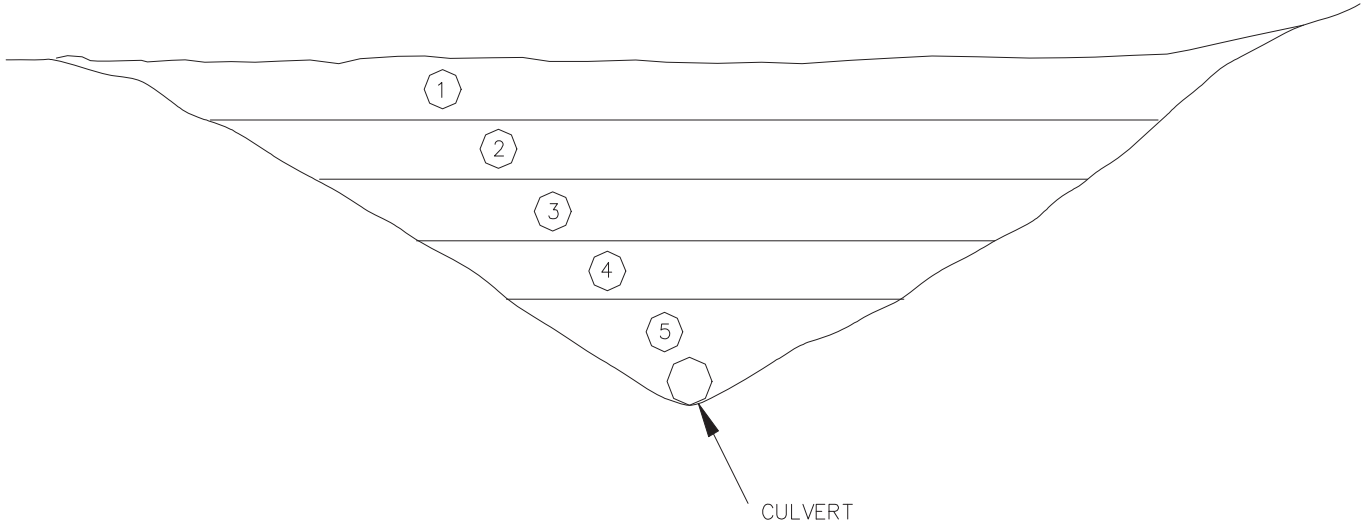
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- 4) Set up pumps (one as backup).
- 5) Dam up stream with sandbags and line floor of dam with plastic (to prevent sub-surface water flow), place clean rock on plastic to hold in place, and key leading edge of plastic into channel bottom - see **SETTLING POND AND PUMP DETAIL**. Build a settling pond at culvert outlet. Fill may need to be removed before the settling pond installation due to space limitations. Pump clean water at catch basin around work site and back into stream. Dirty water shall be pumped away from site and onto forest floor a minimum of 200 feet from live streams. Silt fence shall be erected at base of fill slope and bottom edge of fence shall be keyed into slope and held in place with rocks to prevent water from flowing under the silt fence.
- 6) Remove 95% of fill (see **FILL REMOVAL DETAIL**). Excavated channel slopes shall be consistent with requirements stated in Clauses 9-2, 9-22 and 9-24.
- 7) Remove remainder of fill, logs from fill, and any culverts.
- 8) Remove settling pond.
- 9) Cover exposed soils within 100 feet of all live streams with weed free straw (minimum depth of 4 inches) and grass seed.

### Materials List:

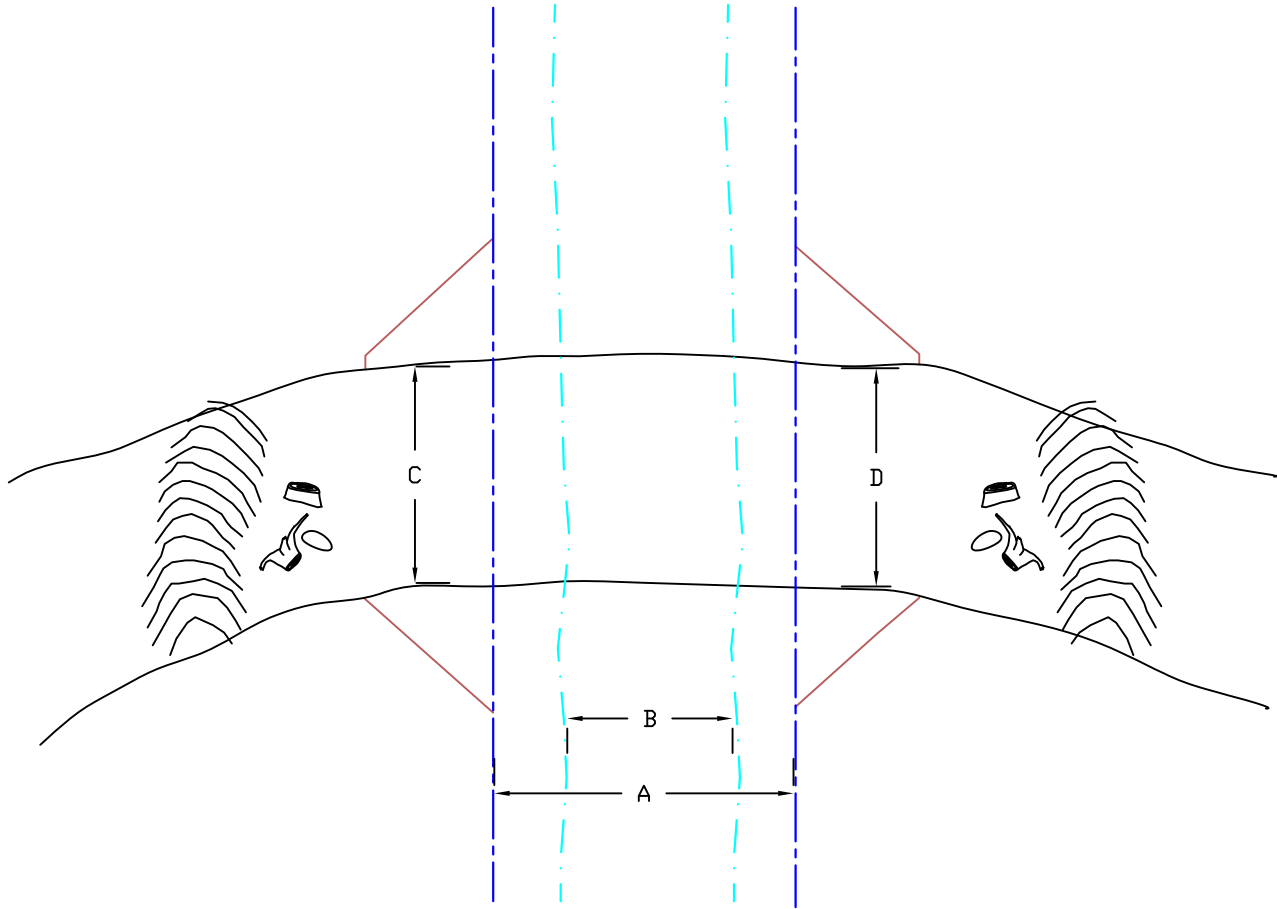
- 3 pumps, (one as a backup) The clean water pump (dam at culvert catch basin) shall have a minimum capacity of 1200 gallons per minute. The dirty water pump (settling pond) and the backup pump shall each have a minimum capacity of 600 gpm. Culvert removal should not start during rain or threat of rain;
- plastic sheet;
- silt fence and stakes;
- bales of weed free straw

# FILL REMOVAL DETAIL



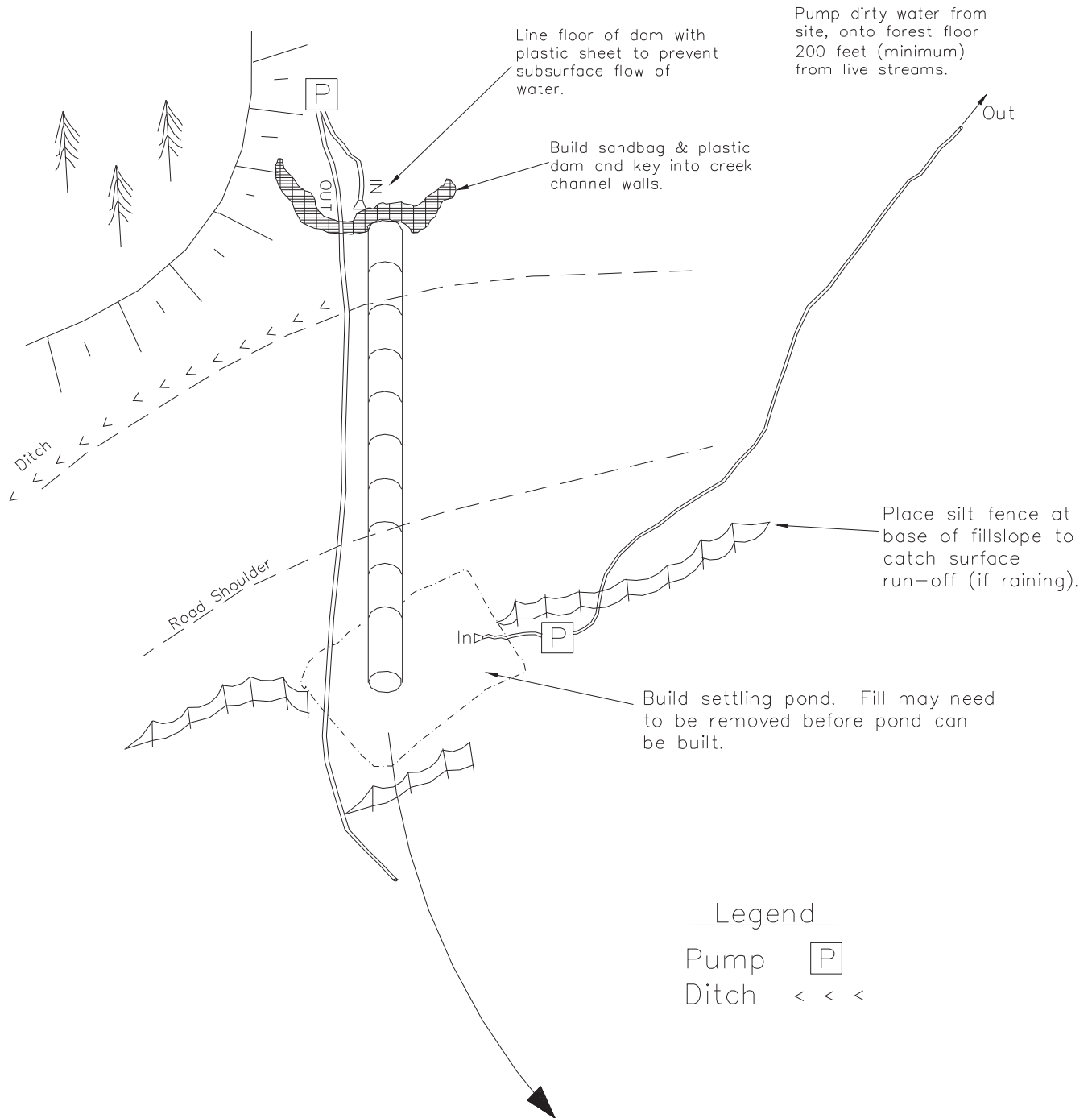
- Remove fill in layers not to exceed 3 feet.

# TYPICAL ABANDONED/DEACTIVATED STREAM CROSSING PLAN VIEW

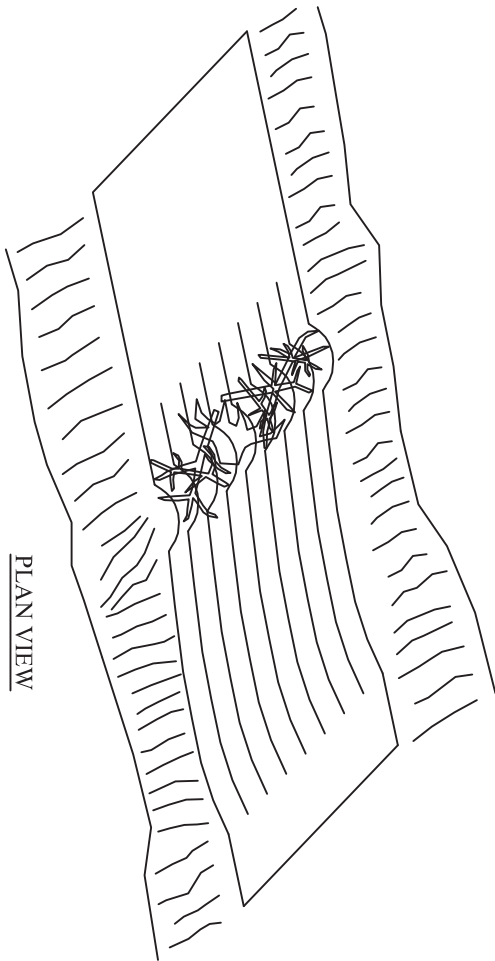


- A = Total Fill Removal Width
- B = Bank Full Width
- C = Road With
- D = Road With

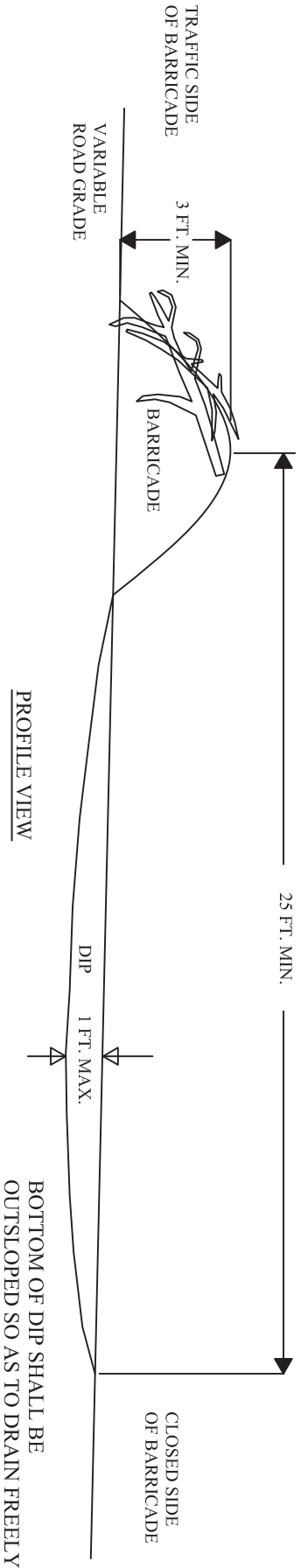
# SETTLING POND AND PUMP DETAIL



# EARTHEN BARRICADE DETAIL



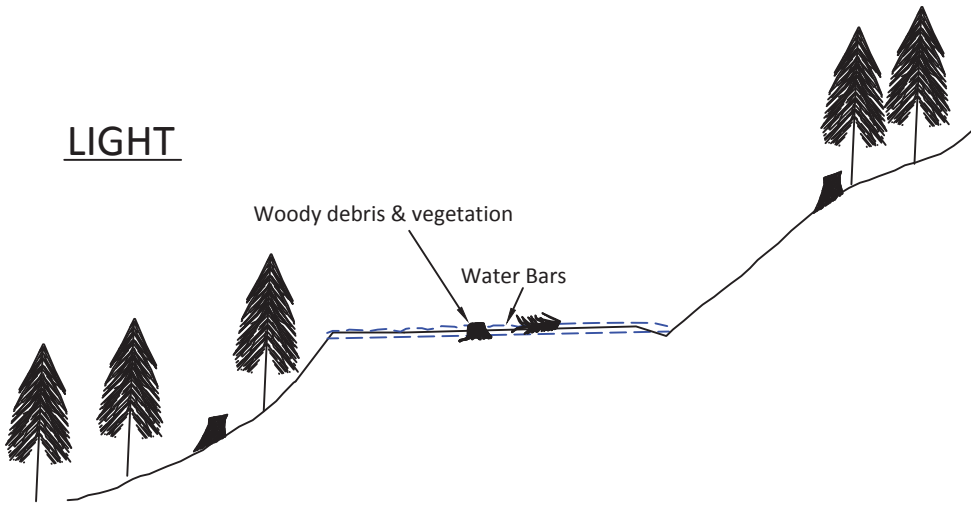
SLASH AND ROOT WADS SHALL BE INCORPORATED INTO THE TRAFFIC SIDE OF THE BARRICADE.



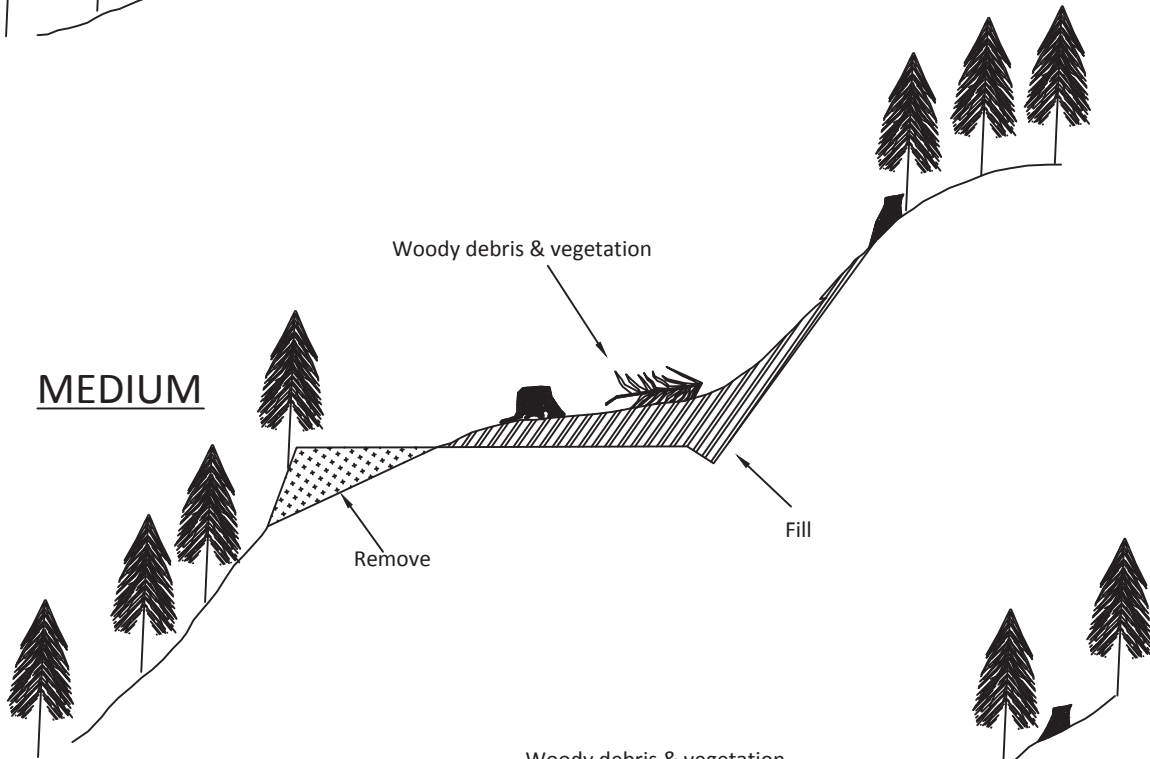


# ROAD ABANDONMENT CROSS SECTIONS

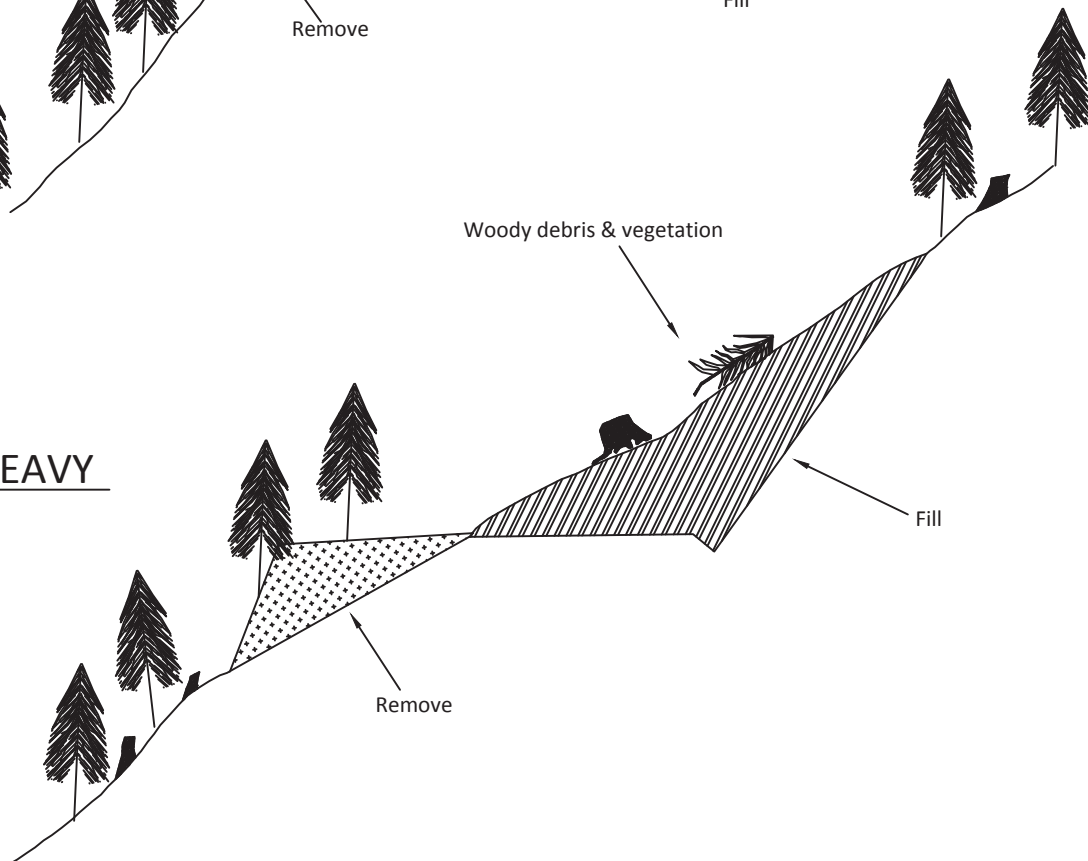
LIGHT



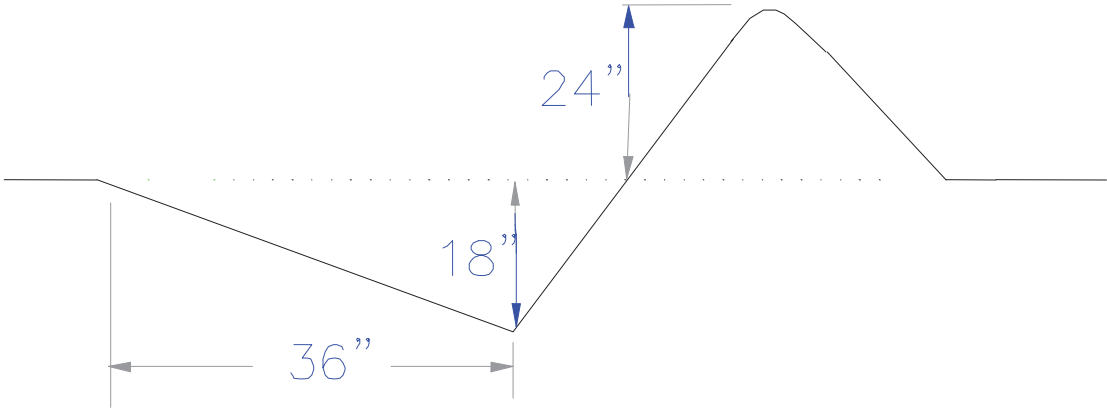
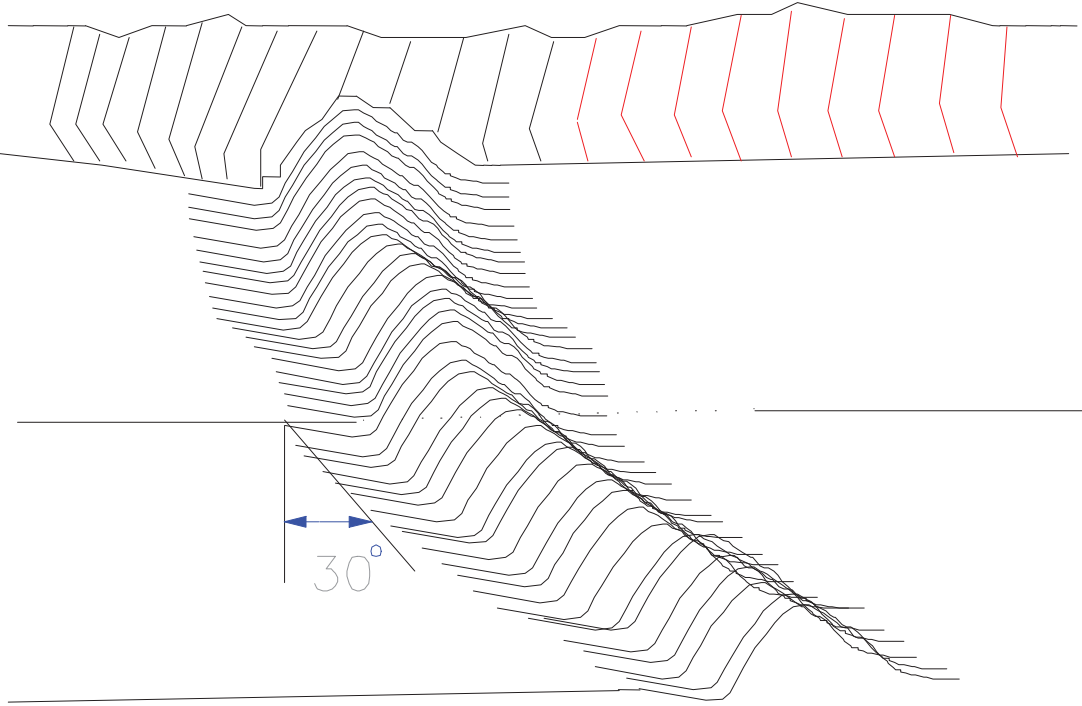
MEDIUM



HEAVY



NON-DRIVABLE WATER BAR DETAIL



ROCK ACCOUNTABILITY DETAIL

SALE NAME: \_\_\_\_\_

Purchaser: \_\_\_\_\_

Agreement #: \_\_\_\_\_

Contractor: \_\_\_\_\_

Rock Quarry/Pit: \_\_\_\_\_

Truck No: \_\_\_\_\_

DAILY ROCK LOAD RECORD					
DATE	LOAD TIME	ROAD NO.	TYPE OF ROCK	QUANTITY	COMMENTS

Truck Driver Signature

\_\_\_\_\_  
SIGNATURE DATE

# Rock Crushing Compliance Procedure

## Phase I. Equipment Adjustment

- Step 1:** At start up of crushing operations, the contractor will notify the contract administrator when the rock meets the gradation specifications in the contract. None of the rock crushed during this calibration period will be counted toward the amount required to be crushed, and this rock must be kept separate from accepted rock crushed later.
- Step 2:** The contract administrator and the contractor will test the rock. Two samples will be taken. If the rock meets specifications, crushing may begin. If the rock does not meet specifications, return to Step 1.

## Phase II. Production

- Step 3:** The contract administrator and the contractor will continue periodic testing to ensure that rock stays in spec. Testing will take place according to the following schedule:
- After the first 500 yards
  - After every 1,000 yards thereafter
- a) Any time a sample is out of spec, but is within 5%\*, the contractor will be notified and a second sample will be taken later in the day. If the second sample meets specifications, the rock crushed during that day will be accepted. If the second sample also fails to meet spec, none of the rock crushed since the last acceptable test will be counted toward the amount to be crushed.
- b) Any time a sample is out of spec and is more than 5% off in any category, none of the rock crushed since the last acceptable test will be accepted and that rock must be kept separate from the stockpile. Return to Step 1.
- c) Contractors are strongly encouraged to take their own samples regularly and keep their operations in spec to avoid unnecessary expenses.
- \* The 5% will be applied only to sieve specs for 2" to ¼"; rock that is out of spec in larger sizes must be kept separate from the acceptable rock.

STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES  
PACIFIC CASCADE REGION

**INFORMATIONAL BLASTING PLAN**

Timber Sale/Project Name: \_\_\_\_\_ App./Project No.: \_\_\_\_\_

1. Blaster-in-Charge: Name: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

2. Quarry Name/Location: \_\_\_\_\_

3. Total Estimated Cubic Yards in Blast (loose): \_\_\_\_\_

4. Hole Spacing: \_\_\_\_\_

5. Burden: \_\_\_\_\_

6. Hole Diameter: \_\_\_\_\_

7. Hole Depth: \_\_\_\_\_

8. Sub Drill: \_\_\_\_\_

9. Number of Holes: \_\_\_\_\_

10. Stemming Depth: \_\_\_\_\_

11. Explosive (mfg., name, density, %, V.O.D.): \_\_\_\_\_

\_\_\_\_\_

12. Type and Size of Primer (if applicable): \_\_\_\_\_

13. Total Weight of Primers for Shot: \_\_\_\_\_

14. Calculated Powder Factor/Cubic Yard: \_\_\_\_\_

15. Number of Delays (in M.S.): \_\_\_\_\_

M-126PAC (03/04)

INFORMATIONAL BLASTING PLAN

Page 2 of 3

16. Number of Holes Fired on Each Delay: \_\_\_\_\_

\_\_\_\_\_

17. Total Amount of Explosives Fired on Each Delay: \_\_\_\_\_

\_\_\_\_\_

18. Type of Blasting Machine: \_\_\_\_\_

\_\_\_\_\_

19. Date, Start Drilling: \_\_\_\_\_

20. Date and Time, Start Loading: \_\_\_\_\_

21. Date and Time of Blast (approx.): \_\_\_\_\_

INFORMATIONAL BLASTING PLAN

Page 3 of 3

22. Detail drawing of delay system (show hole pattern and delays in milliseconds). Attach additional sheets if required:

23. Typical cross-section of hole (show primer, main charge, sub drill, and stemming):

23. Submitted by: \_\_\_\_\_ Date: \_\_\_\_\_

24. Received by: \_\_\_\_\_ Date: \_\_\_\_\_

Note: Attach copies of manufacturer=s data sheet(s) for explosive and caps.

M-126PAC (03/04)

STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES  
PACIFIC CASCADE REGION

**PIT DEVELOPMENT PLAN**

CG-2037 Pit #2 – N½ Section 10, Township 03 North, Range 07 East, W.M.  
(Page 1 of 2)

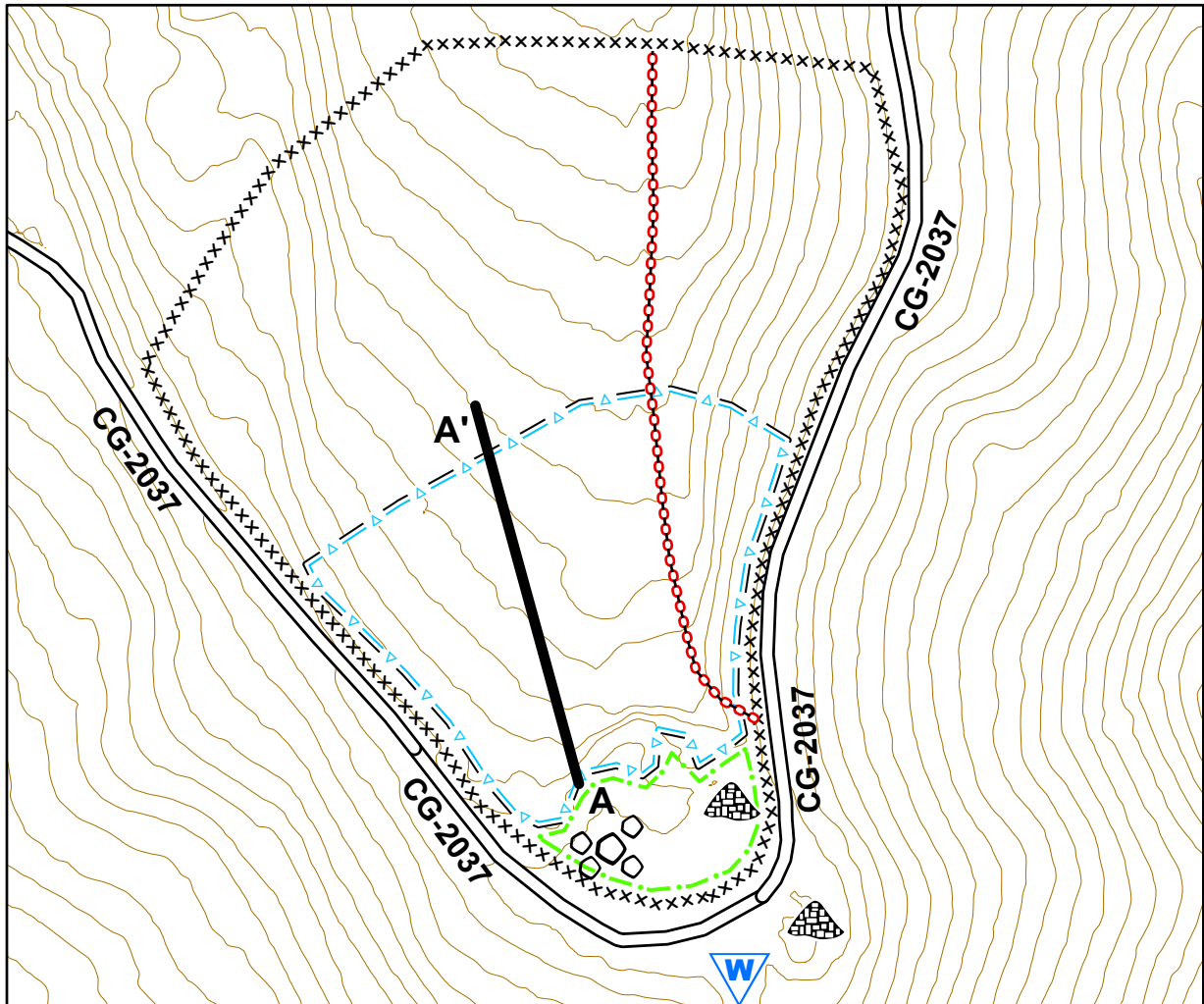
1. Development shall take place in mining area as indicated on the Pit Development Plan Maps for the CG-2037 Pit #2.
2. All vegetation including stumps shall be cleared a minimum of 25 feet beyond the top of all working faces. Trees shall be cleared to a minimum of  $\frac{3}{4}$  of the height of the tallest tree adjacent to the pit. The Contractor shall maintain a minimum of 15 foot wide area stripped to rock from the pit face at all times. All Clearing shall be approved in writing by the Contract Administrator prior to overburden removal.
3. Overburden from the CG-2037 Pit#2 shall be end hauled to the waste area at Station 19+71 on the CG-2037 road. All waste material shall be compacted. Minimal acceptable compaction is achieved by placing waste material in 1 foot or shallower lifts and routing excavation equipment over entire width of the lifts. All Overburden removal shall be approved in writing by the Contract Administrator prior to any drilling operation and or rock extraction.
4. Root wads and organic debris larger than one cubic foot in volume shall be separated from overburden material and piled in the designated Waste Area.
5. The Operator shall submit an informational drilling and shooting plan to the Contract Administrator 5 working days prior to any drilling. (Form #M-126PAC)
6. Drilling may begin when the Contract Administrator has approved, in writing, all of the Clearing, Grubbing and Overburden removal. Purchaser shall block access roads and trails before blasting operations.
7. Pit faces shall not exceed 30 feet in height. All pit faces shall be sloped no steeper than  $\frac{1}{4}$ :1.
8. Working bench width shall be a minimum of 20 feet.
9. The pit floor shall have continuity of slope and be left in a smooth and neat condition, providing drainage at a minimum of 2 percent. All knobs, bumps, or extrusions shall be removed to the designated floor level by excavation or drill and shoot techniques. The installation of a culvert may be necessary to drain water from the pit floor in locations where the pit floor is adjacent to a road. The location of the culvert shall be subject to approval of the Contract Administrator. No sediment shall enter live water.
10. The location and amount of material to be placed in a temporary stockpile are subject to approval of the Contract Administrator. All stock piled material shall be maintained in a neat and useable condition.
11. Oversize material remaining in the rock source at the conclusion of use shall not exceed 5 percent of the total volume mined during that operation. Oversize material is defined as rock fragments larger than two feet in any direction. At the conclusion of operations, all remaining oversize material shall be placed at the location shown on the Pit Development Plan Map and as directed by the Contract Administrator in a location outside of the future development.
12. At the end of operations, pit faces and walls shall be scaled and cleared of loose and overhanging material and shall not be undermined or over steepened; benches shall have safety berms constructed or access blocked to highway vehicles. Access roads/trails shall have Non-driveable waterbars constructed in accordance with the NON-DRIVEABLE WATER BAR DETAIL as directed by the Contract Administrator. Upon completion of operations in the pit, the area will be left in a condition that will not endanger public safety, damage property, or be hazardous to human life.
13. All exposed soil in the waste area, access roads, and exposed banks shall be grass seeded in accordance with Road Plan Clauses 8-15 and 8-25.
14. All operations shall be carried out in compliance with all regulations of:
  - a. Regulations and Standards Applicable to Metal and Nonmetal Mining and Milling Operations@ (30 CFR) U.S. Department of Labor, Mine Safety and Health Administration.
  - b. "Safety Standards for Construction Work" (296-155 WAC), Washington Department of Labor and Industries.
15. The Operator shall submit an informational drilling and shooting report to the Contract Administrator after blasting has occurred. (Form #M-126PAC)
16. The pit area shall be worked and left in a condition that future operations may proceed in an orderly manner. Upon completion of operations, the site shall be cleared of all temporary structures/equipment and rubbish, access roads shall be blocked with riprap at locations as directed by the Contract Administrator, and shall be left in a neat and presentable condition. At the completion of rock source operations, Contractor shall ask Contract Administrator for written approval of final rock source condition and compliance with the terms of this plan.



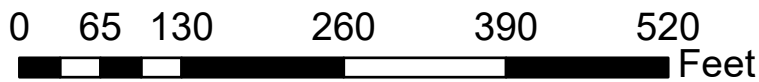
# CG-2037 PIT #2

## N1/2 Sec. 10, T03N, R07E, W.M.

(Page 2 of 2)

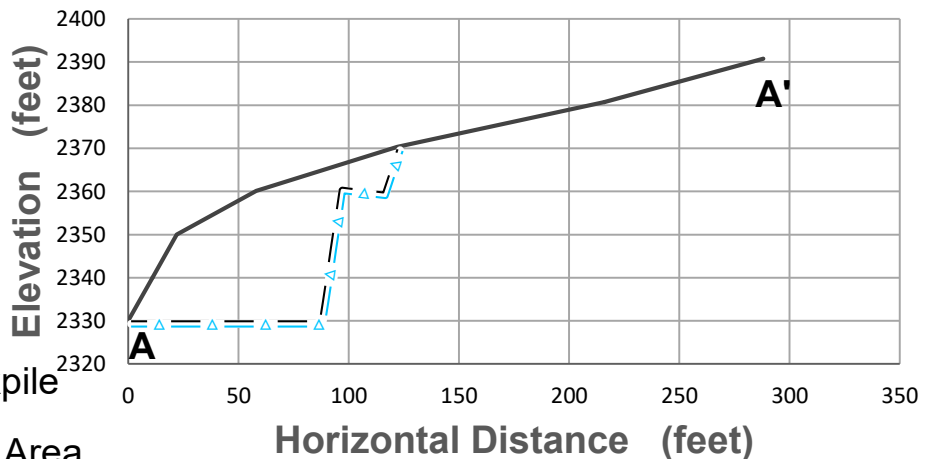


### Legend



- - - - - Existing Pit Floor
- o o o o o Access Road
- Δ - Δ - Mining Area
- x x x x x Rock Pit Boundary
- Existing Road
- Contours 10 ft
- W Waste Area
- Existing Jaw Run Stockpile
- Oversize Rock Storage Area

### Profile "A"



## SUMMARY - Road Development Costs

REGION: Pacific Cascade  
DISTRICT: Yacolt

SALE/PROJECT NAME: Fiddlehead VDT VRH

AGREEMENT #: 30-103982

ROAD NUMBERS:	CG-2031A, CG-2031A1, & CG-2031C1	CG-2031A, CG-2031A1, CG-2031C, & CG-2031D	CG-2030, CG-2031, CG-2031C, & CG-2037
ROAD STANDARD:	Construction	Reconstruction	Maintenance
NUMBER OF STATIONS:	37.27	74.40	290.58
CLEARING & GRUBBING, EXCAVATION AND FILL, MISC.:	\$34,272.47	\$46,093.45	\$21,708.13
ROAD ROCK:			
	Optional: \$0.00	\$25,929.59	\$0.00
	Required: \$53,696.13	\$73,351.12	\$25,006.28
	Total: \$53,696.13	\$99,280.71	\$25,006.28
STOCKPILE/PIT DEVELOPMENT:	\$0.00	\$0.00	\$28,456.80
CULVERTS AND FLUMES:	\$10,795.82	\$15,833.85	\$1,001.18
STRUCTURES:	\$0.00	\$0.00	\$0.00
DUST ABATEMENT	\$0.00	\$0.00	\$0.00
MOBILIZATION:	\$2,422.25	\$3,936.15	\$1,211.12
 TOTAL COSTS:	 \$101,186.67	 \$165,144.16	 \$77,383.51
COST PER STATION:	\$2,715	\$2,220	\$266
ROAD DEACTIVATION & ABANDONMENT COSTS:	\$7,040.34	\$10,275.99	\$0.00
			<b>\$36,103.07</b>
			<b>\$397,133.74</b>
			<b>\$371,204.15</b>
			<b>3,656</b>
			<b>\$108.63</b>
			<b>\$101.53</b>

Profit and Risk costs are accounted on an individual basis.

Compiled by: David Stone

Date: May 3, 2023

## SUMMARY OF ROAD

Sale: Fiddlehead VDT VRH

Road: CG-2030

Required Pre-Haul Maintenance - 202+96 stations  
3.84 miles

Required Reconstruction - 0.00 stations  
0.00 miles

Required Construction - 0.00 stations  
0.00 miles

Required Abandonment - 0.00 stations  
0.00 miles

Optional Reconstruction - 0.00 stations  
0.00 miles

Optional Construction - 0.00 stations  
0.00 miles

### PRE-HAUL MAINTENANCE

#### CLEARING

#### EXCAVATION

Excavate ditchline and scatter material/ clean ditch - 202.96 stations @ \$19.95 per station \$4,049.05

#### MISC.

Grade and shape existing road surface - 202.96 stations @ \$27.10 per station \$5,500.22  
 Roll shaped road surface w/ vibratory roller prior to rocking - 202.96 stations @ \$14.40 per station \$2,922.62  
 Grass seed - 44.6 lbs @ \$9.00 per lb \$401.40

#### ENDHAUL

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$12,873.29**

### RECONSTRUCTION

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$0.00**

### CONSTRUCTION

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$0.00**

### CULVERTS - MATERIALS & INSTALLATION

#### Culverts & Bands

0	LF of 18"	\$0.00		0	LF of 24"	\$0.00	
0	LF of 30"	\$0.00		0	LF of 36"	\$0.00	w/bevel
0	LF of 42"	\$0.00	w/gasket-bevel	0	LF of 48"	\$0.00	
0	LF of 54"	\$0.00		0	LF of 60"	\$0.00	
0	LF of 66"	\$0.00		0	LF of 72"	\$0.00	
		\$0.00				\$0.00	

#### Half Rounds

0	LF of 24"	\$0.00		0	LF of 30"	\$0.00	
0	LF of 36"	\$0.00		0	LF of 42"	\$0.00	
		\$0.00				\$0.00	

#### Culvert Stakes & Markers

0	stakes	\$0.00	
0	markers	\$0.00	
		\$0.00	

TOTAL CULVERTS **\$0.00**

### ROCK

0+00 to 202+96 Spot Rock 500 cy. of 1 1/4" Minus @ \$23.02 per c.y. = \$11,510.00

**\$11,510.00**

### ADDITIONAL REQUIREMENTS

TOTAL ADDITIONAL REQUIREMENTS **\$0.00**

### ABANDONMENT

TOTAL ABANDONMENT **\$0.00**

Required Pre-Haul Maintenance - \$24,383.29

Required Reconstruction - \$0.00

SUBTOTAL **\$24,383.29**

Required Abandonment - \$0.00

Optional Reconstruction - \$0.00

Required Construction - \$0.00

Optional Construction - \$0.00

**TOTAL \$24,383.29**

**COST PER STATION \$120.14**

## SUMMARY OF ROAD

Sale:	<b>Fiddlehead VDT VRH</b>		Road: <b>CG-2031</b>
Required Pre-Haul Maintenance-	62+81 1.19	stations miles	Required Reconstruction -
			0.00
			stations miles
Required Abandonment-	0.00	stations miles	Optional Reconstruction -
			0.00
			stations miles
			Required Construction -
			0.00
			stations miles
			Optional Construction -
			0.00
			stations miles

### PRE-HAUL MAINTENANCE

<b>CLEARING</b>						
Scattering Organic Debris -50+76 to 62+81	0.28	acres @	\$1,010.00	per acre		\$282.80
<b>EXCAVATION</b>						
Excavate ditchline and scatter material/ clean ditch - 0+00 to 50+76	50.76	stations @	\$19.95	per station		\$1,012.66
<b>MISC.</b>						
Grade and shape existing road surface -	62.81	stations @	\$27.10	per station		\$1,702.15
Roll shaped road surface w/ vibratory roller prior to rocking -	62.81	stations @	\$14.40	per station		\$904.46
Construct landings -	8.00	@	\$185.50	each		\$1,484.00
Grass seed -	19.2	lbs @	\$9.00	per lb		\$172.80
<b>ENDHAUL</b>						
TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC.						<b>\$6,179.27</b>

### RECONSTRUCTION

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$0.00**

### CONSTRUCTION

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$0.00**

### CULVERTS - MATERIALS & INSTALLATION

<u>Culverts</u>						
0	LF of 18"	\$0.00		0	LF of 24"	\$0.00
0	LF of 30"	\$0.00		0	LF of 36"	\$0.00
0	LF of 42"	\$0.00		0	LF of 48"	\$0.00
0	LF of 54"	\$0.00		0	LF of 60"	\$0.00
0	LF of 66"	\$0.00		0	LF of 72"	\$0.00
		\$0.00				\$0.00
<u>Half Rounds</u>						
0	LF of 24"	\$0.00		0	LF of 30"	\$0.00
0	LF of 36"	\$0.00		0	LF of 42"	\$0.00
		\$0.00				\$0.00
<u>Culvert Stakes &amp; Markers</u>						
0	stakes	\$0.00				
0	markers	\$0.00				
		\$0.00				
<b>TOTAL CULVERTS</b>						<b>\$0.00</b>

<b>ROCK</b>						
0+00 to 50+76 Spot Rock	150	cy. of	1 1/4" Minus	@	\$20.64	per c.y.= \$3,096.00
Landings from CG-2037 stockpile	328	cy. of	3" Jaw Run	@	\$12.13	per c.y.= \$3,978.64
50+76 to 62+81 Spot Rock-CG-2031D stockpile	250	cy. of	1 1/4" Minus	@	\$7.77	per c.y.= \$1,942.50
<b>TOTAL ROCK</b>						<b>\$9,017.14</b>

### ADDITIONAL REQUIREMENTS

TOTAL ADDITIONAL REQUIREMENTS **\$0.00**

### ABANDONMENT

TOTAL ABANDONMENT **\$0.00**

Required Pre-Haul Maintenance-	\$15,196.41	Required Reconstruction -	\$0.00		
				SUBTOTAL	<b>\$15,196.41</b>
Required Abandonment-	\$0.00	Optional Reconstruction -	\$0.00		
Required Construction -	\$0.00	Optional Construction -	\$0.00		
				<b>TOTAL</b>	<b>\$15,196.41</b>
<b>COST PER STATION</b>					<b>\$241.94</b>

## SUMMARY OF ROAD

Sale: Fiddlehead VDT VRH

Road: CG-2031C

Required  
Pre-Haul Maintenance- 5+10 stations  
0.10 miles

Required  
Reconstruction - 0.00 stations  
0.00 miles

Required  
Construction - 0.00 stations  
0.00 miles

Required Abandonment- 0+00 stations  
0.00 miles

Optional  
Reconstruction - 0+00 stations  
0.00 miles

Optional  
Construction - 0.00 stations  
0.00 miles

### PRE-HAUL MAINTENANCE

#### CLEARING

#### EXCAVATION

Excavate ditchline and scatter material/ clean ditch - 5.10 stations @ \$33.25 per station \$169.58

#### MISC.

Grade and shape existing road surface - 5.10 stations @ \$27.10 per station \$138.21  
 Roll shaped road surface w/ vibratory roller prior to rocking - 5.10 stations @ \$14.40 per station \$73.44  
 Construct landing - 1.00 @ \$185.50 each \$185.50  
 Grass seed - 2.90 lbs @ \$9.00 per lb \$26.10

#### ENDHAUL

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$592.83**

### RECONSTRUCTION

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$0.00**

### CONSTRUCTION

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$0.00**

### CULVERTS - MATERIALS & INSTALLATION

#### Culverts

40	LF of 18"	\$990.18		0	LF of 24"	\$0.00
0	LF of 30"	\$0.00		0	LF of 36"	\$0.00
0	LF of 42"	\$0.00		0	LF of 48"	\$0.00
0	LF of 54"	\$0.00		0	LF of 60"	\$0.00
0	LF of 66"	\$0.00		0	LF of 72"	\$0.00
		\$990.18				\$0.00

#### Half Rounds

0	LF of 24"	\$0.00		0	LF of 30"	\$0.00
0	LF of 36"	\$0.00		0	LF of 42"	\$0.00
		\$0.00				\$0.00

#### Culvert Stakes & Markers

0	stakes	\$0.00	
1	markers	\$11.00	
		\$11.00	

TOTAL CULVERTS **\$1,001.18**

### ROCK

0+00 to 5+10 Spot Rock	50	cy. of	1 1/4" Minus	@	\$20.72	per c.y.=	\$1,036.00
Energy Dissipator/Headwall - culverts	1.0	cy. of	Riprap LL	@	\$21.56	per c.y.=	\$21.56
Landing	41	cy. of	3" Jaw Run	@	\$20.38	per c.y.=	\$835.58
							TOTAL ROCK
							<b>\$1,893.14</b>

### ADDITIONAL REQUIREMENTS

TOTAL ADDITIONAL REQUIREMENTS **\$0.00**

### ABANDONMENT

TOTAL ABANDONMENT **\$0.00**

Required  
Pre-Haul Maintenance- \$3,487.15

Required  
Reconstruction - \$0.00

SUBTOTAL **\$3,487.15**

Required Abandonment- \$0.00

Optional  
Reconstruction - \$0.00

Required Construction - \$0.00

Optional  
Construction - \$0.00

TOTAL **\$3,487.15**

COST PER STATION **\$683.75**

## SUMMARY OF ROAD

Sale: Fiddlehead VDT VRH

Road: CG-2037

Required Pre-Haul Maintenance- <span style="border: 1px solid black; padding: 2px;">19+71</span> stations <span style="border: 1px solid black; padding: 2px;">0.37</span> miles	Required Reconstruction - <span style="border: 1px solid black; padding: 2px;">0.00</span> stations <span style="border: 1px solid black; padding: 2px;">0.00</span> miles	Required Construction - <span style="border: 1px solid black; padding: 2px;">0.00</span> stations <span style="border: 1px solid black; padding: 2px;">0.00</span> miles
Required Abandonment- <span style="border: 1px solid black; padding: 2px;">0.00</span> stations <span style="border: 1px solid black; padding: 2px;">0.00</span> miles	Optional Reconstruction - <span style="border: 1px solid black; padding: 2px;">0.00</span> stations <span style="border: 1px solid black; padding: 2px;">0.00</span> miles	Optional Construction - <span style="border: 1px solid black; padding: 2px;">0.00</span> stations <span style="border: 1px solid black; padding: 2px;">0.00</span> miles

### PRE-HAUL MAINTENANCE

#### CLEARING

#### EXCAVATION

Construct waste area, includes clearing grubbing & piling of organic debris -	1.5	hours @	\$402.00	per hour	\$603.00
Excavate ditchline and scatter material/ clean ditch -	19.71	stations @	\$16.63	per station	\$327.78

#### MISC.

Grade and shape existing road surface -	19.71	stations @	\$27.10	per station	\$534.14
Roll shaped road surface w/ vibratory roller prior to rocking -	19.71	stations @	\$14.40	per station	\$283.82
Grass seed -	8.0	lbs @	\$9.00	per lb	\$72.00

#### ENDHAUL

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$2,062.74**

### RECONSTRUCTION

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$0.00**

### CONSTRUCTION

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$0.00**

### CULVERTS - MATERIALS & INSTALLATION

#### Culverts

0	LF of 18"	\$0.00		0	LF of 24"	\$0.00
0	LF of 30"	\$0.00		0	LF of 36"	\$0.00
0	LF of 42"	\$0.00		0	LF of 48"	\$0.00
0	LF of 54"	\$0.00		0	LF of 60"	\$0.00
0	LF of 66"	\$0.00		0	LF of 72"	\$0.00
		\$0.00				\$0.00

#### Half Rounds

0	LF of 24"	\$0.00		0	LF of 30"	\$0.00
0	LF of 36"	\$0.00		0	LF of 42"	\$0.00
		\$0.00				\$0.00

#### Culvert Stakes & Markers

0	stakes	\$0.00
0	markers	\$0.00
		\$0.00

TOTAL CULVERTS **\$0.00**

### ROCK

Spot Rock 0+00 to 19+71	150	cy. of	1 1/4" Minus	@	\$17.24	per c.y. =	\$2,586.00
							TOTAL ROCK <span style="float: right;"><b>\$2,586.00</b></span>

### ADDITIONAL REQUIREMENTS

TOTAL ADDITIONAL REQUIREMENTS **\$0.00**

### ABANDONMENT

TOTAL ABANDONMENT **\$0.00**

Required Pre-Haul Maintenance- <span style="border: 1px solid black; padding: 2px;">\$4,648.74</span>	Required Reconstruction - <span style="border: 1px solid black; padding: 2px;">\$0.00</span>	
Required Abandonment- <span style="border: 1px solid black; padding: 2px;">\$0.00</span>	Optional Reconstruction - <span style="border: 1px solid black; padding: 2px;">\$0.00</span>	SUBTOTAL <span style="float: right;"><b>\$4,648.74</b></span>
Required Construction - <span style="border: 1px solid black; padding: 2px;">\$0.00</span>	Optional Construction - <span style="border: 1px solid black; padding: 2px;">\$0.00</span>	

**TOTAL \$4,648.74**

**COST PER STATION \$235.86**

## SUMMARY OF ROAD

Sale: <u>Fiddlehead VDT VRH</u>	Road: <u>CG-2031A</u>
Required Pre-Haul Maintenance - <span style="border: 1px solid black; padding: 2px 10px;">0.00</span> stations miles	Required Reconstruction - <span style="border: 1px solid black; padding: 2px 10px;">0.00</span> stations miles
Required Decommissioning - <span style="border: 1px solid black; padding: 2px 10px;">28+24</span> stations miles <span style="border: 1px solid black; padding: 2px 10px;">0.53</span>	Optional Reconstruction - <span style="border: 1px solid black; padding: 2px 10px;">20+12</span> stations miles <span style="border: 1px solid black; padding: 2px 10px;">0.38</span>
Required Construction - <span style="border: 1px solid black; padding: 2px 10px;"></span> stations miles	Optional Construction - <span style="border: 1px solid black; padding: 2px 10px;">8+12</span> stations miles <span style="border: 1px solid black; padding: 2px 10px;">0.15</span>

### PRE-HAUL MAINTENANCE

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$0.00**

### RECONSTRUCTION

#### CLEARING/GRUBBING

Scattering Organic Debris	0.49	acres @	\$1,010.00	per acre	\$494.90
Endhaul Organic Debris	0.80	acres @	\$1,500.00	per acre	\$1,200.00
Remove large stumps -	9.00	@	\$117.00	each	\$1,053.00
Construct waste area -	2.00	hours @	\$402.00	per hour	\$804.00

#### EXCAVATION

Reconstruct and Widen Road Prism/with ditchline - includes embankment	14.32	stations @	\$156.33	per station	\$2,238.65
Widening Road Prism - Full Bench 20+12 to 25+92	2,175	cy. @	\$2.30	per c.y.	\$5,002.50
Grade and shape subgrade -	20.12	stations @	\$22.55	per station	\$453.71

#### FILL

Waste Area Compaction - earthwork and organic debris	2,229	cy. @	\$0.50	per c.y.	\$1,114.50
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#### MISC.

Roll subgrade w/ vibratory roller prior to rocking -	20.12	stations @	\$18.00	per station	\$362.16
Construct turnouts -	3.00	@	\$91.00	each	\$273.00
Construct landings -	5.00	@	\$185.50	each	\$927.50
Grass seed -	45.7	lbs @	\$9.00	per lbs	\$411.30

#### ENDHAUL

To Waste Area @ 28+24 on CG-2031A	2,175	cy. @	\$2.48	per c.y.	\$5,394.00
Organic Debris - To Waste Area @ 28+24 on CG-2031A	54	cy. @	\$3.79	per c.y.	\$204.66

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$19,933.88**

### CONSTRUCTION

#### CLEARING/GRUBBING

Scattering Organic Debris	0.31	acres @	\$1,010.00	per acre	\$313.10
Endhaul Organic Debris	0.75	acres @	\$1,500.00	per acre	\$1,125.00
Remove large stumps -	6	@	\$117.00	each	\$702.00

#### EXCAVATION

Road Construction Earthwork - includes embankment	2.67	sta. @	\$223.33	per sta. =	\$596.29
Full Bench 12+18 to 17+63	1,635	cy. @	\$2.30	per c.y.	\$3,760.50
Grade and shape subgrade -	8.12	stations @	\$22.55	per station	\$183.11

#### FILL

Waste Area compaction - earthwork and organic debris	1,676	cy. @	\$0.50	per c.y.=	\$838.00
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#### MISC.

Roll subgrade w/ vibratory roller prior to rocking -	8.12	stations @	\$18.00	per station	\$146.16
Construct landings -	1	@	\$185.50	each	\$185.50
Grass seed -	12.1	lbs @	\$9.00	per lbs	\$108.90

#### ENDHAUL

To Waste Area @ 28+24 on CG-2031A	1,635	cy. @	\$2.96	per c.y.=	\$4,839.60
Organic Debris - To Waste Area @ 28+24 on CG-2031A	41	cy. @	\$4.39	per c.y.=	\$179.99

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$12,978.15**

### CULVERTS - MATERIALS & INSTALLATION

#### Culverts

140	LF of 18"	\$3,475.72		0	LF of 24"	\$0.00
0	LF of 30"	\$0.00		0	LF of 36"	\$0.00
0	LF of 42"	\$0.00		0	LF of 48"	\$0.00
0	LF of 54"	\$0.00		0	LF of 60"	\$0.00
0	LF of 66"	\$0.00		0	LF of 72"	\$0.00
		\$3,475.72				\$0.00

#### Half Rounds

0	LF of 24"	\$0.00		0	LF of 30"	\$0.00
0	LF of 36"	\$0.00		0	LF of 42"	\$0.00
		\$0.00				\$0.00

#### Culvert Stakes & Markers

0	stakes	\$0.00
4	markers	\$44.00
		\$44.00

TOTAL CULVERTS **\$3,519.72**

### ROCK

Energy Dissipator/Headwall - culverts	9.5	cy. of	Riprap LL	@	\$21.94	per c.y.=	\$208.43
0+00 to 28+24	1,715	cy. of	3" Jaw Run	@	\$20.35	per c.y.=	\$34,900.25
							TOTAL ROCK

**\$35,108.68**

### ADDITIONAL REQUIREMENTS

TOTAL ADDITIONAL REQUIREMENTS **\$0.00**

### DECOMMISSIONING

Construct waterbar -	17	@	\$98.00	each	\$1,666.00
Construct Earthen Barricade -	1	@	\$188.00	each	\$188.00
Outslope roadway & block culvert inlets-	28.24	stations @	\$23.80	per station	\$672.11
Grass seed -	52.0	lbs @	\$9.00	per lbs	\$468.00

TOTAL ABANDONMENT **\$2,994.11**

Required Pre-Haul Maintenance - <span style="border: 1px solid black; padding: 2px 10px;">\$0.00</span>	Required Reconstruction - <span style="border: 1px solid black; padding: 2px 10px;">\$0.00</span>		
Required Decommissioning - <span style="border: 1px solid black; padding: 2px 10px;">\$2,994.11</span>	Optional Reconstruction - <span style="border: 1px solid black; padding: 2px 10px;">\$47,360.04</span>	SUBTOTAL	<b>\$74,534.54</b>
Required Construction - <span style="border: 1px solid black; padding: 2px 10px;">\$0.00</span>	Optional Construction - <span style="border: 1px solid black; padding: 2px 10px;">\$24,180.39</span>	TOTAL	<b>\$74,534.54</b>

COST PER STATION **\$2,639.33**

## SUMMARY OF ROAD

Sale:	<b>Fiddlehead VDT VRH</b>		Road:	<b>CG-2031A1</b>
Required Pre-Haul Maintenance-	0.00	stations miles	Required Reconstruction -	0.00
				0.00
Required Abandonment-	13+46	stations miles	Optional Reconstruction -	10+98
	0.25			0.21
			Optional Construction -	2+48
				0.05

### PRE-HAUL MAINTENANCE

#### ENDHAUL

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$0.00**

### RECONSTRUCTION

#### CLEARING/GRUBBING

Scattering Organic Debris	0.31	acres @	\$1,010.00	per acre	\$313.10
Endhaul Organic Debris	0.29	acres @	\$1,500.00	per acre	\$435.00
Remove large stumps -	6	@	\$117.00	each	\$702.00

#### EXCAVATION

Reconstruct and Widen Road Prism/with ditchline - includes embankment	8.89	stations @	\$156.33	per station	\$1,389.77
Widening Road Prism - Full Bench 8+89 to 10+98	732	cy. @	\$2.30	per c.y.	\$1,683.60
Grade and shape subgrade -	10.98	stations @	\$22.55	per station	\$247.60

#### FILL

Waste Area Compaction - earthwork and organic debris	732	cy. @	\$0.50	per c.y.	\$366.00
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#### MISC.

Roll subgrade w/ vibratory roller prior to rocking -	10.98	stations @	\$18.00	per station	\$197.64
Construct turnouts -	1	@	\$91.00	each	\$91.00
Construct landing -	2	@	\$185.50	each	\$371.00
Grass seed -	17.0	lbs @	\$9.00	per lbs	\$153.00

#### ENDHAUL

To Waste Area @ 28+24 on CG-2031A	732	cy. @	\$3.47	per c.y.	\$2,540.04
Organic Debris - To Waste Area @ 28+24 on CG-2031A	18	cy. @	\$5.02	per c.y.	\$90.36
			TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC.		<b>\$8,580.11</b>

### CONSTRUCTION

#### CLEARING/GRUBBING

Endhaul Organic Debris	0.34	acres @	\$1,500.00	per acre	\$510.00
Remove large stumps -	3	@	\$117.00	each	\$351.00

#### EXCAVATION

Full Bench 10+98 to 13+46	868	cy. @	\$2.30	per c.y.=	\$1,996.40
Grade and shape subgrade -	2.48	stations @	\$22.55	per station	\$55.92

#### FILL

Waste Area Compaction - earthwork and organic debris	890	cy. @	\$0.50	per c.y.=	\$445.00
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#### MISC.

Roll subgrade w/ vibratory roller prior to rocking -	2.48	stations @	\$18.00	per station	\$44.64
Construct landing -	2	@	\$185.50	each	\$371.00
Grass seed -	6.2	lbs @	\$9.00	per lbs	\$55.80

#### ENDHAUL

To Waste Area @ 28+24 on CG-2031A	868	cy. @	\$3.63	per c.y.=	\$3,150.84
Organic Debris - To Waste Area @ 28+24 on CG-2031A	22	cy. @	\$5.22	per c.y.=	\$114.84
			TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC.		<b>\$7,095.44</b>

### CULVERTS - MATERIALS & INSTALLATION

#### Culverts & Bands

90	LF of 18"	\$2,243.04	0	LF of 24"	\$0.00
0	LF of 30"	\$0.00	0	LF of 36"	\$0.00 w/bevel
0	LF of 42"	\$0.00 w/gasket-bevel	0	LF of 48"	\$0.00
0	LF of 54"	\$0.00 w/gasket-bevel	0	LF of 60"	\$0.00
0	LF of 66"	\$0.00	0	LF of 72"	\$0.00
		\$2,243.04			\$0.00

#### Half Rounds

0	LF of 24"	\$0.00	0	LF of 30"	\$0.00
0	LF of 36"	\$0.00	0	LF of 42"	\$0.00
		\$0.00			\$0.00

#### Culvert Stakes & Markers

0	stakes	\$0.00
3	markers	\$33.00
		\$33.00

**TOTAL CULVERTS \$2,276.04**

### ROCK

Energy Dissipator/Headwall - culverts	10.5	cy. of	Riprap LL	@	\$22.07	per c.y.=	\$231.74
0+00 to 13+46	690	cy. of	3" Jaw Run	@	\$20.28	per c.y.=	\$13,993.20
Landings from CG-2037 stockpile	164	cy. of	3" Jaw Run	@	\$11.10	per c.y.=	\$1,820.40
					TOTAL ROCK		<b>\$16,045.34</b>

### ADDITIONAL REQUIREMENTS

TOTAL ADDITIONAL REQUIREMENTS **\$0.00**

### DECOMMISSIONING

Construct waterbar -	9.00	@	\$98.00	each	\$882.00
Outslope roadway & block culvert inlets-	13.46	stations @	\$23.80	per station	\$320.35
Grass seed -	24.8	lbs @	\$9.00	per lbs	\$223.20
			TOTAL ABANDONMENT		<b>\$1,425.55</b>

Required Pre-Haul Maintenance- \$0.00

Required Reconstruction - \$0.00

SUBTOTAL **\$35,422.48**

Required Decommissioning- \$1,425.55

Optional Reconstruction - \$24,013.33

Required Construction - \$0.00

Optional Construction - \$9,983.60

**TOTAL \$35,422.48**

**COST PER STATION \$2,631.68**



## SUMMARY OF ROAD

Sale:	<b>Fiddlehead VDT VRH</b>		Road: <b>CG-2031C</b>
Required Pre-Haul Maintenance -	0.00	stations miles	Required Reconstruction -
			0.00
			stations miles
Required Abandonment -	25+36 0.48	stations miles	Optional Reconstruction -
			25+36 0.48
			stations miles
			Optional Construction -
			0.00
			stations miles

### PRE-HAUL MAINTENANCE

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$0.00**

### RECONSTRUCTION

#### CLEARING/GRUBBING

Scatter Organic Debris	0.52	acres @	\$1,010.00	per acre	\$525.20
Remove large stumps -	8	@	\$117.00	each	\$936.00

#### EXCAVATION

Reconstruct and Widen Road Prism/with ditchline - includes embankment	17.54	stations @	\$159.77	per station	\$2,802.37
Reconstruct and Widen Road Prism/with ditchline - includes embankment	7.82	stations @	\$463.85	per station	\$3,627.31
Grade and shape subgrade -	25.36	stations @	\$22.55	per station	\$571.87

#### FILL

#### MISC.

Roll subgrade w/ vibratory roller prior to rocking -	25.36	stations @	\$18.00	per station	\$456.48
Construct turnouts -	3	@	\$91.00	each	\$273.00
Construct landing -	4	@	\$185.50	each	\$742.00
Grass seed -	38.4	lbs @	\$9.00	per lbs	\$345.60

#### ENDHAUL

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$10,279.83**

### CONSTRUCTION

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$0.00**

### CULVERTS - MATERIALS & INSTALLATION

#### Culverts & Bands

	218	LF of 18"	\$5,427.76		108	LF of 24"	\$3,120.36
	40	LF of 30"	\$1,752.01		0	LF of 36"	\$0.00
	0	LF of 42"	\$0.00		0	LF of 48"	\$0.00
	0	LF of 54"	\$0.00		0	LF of 60"	\$0.00
	0	LF of 66"	\$0.00		0	LF of 72"	\$0.00
			\$7,179.77				\$3,120.36

#### Half Rounds

	0	LF of 24"	\$0.00		0	LF of 30"	\$0.00
	0	LF of 36"	\$0.00		0	LF of 42"	\$0.00
			\$0.00				\$0.00

#### Culvert Stakes & Markers

	0	stakes	\$0.00
	0	markers	\$0.00
			\$0.00

TOTAL CULVERTS **\$10,300.13**

### ROCK

Energy Dissipator/Headwall/Armor - culverts	76.0	cy. of	Riprap HL	@	\$24.23	per c.y.=	\$1,841.48
Energy Dissipator/Headwall - culverts	34.0	cy. of	Riprap LL	@	\$24.19	per c.y.=	\$822.46
5+10 to 30+46	1,486	cy. of	3" Jaw Run	@	\$21.94	per c.y.=	\$32,602.84
							TOTAL ROCK
							<b>\$35,266.78</b>

### ADDITIONAL REQUIREMENTS

Live stream diversion at culvert installation sites -	6.5	hours @	\$30.00	per hour	\$195.00
Straw Mulching near streams -	0.41	acres @	\$860.00	per acre	\$352.60
					TOTAL ADDITIONAL REQUIREMENTS
					<b>\$547.60</b>

### ABANDONMENT

Construct waterbar -	12	@	\$98.00	each	\$1,176.00
Construct Earthen Barricade -	1	@	\$188.00	each	\$188.00
Rip roadway -	25.36	stations @	\$35.60	per station	\$902.82
Grass seed -	79.2	lbs @	\$9.00	per lbs	\$712.80
Mulching -	0.56	acres @	\$860.00	per acre	\$481.60
Live stream diversion at culvert removal sites -	6.5	hours @	\$30.00	per hour	\$195.00
Remove culvert -	10.0	hours @	\$178.00	per hour	\$1,780.00
Remove culvert from state lands -	11	@	\$100.00	each	\$1,100.00
Scatter woody debris -	2.5	hours @	\$178.00	per hour	\$445.00
					TOTAL ABANDONMENT
					<b>\$6,981.22</b>

Required Pre-Haul Maintenance -	\$0.00
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Required Reconstruction -	\$0.00
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SUBTOTAL **\$63,375.56**

Required Abandonment -	\$6,981.22
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Optional Reconstruction -	\$56,394.34
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Required Construction -	\$0.00
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Optional Construction -	\$0.00
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**TOTAL \$63,375.56**

**COST PER STATION \$2,499.04**

## SUMMARY OF ROAD

Sale:	<u>Fiddlehead VDT VRH</u>		Road: <u>CG-2031C1</u>
Required Haul Maintenance-	Pre- <span style="border: 1px solid black; padding: 2px;">0.00</span> stations 0.00 miles	Required Reconstruction -	<span style="border: 1px solid black; padding: 2px;">0.00</span> stations 0.00 miles
Required Abandonment-	<span style="border: 1px solid black; padding: 2px;">26+67</span> stations 0.51 miles	Optional Reconstruction -	<span style="border: 1px solid black; padding: 2px;">0.00</span> stations 0.00 miles
		Required Construction -	<span style="border: 1px solid black; padding: 2px;">0.00</span> stations 0.00 miles
		Optional Construction -	<span style="border: 1px solid black; padding: 2px;">26+67</span> stations 0.51 miles

### PRE-HAUL MAINTENANCE

#### CLEARING

#### EXCAVATION

#### MISC.

#### ENDHAUL

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$0.00**

### RECONSTRUCTION

#### CLEARING/GRUBBING

#### EXCAVATION

#### FILL

#### MISC.

#### ENDHAUL

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$0.00**

### CONSTRUCTION

#### CLEARING/GRUBBING

Scattering Organic Debris	2.76	acres @	\$1,010.00	per acre	\$2,787.60
Remove large stumps -	16	@	\$117.00	each	\$1,872.00

#### EXCAVATION - includes drift endhaul

Road Construction Earthwork - includes embankment work	26.67	sta. @	\$223.33	per sta. =	\$5,956.21
Construct ditches -	1	@	\$91.00	each	\$91.00
Grade and shape subgrade -	26.67	stations @	\$22.55	per station	\$601.41

#### FILL

#### MISC.

Roll subgrade w/ vibratory roller prior to rocking -	26.67	stations @	\$18.00	per station	\$480.06
Construct turnouts -	3	@	\$91.00	each	\$273.00
Construct landing -	8	@	\$185.50	each	\$1,484.00
Grass seed -	44.0	lbs @	\$9.00	per lbs	\$396.00

#### ENDHAUL - by trucking

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$13,941.28**

### CULVERTS - MATERIALS & INSTALLATION

#### Culverts

150	LF of 18"	\$3,738.40		0	LF of 24"	\$0.00
40	LF of 30"	\$1,674.40		40	LF of 36"	\$4,362.30
0	LF of 42"	\$0.00		0	LF of 48"	\$0.00
0	LF of 54"	\$0.00	w/gasket-bevel	0	LF of 60"	\$0.00
0	LF of 66"	\$0.00		0	LF of 72"	\$0.00
		\$5,412.80				\$4,362.30

#### Half Rounds

0	LF of 24"	\$0.00		0	LF of 30"	\$0.00
0	LF of 36"	\$0.00		0	LF of 42"	\$0.00
		\$0.00				\$0.00

#### Culvert Stakes & Markers

0	stakes	\$0.00
0	markers	\$0.00
		\$0.00

TOTAL CULVERTS **\$9,775.10**

### ROCK

Energy Dissipator/Headwall/Armor - culverts	30.0	cy. of	Riprap HL	@	\$25.65	per c.y.=	\$769.50
Energy Dissipator/Headwall - culverts	16.0	cy. of	Riprap LL	@	\$25.41	per c.y.=	\$406.56
0+00 to 26+67	1,713	cy. of	3" Jaw Run	@	\$23.03	per c.y.=	\$39,450.39
							TOTAL ROCK <b>\$40,626.45</b>

### ADDITIONAL REQUIREMENTS

Live stream diversion at culvert installation sites -	4.0	hours @	\$30.00	per hour	\$120.00
Straw Mulching near streams -	0.16	acres @	\$860.00	per acre	\$137.60
					TOTAL ADDITIONAL REQUIREMENTS <b>\$257.60</b>

### ABANDONMENT

Construct waterbar -	13	@	\$98.00	each	\$1,274.00
Rip roadway -	26.67	stations @	\$35.60	per station	\$949.45
Grass seed -	110.4	lbs @	\$9.00	per lbs	\$993.60
Mulching -	0.28	acres @	\$860.00	per acre	\$240.80
Live stream diversion at culvert removal sites -	4.0	hours @	\$30.00	per hour	\$120.00
Remove culverts -	6.5	hours @	\$178.00	per hour	\$1,157.00
Remove culvert from state lands -	7	@	\$100.00	each	\$700.00
Scatter woody debris -	2.7	hours @	\$178.00	per hour	\$480.60
					TOTAL ABANDONMENT <b>\$5,915.45</b>

Required Pre-Haul Maintenance-	<span style="border: 1px solid black; padding: 2px;">\$0.00</span>	Required Reconstruction -	<span style="border: 1px solid black; padding: 2px;">\$0.00</span>	
Required Abandonment-	<span style="border: 1px solid black; padding: 2px;">\$5,915.45</span>	Optional Reconstruction -	<span style="border: 1px solid black; padding: 2px;">\$0.00</span>	SUBTOTAL <b>\$70,515.88</b>
Required Construction -	<span style="border: 1px solid black; padding: 2px;">\$0.00</span>	Optional Construction -	<span style="border: 1px solid black; padding: 2px;">\$64,600.43</span>	TOTAL <b>\$70,515.88</b>
				<b>COST PER STATION \$2,644.01</b>

## SUMMARY OF ROAD

Sale: <b>Fiddlehead VDT VRH</b>		Road: <b>CG-2031D</b>
Required Pre-Haul Maintenance- <span style="border: 1px solid black; padding: 2px 10px;">0.00</span> stations miles	Required Reconstruction - <span style="border: 1px solid black; padding: 2px 10px;">0.00</span> stations miles	Required Construction - <span style="border: 1px solid black; padding: 2px 10px;">0.00</span> stations miles
Required Abandonment- <span style="border: 1px solid black; padding: 2px 10px;">0.00</span> stations miles	Optional Reconstruction - <span style="border: 1px solid black; padding: 2px 10px;">17+94</span> stations miles <span style="border: 1px solid black; padding: 2px 10px;">0.34</span>	Optional Construction - <span style="border: 1px solid black; padding: 2px 10px;">0+00</span> stations miles <span style="border: 1px solid black; padding: 2px 10px;">0.00</span>

### PRE-HAUL MAINTENANCE

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$0.00**

### RECONSTRUCTION

#### CLEARING/GRUBBING

Scattering Organic Debris	0.62	acres @	\$1,010.00	per acre	\$626.20
Remove large stumps -	8.00	@	\$117.00	each	\$936.00

#### EXCAVATION

Reconstruct and Widen Road Prism/with ditchline - includes embankment	17.94	stations @	\$156.33	per station	\$2,804.56
Construct ditchouts -	1	@	\$91.00	each	\$91.00
Grade and shape subgrade -	17.94	stations @	\$22.55	per station	\$404.55

#### FILL

#### MISC.

Roll subgrade w/ vibratory roller prior to rocking -	17.94	stations @	\$18.00	per station	\$322.92
Construct turnouts -	2	@	\$91.00	each	\$182.00
Construct landing -	6	@	\$185.50	each	\$1,113.00
Grass seed -	30.2	lbs @	\$9.00	per lbs	\$271.80

#### ENDHAUL

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$6,752.03**

### CONSTRUCTION

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$0.00**

### CULVERTS - MATERIALS & INSTALLATION

<u>Culverts</u>					
30	LF of 18"	\$747.68		0	LF of 24" <span style="float: right;">\$0.00</span>
0	LF of 30"	\$0.00		0	LF of 36" <span style="float: right;">\$0.00</span>
0	LF of 42"	\$0.00		0	LF of 48" <span style="float: right;">\$0.00</span>
0	LF of 54"	\$0.00		0	LF of 60" <span style="float: right;">\$0.00</span>
0	LF of 66"	\$0.00		0	LF of 72" <span style="float: right;">\$0.00</span>
		\$747.68		\$0.00	
<u>Half Rounds</u>					
0	LF of 24"	\$0.00		0	LF of 30" <span style="float: right;">\$0.00</span>
0	LF of 36"	\$0.00		0	LF of 42" <span style="float: right;">\$0.00</span>
		\$0.00		\$0.00	
<u>Culvert Stakes &amp; Markers</u>					
0	stakes	\$0.00			
1	markers	\$11.00			
		\$11.00		TOTAL CULVERTS	

**\$758.68**

### ROCK

Energy Dissipator/Headwall - culverts	1.0	cy. of	Riprap LL	@	\$23.82	per c.y.=	\$23.82
0+00 to 17+94	1,177	cy. of	3" Jaw Run	@	\$22.01	per c.y.=	\$25,905.77
							TOTAL ROCK

**\$25,929.59**

### ABANDONMENT

TOTAL ABANDONMENT **\$0.00**

Required Pre-Haul Maintenance- <span style="border: 1px solid black; padding: 2px 10px;">\$0.00</span>	Required Reconstruction - <span style="border: 1px solid black; padding: 2px 10px;">\$0.00</span>	
Required Abandonment- <span style="border: 1px solid black; padding: 2px 10px;">\$0.00</span>	Optional Reconstruction - <span style="border: 1px solid black; padding: 2px 10px;">\$33,440.30</span>	SUBTOTAL <b>\$33,440.30</b>
Required Construction - <span style="border: 1px solid black; padding: 2px 10px;">\$0.00</span>	Optional Construction - <span style="border: 1px solid black; padding: 2px 10px;">\$0.00</span>	TOTAL <b>\$33,440.30</b>
		<b>COST PER STATION \$1,864.01</b>

## ROCK DEVELOPMENT COST SUMMARY

Pit:	CG-2037 Pit #2	Location:	N½ Sec. 10, T03N, R07E, W.M.
Sale:	<b>Fiddlehead VDT VRH</b>	Road:	7850. CY
Swell:	1.30	Stockpile:	2004 c.y.
Shrinkage:	0.00	Total Truck Loads:	9854. CY
Drill Pct.:	100%	In Place Total:	7580 c.y.

Access Road Construction	1.5 Stations	\$223.33 /Station	\$335.00
Pit Development & Cleanup including Clearing and Grubbing of Waste Area, Endhaul and place overburden, grass seeding.			
in Waste Area, spread and compact.	\$5.32 /cu.yd x	1824.0 cu.yds.	\$9,703.68
Drill & Shoot:	\$3.65 /cu.yd x	7580.0 cu.yds.	\$27,667.00
Rip Rock:	\$2.50 /cu.yd x	0 cu.yds.	\$0.00
Push Rock:	\$1.35 /cu.yd x	9854.0 cu.yds.	\$13,302.90
Load Crusher:	\$0.75 /cu.yd x	9676.0 cu.yds.	\$7,257.00
Crush 3" Jaw Run Rock:	\$4.05 /cu.yd x	6822 cu.yds.	\$27,629.10
Crush 1½" Minus Rock:	\$6.00 /cu.yd x	2854 cu.yds.	\$17,124.00
Load Crushed Rock in Truck:	\$0.75 /cu.yd x	9676.0 cu.yds.	\$7,257.00
Load Rip Rap Rock in Truck:	\$2.50 /cu.yd x	178.0 cu.yds.	\$445.00
	\$0.00 /ton x	0 tons =	\$0.00
	\$0.00 /ton x	0 tons =	\$0.00
	\$0.00 /ton x	0 tons =	\$0.00
	\$0.00 /cu.yd x	0 cu.yds.	\$0.00
		Subtotal	\$110,720.68

Move In/Set-up Mobile Jaw	1	@	\$1,106.54	=	\$1,106.54
Move In/Set-up Mobile 2 Stage Crusher	1	@	\$1,411.30	=	\$1,411.30
Move In/Set-up 3 Stage Crusher	0	@	\$0.00	=	\$0.00
Move In and set up Drill and Compressor	1	@	\$716.53	=	\$716.53
Move in Roller and Compactor	0	@	\$620.07	=	\$0.00
Move in Grader	0	@	\$583.89	=	\$0.00
Move in D-8	1	@	\$729.84	=	\$729.84
Move in Loader	1	@	\$685.08	=	\$685.08
Move in Excavator	2	@	\$645.83	=	\$1,291.66
Move in Trucks	5	@	\$246.14	=	\$1,230.70
Move in Water Truck	0	@	\$0.00	=	\$0.00
				Subtotal	\$7,171.65

TOTAL PRODUCTION COSTS \$117,892.33

Base Cost = \$11.96 Per Cu.Yd.

Road Segment	Haul Cost /cu.yd.	Proc Cost /cu.yd.	Base Cst. /cu.yd.	Cost /cu.yd.	Number Cu. Yds	Speed (Mi/hr.)	One-Way Dist (ft)	ROCK COST
CG-2030 0+00 to 202+96 Spot Rock 1 1/4" Minus	\$9.36	\$1.70	\$11.96	\$23.02	500	17	19487	\$11,510.00
CG-2031 0+00 to 50+76 Spot Rock 1 1/4" Minus	\$6.98	\$1.70	\$11.96	\$20.64	150	17	13004	\$3,096.00
CG-2031C 0+00 to 5+10 Spot Rock 1 1/4" Minus	\$7.06	\$1.70	\$11.96	\$20.72	50	17	13223	\$1,036.00
CG-2031C LL Energy Dissipator/Headwall - culverts	\$7.80	\$1.80	\$11.96	\$21.56	1.0	15	12783	\$21.56
CG-2031C Landing 3" Jaw Run	\$6.97	\$1.45	\$11.96	\$20.38	41	17	12973	\$835.58
CG-2037 Spot Rock 0+00 to 19+71 1 1/4" Minus	\$3.58	\$1.70	\$11.96	\$17.24	150	17	3761	\$2,586.00
CG-2031A Energy Dissipator/Headwall - culverts	\$8.18	\$1.80	\$11.96	\$21.94	9.5	12	10947	\$208.43
CG-2031A 0+00 to 28+24 3" Jaw Run	\$6.94	\$1.45	\$11.96	\$20.35	1715	15	11365	\$34,900.25
CG-2031A1 LL Energy Dissipator/Headwall - culverts	\$8.31	\$1.80	\$11.96	\$22.07	10.5	12	11198	\$231.74
CG-2031A1 0+00 to 13+46 3" Jaw Run	\$6.87	\$1.45	\$11.96	\$20.28	690	15	11208	\$13,993.20
CG-2031C HL Energy Dissipator/Headwall/Armor - cul	\$10.07	\$2.20	\$11.96	\$24.23	76.0	12	14573	\$1,841.48
CG-2031C LL Energy Dissipator/Headwall - culverts	\$10.43	\$1.80	\$11.96	\$24.19	34.0	12	15273	\$822.46
CG-2031C 5+10 to 30+46 3" Jaw Run	\$8.53	\$1.45	\$11.96	\$21.94	1486	15	15185	\$32,602.84
CG-2031C1 HL Energy Dissipator/Headwall/Armor - ct	\$11.49	\$2.20	\$11.96	\$25.65	30.0	12	17304	\$769.50
CG-2031C1 LL Energy Dissipator/Headwall - culverts	\$11.65	\$1.80	\$11.96	\$25.41	16.0	12	17619	\$406.56
CG-2031C1 0+00 to 26+67 3" Jaw Run	\$9.62	\$1.45	\$11.96	\$23.03	1713	15	17819	\$39,450.39
CG-2031D LL Energy Dissipator/Headwall - culverts	\$10.06	\$1.80	\$11.96	\$23.82	1.0	12	14572	\$23.82
CG-2031D 0+00 to 17+94 3" Jaw Run	\$8.60	\$1.45	\$11.96	\$22.01	1177	15	15365	\$25,905.77
Stock Pile - CG-2037 @ 19+71 - 1 1/4" Minus	\$1.84	\$0.40	\$11.96	\$14.20	2004	5	150	\$28,456.80
Total C.Y.					9854.0		Sub Total	\$198,698.38

TOTAL ROCKING COSTS \$198,698.38

## ROCK DEVELOPMENT COST SUMMARY

	Existing 2 1/2" Minus Stockpile		
Pit:	Existng 3" Jaw Run Stockpile	Location:	1+32 on CG-2031D 19+71 on CG-2037
Sale:	<b>Fiddlehead VDT VRH</b>	Road:	742. c.y.
Swell:	1.30	Stockpile:	c.y.
Shrinkage	1.16	Total Truck Loads:	742. c.y.
Drill Pct.:	0%	In Place Total:	c.y.

Pit Development & Cleanup including Clearing and grubbing of Waste Area @ adjacent to pit, place overburden in Waste Area, spread and compact.

	\$0.00	/cu.yd x	0	cu.yds.	\$0.00
Drill & Shoot:	\$3.65	/cu.yd x	0	cu.yds.	\$0.00
Rip Rock:	\$2.50	/cu.yd x	0	cu.yds.	\$0.00
Push Rock:	\$1.35	/cu.yd x	0	cu.yds.	\$0.00
Load Crusher:	\$0.75	/cu.yd x	0	cu.yds.	\$0.00
Crush 3" Rock:	\$4.05	/cu.yd x	0	cu.yds.	\$0.00
Load Dump Truck - 2 1/2" Minus/Jaw Run:	\$0.75	/cu.yd x	742	cu.yds.	\$556.50
Load Dump Truck - Riprap:	\$2.50	/cu.yd x	0.0	cu.yds.	\$0.00
	\$0.00	/ton x	0	tons =	\$0.00
	\$0.00	/ton x	0	tons =	\$0.00
	\$0.00	/ton x	0	tons =	\$0.00
	\$0.00	/cu.yd x	0	cu.yds.	\$0.00
Subtotal	\$556.50				

Move In/Set-up Jaw	0	@	\$0.00	=	\$0.00
Move In/Set-up 2 Stage Crusher	0	@	\$0.00	=	\$0.00
Move In/Set-up 3 Stage Crusher	0	@	\$0.00	=	\$0.00
Move In and set up Drill and Compressor	0	@	\$0.00	=	\$0.00
Move in Roller and Compactor	0	@	\$0.00	=	\$0.00
Move in Grader	0	@	\$0.00	=	\$0.00
Move in D-8	0	@	\$0.00	=	\$0.00
Move in Loader	1	@	\$685.08	=	\$685.08
Move in Excavator	0	@	\$0.00	=	\$0.00
Move in Trucks	5	@	\$246.14	=	\$1,230.70
Move in Water Truck	0	@	\$0.00	=	\$0.00
Subtotal	\$1,915.78				

TOTAL PRODUCTION COSTS \$2,472.28

Base Cost= \$3.33 Per Cu.Yd.

Road Segment	Haul Cost /cu.yd.	Proc Cost /cu.yd.	Load Cost Base Cst. /cu.yd.	Cost /cu.yd.	Number Cu. Yds	Speed (Mi/hr.)	One-way Dist (ft)	ROCK COST
CG-2031 Landings from CG-2037 stockpile	\$7.35	\$1.45	\$3.33	\$12.13	328	17	14019	\$3,978.64
CG-2031 50+76 to 62+81 Spot Rock-CG-2031D stockpi	\$2.74	\$1.70	\$3.33	\$7.77	250	12	1036	\$1,942.50
CG-2031A1 Landings from CG-2037 stockpile	\$6.32	\$1.45	\$3.33	\$11.10	164	17	11198	\$1,820.40
			Total C.Y.		742.0		Sub Total	\$7,741.54

TOTAL ROCKING COSTS \$7,741.54

## Road Building Move-In Calculations

Sale: Fiddlehead VDT VRH

LOWBOY HAUL (Round Trip)		
DIST. (mi)	ROADWAY	AVE SPEED (mph)
43.0	Highway	50
3.6	County/ Mainline	17
2.5	Steep Grades	10

No.	EQUIPMENT DESCRIPTION	Move in Cost	Pilot Cars	Within Area			Within		Total Cost
				Move (\$/mile)	Begin Mileage	End Mileage	Total Miles	Area Cost	
0	Brush Cutter	\$406.25		\$17.80	0.00	0.00	0	\$0.00	\$0.00
1	Graders	\$635.80		\$19.83	0.00	0.00	4	\$79.32	\$715.12
0	Loader (Small)	\$406.25		\$15.00	0.00	0.00	0	\$0.00	\$0.00
0	Loader (Med. & Large)	\$635.80		\$17.00	0.00	0.00	0	\$0.00	\$0.00
1	Rollers & Compactors	\$406.25		\$27.14	0.00	0.00	4	\$108.56	\$514.81
0	Drill & Compressor	\$406.25		\$35.60	0.00	0.00	0	\$0.00	\$0.00
1	Excavators (Small)	\$406.25		\$50.00	0.00	0.00	6	\$300.00	\$706.25
2	Excavators (Large)	\$799.75	2	\$56.00	0.00	0.00	4	\$448.00	\$2,591.96
0	Tired Backhoes/Skidlers	\$635.80		\$12.50	0.00	0.00	0	\$0.00	\$0.00
0	Tractors (D6)	\$635.80		\$32.43	0.00	0.00	0	\$0.00	\$0.00
0	Tractors (D7)	\$635.80		\$30.00	0.00	0.00	0	\$0.00	\$0.00
1	Tractor (D8)	\$799.75	2	\$57.43	0.00	0.00	4	\$229.72	\$1,125.93
5	Dump Truck (10 cy +)	\$218.09		\$11.00	0.00	0.00	3	\$165.00	\$1,915.45
0	Dump Truck (Off Hiway)	\$585.65		\$9.00	0.00	0.00	0	\$0.00	\$0.00
0	Water Truck (1500 Gal)	\$166.54		\$10.50	0.00	0.00	0	\$0.00	\$0.00
0	Water Truck (2500 Gal)	\$194.30		\$12.25	0.00	0.00	0	\$0.00	\$0.00

	<b>TOTAL MOVE-IN COSTS: \$7,569.52</b>
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## WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

### FOREST EXCISE TAX ROAD SUMMARY SHEET

**Region:** Pacific Cascade

**Timber Sale Name:** Fiddlehead VDT VRH

**Application Number:** 30- 103982

#### EXCISE TAX APPLICABLE ACTIVITIES

**Construction:** 0 linear feet  
*Road to be constructed (optional and required) but not abandoned*

**Reconstruction:** 1,794 linear feet  
*Road to be reconstructed (optional and required) but not abandoned*

**Abandonment:** 0 linear feet  
*Abandonment of existing roads not reconstructed under the contract*

**Decommission:** 4,170 linear feet  
*Road to be made undriveable but not officially abandoned.*

**Pre-Haul Maintenance:** 29,058 linear feet  
*Existing road to receive maintenance work (optional and required) prior to haul*

#### EXCISE TAX EXEMPT ACTIVITIES

**Temporary Construction:** 2,667 linear feet  
*Roads to be constructed (optional and required) and then abandoned*

2,536 linear feet  
**Temporary Reconstruction:**  
*Roads to be reconstructed (optional and required) and then abandoned*

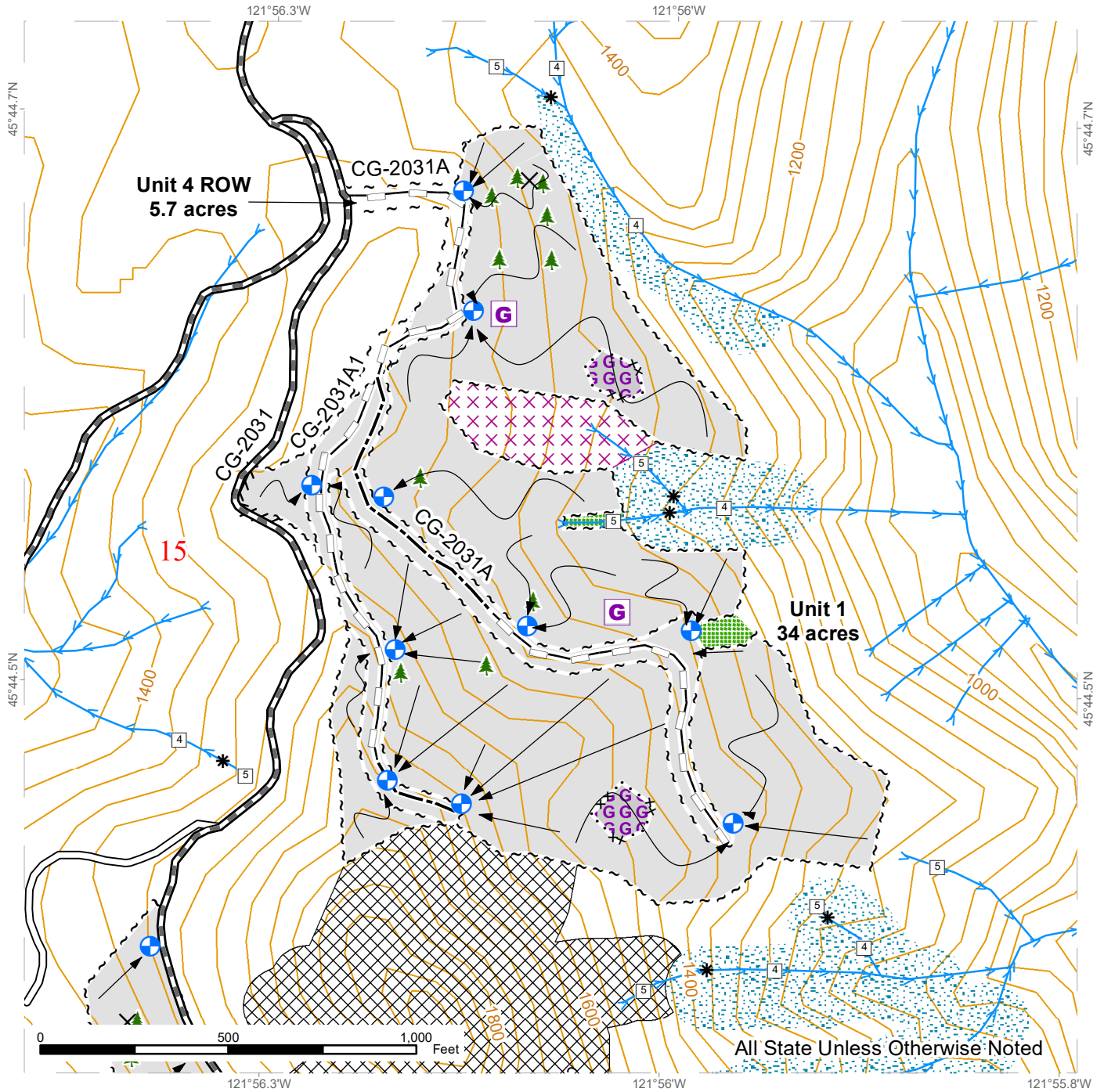
All parties must make their own assessment of the taxable or non-taxable status of any work performed under the timber sale contract. The Department of Revenue bears responsibility for determining forest road excise taxes. The Department of Natural Resources developed this form to help estimate the impact of forest excise taxes. However, the information provided may not precisely calculate the actual amount of taxes due. The Department of Revenue is available for consultation by calling 1.800.548.8829.

(Revised 9/18)

# LOGGING PLAN MAP

SALE NAME: FIDDLEHEAD VDT VRH  
 AGREEMENT#: None  
 TOWNSHIP(S): T3R7E  
 TRUST(S): Common School and Indemnity (3), Scientific School (10), State Forest Transfer (1)

REGION: Pacific Cascade Region  
 COUNTY(S): Skamania  
 ELEVATION RGE: 800-1800



Ground Harvest	Sale Boundary Tags	Streams
Cable Harvest	Special Mgmt Area	Stream Type
Talus and Buffer	Right of Way Tags	Stream Type Break
Gap	Flag Line	Gap < 1/4 acre
Leave Tree Area	Existing Roads	Landing - Proposed
Riparian Mgt Zone	Required Pre-Haul Maintenance	Leave Trees
Potentially Unstable Slopes	Optional Construction	Take Tree
	Optional Reconstruction	

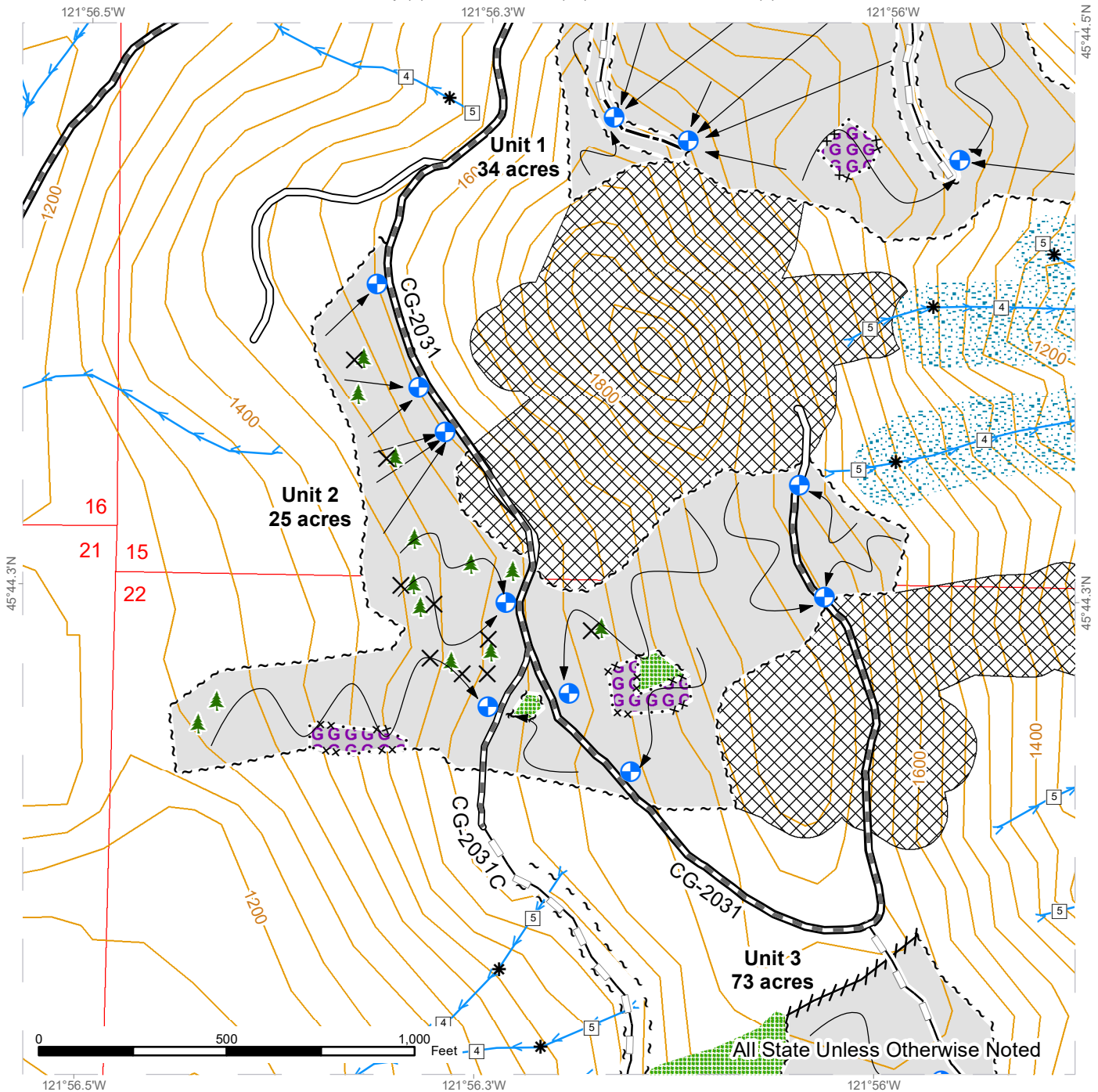




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SALE NAME: FIDDLEHEAD VDT VRH  
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 TOWNSHIP(S): T3R7E  
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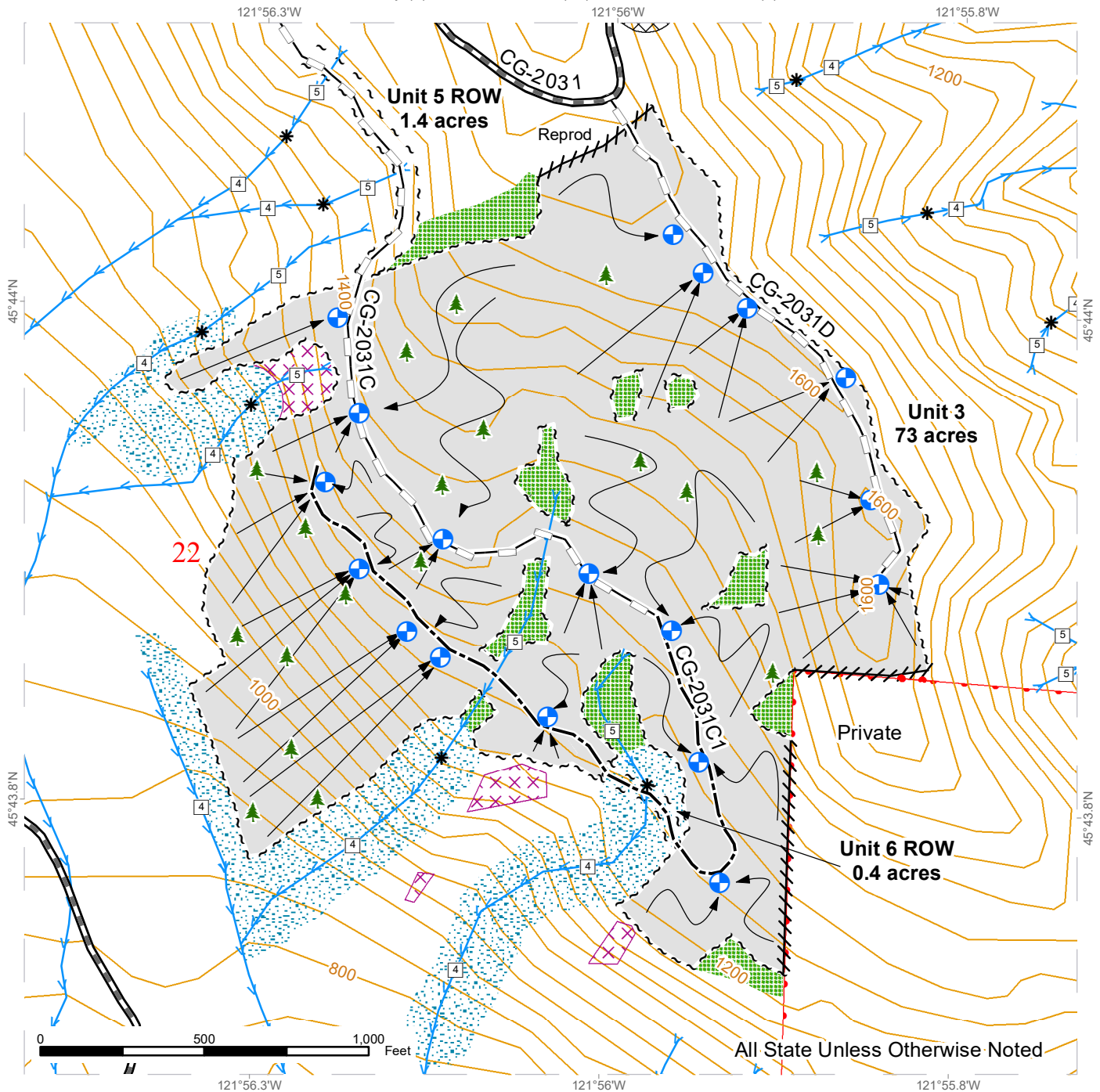





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REGION: Pacific Cascade Region  
 COUNTY(S): Skamania  
 ELEVATION RGE: 800-1800



Ground Harvest	Sale Boundary Tags	Existing Roads
Cable Harvest	Leave Tree Tags	Required Pre-Haul Maintenance
Talus and Buffer	Right of Way Tags	Optional Construction
Leave Tree Area	Property Line	Optional Reconstruction
Riparian Mgt Zone	Flag Line	Streams
Potentially Unstable Slopes	Stream Type	Stream Type Break
	Landing - Proposed	Leave Tree Area <1/4-acre

