



TIMBER NOTICE OF SALE

SALE NAME: GROOT VRH THIN RMZ

AGREEMENT NO: 30-99599

AUCTION: April 30, 2020 starting at 10:00 a.m., COUNTY: Cowlitz
Pacific Cascade Region Office, Castle Rock, WA

SALE LOCATION: Sale located approximately 15 miles southeast of Toutle

PRODUCTS SOLD AND SALE AREA:

All timber, except leave trees marked with blue paint, trees bounded out by yellow "Leave Tree Area" tags with pink flagging, snags and all down timber existing 3 years prior to the day of sale, bounded by the following: White "Timber Sale Boundary" tags with pink flagging, blue "Special Management Boundary" tags with pink flagging, the 5100, 5108, and 4258 Roads in Unit 1; White "Timber Sale Boundary" tags with pink flagging and the 5100 Road in Units 3; White "Timber Sale Boundary" tags with pink flagging and the 5100 and 5110 Roads in Unit 4.

All timber as described in the Schedule A bound by the following; pink flagging and the 5100, 5105, and 5110B roads in Unit 2; White "Timber Sale Boundary" tags with pink flagging, blue "Special Management Boundary" tags with pink flagging Unit 5 on part(s) of Sections 13, 14, 22 and 23 all in Township 9 North, Range 2 East, W.M., containing 163 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:

Table with columns: Species, Avg DBH, Ring Count, Total MBF, Total \$/MBF, and MBF by Grade (1P, 2P, 3P, SM, 1S, 2S, 3S, 4S, UT). Rows include Douglas fir, Hemlock, Red alder, Maple, Silver fir, Red cedar, and Sale Total.

MINIMUM BID: \$273/MBF (est. value \$810,000.00) BID METHOD: Sealed Bids

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

EXPIRATION DATE: October 31, 2022 ALLOCATION: Export Restricted

BIDDABLE SPECIES: Douglas fir

BID DEPOSIT: \$81,000.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: Shovel, Track skidder, and Cable. and cable assist logging systems. This sale is estimated to be 40% cable/cable assist and 60% ground based yarding. A detailed felling and yarding plan shall be required prior to any harvest activities. Ground based equipment is restricted to sustained slopes of 45% or less. Ground based equipment shall



TIMBER NOTICE OF SALE

only operate during dry soil conditions. For additional harvest requirements, refer to clauses H-140 and H-141 in this contract and the Schedule A.

ROADS: 7.69 stations of optional construction. 29.52 stations of optional reconstruction. 13.40 stations of required prehaul maintenance. 12.50 stations of light abandonment, if built. Rock used in accordance with the quantities in the ROCK LIST under this contract may be obtained at no cost to the Purchaser from the 4250P Pit, located in Section 13, Township 09 North, Range 03 East, W. M. Rock may be obtained from any commercial pit at the Purchaser's expense. Rock Sources will be subject to written approval by the Contract Administrator before they are used. Road construction will not be permitted from October 1 to April 30 unless authorized in writing by the Contract Administrator.

ACREAGE DETERMINATION

CRUISE METHOD: The sale acres were determined by GPS. The sale area was cruised using a variable plot cruise method.

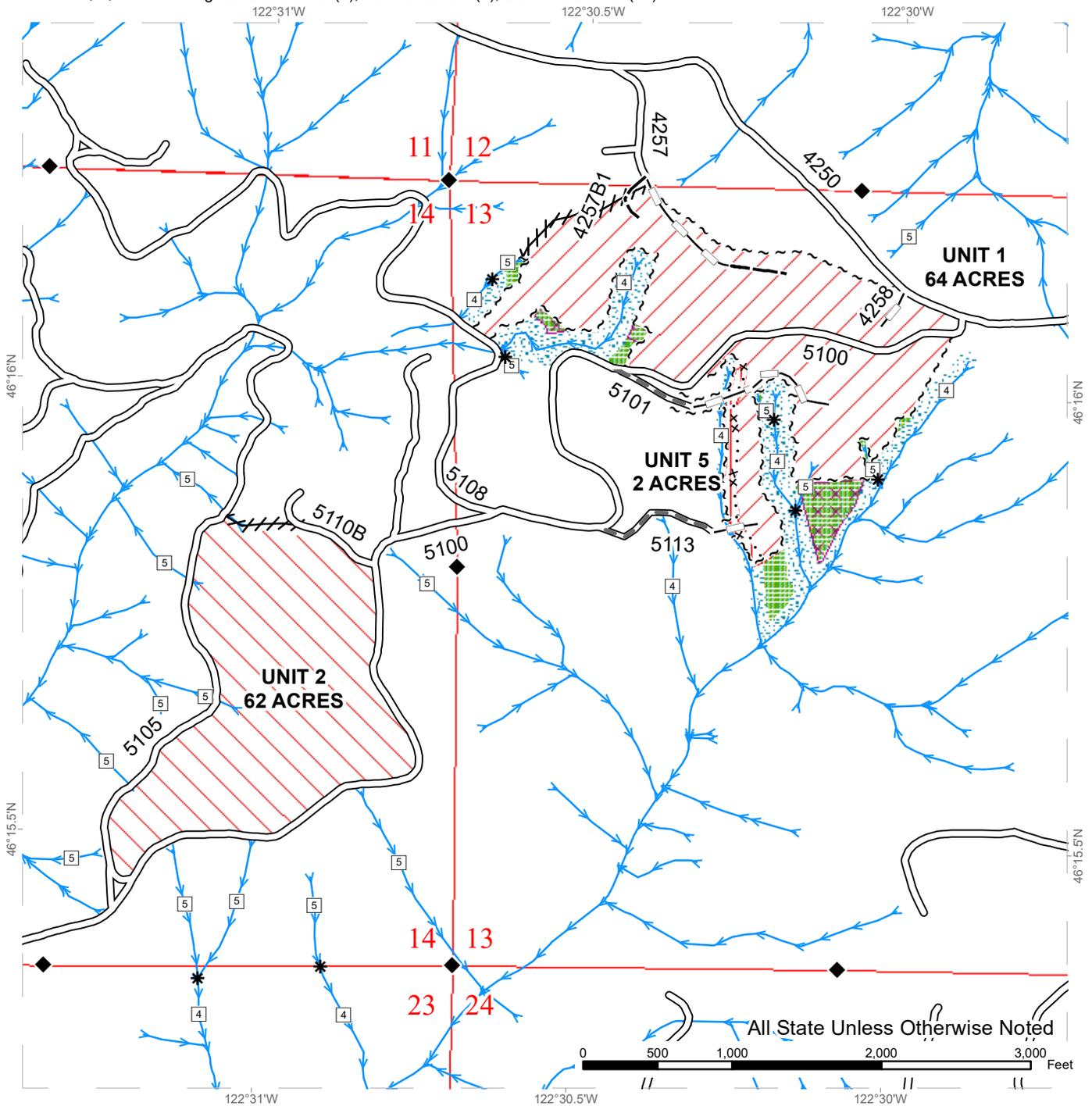
FEES: \$59,347.00 is due on day of sale. \$9.00 per MBF is due upon removal. These are in addition to the bid price.

SPECIAL REMARKS: This sale contains an estimated 181 MBF of higher quality DF 2 saw logs, 176 MBF of higher quality DF 3 saw logs, see cruise for details. No hauling on weekends and State recognized holidays. PCP 1-1 gate keys may be obtained from the Pacific Cascade Region office.

TIMBER SALE MAP

SALE NAME: GROOT VRH THIN RMZ
AGREEMENT #: 30-099599
TOWNSHIP(S): T09R02E
TRUST(S): Agricultural School (4), Normal School (8), Scientific School (10)

REGION: Pacific Cascade Region
COUNTY(S): Cowlitz
ELEVATION RGE: 1059-2800

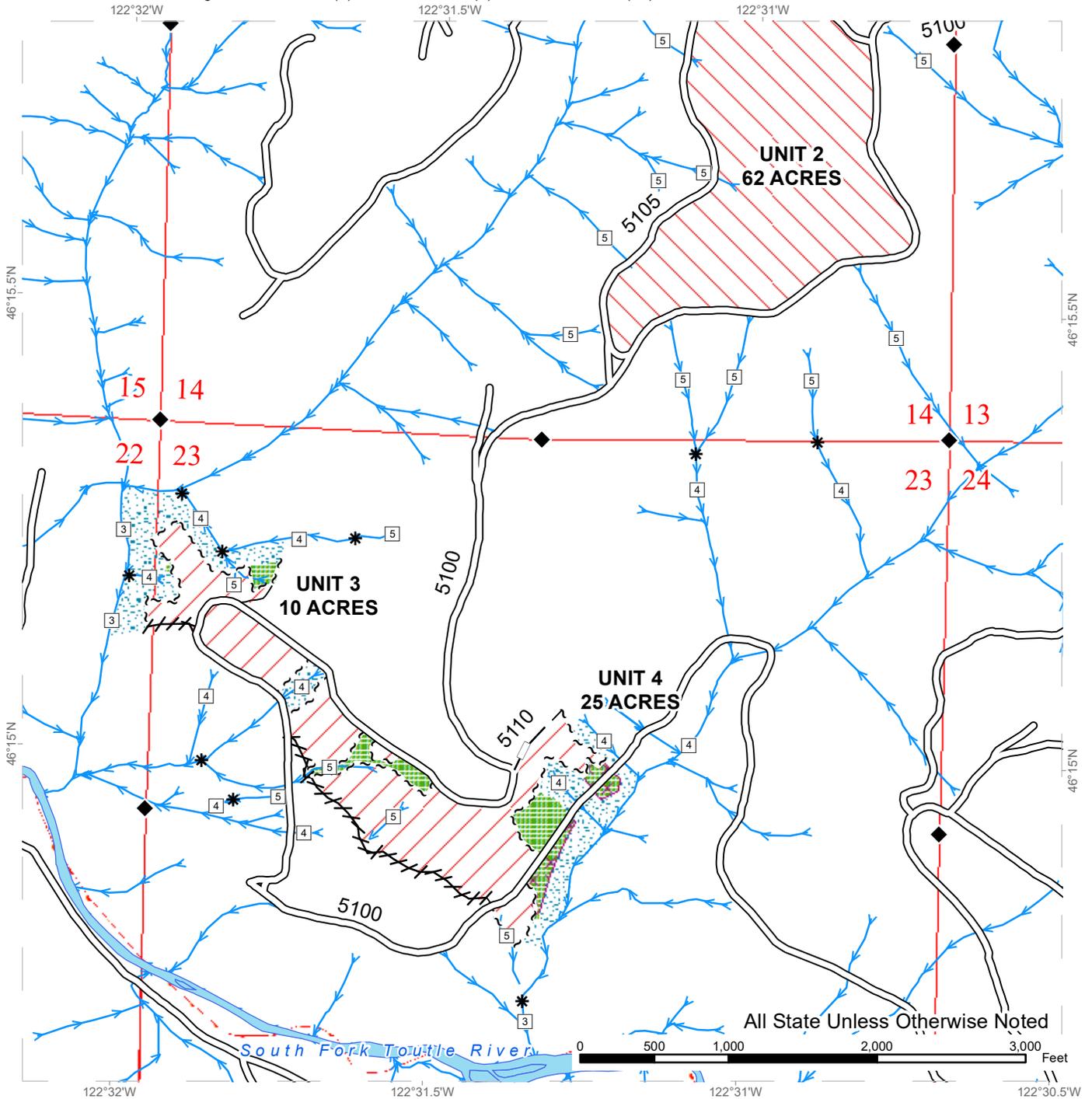


| | | | | | |
|--|-----------------------------|--|-------------------------------|--|-------------------|
| | Variable Retention Harvest | | Sale Boundary Tags | | Streams |
| | Thinning | | Special Mgmt Area | | Stream Type |
| | Riparian Restoration | | Flag Line | | Stream Type Break |
| | Leave Tree Area | | Existing Roads | | Survey Monument |
| | Riparian Mgmt Zone | | Required Pre-Haul Maintenance | | |
| | Forested Wetland | | Optional Construction | | |
| | Potentially Unstable Slopes | | Optional Reconstruction | | |

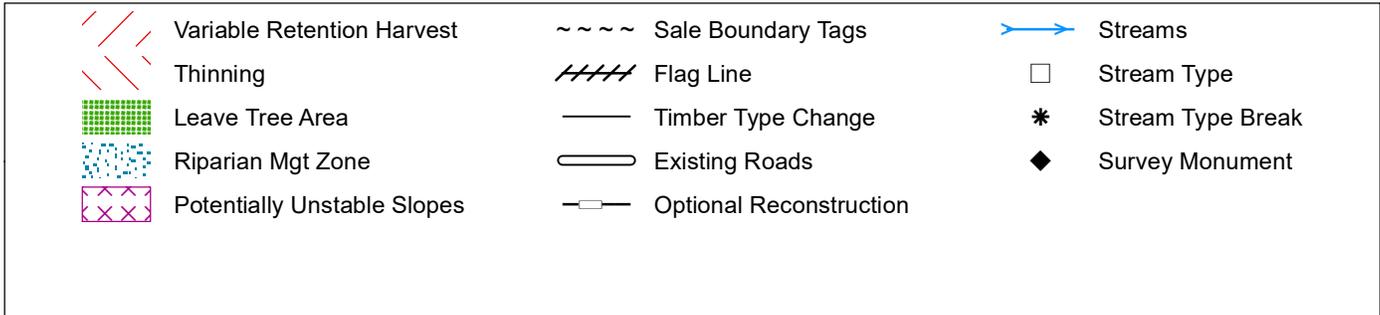
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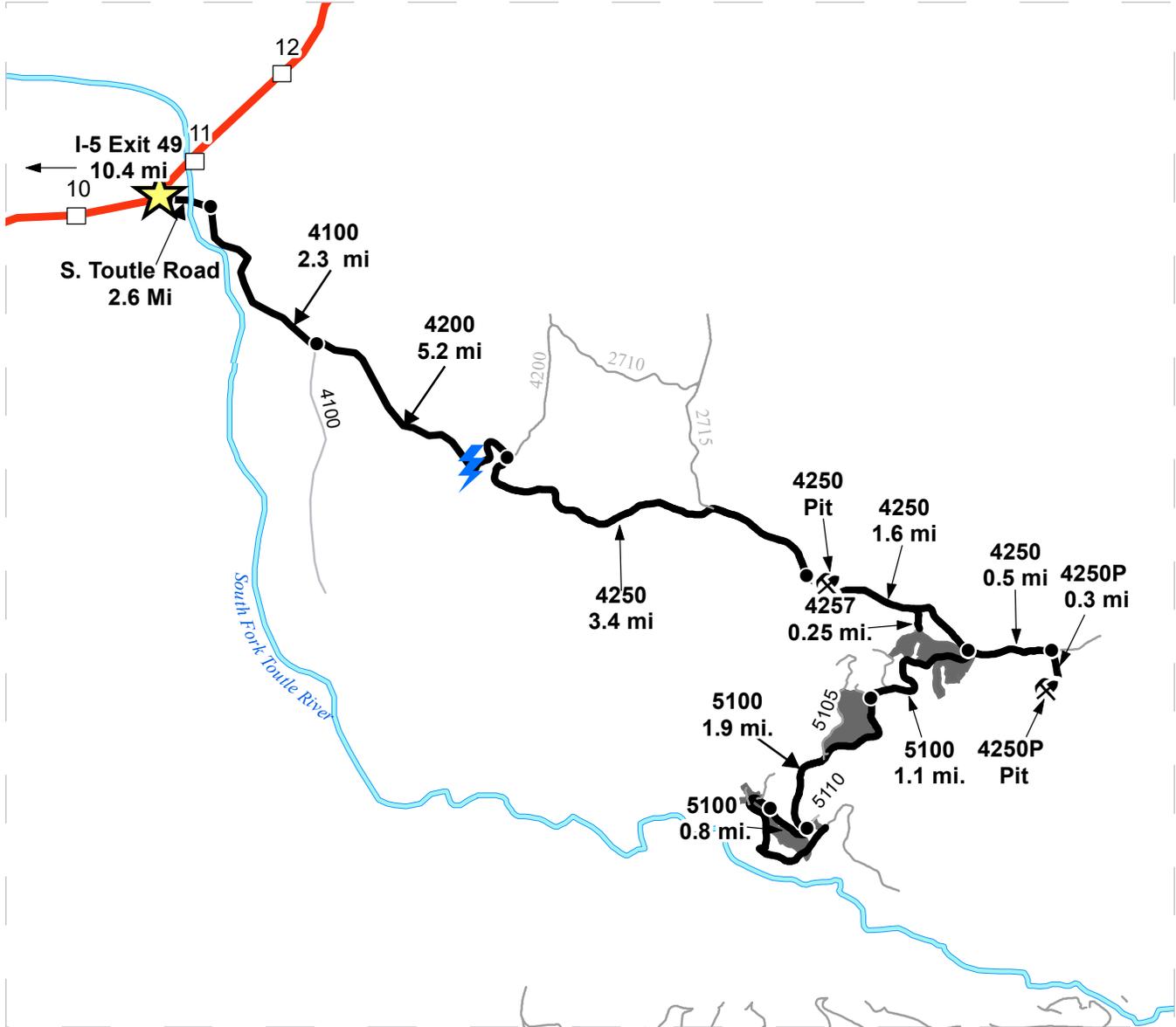
All State Unless Otherwise Noted



DRIVING MAP

SALE NAME: GROOT VRH THIN RMZ
AGREEMENT#: 30-099599
TOWNSHIP(S): T09R02E
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REGION: Pacific Cascade Region
COUNTY(S): Cowlitz
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Map may not be to scale

| | |
|--|------------------|
| | Timber Sale Unit |
| | Highway |
| | Haul Route |
| | Other Road |
| | Milepost Markers |
| | Rock Pit |

DRIVING DIRECTIONS:
 Take Exit 49 off I-5. Follow SR 504 for 10.4 miles. Turn right onto South Toutle Rd. Continue 2.6 miles and turn right on to the 4100 Rd. Drive 2.3 miles on the 4100 to the 4100/4200 intersection. Turn left onto the 4200 and continue for 5.2 miles until reaching the 4200/4250 intersection.

4250P Pit: Continue on the 4250 from the 5100 junction for 0.5 miles. Turn right onto the 4250P road and continue for 0.3 miles.

Unit 1: From the 4250 pit, continue on the 4250 road for 1.6 miles to the 4250/5100 intersection. Unit 1 starts on both sides of the road.

Unit 2: Continue on the 5100 for 1.1 miles. The unit will begin on your right at the 5110B and continue to the 5105 junction.

Unit 4: Continue on the 5100 for 1.4 miles. The unit will be on the left starting at the 5110 intersection.

Unit 3: Continue on the 5100 for 0.8 mile. The unit starts on the left hand side of the road.



**STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES**

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

Export Restricted MBF Scale AGREEMENT NO. 30-099599

SALE NAME: GROOT VRH THIN RMZ

**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 April 30, 2020 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, except leave trees marked with blue paint, trees bounded out by yellow "Leave Tree Area" tags with pink flagging, snags and all down timber existing 3 years prior to the day of sale, bounded by the following: White "Timber Sale Boundary" tags with pink flagging, blue "Special Management Boundary" tags with pink flagging, the 5100, 5108, and 4258 Roads in Unit 1; White "Timber Sale Boundary" tags with pink flagging and the 5100 Road in Units 3; White "Timber Sale Boundary" tags with pink flagging and the 5100 and 5110 Roads in Unit 4.

All timber as described in the Schedule A bound by the following; pink flagging and the 5100, 5105, and 5110B roads in Unit 2; White "Timber Sale Boundary" tags with pink flagging, blue "Special Management Boundary" tags with pink flagging Unit 5, located on approximately 163 acres on part(s) of Sections 13, 14, 22, and 23 all in Township 9 North, Range 2 East W.M. in Cowlitz 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 | 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, 2022.

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 \$16.00 per acre per annum for the acres on which an operating release has not been issued in Units 1, 3 and 4. Payment of \$3.00 per acre per annum for the acres on which an operating release has not been issued in Units 2 and 5.
- 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: BV-SFIS-US09000572.

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.

Road is defined as the road bed, including but not limited to its component parts, such as 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. 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.

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 Purchaser's 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 Operation

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; 2715, 4100 (00+00 to 130+57), 4200, 4250, 4257, 4257B1, 4258, 5100, 5101, 5105, 5110, 5110B, and 5113 Roads. 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 4100, 4200, and 4250 Roads, unless authority is granted in writing by the Contract Administrator.

G-396 Public Hauling Permit

The hauling of forest products, rock or equipment may require a state, county, or city hauling permit. Purchaser is responsible for obtaining any necessary permit and any costs associated with extra maintenance or repair levied by the permitting agency. Purchaser must provide the Contract Administrator with a copy of the executed permit.

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 TO BE ADDED LATER

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 \$59,347.00 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-027 Payment for Removal of Optional Forest Products

Purchaser agrees to weigh all loads and pay the rate of \$2.00 per ton for forest products approved for removal from the sale area under clause H-157.

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 \$100,000.00. 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-070 Purchaser to Furnish Log Scale Information

Purchaser agrees to furnish the State with scaling information, supplied by a third party scaling organization showing the scale, count, and measure of forest products removed during each billing period unless the scale, count, and measure is performed by 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 en-route 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-001 Operations Outside the Sale Boundaries

No operations shall occur outside the sale boundaries, as described within the contract, unless approved in writing by the State.

H-011 Certification of Fallers and Yarder Operators

All persons engaged in the felling and yarding of timber must receive certification in writing from the Contract Administrator. Certification may be revoked when the Contract Administrator determines that non-compliance of leave tree selection criteria or cut tree selection criteria is occurring, or excessive damage to leave trees or skid trails is occurring.

Excessive damage for leave trees is defined in clause H-012.

Excessive skid trail damage is defined in clause H-015 or H-016.

When leave tree damage exceeds the limits set forth in clause H-012, Purchaser shall be subject to liquidated damages (clause D-040 or D-041).

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 'Trespass and 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 14 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-018 Temporary Stream Crossings

A temporary stream crossing is required to access Unit 1.

Purchaser shall comply with the following during the yarding operation:

- a. Adhere to the approved Hydraulic Permit Application (HPA) or Forest Practice Application (FPA) with approved hydraulic project work, if required, amend a current FPA or obtain a new FPA prior to commencing any new stream crossing construction.
- b. Location of the temporary stream crossing must be approved by the Contract Administrator.
- c. A temporary stream crossing shall not exceed 12 feet in width, including rub trees.

- d. Purchaser shall suspend operations during periods of wet weather when a high potential for sediment delivery into typed waters may occur.
- e. Temporary stream crossings shall be removed at the time of completion of yarding as 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-025 Timing Requirements for Timber Removal

All downed timber must be removed within 60 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 and yarding operations, 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-050 Rub Trees

Trees designated for cutting along skid trails and cable corridors shall be left standing as rub trees until all timber that is tributary to the skid trail or cable corridor has been removed.

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-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 shovel, track skidder, and cable/cable assist systems. 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. Full suspension is required when yarding over Type 5 streams.

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-130 Hauling Schedule

The hauling of forest products will not be permitted during weekends and State recognized holidays unless authorized in writing by the Contract Administrator.

H-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

Shovel must be large enough to pick up one end of the largest log 35 feet from the machine.

Ground based yarding equipment will not be permitted on slopes over 45%

Ground based yarding equipment shall only operate during dry soil conditions.

All corridors within Units 2 and 5 will be marked by the Purchaser, and approved by the Contract Administrator prior to felling.

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

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.

Section C: Construction and Maintenance**C-040 Road Plan**

Road construction and associated work provisions of the Road Plan for this sale, dated 2/5/2020 are hereby made a part of this contract.

C-050 Purchaser Road Maintenance and Repair

Purchaser shall perform work at their own expense on the 4257, 4257B, 4257B1, 4258, 5100, 5101, 5105, 5110, 5110B, and 5113 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 listed in Clause G-310 that are not listed in the C-050 Clause. 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-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-040 Noxious Weed Control

Purchaser shall notify the Contract Administrator in advance of moving equipment onto State lands. Purchaser shall thoroughly clean all off road equipment prior to entry onto State land to remove contaminated soils and noxious weed seed. If equipment is moved from one DNR project area to another, the Contract Administrator reserves the right to require the cleaning of equipment. Equipment shall be cleaned at a location approved 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-100 Stream Cleanout

Slash or debris which enters streams 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.

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, the Purchaser is responsible for notifying the following:

Appropriate Department of Ecology regional office (contact information below).

DNR Contract Administrator

ECY - Northwest Region:

1-425-649-7000

(Island, King, Kitsap, San Juan, Skagit, Snohomish, and Whatcom counties)

ECY - Southwest Region:

1-360-407-6300

(Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Mason, Lewis, Pacific, Pierce, Skamania, Thurston, and Wahkiakum counties)

ECY - Central Region:

1-509-575-2490

(Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, and Yakima counties)

ECY - Eastern Region:

1-509-329-3400

(Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, and Whitman counties)

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: $\text{Interest} = r \times \text{LD} \times \text{N}$.

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 \$250.00 per tree for all damaged trees in in Units 2 and 5.

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 Units 1, 3, and 4.

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
THINNING PRESCRIPTIONS

HARVESTING PRESCRIPTIONS

Commercial Thinning Prescription for Unit 2 and Riparian Forest Restoration Management area, Unit 5.

A. THINNING PRESCRIPTION:

The thinning activity within Unit 2 will be a proportional thinning. The thinning activities in Unit 5 will be a thinning from below to meet the requirement that is the residual stand QDM. Specific prescriptions are listed in the table on the following page.

- Opening created by felling trees shall not exceed 30 feet between leave trees. If natural openings in the stand exceed this distance, sufficient trees shall be left on the perimeter of the opening to maintain the appropriate trees per acre and basal area.
- Residual tree spacing shall be varied to preserve trees of good form and vigor within the largest diameter and height.

B. LEAVE TREE SELECTION CRITERIA:

Leave Tree Definition:

Leave trees in the unit will be selected by comparing their characteristics with other trees in the stand.

Priority #1: Leave trees shall be selected based on the following criteria:

- 1) Free of multiple tops;
- 2) No sweep in the bole (stem);
- 3) Free of conks, broken tops, or visible rot, and;
- 4) Possess the biggest, fullest crowns.

If leave trees do not meet one or more of the criteria above, then the Purchaser must leave the required basal area per acre regardless of form or quality.

Priority #2: Species of trees to be retained in order of preference:

| | *Target Residual BA | **Preferred Species to Retain |
|---------|---------------------|---|
| Unit 2: | 180 | Douglas fir, western hemlock, noble fir |
| Unit 5: | 210 | Western hemlock, Douglas fir |

*In each unit, the BA shall not vary by +/- 10 square feet from the prescribed target listed above.

**Highest priority species to retain is listed first.

GROUND-BASED YARDING CORRIDORS:

Skid trail locations shall be marked by the Purchaser and approved, in writing, by the Contract Administrator prior to any harvesting or felling activities. Pre-approved corridors are limited to 12 feet in width (including rub trees), and should be no less than 100 feet apart where operationally feasible, as measured from the center of the corridor. Where possible, corridors shall be located in a manner that minimizes the potential for damaging or needing to remove any leave trees. Use of existing corridors/skid trails shall be given priority where possible.

C. RIPARIAN MANAGEMENT ZONE (RMZ) SPECIAL GUIDELINES (identified as Riparian Restoration areas on the Timber Sale Map):

- Commercial thinning of RMZs shall follow the Schedule A prescription as outlined above.
- No ground-based equipment shall operate within 25 feet of the timber sale boundary tags with pink flagging.
- Five trees from the largest diameter class per RMZ acre shall be selected from the first 25 to 50 feet from the timber sale boundary tags to become RMZ enhancement down wood (DW) or created into snags. Trees becoming down wood shall be felled toward the typed water and left onsite. Down wood will be created at an interval of 1 tree per 116 linear feet of stream on Type 4 waters. Of the five RMZ enhancement trees per RMZ acre, 2 trees may be created into snags. Snags may be created with the use of mechanized equipment by topping the trees with the tops felled towards the stream or wetland and left onsite. Or snags may be created by girdling. Girdling shall expose the cambium the entire circumference of the tree for a width of no less than 6 inches.
-

*DW and/or snag trees shall not count towards the basal area per acre target.

C. PURCHASER CERTIFICATION:

All persons engaged in the selection of leave trees, including the Purchaser, must receive certification, in writing, from the Contract Administrator prior to the start of harvest activities. Within the sale area, certification entails the following:

- 1) Marking an unmarked area with red paint to meet the desired Leave Tree Marking Specifications, Leave Tree Selection Criteria, down woody debris, snag creation, and Spacing Requirements under close supervision of the Contract Administrator.
- 2) Only individuals with written approval by the Contract Administrator are certified. Certification may be revoked when the Contract Administrator determines that non-compliance of leave tree selection criteria or cut tree selection criteria is occurring.

All marking will be approved by the Contract Administrator prior to harvest.

DRAFT

DRAFT

DRAFT

Certification for fallers is defined in clause H-011.

Leave Tree Damage Definition is defined in clause H-012.

Leave Tree Excessive Damage is defined in clause D-040.

PRE-CRUISE NARRATIVE

| | |
|--|---|
| Sale Name: GROOT VRH THIN RMZ | Region: Pacific Cascade |
| Agreement #: 30-099599 | District: St. Helens |
| Contact Forester: Renee Pitts Phone / Location: 360.827.0595 | County(s): Cowlitz |
| Alternate Contact: Chris Wills Phone / Location: 360.751.0764 | Other information: Click here to enter text. |

| | |
|---|-----|
| Type of Sale: MBF Scale | |
| Harvest System: Ground based Click here to enter text. | 60% |
| Harvest System: Uphill Cable | 40% |

UNIT ACREAGES AND METHOD OF DETERMINATION:

| Unit # | 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 (Potentially unstable slopes) | | |
| 1 | 13/T9N/R2E | 10 | 95 | 22 | 6 | 3 | 3* | 64 | GPS (Garmin) |
| 2 | 14/T9N/R2E | 10 | 64 | 0 | 0 | 2 | 0 | 62 | GPS (Garmin) |
| 3 | 22/T9N/R2E | 04 | 21 | 9 | 1 | 1 | 0 | 10 | GPS (Garmin) |
| 4 | 23/T9N/R2E | 04 | 41 | 8 | 7 | 1 | 3* | 25 | GPS (Garmin) |
| 5 | 13/T9N/R2E | 10 | 2 | 0 | 0 | 0 | 0 | 2 | GPS (Garmin) |
| TOTAL ACRES | | | 223 | 39 | 14 | 7 | 6* | 163 | |

*Acres are accounted for within RMZ and Leave Tree Acres

HARVEST PLAN AND SPECIAL CONDITIONS:

| Unit # | Harvest Prescription: (Leave, take, paint color, tags, flagging etc.) | Special Management areas: | Other conditions (# leave trees, etc.) |
|--------|---|----------------------------|--|
| 1 | White "Timber Sale Boundary" tags with pink flagging, 5100 Road, 5108 Road, and 4250 road in Unit 1 | Variable Retention Harvest | 569 Leave Trees |
| 2 | Pink flagging, 5105 Road, 5110B Road, and 5100 Road in Unit 2. | Commerical Thin | |
| 3 | White "Timber Sale Boundary" tags with pink flagging, and 5100 | Variable Retention Harvest | 96 Leave Trees |

| | | | |
|---|---|----------------------------|-----------------|
| | | | |
| 4 | White "Timber Sale Boundary" tags with pink flagging, and 5100 | Variable Retention Harvest | 264 Leave Trees |
| 5 | White "Timber Sale Boundary" tags with pink flagging in Unit 5. | RFRS Thin | |

OTHER PRE-CRUISE INFORMATION:

| Unit # | Primary,secondary Species / Estimated Volume (MBF) | Access information (Gates, locks, etc.) | Photos, traverse maps required |
|-----------|--|---|---|
| 1 | DF, WH, RA (1,418 MBF) | Access is from the Weyco 4100 road, to the 4200, to the 4250, then the 5100 | See Logging Plan maps and driving maps. |
| 2 | DF, WH, NF, RA (895 MBF) | Access is from the Weyco 4100 road, to the 4200, to the 4250, then the 5100 | See Logging Plan maps and driving maps. |
| 3 | DF, WH, NF, RA (395 MBF) | Access is from the Weyco 4100 road, to the 4200, to the 4250, then the 5100 | See Logging Plan maps and driving maps. |
| 4 | DF, WH, NF, RA (972 MBF) | Access is from the Weyco 4100 road, to the 4200, to the 4250, then the 5100 | See Logging Plan maps and driving maps. |
| 5 | DF, WH, RA | Access is from the Weyco 4100 road, to the 4200, to the 4250, then the 5100 | See Logging Plan maps and driving maps. |
| TOTAL MBF | 3860 | | |

REMARKS:

This sale is a Variable Retention Harvest with an Upland Thinning and a RFRS thinning. All units are located off of the 5100. Leave tree areas are located behind the white "Timber Sale Boundary" tags to alleviate confusion of tags behind tags. This will be a scale sale with a mixture of Douglas-Fir, noble fir, western hemlock and red alder. Previous activities in the vicinity include the Rib Eye Timber Sale, the Prime Rib Timber Sale, and the Shoe Shiner Timber Sale. The 4250 road is one of the main access roads within the Toutle block. Drivability is anticipated to be good year-round.

| | | |
|--|-----------------|-----|
| Prepared By: Renee Pitts Date: Jan 2019 | Title: Forester | CC: |
|--|-----------------|-----|

Cruise Narrative

| | |
|---|-----------------------------------|
| Sale Name: Groot VRH THIN RMZ | Region: Pacific Cascade |
| App. #: 30-099599 | District: St. Helens |
| Lead Cruiser: DPClark | Completion date: 9-11-2019 |
| Other Cruisers: ACChaney, KJBailey | |

Unit acreage specifications:

| Unit # | Cruised acres | Cruised acres agree with sale acres? Yes/No | If acres do not agree explain why. |
|--------|---------------|--|------------------------------------|
| 1 | 64 | YES | |
| 2 | 62 | YES | |
| 3 | 10 | YES | |
| 4 | 25 | YES | |
| 5 | 2 | YES | |
| Total | 163 | YES | |

Unit cruise specifications:

| Unit # | Sample type (VP, FP, ITS,100%) | Expansion factor (BAF, full/half) | Sighting height (4.5 ft, 16 ft.) | Grid size (Plot spacing or % of area) | Plot ratio (Cru./Tally) | Total number of plots |
|--------|--------------------------------|-----------------------------------|----------------------------------|---------------------------------------|-------------------------|-----------------------|
| 1 | VP | 33.61 | 16' | 208 | 1:2 | 64 |
| 2 | VP | 27.78 | 16' | 208 | 1:1 | 60 |
| 3 | VP | 33.61 | 16' | 150 | 1:1 | 19 |
| 4 | VP | 33.61 | 16' | 208 | 1:1 | 22 |
| 5 | VP | 33.61 | 16' | 150 | Cruise All | 7 |

Sale/Cruise Description:

| | | | | | | | |
|--|---|-------------|----|-------------|----|-------------|----|
| Minor species cruise intensity: | Cruised on appropriate plots. | | | | | | |
| Minimum cruise spec: | 40% Of Form- Factor at 16 feet D.O.B or 5 inch Top, and merchantable top. | | | | | | |
| Avg. ring count by sp: | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">DF =</td> <td style="width: 35%;">5</td> <td style="width: 15%;">WH =</td> <td style="width: 15%;">NA</td> <td style="width: 15%;">SS =</td> <td style="width: 15%;">NA</td> </tr> </table> | DF = | 5 | WH = | NA | SS = | NA |
| DF = | 5 | WH = | NA | SS = | NA | | |
| Leave/take tree description: | | | | | | | |
| Sort Description: | <p>HA – Logs meeting the following criteria: Surface characteristics for a high quality A sort will have sound tight knots not to exceed 1 ½" in diameter, numbering not more than an average of one per foot of log length. May include logs with not more than two larger knots. Knots and knot indicators ½" in diameter and smaller shall not be a determining factor. Logs will have a growth ring count of 6 or more rings per inch in the outer third top end of the log. (min dia 8".)</p> <p>HB – Logs meeting the following criteria: Surface characteristics for a B sort will have sound tight knots not to exceed 1 ½" in diameter. May include logs with not more than two larger knots up to 2 ½" in diameter. Logs will have a growth ring count of 6 or more rings per inch in the outer third to end of the log. (min dia 8".)</p> <p>R – Logs meeting the following criteria: Gross diameter of 12 inches or greater, excessive knots greater than 2 ½ inches with recovery less than 65% of the net scale.</p> | | | | | | |

| |
|--------------|
| D - Domestic |
|--------------|

Field observations:

Groot is a timber sale comprised of 5 sub units totaling 163 acres. The timber type is a conifer mix that is even aged and uniform sized. The stands were pre-commercially thinned several years ago and stand stocking is uniform. The average tree age for the sale is approximately 50 years old. Stand health is good with little evidence of insect or disease problems. Minor amounts of storm damage along stand edges. Modest amount of defect. Some frost cracks in the WH and SF. Log quality is mostly Domestic because of low ring count and small size. A very small amount of RA and RC present.

Note that units 2 and 5 are commercial thins with harvest selection designated by prescription as defined in Schedule A.

Grants: 04,10**Prepared by:** DPClark**Title:** Timber Cruiser

Trees with status code L are leave trees.

| TC | | PSPCSTGR | | Species, Sort Grade - Board Foot Volumes (Project) | | | | | | | | | | | | | | | | | | | | | | |
|--|--------|----------|----------|--|------------------|--------|--------|------------------|----------------------------------|------|-------|-----|------------|-------|-------|-------|-------------|-----------|-----------|-----------|----------------------|----|-----|------|-------|-----|
| <div style="border: 1px solid black; padding: 5px;"> T09N R02E S13 Ty00U1 THRU T09N R02E S13 Ty00U5 </div> | | | | Project: | | GROOT | | | | | | | | | | | Page | | 1 | | | | | | | |
| | | | | Acres | | 163.00 | | | | | | | | | | | Date | | 9/17/2019 | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spp | S T | So rt | Gr ad | % Net BdFt | Bd. Ft. per Acre | | | Total Net MBF | Percent of Net Board Foot Volume | | | | | | | | Average Log | | | | Logs Per /Acre | | | | | |
| | | | | | Def% | Gross | Net | | Log Scale Dia. | | | | Log Length | | | | Ln Ft | Dia In | Bd Ft | CF/ Lf | | | | | | |
| | | | | | | | | | 5-7 | 8-11 | 12-15 | 16+ | 12-20 | 21-30 | 31-35 | 36-40 | | | | | | | | | | |
| DF | CU | CU | | | 100.0 | 126 | | | | | | | | | | | 5 | 8 | | 0.00 | 17.2 | | | | | |
| DF | HB | 2S | | 7 | 1.3 | 1,126 | 1,111 | 181 | | | 100 | | | | | | 7 | 93 | | | 37 | 13 | 215 | 1.50 | 5.2 | |
| DF | HB | 3S | | 8 | 2.7 | 1,112 | 1,082 | 176 | | | 100 | | | | | | 19 | 81 | | | 38 | 10 | 149 | 1.04 | 7.3 | |
| DF | D | 2S | | 31 | 2.7 | 4,699 | 4,571 | 745 | | | | 72 | 28 | 2 | 10 | 2 | 86 | | | | 36 | 14 | 249 | 1.78 | 18.3 | |
| DF | D | 3S | | 41 | 2.8 | 6,033 | 5,865 | 956 | 19 | 81 | | | | 0 | 2 | 27 | 70 | | | | 37 | 8 | 100 | 0.79 | 58.9 | |
| DF | D | 4S | | 11 | .5 | 1,678 | 1,669 | 272 | 99 | 1 | | | | 28 | 37 | 8 | 28 | | | | 25 | 5 | 28 | 0.33 | 59.6 | |
| DF | D | UT | | 2 | | 159 | 159 | 26 | 41 | 59 | | | | 4 | 36 | | 60 | | | | 30 | 7 | 52 | 0.52 | 3.1 | |
| DF Totals | | | | 47 | 3.2 | 14,934 | 14,458 | 2,357 | 20 | 41 | 30 | 9 | | 4 | 8 | 15 | 73 | | | | 30 | 8 | 85 | 0.81 | 169.5 | |
| DF | L | CU | CU | | 100.0 | 21 | | | | | | | | | | | | | | | 2 | 7 | | 0.00 | 5.5 | |
| DF | L | HB | 2S | | 3.3 | 42 | 40 | 7 | | | 100 | | | | | 37 | 63 | | | | 32 | 13 | 196 | 1.50 | .2 | |
| DF | L | HB | 3S | 1 | 2.5 | 41 | 40 | 7 | | | 100 | | | | | | 100 | | | | 37 | 11 | 160 | 1.10 | .3 | |
| DF | L | D | 2S | 57 | 2.4 | 3,757 | 3,666 | 597 | | | | 87 | 13 | | | 6 | 94 | | | | 38 | 14 | 250 | 1.74 | 14.7 | |
| DF | L | D | 3S | 34 | 1.5 | 2,178 | 2,145 | 350 | 19 | 81 | | | | | 3 | 36 | 61 | | | | 37 | 9 | 105 | 0.80 | 20.5 | |
| DF | L | D | 4S | 6 | .5 | 439 | 437 | 71 | 99 | 1 | | | | 32 | 24 | 8 | 36 | | | | 26 | 6 | 30 | 0.37 | 14.7 | |
| DF | L | D | UT | 2 | | 66 | 66 | 11 | 12 | | 88 | | | 19 | 12 | | 70 | | | | 27 | 11 | 118 | 1.29 | .6 | |
| DF Totals | | | | 21 | 2.3 | 6,543 | 6,393 | 1,042 | 13 | 28 | 51 | 7 | | 2 | 3 | 16 | 79 | | | | 31 | 9 | 113 | 1.01 | 56.4 | |
| WH | CU | CU | | | 100.0 | 169 | | | | | | | | | | | | | | | 7 | 12 | | 0.00 | 8.6 | |
| WH | D | 2S | | 22 | 5.3 | 1,540 | 1,458 | 238 | | | | 96 | 4 | 4 | 7 | 12 | 78 | | | | 36 | 13 | 211 | 1.73 | 6.9 | |
| WH | D | 3S | | 61 | 5.5 | 4,112 | 3,887 | 634 | 7 | 93 | | | | | | 0 | 22 | 78 | | | 38 | 9 | 112 | 0.95 | 34.8 | |
| WH | D | 4S | | 15 | 2.0 | 978 | 959 | 156 | 100 | | | | | 27 | 50 | 9 | 14 | | | | 24 | 5 | 26 | 0.35 | 37.5 | |
| WH | D | UT | | 2 | | 119 | 119 | 19 | 30 | 44 | 26 | | | 26 | 30 | | 44 | | | | 25 | 8 | 62 | 0.91 | 1.9 | |
| WH Totals | | | | 21 | 7.2 | 6,919 | 6,423 | 1,047 | 19 | 57 | 22 | 1 | | 5 | 10 | 17 | 68 | | | | 29 | 8 | 72 | 0.80 | 89.8 | |
| WH | L | CU | CU | | 100.0 | 2 | | | | | | | | | | | | | | | 5 | 5 | | 0.00 | .6 | |
| WH | L | D | 2S | 63 | 1.8 | 1,707 | 1,676 | 273 | | | | 88 | 12 | | | | 100 | | | | 40 | 14 | 273 | 2.06 | 6.1 | |
| WH | L | D | 3S | 30 | 2.5 | 828 | 808 | 132 | 29 | 71 | | | | | 9 | 18 | 73 | | | | 36 | 8 | 100 | 0.89 | 8.0 | |
| WH | L | D | 4S | 7 | | 173 | 173 | 28 | 100 | | | | | 6 | 50 | 22 | 22 | | | | 29 | 5 | 32 | 0.42 | 5.5 | |
| WH Totals | | | | 9 | 2.0 | 2,710 | 2,656 | 433 | 15 | 22 | 56 | 7 | | 0 | 6 | 7 | 87 | | | | 34 | 9 | 131 | 1.19 | 20.2 | |
| RA | CU | CU | | | 100.0 | 22 | | | | | | | | | | | | | | | 7 | 6 | | 0.00 | 3.8 | |
| RA | D | UT | | 47 | | 198 | 198 | 32 | 98 | | 2 | | | 22 | 63 | | 16 | | | | 23 | 5 | 28 | 0.26 | 7.0 | |
| RA | D | 4S | | 16 | | 67 | 67 | 11 | | 100 | | | | | 60 | 40 | | | | | 28 | 8 | 58 | 0.63 | 1.2 | |
| RA | D | 4S | | 37 | | 150 | 150 | 24 | 100 | | | | | | 24 | 21 | 55 | | | | 35 | 5 | 46 | 0.38 | 3.3 | |
| RA Totals | | | | 1 | 5.1 | 437 | 415 | 68 | 83 | 16 | 1 | | | 10 | 48 | 14 | 27 | | | | 22 | 6 | 27 | 0.31 | 15.2 | |
| RC | D | 3S | | 100 | 8.5 | 18 | 16 | 3 | | | 12 | 88 | | | 12 | | 88 | | | | 32 | 13 | 215 | 2.44 | .1 | |
| RC Totals | | | | 0 | 8.5 | 18 | 16 | 3 | | | 12 | 88 | | | | 12 | | 88 | | | | 32 | 13 | 215 | 2.44 | .1 |
| SF | D | 3S | | 60 | | 26 | 26 | 4 | | 100 | | | | | | | 100 | | | | 40 | 9 | 120 | 0.92 | .2 | |
| SF | D | 4S | | 40 | | 17 | 17 | 3 | 100 | | | | | 26 | | 74 | | | | | 27 | 5 | 27 | 0.42 | .6 | |
| SF Totals | | | | 0 | | 42 | 42 | 7 | 39 | 61 | | | | 10 | | 29 | 61 | | | | | 30 | 6 | 50 | 0.59 | .8 |
| BM | CU | CU | | | 100.0 | 46 | | | | | | | | | | | | | | | 25 | 5 | | 0.00 | 1.9 | |
| BM | D | UT | | 100 | | 65 | 65 | 11 | | 100 | | | | | | | 100 | | | | 17 | 8 | 34 | 0.58 | 1.9 | |
| BM Totals | | | | 0 | 41.4 | 111 | 65 | 11 | | 100 | | | | | | | | 100 | | | | 21 | 7 | 17 | 0.23 | 3.8 |

| TC PSPCSTGR | | Species, Sort Grade - Board Foot Volumes (Project) | | | | | | | | | | | | | | | | | | |
|--|---------|--|-----------------------|------------------|--------|--------|------------------|----------------------------------|------|-------|-----|-----------------------|-------|-------|-----------------------|-------------|-----------|----------|-----------|----------------------|
| T09N R02E S13 Ty00U1 THRU T09N R02E S13 Ty00U5 | | | Project: GROOT | | | | | | | | | | | | Page 2 | | | | | |
| | | | Acres 163.00 | | | | | | | | | | | | Date 9/17/2019 | | | | | |
| | | | | | | | | | | | | Time 2:19:14PM | | | | | | | | |
| S Spp | So T | Gr rt ad | % Net BdFt | Bd. Ft. per Acre | | | Total Net MBF | Percent of Net Board Foot Volume | | | | | | | | Average Log | | | | Logs Per /Acre |
| | | | | Def% | Gross | Net | | Log Scale Dia. | | | | Log Length | | | | Ln Ft | Dia In | Bd Ft | CF/ Lf | |
| | | | | | | | | 5-7 | 8-11 | 12-15 | 16+ | 12-20 | 21-30 | 31-35 | 36-40 | | | | | |
| Totals | | | | 3.9 | 31,714 | 30,469 | 4,966 | 19 | 40 | 35 | 7 | 4 | 8 | 15 | 73 | 29 | 8 | 86 | 0.84 | 355.9 |

Total project volume 4,966 MBF - Leave tree volume 1,475 MBF = Sale volume 3,491 MBF.

| TC PSTATS | | PROJECT STATISTICS | | | | | | | | PAGE | 1 |
|--|------------|---------------------------|-------------------|------------|-------------|--------------|-----------------|---------------|--------------|--------------|-----------|
| | | PROJECT | | | | GROOT | | | | DATE | 9/17/2019 |
| TWP | RGE | SC | TRACT | TYPE | | ACRES | PLOTS | TREES | CuFt | BdFt | |
| 09N | 02E | 13 | THIN | 00U1 | THR | 163.00 | 172 | 1,004 | S | W | |
| 09N | 02E | 13 | THIN | 00U5 | | | | | | | |
| | | | | TREES | | ESTIMATED | PERCENT | | | | |
| | | | | PER PLOT | | TOTAL | SAMPLE | | | | |
| | | PLOTS | TREES | | | TREES | TREES | | | | |
| TOTAL | | 172 | 1004 | 5.8 | | | | | | | |
| CRUISE | | 83 | 490 | 5.9 | | 25,931 | 1.9 | | | | |
| DBH COUNT | | | | | | | | | | | |
| REFOREST | | | | | | | | | | | |
| COUNT | | 87 | 491 | 5.6 | | | | | | | |
| BLANKS | | 2 | | | | | | | | | |
| 100 % | | | | | | | | | | | |
| STAND SUMMARY | | | | | | | | | | | |
| SAMPLE | | TREES | AVG | BOLE | REL | BASAL | GROSS | NET | GROSS | NET | |
| TREES | | /ACRE | DBH | LEN | DEN | AREA | BF/AC | BF/AC | CF/AC | CF/AC | |
| DOUG FIR | 202 | 73.6 | 17.3 | 73 | 28.9 | 120.4 | 14,934 | 14,458 | 4,081 | 4,053 | |
| DOUG FIR-L | 110 | 21.9 | 20.0 | 83 | 10.7 | 47.9 | 6,543 | 6,393 | 1,760 | 1,755 | |
| WHEMLOCK | 104 | 42.2 | 17.2 | 64 | 16.4 | 68.0 | 6,919 | 6,423 | 2,085 | 2,046 | |
| WHEMLOCK-L | 47 | 9.6 | 21.0 | 74 | 5.0 | 23.1 | 2,710 | 2,656 | 827 | 826 | |
| R ALDER | 20 | 9.2 | 9.6 | 53 | 1.5 | 4.7 | 437 | 415 | 111 | 106 | |
| BL MAPLE | 4 | 1.9 | 11.9 | 50 | 0.4 | 1.5 | 111 | 65 | 31 | 18 | |
| WR CEDAR | 1 | .0 | 30.0 | 66 | 0.0 | .2 | 18 | 16 | 6 | 6 | |
| PS FIR | 2 | .6 | 13.5 | 45 | 0.2 | .6 | 42 | 42 | 15 | 15 | |
| TOTAL | 490 | 159.1 | 17.5 | 71 | 63.6 | 266.3 | 31,714 | 30,469 | 8,916 | 8,826 | |
| CONFIDENCE LIMITS OF THE SAMPLE | | | | | | | | | | | |
| 68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR | | | | | | | | | | | |
| CL | 68.1 | COEFF | SAMPLE TREES - BF | | | | # OF TREES REQ. | | INF. POP. | | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | | |
| DOUG FIR | | 51.1 | 3.7 | 261 | 271 | 281 | | | | | |
| DOUG FIR-L | | 8.4 | .9 | 353 | 356 | 359 | | | | | |
| WHEMLOCK | | 30.5 | 3.1 | 189 | 195 | 202 | | | | | |
| WHEMLOCK-L | | | | 318 | 318 | 318 | | | | | |
| R ALDER | | 55.6 | 12.8 | 54 | 62 | 69 | | | | | |
| BL MAPLE | | | | 70 | 70 | 70 | | | | | |
| WR CEDAR | | | | | | | | | | | |
| PS FIR | | 91.5 | 85.7 | 12 | 85 | 158 | | | | | |
| TOTAL | | 44.3 | 2.1 | 261 | 267 | 272 | 78 | 40 | 20 | | |
| CL | 68.1 | COEFF | SAMPLE TREES - CF | | | | # OF TREES REQ. | | INF. POP. | | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | | |
| DOUG FIR | | 42.0 | 3.0 | 71 | 74 | 76 | | | | | |
| DOUG FIR-L | | | | 96 | 96 | 96 | | | | | |
| WHEMLOCK | | 26.6 | 2.7 | 60 | 61 | 63 | | | | | |
| WHEMLOCK-L | | | | 99 | 99 | 99 | | | | | |
| R ALDER | | 60.7 | 13.9 | 14 | 17 | 19 | | | | | |
| BL MAPLE | | | | 19 | 19 | 19 | | | | | |
| WR CEDAR | | | | | | | | | | | |
| PS FIR | | 67.5 | 63.2 | 10 | 28 | 46 | | | | | |
| TOTAL | | 36.3 | 1.7 | 74 | 75 | 77 | 53 | 27 | 13 | | |
| CL | 68.1 | COEFF | TREES/ACRE | | | | # OF PLOTS REQ. | | INF. POP. | | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | | |
| DOUG FIR | | 96.5 | 7.4 | 68 | 74 | 79 | | | | | |
| DOUG FIR-L | | 156.6 | 11.9 | 19 | 22 | 25 | | | | | |
| WHEMLOCK | | 136.8 | 10.4 | 38 | 42 | 47 | | | | | |
| WHEMLOCK-L | | 218.9 | 16.7 | 8 | 10 | 11 | | | | | |
| R ALDER | | 668.6 | 50.9 | 5 | 9 | 14 | | | | | |
| BL MAPLE | | 1311.5 | 99.9 | 0 | 2 | 4 | | | | | |
| WR CEDAR | | 1311.5 | 99.9 | 0 | 0 | 0 | | | | | |

| TC PSTATS | | PROJECT STATISTICS | | | | | | | PAGE | 2 | | |
|--------------|------------|---------------------------|--------------|------------------|--------------|--------|-----------------|----|-----------|-----------|------|------|
| | | PROJECT | | | GROOT | | | | DATE | 9/17/2019 | | |
| TWP | RGE | SC | TRACT | TYPE | | ACRES | | | PLOTS | TREES | CuFt | BdFt |
| 09N 09N | 02E 02E | 13 13 | THIN THIN | 00U1 00U5 | THR | 163.00 | | | 172 | 1,004 | S | W |
| CL | 68.1 | COEFF | | TREES/ACRE | | | # OF PLOTS REQ. | | INF. POP. | | | |
| SD: | 1.00 | VAR. | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | | | |
| PS FIR | | 969.5 | 73.9 | 0 | 1 | 1 | | | | | | |
| TOTAL | | 57.8 | 4.4 | 152 | 159 | 166 | 133 | 68 | 33 | | | |
| CL | 68.1 | COEFF | | BASAL AREA/ACRE | | | # OF PLOTS REQ. | | INF. POP. | | | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | | | |
| DOUG FIR | | 93.1 | 7.1 | 112 | 120 | 129 | | | | | | |
| DOUG FIR-L | | 156.7 | 11.9 | 42 | 48 | 54 | | | | | | |
| WHEMLOCK | | 128.1 | 9.8 | 61 | 68 | 75 | | | | | | |
| WHEMLOCK-L | | 216.6 | 16.5 | 19 | 23 | 27 | | | | | | |
| R ALDER | | 743.9 | 56.7 | 2 | 5 | 7 | | | | | | |
| BL MAPLE | | 1311.5 | 99.9 | 0 | 1 | 3 | | | | | | |
| WR CEDAR | | 1311.5 | 99.9 | 0 | 0 | 0 | | | | | | |
| PS FIR | | 925.3 | 70.5 | 0 | 1 | 1 | | | | | | |
| TOTAL | | 44.3 | 3.4 | 257 | 266 | 275 | 78 | 40 | 20 | | | |
| CL | 68.1 | COEFF | | NET BF/ACRE | | | # OF PLOTS REQ. | | INF. POP. | | | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | | | |
| DOUG FIR | | 98.8 | 7.5 | 13,370 | 14,458 | 15,546 | | | | | | |
| DOUG FIR-L | | 158.5 | 12.1 | 5,621 | 6,393 | 7,165 | | | | | | |
| WHEMLOCK | | 127.9 | 9.7 | 5,797 | 6,423 | 7,049 | | | | | | |
| WHEMLOCK-L | | 217.1 | 16.5 | 2,217 | 2,656 | 3,096 | | | | | | |
| R ALDER | | 672.5 | 51.2 | 202 | 415 | 628 | | | | | | |
| BL MAPLE | | 1311.5 | 99.9 | 0 | 65 | 130 | | | | | | |
| WR CEDAR | | 1311.5 | 99.9 | 0 | 16 | 32 | | | | | | |
| PS FIR | | 1003.2 | 76.4 | 10 | 42 | 75 | | | | | | |
| TOTAL | | 48.0 | 3.7 | 29,354 | 30,469 | 31,583 | 92 | 47 | 23 | | | |
| CL | 68.1 | COEFF | | NET CUFT FT/ACRE | | | # OF PLOTS REQ. | | INF. POP. | | | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | | | |
| DOUG FIR | | 95.3 | 7.3 | 3,759 | 4,053 | 4,348 | | | | | | |
| DOUG FIR-L | | 157.4 | 12.0 | 1,544 | 1,755 | 1,965 | | | | | | |
| WHEMLOCK | | 128.4 | 9.8 | 1,846 | 2,046 | 2,247 | | | | | | |
| WHEMLOCK-L | | 216.9 | 16.5 | 690 | 826 | 963 | | | | | | |
| R ALDER | | 738.6 | 56.3 | 47 | 106 | 166 | | | | | | |
| BL MAPLE | | 1311.5 | 99.9 | 0 | 18 | 36 | | | | | | |
| WR CEDAR | | 1311.5 | 99.9 | 0 | 6 | 12 | | | | | | |
| PS FIR | | 941.8 | 71.8 | 4 | 15 | 26 | | | | | | |
| TOTAL | | 45.7 | 3.5 | 8,519 | 8,826 | 9,133 | 83 | 43 | 21 | | | |
| CL | 68.1 | COEFF | | V BAR/ACRE | | | # OF PLOTS REQ. | | INF. POP. | | | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | | | |
| DOUG FIR | | | | 111 | 120 | 129 | | | | | | |
| DOUG FIR-L | | 91.4 | 7.0 | 117 | 133 | 150 | | | | | | |
| WHEMLOCK | | 22.0 | 1.7 | 85 | 94 | 104 | | | | | | |
| WHEMLOCK-L | | 127.8 | 9.7 | 96 | 115 | 134 | | | | | | |
| R ALDER | | 607.8 | 46.3 | 43 | 89 | 135 | | | | | | |
| BL MAPLE | | 1311.5 | 99.9 | 0 | 44 | 89 | | | | | | |
| WR CEDAR | | 1311.5 | 99.9 | 0 | 88 | 175 | | | | | | |
| PS FIR | | 1014.3 | 77.3 | 16 | 68 | 120 | | | | | | |
| TOTAL | | 52.8 | 4.0 | 110 | 114 | 119 | 111 | 57 | 28 | | | |

| T | TSPCSTGR | Species, Sort Grade - Board Foot Volumes (Type) | | | | | | | | | | Page | 1 | | | | | | | |
|---------------------|---------------|---|-------|-------|--------|------------------|--------------|-------------------------------|-------|---------------------|---------|----------------|-----------|-------|-------|-------------|----|-----|------|----------------|
| | | | | | | | | | | | | Date | 9/17/2019 | | | | | | | |
| | | | | | | | | | | | | Time | 2:19:15PM | | | | | | | |
| T09N R02E S13 T00U1 | | | | | | | | | | T09N R02E S13 T00U1 | | | | | | | | | | |
| Twp | Rge | Sec | Tract | Type | Acres | Plots | Sample Trees | CuFt | BdFt | | | | | | | | | | | |
| 09N | 02E | 13 | THIN | 00U1 | 64.00 | 64 | 120 | S | W | | | | | | | | | | | |
| Spp | S | So | Gr | % | Net | Bd. Ft. per Acre | Total | Percent Net Board Foot Volume | | | | | | | | Average Log | | | | Logs Per /Acre |
| | | | | | | | | Def% | Gross | Net | Net MBF | Log Scale Dia. | | | | Log Length | | | | |
| | | | | | | | | 5-7 | 8-11 | 12-15 | 16+ | 12-20 | 21-30 | 31-35 | 36-40 | Ft | In | Ft | | |
| DF | CU | CU | | 100.0 | | 112 | | | | | | | | | | 4 | 7 | | 0.00 | 19.1 |
| DF | HB | 2S | 15 | 1.3 | 2,867 | 2,830 | 181 | | 100 | | | | 7 | 93 | | 37 | 13 | 215 | 1.50 | 13.2 |
| DF | HB | 3S | 14 | 2.5 | 2,582 | 2,518 | 161 | | 100 | | | | 14 | 86 | | 39 | 10 | 150 | 1.04 | 16.8 |
| DF | DM | 2S | 14 | 3.0 | 2,596 | 2,517 | 161 | | | 72 | 28 | | 7 | 93 | | 37 | 13 | 231 | 1.77 | 10.9 |
| DF | DM | 3S | 43 | 3.3 | 7,994 | 7,726 | 494 | 22 | 78 | | | | 30 | 70 | | 38 | 8 | 98 | 0.81 | 79.1 |
| DF | DM | 4S | 14 | .6 | 2,540 | 2,525 | 162 | 100 | | | | 28 | 40 | 10 | 23 | 25 | 5 | 27 | 0.33 | 92.0 |
| DF | Totals | | 70 | 3.1 | 18,691 | 18,116 | 1,159 | 23 | 47 | 26 | 4 | 4 | 6 | 17 | 73 | 30 | 8 | 78 | 0.77 | 231.1 |
| WH | CU | CU | | | | | | | | | | | | | | 3 | 11 | | 0.00 | 7.9 |
| WH | DM | 2S | 7 | 2.0 | 555 | 543 | 35 | | 100 | | | 26 | | 36 | 39 | 29 | 13 | 155 | 1.58 | 3.5 |
| WH | DM | 3S | 74 | 6.1 | 5,885 | 5,524 | 354 | 5 | 95 | | | | | 29 | 71 | 38 | 9 | 107 | 0.95 | 51.6 |
| WH | DM | 4S | 17 | 1.6 | 1,336 | 1,315 | 84 | 100 | | | | 38 | 50 | 4 | 8 | 22 | 5 | 23 | 0.33 | 57.8 |
| WH | DM | UT | 2 | | 91 | 91 | 6 | 100 | | | | | 100 | | | 26 | 5 | 30 | 0.68 | 3.0 |
| WH | Totals | | 29 | 5.0 | 7,867 | 7,473 | 478 | 23 | 70 | 7 | | 9 | 10 | 25 | 57 | 28 | 7 | 60 | 0.73 | 123.9 |
| SF | DM | 3S | 60 | | 66 | 66 | 4 | | 100 | | | | | 100 | | 40 | 9 | 120 | 0.92 | .5 |
| SF | DM | 4S | 40 | | 42 | 42 | 3 | 100 | | | | 26 | | 74 | | 27 | 5 | 27 | 0.42 | 1.6 |
| SF | Totals | | 0 | | 108 | 108 | 7 | 39 | 61 | | | 10 | | 29 | 61 | 30 | 6 | 50 | 0.59 | 2.1 |
| Type Totals | | | | 3.6 | 26,665 | 25,697 | 1,645 | 23 | 54 | 20 | 3 | 5 | 7 | 19 | 68 | 29 | 7 | 72 | 0.75 | 357.1 |

| T | TSPCSTGR | Species, Sort Grade - Board Foot Volumes (Type) | | | | | | | | | | Page | 1 | | | | | | | | |
|---------------------|---------------|---|-------|------|-------|------------------|--------------|-------------------------------|-------------|---------------------|-----|-------|-------|-----------|-------|---------|----------------|------------|------|------|-------|
| | | | | | | | | | | | | Date | | 9/17/2019 | | | | | | | |
| | | | | | | | | | | | | Time | | 2:19:15PM | | | | | | | |
| T09N R02E S13 T00U2 | | | | | | | | | | T09N R02E S13 T00U2 | | | | | | | | | | | |
| Twp | Rge | Sec | Tract | Type | Acres | Plots | Sample Trees | CuFt | BdFt | | | | | | | | | | | | |
| 09N | 02E | 13 | THIN | 00U2 | 62.00 | 60 | 433 | S | W | | | | | | | | | | | | |
| Spp | S | So | Gr | % | Net | Bd. Ft. per Acre | Total | Percent Net Board Foot Volume | Average Log | Logs | Per | /Acre | | | | | | | | | |
| | | | | | | | | | | | | | Def% | Gross | Net | Net MBF | Log Scale Dia. | Log Length | Ln | Dia | Bd |
| | | | | | | | | 5-7 | 8-11 | 12-15 | 16+ | 12-20 | 21-30 | 31-35 | 36-40 | Ft | In | Ft | Lf | | |
| DF | L | CU | CU | | 100.0 | 47 | | | | | | | | | | 2 | 7 | | 0.00 | 14.3 | |
| DF | L | DM | 2S | 58 | 2.4 | 9,715 | 9,482 | 588 | | 87 | 13 | | | 6 | 94 | 38 | 13 | 249 | 1.73 | 38.0 | |
| DF | L | DM | 3S | 34 | 1.4 | 5,547 | 5,468 | 339 | 19 | 81 | | | 3 | 35 | 62 | 37 | 9 | 105 | 0.81 | 52.0 | |
| DF | L | DM | 4S | 6 | .5 | 1,099 | 1,094 | 68 | 99 | 1 | | 31 | 23 | 9 | 37 | 26 | 6 | 30 | 0.37 | 36.6 | |
| DF | L | DM | UT | 2 | | 173 | 173 | 11 | 12 | | 88 | 19 | 12 | | 70 | 27 | 11 | 118 | 1.29 | 1.5 | |
| DF | L | Totals | | 45 | 2.2 | 16,582 | 16,217 | 1,005 | 13 | 27 | 52 | 7 | 2 | 3 | 16 | 79 | 31 | 9 | 114 | 1.02 | 142.3 |
| DF | | CU | CU | | 100.0 | 63 | | | | | | | | | | 6 | 8 | | 0.00 | 10.8 | |
| DF | | HB | 3S | 3 | 6.7 | 218 | 203 | 13 | | 100 | | | | 100 | | 34 | 11 | 140 | 1.12 | 1.5 | |
| DF | | DM | 2S | 35 | 1.8 | 1,873 | 1,838 | 114 | | 74 | 26 | | 18 | 6 | 76 | 35 | 13 | 219 | 1.62 | 8.4 | |
| DF | | DM | 3S | 49 | 3.3 | 2,694 | 2,604 | 161 | 14 | 86 | | | 2 | 5 | 17 | 37 | 9 | 101 | 0.79 | 25.7 | |
| DF | | DM | 4S | 12 | | 643 | 643 | 40 | 96 | 4 | | | 25 | 41 | 4 | 26 | 5 | 29 | 0.32 | 22.1 | |
| DF | | DM | UT | 1 | | 15 | 15 | 1 | | 100 | | | 100 | | | 14 | 9 | 30 | 0.61 | .5 | |
| DF | Totals | | | 15 | 3.7 | 5,505 | 5,304 | 329 | 18 | 47 | 26 | 9 | 4 | 13 | 15 | 68 | 28 | 8 | 77 | 0.76 | 69.0 |
| WH | | CU | CU | | 100.0 | 217 | | | | | | | | | | 7 | 13 | | 0.00 | 9.0 | |
| WH | | DM | 2S | 37 | 5.5 | 2,770 | 2,619 | 162 | | 95 | 5 | | 10 | 10 | 81 | 37 | 13 | 215 | 1.70 | 12.2 | |
| WH | | DM | 3S | 48 | 4.6 | 3,540 | 3,378 | 209 | 9 | 91 | | | | 15 | 85 | 38 | 9 | 118 | 0.93 | 28.7 | |
| WH | | DM | 4S | 13 | 2.5 | 911 | 888 | 55 | 100 | | | | 19 | 40 | 19 | 27 | 5 | 30 | 0.38 | 30.0 | |
| WH | | DM | UT | 2 | | 140 | 140 | 9 | | 100 | | | | | 100 | 40 | 11 | 180 | 1.42 | .8 | |
| WH | Totals | | | 20 | 7.3 | 7,577 | 7,024 | 435 | 17 | 46 | 35 | 2 | 2 | 9 | 13 | 76 | 30 | 9 | 87 | 0.87 | 80.7 |
| WH | L | CU | CU | | 100.0 | 6 | | | | | | | | | | 5 | 5 | | 0.00 | 1.6 | |
| WH | L | DM | 2S | 65 | 1.8 | 4,487 | 4,406 | 273 | | 88 | 12 | | | | 100 | 40 | 14 | 273 | 2.06 | 16.1 | |
| WH | L | DM | 3S | 28 | 2.5 | 1,939 | 1,892 | 117 | 32 | 68 | | | 10 | 20 | 70 | 36 | 8 | 97 | 0.88 | 19.4 | |
| WH | L | DM | 4S | 7 | | 406 | 406 | 25 | 100 | | | | 5 | 47 | 23 | 29 | 5 | 32 | 0.43 | 12.7 | |
| WH | L | Totals | | 19 | 2.0 | 6,839 | 6,705 | 416 | 15 | 19 | 58 | 8 | 0 | 6 | 7 | 87 | 34 | 9 | 135 | 1.22 | 49.8 |
| RA | | CU | CU | | | | | | | | | | | | | 4 | 7 | | 0.00 | 3.7 | |
| RA | | DM | UT | 100 | | 451 | 451 | 28 | 100 | | | | 20 | 67 | 12 | 23 | 5 | 27 | 0.25 | 16.5 | |
| RA | Totals | | | 1 | | 451 | 451 | 28 | 100 | | | | 20 | 67 | 12 | 20 | 6 | 22 | 0.24 | 20.2 | |
| Type Totals | | | | | 3.4 | 36,953 | 35,699 | 2,213 | 16 | 32 | 45 | 7 | 2 | 7 | 13 | 77 | 30 | 9 | 99 | 0.94 | 361.9 |

| | |
|--|---------------------|
| T09N R02E S13 T00U3 | T09N R02E S13 T00U3 |
| Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt | BdFt |
| 09N 02E 13 THIN 00U3 10.00 19 47 S | W |

| Spp | S T | So rt | Gr ad | % Net BdFt | Bd. Ft. per Acre | | | Total Net MBF | Percent Net Board Foot Volume | | | | | | | | Average Log | | | | Logs Per /Acre | |
|--------------------|---------------|----------|----------|------------------|------------------|--------|--------|------------------|-------------------------------|------|-------|-----|------------|-------|-------|-------|-------------|-----------|----------|-----------|----------------------|-------|
| | | | | | Def% | Gross | Net | | Log Scale Dia. | | | | Log Length | | | | Ln Ft | Dia In | Bd Ft | CF/ Lf | | |
| | | | | | | | | | 5-7 | 8-11 | 12-15 | 16+ | 12-20 | 21-30 | 31-35 | 36-40 | | | | | | |
| DF | | CU | CU | | 100.0 | 744 | | | | | | | | | | | | 8 | 9 | | 0.00 | 35.3 |
| DF | | DM | 2S | 59 | 3.9 | 13,770 | 13,238 | 132 | | | 79 | 21 | 2 | 3 | | 95 | | 36 | 14 | 247 | 1.73 | 53.6 |
| DF | | DM | 3S | 29 | 1.6 | 6,664 | 6,556 | 66 | 11 | 89 | | | | 8 | 16 | 76 | | 36 | 9 | 108 | 0.81 | 60.7 |
| DF | | DM | 4S | 8 | | 1,659 | 1,659 | 17 | 97 | 3 | | | 33 | 13 | 5 | 49 | | 27 | 6 | 32 | 0.39 | 52.2 |
| DF | | DM | UT | 4 | | 854 | 854 | 9 | | 100 | | | | | | 100 | | 40 | 10 | 150 | 1.06 | 5.7 |
| DF | Totals | | | 81 | 5.8 | 23,692 | 22,308 | 223 | 10 | 30 | 47 | 13 | 4 | 5 | 5 | 86 | | 29 | 9 | 108 | 0.98 | 207.4 |
| WH | | CU | CU | | | | | | | | | | | | | | | 3 | 24 | | 0.00 | 7.6 |
| WH | | DM | 2S | 57 | 7.9 | 2,447 | 2,254 | 23 | | | 100 | | | | | 100 | | 36 | 15 | 295 | 2.18 | 7.6 |
| WH | | DM | 3S | 31 | 3.2 | 1,261 | 1,221 | 12 | 16 | 84 | | | | | 16 | 84 | | 35 | 8 | 86 | 0.81 | 14.2 |
| WH | | DM | 4S | 12 | 7.5 | 489 | 453 | 5 | 100 | | | | | 100 | | | | 29 | 6 | 33 | 0.41 | 13.9 |
| WH | Totals | | | 14 | 6.4 | 4,197 | 3,928 | 39 | 17 | 26 | 57 | | | 12 | 5 | 83 | | 28 | 11 | 91 | 0.97 | 43.4 |
| RA | | CU | CU | | 100.0 | 27 | | | | | | | | | | | | 7 | 7 | | 0.00 | 3.7 |
| RA | | DM | UT | 48 | | 437 | 437 | 4 | 83 | | 17 | | 31 | 32 | | 38 | | 27 | 6 | 39 | 0.34 | 11.2 |
| RA | | DM | 4S | 41 | | 371 | 371 | 4 | | 100 | | | | 100 | | | | 30 | 9 | 67 | 0.68 | 5.6 |
| RA | | DM | 4S | 11 | | 100 | 100 | 1 | 100 | | | | | 100 | | | | 30 | 7 | 50 | 0.53 | 2.0 |
| RA | Totals | | | 3 | 2.9 | 935 | 908 | 9 | 51 | 41 | 8 | | 15 | 67 | | 18 | | 25 | 7 | 40 | 0.45 | 22.5 |
| RC | | DM | 3S | 100 | 8.5 | 286 | 261 | 3 | | 12 | 88 | | | 12 | | 88 | | 32 | 13 | 215 | 2.44 | 1.2 |
| RC | Totals | | | 1 | 8.5 | 286 | 261 | 3 | | 12 | 88 | | | 12 | | 88 | | 32 | 13 | 215 | 2.44 | 1.2 |
| Type Totals | | | | | 5.9 | 29,110 | 27,405 | 274 | 13 | 30 | 46 | 11 | 3 | 8 | 5 | 84 | | 29 | 10 | 100 | 0.95 | 274.5 |

| | | | | | | | | | | | | | | |
|---------------------|-----|-----|-------|------|-------|-------|--------------|------|------|---------------------|--|--|--|--|
| T09N R02E S13 T00U4 | | | | | | | | | | T09N R02E S13 T00U4 | | | | |
| Twp | Rge | Sec | Tract | Type | Acres | Plots | Sample Trees | CuFt | BdFt | | | | | |
| 09N | 02E | 13 | THIN | 00U4 | 25.00 | 22 | 64 | S | W | | | | | |

| Spp | So | Gr | % Net BdFt | Bd. Ft. per Acre | | | Total Net MBF | Percent Net Board Foot Volume | | | | | | | | Average Log | | | | Logs Per /Acre | | |
|--------------------|---------------|----|------------|------------------|--------|--------|---------------|-------------------------------|------|-------|-----|------------|-------|-------|-------|-------------|--------|-------|-------|----------------|------|-------|
| | | | | Def% | Gross | Net | | Log Scale Dia. | | | | Log Length | | | | Ln Ft | Dia In | Bd Ft | CF/Lf | | | |
| | | | | | | | | 5-7 | 8-11 | 12-15 | 16+ | 12-20 | 21-30 | 31-35 | 36-40 | | | | | | | |
| DF | CU | CU | | 100.0 | 79 | | | | | | | | | | | | | | | | 22.1 | |
| DF | DM | 2S | 52 | 2.4 | 13,780 | 13,447 | 336 | | | 69 | 31 | | | 3 | 11 | 3 | 83 | 36 | 14 | 274 | 1.86 | 49.1 |
| DF | DM | 3S | 37 | 1.4 | 9,406 | 9,274 | 232 | 20 | 80 | | | | | 0 | 2 | 34 | 63 | 37 | 9 | 101 | 0.76 | 91.8 |
| DF | DM | 4S | 8 | .7 | 2,113 | 2,098 | 52 | 100 | | | | | | 29 | 33 | 5 | 33 | 25 | 5 | 28 | 0.31 | 75.7 |
| DF | DM | UT | 3 | | 659 | 659 | 16 | 64 | 36 | | | | | | | | 43 | 30 | 6 | 40 | 0.42 | 16.5 |
| DF | Totals | | 84 | 2.2 | 26,037 | 25,477 | 637 | 17 | 30 | 36 | 17 | | | 4 | 11 | 14 | 71 | 30 | 9 | 100 | 0.88 | 255.3 |
| WH | CU | CU | | 100.0 | 563 | | | | | | | | | | | | | 20 | 8 | | 0.00 | 8.5 |
| WH | DM | 2S | 22 | 6.9 | 773 | 720 | 18 | | | 100 | | | | | | | 100 | 40 | 14 | 270 | 2.04 | 2.7 |
| WH | DM | 3S | 61 | 5.8 | 2,022 | 1,904 | 48 | 7 | 93 | | | | | | 3 | 4 | 93 | 38 | 10 | 130 | 1.18 | 14.6 |
| WH | DM | 4S | 10 | | 317 | 317 | 8 | 100 | | | | | | | | 100 | | 25 | 5 | 30 | 0.37 | 10.6 |
| WH | DM | UT | 7 | | 199 | 199 | 5 | | | 100 | | | | 100 | | | | 14 | 12 | 70 | 1.09 | 2.8 |
| WH | Totals | | 10 | 19.0 | 3,874 | 3,140 | 78 | 14 | 56 | 29 | | | | 6 | 12 | 2 | 79 | 29 | 9 | 80 | 0.89 | 39.2 |
| RA | CU | CU | | 100.0 | 133 | | | | | | | | | | | | | 9 | 5 | | 0.00 | 14.3 |
| RA | DM | 4S | 23 | | 288 | 288 | 7 | | | 100 | | | | | 40 | 60 | | 28 | 8 | 54 | 0.60 | 5.4 |
| RA | DM | 4S | 77 | | 937 | 937 | 23 | 100 | | | | | | | 21 | 22 | 57 | 35 | 5 | 46 | 0.37 | 20.6 |
| RA | Totals | | 4 | 9.8 | 1,358 | 1,225 | 31 | 76 | 24 | | | | | | 25 | 31 | 44 | 25 | 6 | 30 | 0.36 | 40.2 |
| BM | CU | CU | | 100.0 | 300 | | | | | | | | | | | | | 25 | 5 | | 0.00 | 12.4 |
| BM | DM | UT | 100 | | 424 | 424 | 11 | | | 100 | | | | 100 | | | | 17 | 8 | 34 | 0.58 | 12.4 |
| BM | Totals | | 1 | 41.4 | 724 | 424 | 11 | | | 100 | | | | 100 | | | | 21 | 7 | 17 | 0.23 | 24.8 |
| Type Totals | | | | 5.4 | 31,994 | 30,266 | 757 | 19 | 34 | 33 | 14 | | | 5 | 11 | 14 | 70 | 29 | 8 | 84 | 0.80 | 359.5 |

| TC TSTATS | | | | STATISTICS | | | | PAGE | 1 | |
|--|-------------|--------------|--------------------------|---------------|---------------|---------------|-----------------|---------------|--------------|--------------|
| | | | | PROJECT | GROOT | | DATE | 9/17/2019 | | |
| TWP | RGE | SECT | TRACT | TYPE | ACRES | PLOTS | TREES | CuFt | BdFt | |
| 09N | 02E | 13 | THIN | 00U1 | 64.00 | 64 | 324 | S | W | |
| | | | | TREES | ESTIMATED | PERCENT | | | | |
| | | | | PER PLOT | TOTAL | SAMPLE | | | | |
| | | | | PLOTS | TREES | TREES | TREES | | | |
| TOTAL | | 64 | 324 | 5.1 | | | | | | |
| CRUISE | | 22 | 117 | 5.3 | 10,724 | | 1.1 | | | |
| DBH COUNT | | | | | | | | | | |
| REFOREST | | | | | | | | | | |
| COUNT | | 42 | 204 | 4.9 | | | | | | |
| BLANKS | | | | | | | | | | |
| 100 % | | | | | | | | | | |
| STAND SUMMARY | | | | | | | | | | |
| | SAMPLE | TREES | AVG | BOLE | REL | BASAL | GROSS | NET | GROSS | NET |
| | TREES | /ACRE | DBH | LEN | DEN | AREA | BF/AC | BF/AC | CF/AC | CF/AC |
| DOUG FIR | 79 | 105.1 | 16.9 | 71 | 39.7 | 163.0 | 18,691 | 18,116 | 5,324 | 5,298 |
| WHEMLOCK | 36 | 60.9 | 16.2 | 60 | 21.7 | 87.2 | 7,867 | 7,473 | 2,488 | 2,488 |
| PS FIR | 2 | 1.6 | 13.5 | 45 | 0.4 | 1.6 | 108 | 108 | 38 | 38 |
| TOTAL | 117 | 167.6 | 16.6 | 66 | 61.8 | 251.7 | 26,665 | 25,697 | 7,850 | 7,823 |
| CONFIDENCE LIMITS OF THE SAMPLE | | | | | | | | | | |
| 68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR | | | | | | | | | | |
| CL: | 68.1 % | COEFF | SAMPLE TREES - BF | | | | # OF TREES REQ. | | INF. POP. | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | 47.5 | 5.5 | | 205 | 217 | 229 | | | | |
| WHEMLOCK | 35.0 | 5.8 | | 127 | 134 | 142 | | | | |
| PS FIR | 91.5 | 85.7 | | 12 | 85 | 158 | | | | |
| TOTAL | 51.6 | 4.9 | | 179 | 189 | 198 | 107 | 54 | 27 | |
| CL: | 68.1 % | COEFF | SAMPLE TREES - CF | | | | # OF TREES REQ. | | INF. POP. | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | 39.2 | 4.5 | | 60 | 63 | 66 | | | | |
| WHEMLOCK | 33.3 | 5.5 | | 42 | 45 | 47 | | | | |
| PS FIR | 67.5 | 63.2 | | 10 | 28 | 46 | | | | |
| TOTAL | 41.9 | 3.9 | | 54 | 56 | 59 | 70 | 36 | 18 | |
| CL: | 68.1 % | COEFF | TREES/ACRE | | | | # OF PLOTS REQ. | | INF. POP. | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | 61.4 | 7.7 | | 97 | 105 | 113 | | | | |
| WHEMLOCK | 118.1 | 14.7 | | 52 | 61 | 70 | | | | |
| PS FIR | 589.0 | 73.6 | | 0 | 2 | 3 | | | | |
| TOTAL | 36.0 | 4.5 | | 160 | 168 | 175 | 52 | 26 | 13 | |
| CL: | 68.1 % | COEFF | BASAL AREA/ACRE | | | | # OF PLOTS REQ. | | INF. POP. | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | 58.6 | 7.3 | | 151 | 163 | 175 | | | | |
| WHEMLOCK | 116.8 | 14.6 | | 74 | 87 | 100 | | | | |
| PS FIR | 561.6 | 70.1 | | 0 | 2 | 3 | | | | |
| TOTAL | 33.6 | 4.2 | | 241 | 252 | 262 | 45 | 23 | 11 | |
| CL: | 68.1 % | COEFF | NET BF/ACRE | | | | # OF PLOTS REQ. | | INF. POP. | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | 61.6 | 7.7 | | 16,723 | 18,116 | 19,509 | | | | |
| WHEMLOCK | 121.5 | 15.2 | | 6,340 | 7,473 | 8,607 | | | | |
| PS FIR | 609.8 | 76.2 | | 26 | 108 | 190 | | | | |
| TOTAL | 37.3 | 4.7 | | 24,501 | 25,697 | 26,894 | 56 | 28 | 14 | |
| CL: | 68.1 % | COEFF | NET CUFT FT/ACRE | | | | # OF PLOTS REQ. | | INF. POP. | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | 59.5 | 7.4 | | 4,904 | 5,298 | 5,691 | | | | |
| WHEMLOCK | 119.5 | 14.9 | | 2,116 | 2,487 | 2,859 | | | | |
| PS FIR | 571.8 | 71.4 | | 11 | 38 | 65 | | | | |

| TC TSTATS | | | | STATISTICS | | | | PAGE | 2 | |
|--------------|--------|-------|-------|------------------|-------|-------|-----------------|-------|-----------|------|
| | | | | PROJECT | GROOT | | | DATE | 9/17/2019 | |
| TWP | RGE | SECT | TRACT | TYPE | ACRES | | PLOTS | TREES | CuFt | BdFt |
| 09N | 02E | 13 | THIN | 00U1 | 64.00 | | 64 | 324 | S | W |
| CL: | 68.1 % | COEFF | | NET CUFT FT/ACRE | | | # OF PLOTS REQ. | | INF. POP. | |
| SD: | 1.0 | VAR. | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| TOTAL | | 35.0 | 4.4 | 7,481 | 7,823 | 8,166 | 49 | 25 | 12 | |
| CL: | 68.1 % | COEFF | | V-BAR/ACRE | | | # OF PLOTS REQ. | | INF. POP. | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | | | | 103 | 111 | 120 | | | | |
| WHEMLOCK | | 11.0 | 1.4 | 73 | 86 | 99 | | | | |
| PS FIR | | 616.6 | 77.0 | 16 | 68 | 120 | | | | |
| TOTAL | | 280.4 | 35.0 | 97 | 102 | 107 | 3,140 | 1,602 | 785 | |

| TC TSTATS | | | | STATISTICS | | | | PAGE | 1 | |
|--|-----------------|----------------|-------------------|-------------------|-----------------------------|----------------------------|-----------------|---------------|----------------|---------------|
| | | | | PROJECT | GROOT | | DATE | 9/17/2019 | | |
| TWP | RGE | SECT | TRACT | TYPE | ACRES | PLOTS | TREES | CuFt | BdFt | |
| 09N | 02E | 13 | THIN | 00U2 | 62.00 | 60 | 433 | S | W | |
| | | PLOTS | TREES | TREES PER PLOT | ESTIMATED TOTAL TREES | PERCENT SAMPLE TREES | | | | |
| TOTAL | | 60 | 433 | 7.2 | | | | | | |
| CRUISE | | 31 | 216 | 7.0 | 9,613 | 2.2 | | | | |
| DBH COUNT | | | | | | | | | | |
| REFOREST | | | | | | | | | | |
| COUNT | | 29 | 209 | 7.2 | | | | | | |
| BLANKS | | | | | | | | | | |
| 100 % | | | | | | | | | | |
| STAND SUMMARY | | | | | | | | | | |
| | SAMPLE TREES | TREES /ACRE | AVG DBH | BOLE LEN | REL DEN | BASAL AREA | GROSS BF/AC | NET BF/AC | GROSS CF/AC | NET CF/AC |
| DOUG FIR | 37 | 28.1 | 17.0 | 75 | 10.7 | 44.0 | 5,505 | 5,304 | 1,491 | 1,474 |
| DOUG FIR-L | 91 | 55.5 | 20.1 | 83 | 27.2 | 121.8 | 16,582 | 16,217 | 4,472 | 4,459 |
| WHEMLOCK | 45 | 35.8 | 18.4 | 71 | 15.3 | 65.7 | 7,577 | 7,024 | 2,186 | 2,137 |
| WHEMLOCK-L | 36 | 23.6 | 21.3 | 75 | 12.6 | 58.3 | 6,839 | 6,705 | 2,090 | 2,087 |
| R ALDER | 7 | 12.1 | 8.1 | 51 | 1.5 | 4.3 | 451 | 451 | 94 | 94 |
| TOTAL | 216 | 155.1 | 18.6 | 75 | 68.1 | 294.1 | 36,953 | 35,699 | 10,332 | 10,251 |
| CONFIDENCE LIMITS OF THE SAMPLE | | | | | | | | | | |
| 68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR | | | | | | | | | | |
| CL: | 68.1 % | COEFF | SAMPLE TREES - BF | | | | # OF TREES REQ. | | INF. POP. | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | 34.1 | 5.8 | | 234 | 249 | 263 | | | | |
| DOUG FIR-L | 28.0 | 3.0 | | 324 | 334 | 344 | | | | |
| WHEMLOCK | 28.1 | 4.3 | | 217 | 226 | 236 | | | | |
| WHEMLOCK-L | | | | 330 | 330 | 330 | | | | |
| R ALDER | 38.2 | 15.5 | | 34 | 40 | 46 | | | | |
| TOTAL | 34.5 | 2.4 | | 279 | 286 | 293 | 48 | 24 | 12 | |
| CL: | 68.1 % | COEFF | SAMPLE TREES - CF | | | | # OF TREES REQ. | | INF. POP. | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | 27.8 | 4.8 | | 65 | 69 | 72 | | | | |
| DOUG FIR-L | 19.1 | 2.0 | | 89 | 91 | 93 | | | | |
| WHEMLOCK | 25.7 | 3.9 | | 66 | 69 | 71 | | | | |
| WHEMLOCK-L | | | | 103 | 103 | 103 | | | | |
| R ALDER | 47.5 | 19.3 | | 7 | 9 | 10 | | | | |
| TOTAL | 29.5 | 2.1 | | 80 | 82 | 83 | 35 | 18 | 9 | |
| CL: | 68.1 % | COEFF | TREES/ACRE | | | | # OF PLOTS REQ. | | INF. POP. | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | 113.0 | 14.6 | | 24 | 28 | 32 | | | | |
| DOUG FIR-L | 52.7 | 6.8 | | 52 | 55 | 59 | | | | |
| WHEMLOCK | 107.6 | 13.9 | | 31 | 36 | 41 | | | | |
| WHEMLOCK-L | 112.2 | 14.5 | | 20 | 24 | 27 | | | | |
| R ALDER | 411.5 | 53.1 | | 6 | 12 | 19 | | | | |
| TOTAL | 43.9 | 5.7 | | 146 | 155 | 164 | 77 | 39 | 19 | |
| CL: | 68.1 % | COEFF | BASAL AREA/ACRE | | | | # OF PLOTS REQ. | | INF. POP. | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | 113.5 | 14.6 | | 38 | 44 | 50 | | | | |
| DOUG FIR-L | 52.2 | 6.7 | | 114 | 122 | 130 | | | | |
| WHEMLOCK | 102.9 | 13.3 | | 57 | 66 | 74 | | | | |
| WHEMLOCK-L | 106.9 | 13.8 | | 50 | 58 | 66 | | | | |
| R ALDER | 390.0 | 50.3 | | 2 | 4 | 7 | | | | |
| TOTAL | 31.9 | 4.1 | | 282 | 294 | 306 | 41 | 21 | 10 | |
| CL: | 68.1 % | COEFF | NET BF/ACRE | | | | # OF PLOTS REQ. | | INF. POP. | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | 117.3 | 15.1 | | 4,501 | 5,304 | 6,106 | | | | |
| DOUG FIR-L | 54.4 | 7.0 | | 15,080 | 16,217 | 17,354 | | | | |

| TC TSTATS | | | | STATISTICS | | | | PAGE | 2 | |
|--------------|--------|--------------|-------------|------------------|---------------|---------------|-----------------|------------|------------|------|
| | | | | PROJECT | GROOT | | | DATE | 9/17/2019 | |
| TWP | RGE | SECT | TRACT | TYPE | ACRES | | PLOTS | TREES | CuFt | BdFt |
| 09N | 02E | 13 | THIN | 00U2 | 62.00 | | 60 | 433 | S | W |
| CL: | 68.1 % | COEFF | | NET BF/ACRE | | | # OF PLOTS REQ. | | INF. POP. | |
| SD: | 1.0 | VAR. | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| WHEMLOCK | | 103.2 | 13.3 | 6,089 | 7,024 | 7,958 | | | | |
| WHEMLOCK-L | | 107.0 | 13.8 | 5,779 | 6,705 | 7,630 | | | | |
| R ALDER | | 384.9 | 49.6 | 227 | 451 | 674 | | | | |
| TOTAL | | 32.7 | 4.2 | 34,192 | 35,699 | 37,207 | 43 | 22 | 11 | |
| CL: | 68.1 % | COEFF | | NET CUFT FT/ACRE | | | # OF PLOTS REQ. | | INF. POP. | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | | 115.5 | 14.9 | 1,254 | 1,474 | 1,693 | | | | |
| DOUG FIR-L | | 53.0 | 6.8 | 4,155 | 4,459 | 4,764 | | | | |
| WHEMLOCK | | 102.7 | 13.2 | 1,854 | 2,137 | 2,420 | | | | |
| WHEMLOCK-L | | 106.8 | 13.8 | 1,800 | 2,087 | 2,375 | | | | |
| R ALDER | | 385.7 | 49.8 | 47 | 94 | 141 | | | | |
| TOTAL | | 32.0 | 4.1 | 9,828 | 10,251 | 10,674 | 41 | 21 | 10 | |
| CL: | 68.1 % | COEFF | | V-BAR/ACRE | | | # OF PLOTS REQ. | | INF. POP. | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | | 70.5 | 9.1 | 102 | 120 | 139 | | | | |
| DOUG FIR-L | | | | 124 | 133 | 142 | | | | |
| WHEMLOCK | | | | 93 | 107 | 121 | | | | |
| WHEMLOCK-L | | | | 99 | 115 | 131 | | | | |
| R ALDER | | 385.3 | 49.7 | 52 | 104 | 155 | | | | |
| TOTAL | | 187.6 | 24.2 | 116 | 121 | 127 | 1,405 | 717 | 351 | |

| TC TSTATS | | | | STATISTICS | | | | PAGE | 1 | |
|--|-----------------|----------------|-------------------|-------------------|-----------------------------|----------------------------|----------------|---------------|----------------|--------------|
| | | | | PROJECT | GROOT | | DATE | 9/17/2019 | | |
| TWP | RGE | SECT | TRACT | TYPE | ACRES | PLOTS | TREES | CuFt | BdFt | |
| 09N | 02E | 13 | THIN | 00U3 | 10.00 | 19 | 89 | S | W | |
| | | PLOTS | TREES | TREES PER PLOT | ESTIMATED TOTAL TREES | PERCENT SAMPLE TREES | | | | |
| TOTAL | | 19 | 89 | 4.7 | | | | | | |
| CRUISE | | 11 | 47 | 4.3 | 1,065 | 4.4 | | | | |
| DBH COUNT | | | | | | | | | | |
| REFOREST | | | | | | | | | | |
| COUNT | | 7 | 30 | 4.3 | | | | | | |
| BLANKS | | 1 | | | | | | | | |
| 100 % | | | | | | | | | | |
| STAND SUMMARY | | | | | | | | | | |
| | SAMPLE TREES | TREES /ACRE | AVG DBH | BOLE LEN | REL DEN | BASAL AREA | GROSS BF/AC | NET BF/AC | GROSS CF/AC | NET CF/AC |
| DOUG FIR | 37 | 77.7 | 19.8 | 81 | 37.4 | 166.6 | 23,692 | 22,308 | 6,082 | 5,928 |
| WHEMLOCK | 3 | 17.9 | 20.2 | 71 | 8.8 | 39.6 | 4,197 | 3,928 | 1,174 | 1,172 |
| R ALDER | 6 | 10.3 | 12.6 | 62 | 2.5 | 9.0 | 935 | 908 | 252 | 248 |
| WR CEDAR | 1 | .6 | 30.0 | 66 | 0.5 | 3.0 | 286 | 261 | 95 | 95 |
| TOTAL | 47 | 106.5 | 19.4 | 78 | 49.5 | 218.1 | 29,110 | 27,405 | 7,602 | 7,443 |
| CONFIDENCE LIMITS OF THE SAMPLE | | | | | | | | | | |
| 68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR | | | | | | | | | | |
| CL: | 68.1 % | COEFF | SAMPLE TREES - BF | | | # OF TREES REQ. | | INF. POP. | | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | 41.4 | 6.9 | | 311 | 334 | 357 | | | | |
| WHEMLOCK | 44.9 | 31.1 | | 186 | 270 | 354 | | | | |
| R ALDER | 39.3 | 17.5 | | 81 | 98 | 116 | | | | |
| WR CEDAR | | | | | | | | | | |
| TOTAL | 49.7 | 7.3 | | 279 | 301 | 323 | 99 | 50 | 25 | |
| CL: | 68.1 % | COEFF | SAMPLE TREES - CF | | | # OF TREES REQ. | | INF. POP. | | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | 33.7 | 5.6 | | 83 | 87 | 92 | | | | |
| WHEMLOCK | 45.6 | 31.5 | | 55 | 81 | 106 | | | | |
| R ALDER | 38.0 | 16.9 | | 23 | 27 | 32 | | | | |
| WR CEDAR | | | | | | | | | | |
| TOTAL | 44.6 | 6.6 | | 75 | 81 | 86 | 79 | 40 | 20 | |
| CL: | 68.1 % | COEFF | TREES/ACRE | | | # OF PLOTS REQ. | | INF. POP. | | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | 60.8 | 14.3 | | 67 | 78 | 89 | | | | |
| WHEMLOCK | 195.2 | 46.0 | | 10 | 18 | 26 | | | | |
| R ALDER | 435.9 | 102.7 | | | 10 | 21 | | | | |
| WR CEDAR | 435.9 | 102.7 | | | 1 | 1 | | | | |
| TOTAL | 39.6 | 9.3 | | 97 | 106 | 116 | 66 | 34 | 17 | |
| CL: | 68.1 % | COEFF | BASAL AREA/ACRE | | | # OF PLOTS REQ. | | INF. POP. | | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | 59.9 | 14.1 | | 143 | 167 | 190 | | | | |
| WHEMLOCK | 196.4 | 46.3 | | 21 | 40 | 58 | | | | |
| R ALDER | 435.9 | 102.7 | | | 9 | 18 | | | | |
| WR CEDAR | 435.9 | 102.7 | | | 3 | 6 | | | | |
| TOTAL | 30.7 | 7.2 | | 202 | 218 | 234 | 40 | 20 | 10 | |
| CL: | 68.1 % | COEFF | NET BF/ACRE | | | # OF PLOTS REQ. | | INF. POP. | | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | 62.0 | 14.6 | | 19,050 | 22,308 | 25,565 | | | | |
| WHEMLOCK | 196.1 | 46.2 | | 2,113 | 3,928 | 5,742 | | | | |
| R ALDER | 435.9 | 102.7 | | | 908 | 1,841 | | | | |
| WR CEDAR | 435.9 | 102.7 | | | 261 | 530 | | | | |
| TOTAL | 36.4 | 8.6 | | 25,055 | 27,405 | 29,755 | 56 | 29 | 14 | |

| TC TSTATS | | | | STATISTICS | | | | PAGE | 2 | |
|--------------|--------|--------------|-------------|------------------|--------------|--------------|-----------------|------------|------------|------|
| | | | | PROJECT | GROOT | | | DATE | 9/17/2019 | |
| TWP | RGE | SECT | TRACT | TYPE | ACRES | | PLOTS | TREES | CuFt | BdFt |
| 09N | 02E | 13 | THIN | 00U3 | 10.00 | | 19 | 89 | S | W |
| CL: | 68.1 % | COEFF | | NET CUFT FT/ACRE | | | # OF PLOTS REQ. | | INF. POP. | |
| SD: | 1.0 | VAR. | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| CL: | 68.1 % | COEFF | | NET CUFT FT/ACRE | | | # OF PLOTS REQ. | | INF. POP. | |
| SD: | 1.0 | VAR. % | S.E. % | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | | 60.6 | 14.3 | 5,081 | 5,928 | 6,775 | | | | |
| WHEMLOCK | | 196.1 | 46.2 | 630 | 1,172 | 1,713 | | | | |
| R ALDER | | 435.9 | 102.7 | | 248 | 504 | | | | |
| WR CEDAR | | 435.9 | 102.7 | | 95 | 192 | | | | |
| TOTAL | | 33.2 | 7.8 | 6,860 | 7,443 | 8,026 | 47 | 24 | 12 | |
| CL: | 68.1 % | COEFF | | V-BAR/ACRE | | | # OF PLOTS REQ. | | INF. POP. | |
| SD: | 1.0 | VAR. % | S.E. % | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | | | | 114 | 134 | 153 | | | | |
| WHEMLOCK | | | | 53 | 99 | 145 | | | | |
| R ALDER | | 435.9 | 102.7 | | 101 | 206 | | | | |
| WR CEDAR | | 435.9 | 102.7 | | 88 | 178 | | | | |
| TOTAL | | 176.2 | 41.5 | 115 | 126 | 136 | 1,310 | 668 | 328 | |

| TC TSTATS | | | | STATISTICS | | | | PAGE | 1 | |
|--|-----------------|----------------|-------------------|-------------------|-----------------------------|----------------------------|-----------------|---------------|----------------|--------------|
| | | | | PROJECT | GROOT | | DATE | 9/17/2019 | | |
| TWP | RGE | SECT | TRACT | TYPE | ACRES | PLOTS | TREES | CuFt | BdFt | |
| 09N | 02E | 13 | THIN | 00U4 | 25.00 | 22 | 112 | S | W | |
| | | PLOTS | TREES | TREES PER PLOT | ESTIMATED TOTAL TREES | PERCENT SAMPLE TREES | | | | |
| TOTAL | | 22 | 112 | 5.1 | | | | | | |
| CRUISE | | 12 | 64 | 5.3 | 4,088 | 1.6 | | | | |
| DBH COUNT | | | | | | | | | | |
| REFOREST | | | | | | | | | | |
| COUNT | | 9 | 48 | 5.3 | | | | | | |
| BLANKS | | 1 | | | | | | | | |
| 100 % | | | | | | | | | | |
| STAND SUMMARY | | | | | | | | | | |
| | SAMPLE TREES | TREES /ACRE | AVG DBH | BOLE LEN | REL DEN | BASAL AREA | GROSS BF/AC | NET BF/AC | GROSS CF/AC | NET CF/AC |
| DOUG FIR | 44 | 107.7 | 17.9 | 77 | 44.6 | 189.1 | 26,037 | 25,477 | 6,758 | 6,749 |
| WHEMLOCK | 9 | 17.5 | 19.2 | 68 | 8.0 | 35.0 | 3,874 | 3,140 | 1,142 | 1,014 |
| R ALDER | 7 | 25.9 | 10.6 | 53 | 4.9 | 16.0 | 1,358 | 1,225 | 391 | 361 |
| BL MAPLE | 4 | 12.4 | 11.9 | 50 | 2.8 | 9.5 | 724 | 424 | 201 | 119 |
| TOTAL | 64 | 163.5 | 16.7 | 70 | 61.0 | 249.7 | 31,994 | 30,266 | 8,492 | 8,243 |
| CONFIDENCE LIMITS OF THE SAMPLE | | | | | | | | | | |
| 68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR | | | | | | | | | | |
| CL: | 68.1 % | COEFF | SAMPLE TREES - BF | | | | # OF TREES REQ. | | INF. POP. | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | | 55.4 | 8.4 | 304 | 333 | 361 | | | | |
| WHEMLOCK | | | | 250 | 250 | 250 | | | | |
| R ALDER | | 28.5 | 11.6 | 45 | 51 | 57 | | | | |
| BL MAPLE | | | | 70 | 70 | 70 | | | | |
| TOTAL | | 65.5 | 8.5 | 257 | 281 | 304 | 171 | 87 | 43 | |
| CL: | 68.1 % | COEFF | SAMPLE TREES - CF | | | | # OF TREES REQ. | | INF. POP. | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | | 47.8 | 7.3 | 80 | 86 | 93 | | | | |
| WHEMLOCK | | | | 81 | 81 | 81 | | | | |
| R ALDER | | 36.1 | 14.7 | 13 | 16 | 18 | | | | |
| BL MAPLE | | | | 19 | 19 | 19 | | | | |
| TOTAL | | 56.5 | 7.3 | 70 | 75 | 81 | 127 | 65 | 32 | |
| CL: | 68.1 % | COEFF | TREES/ACRE | | | | # OF PLOTS REQ. | | INF. POP. | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | | 69.8 | 15.2 | 91 | 108 | 124 | | | | |
| WHEMLOCK | | 168.1 | 36.7 | 11 | 17 | 24 | | | | |
| R ALDER | | 469.0 | 102.2 | | 26 | 52 | | | | |
| BL MAPLE | | 469.0 | 102.2 | | 12 | 25 | | | | |
| TOTAL | | 82.0 | 17.9 | 134 | 164 | 193 | 281 | 143 | 70 | |
| CL: | 68.1 % | COEFF | BASAL AREA/ACRE | | | | # OF PLOTS REQ. | | INF. POP. | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | | 63.9 | 13.9 | 163 | 189 | 215 | | | | |
| WHEMLOCK | | 166.6 | 36.3 | 22 | 35 | 48 | | | | |
| R ALDER | | 469.0 | 102.2 | | 16 | 32 | | | | |
| BL MAPLE | | 469.0 | 102.2 | | 10 | 19 | | | | |
| TOTAL | | 47.7 | 10.4 | 224 | 250 | 276 | 95 | 49 | 24 | |
| CL: | 68.1 % | COEFF | NET BF/ACRE | | | | # OF PLOTS REQ. | | INF. POP. | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | | 69.5 | 15.1 | 21,620 | 25,477 | 29,334 | | | | |
| WHEMLOCK | | 169.0 | 36.8 | 1,983 | 3,140 | 4,296 | | | | |
| R ALDER | | 469.0 | 102.2 | | 1,225 | 2,477 | | | | |
| BL MAPLE | | 469.0 | 102.2 | | 424 | 858 | | | | |
| TOTAL | | 51.2 | 11.2 | 26,888 | 30,266 | 33,643 | 110 | 56 | 27 | |

| TC TSTATS | | | | STATISTICS | | | | PAGE | 2 | |
|--------------|--------|--------------|-------------|------------------|--------------|--------------|-----------------|------------|------------|------|
| | | | | PROJECT | GROOT | | | DATE | 9/17/2019 | |
| TWP | RGE | SECT | TRACT | TYPE | ACRES | | PLOTS | TREES | CuFt | BdFt |
| 09N | 02E | 13 | THIN | 00U4 | 25.00 | | 22 | 112 | S | W |
| CL: | 68.1 % | COEFF | | NET CUFT FT/ACRE | | | # OF PLOTS REQ. | | INF. POP. | |
| SD: | 1.0 | VAR. | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| CL: | 68.1 % | COEFF | | NET CUFT FT/ACRE | | | # OF PLOTS REQ. | | INF. POP. | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | | 66.2 | 14.4 | 5,775 | 6,749 | 7,723 | | | | |
| WHEMLOCK | | 178.0 | 38.8 | 621 | 1,014 | 1,408 | | | | |
| R ALDER | | 469.0 | 102.2 | | 361 | 730 | | | | |
| BL MAPLE | | 469.0 | 102.2 | | 119 | 240 | | | | |
| TOTAL | | 47.0 | 10.2 | 7,399 | 8,243 | 9,087 | 92 | 47 | 23 | |
| CL: | 68.1 % | COEFF | | V-BAR/ACRE | | | # OF PLOTS REQ. | | INF. POP. | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | | | | 114 | 135 | 155 | | | | |
| WHEMLOCK | | 117.5 | 25.6 | 57 | 90 | 123 | | | | |
| R ALDER | | 469.0 | 102.2 | | 76 | 155 | | | | |
| BL MAPLE | | 469.0 | 102.2 | | 44 | 90 | | | | |
| TOTAL | | 184.8 | 40.3 | 108 | 121 | 135 | 1,428 | 729 | 357 | |

| TC TSTATS | | | | STATISTICS | | | | PAGE 1 | | |
|--|--------------|--------------|-------------------|----------------|-----------------------|----------------------|---------------|---------------|---------------|---------------|
| | | | | PROJECT GROOT | | DATE 9/17/2019 | | | | |
| TWP | RGE | SECT | TRACT | TYPE | ACRES | PLOTS | TREES | CuFt | BdFt | |
| 09N | 02E | 13 | THIN | 00U5 | 2.00 | 7 | 46 | S | W | |
| | | PLOTS | TREES | TREES PER PLOT | ESTIMATED TOTAL TREES | PERCENT SAMPLE TREES | | | | |
| TOTAL | | 7 | 46 | 6.6 | | | | | | |
| CRUISE | | 7 | 46 | 6.6 | 441 | 10.4 | | | | |
| DBH COUNT | | | | | | | | | | |
| REFOREST | | | | | | | | | | |
| COUNT | | | | | | | | | | |
| BLANKS | | | | | | | | | | |
| 100 % | | | | | | | | | | |
| STAND SUMMARY | | | | | | | | | | |
| | SAMPLE TREES | TREES /ACRE | AVG DBH | BOLE LEN | REL DEN | BASAL AREA | GROSS BF/AC | NET BF/AC | GROSS CF/AC | NET CF/AC |
| DOUG FIR | 5 | 26.3 | 15.1 | 81 | 8.5 | 32.9 | 4,434 | 4,181 | 1,138 | 1,138 |
| DOUG FIR-L | 19 | 67.7 | 18.7 | 86 | 29.9 | 129.5 | 19,241 | 18,295 | 4,828 | 4,777 |
| WHEMLOCK | 11 | 73.3 | 14.1 | 63 | 21.1 | 79.1 | 7,829 | 7,722 | 2,405 | 2,405 |
| WHEMLOCK-L | 11 | 53.0 | 16.5 | 69 | 19.4 | 78.9 | 8,854 | 8,654 | 2,625 | 2,625 |
| TOTAL | 46 | 220.3 | 16.3 | 73 | 79.3 | 320.6 | 40,358 | 38,853 | 10,996 | 10,945 |
| CONFIDENCE LIMITS OF THE SAMPLE | | | | | | | | | | |
| 68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR | | | | | | | | | | |
| CL: | 68.1 % | COEFF | SAMPLE TREES - BF | | | # OF TREES REQ. | | INF. POP. | | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | | | | 227 | 227 | 227 | | | | |
| DOUG FIR-L | | | | 530 | 530 | 530 | | | | |
| WHEMLOCK | | | | 240 | 240 | 240 | | | | |
| WHEMLOCK-L | | | | 261 | 261 | 261 | | | | |
| TOTAL | | | | 358 | 358 | 358 | | | | |
| CL: | 68.1 % | COEFF | SAMPLE TREES - CF | | | # OF TREES REQ. | | INF. POP. | | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | | 6.4 | 3.7 | 60 | 62 | 65 | | | | |
| DOUG FIR-L | | | | 137 | 137 | 137 | | | | |
| WHEMLOCK | | | | 74 | 74 | 74 | | | | |
| WHEMLOCK-L | | | | 80 | 80 | 80 | | | | |
| TOTAL | | | | 98 | 98 | 98 | | | | |
| CL: | 68.1 % | COEFF | TREES/ACRE | | | # OF PLOTS REQ. | | INF. POP. | | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | | 150.3 | 61.2 | 10 | 26 | 42 | | | | |
| DOUG FIR-L | | 88.9 | 36.2 | 43 | 68 | 92 | | | | |
| WHEMLOCK | | 141.2 | 57.5 | 31 | 73 | 115 | | | | |
| WHEMLOCK-L | | 88.4 | 36.0 | 34 | 53 | 72 | | | | |
| TOTAL | | 51.3 | 20.9 | 174 | 220 | 266 | 122 | 62 | 31 | |
| CL: | 68.1 % | COEFF | BASAL AREA/ACRE | | | # OF PLOTS REQ. | | INF. POP. | | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | | 131.8 | 53.6 | 15 | 33 | 51 | | | | |
| DOUG FIR-L | | 85.7 | 34.9 | 84 | 130 | 175 | | | | |
| WHEMLOCK | | 126.9 | 51.6 | 38 | 79 | 120 | | | | |
| WHEMLOCK-L | | 88.5 | 36.0 | 51 | 79 | 107 | | | | |
| TOTAL | | 32.1 | 13.1 | 279 | 321 | 362 | 48 | 24 | 12 | |
| CL: | 68.1 % | COEFF | NET BF/ACRE | | | # OF PLOTS REQ. | | INF. POP. | | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | | 130.9 | 53.3 | 1,954 | 4,181 | 6,409 | | | | |
| DOUG FIR-L | | 91.8 | 37.4 | 11,459 | 18,295 | 25,132 | | | | |
| WHEMLOCK | | 128.5 | 52.3 | 3,686 | 7,722 | 11,758 | | | | |
| WHEMLOCK-L | | 93.3 | 38.0 | 5,370 | 8,654 | 11,939 | | | | |
| TOTAL | | 37.7 | 15.3 | 32,892 | 38,853 | 44,813 | 66 | 34 | 16 | |

| TC TSTATS | | | | STATISTICS | | | | PAGE | 2 | |
|--------------|--------|-------------|-------------|------------------|---------------|---------------|-----------------|-----------|-----------|------|
| | | | | PROJECT | GROOT | | | DATE | 9/17/2019 | |
| TWP | RGE | SECT | TRACT | TYPE | ACRES | | PLOTS | TREES | CuFt | BdFt |
| 09N | 02E | 13 | THIN | 00U5 | 2.00 | | 7 | 46 | S | W |
| CL: | 68.1 % | COEFF | | NET CUFT FT/ACRE | | | # OF PLOTS REQ. | | INF. POP. | |
| SD: | 1.0 | VAR. | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| CL: | 68.1 % | COEFF | | NET CUFT FT/ACRE | | | # OF PLOTS REQ. | | INF. POP. | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | | 129.8 | 52.8 | 537 | 1,138 | 1,739 | | | | |
| DOUG FIR-L | | 87.0 | 35.4 | 3,086 | 4,777 | 6,468 | | | | |
| WHEMLOCK | | 126.9 | 51.6 | 1,163 | 2,405 | 3,646 | | | | |
| WHEMLOCK-L | | 90.8 | 37.0 | 1,655 | 2,625 | 3,596 | | | | |
| TOTAL | | 32.5 | 13.2 | 9,497 | 10,945 | 12,392 | 49 | 25 | 12 | |
| CL: | 68.1 % | COEFF | | V-BAR/ACRE | | | # OF PLOTS REQ. | | INF. POP. | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 7 | 10 | |
| DOUG FIR | | 132.2 | 53.8 | 59 | 127 | 195 | | | | |
| DOUG FIR-L | | 93.0 | 37.9 | 88 | 141 | 194 | | | | |
| WHEMLOCK | | 129.5 | 52.7 | 47 | 98 | 149 | | | | |
| WHEMLOCK-L | | 93.9 | 38.2 | 68 | 110 | 151 | | | | |
| TOTAL | | 40.1 | 16.3 | 103 | 121 | 140 | 74 | 38 | 19 | |

Species Summary - Trees, Logs, Tons, CCF, MBF

| | |
|----------------------|------|
| T09N R02E S13 Ty00U1 | 64.0 |
| T09N R02E S13 Ty00U2 | 62.0 |
| T09N R02E S13 Ty00U | 2.0 |

Project GROOT
Acres 163.00

Page No 1
Date: 9/17/2019
Time 2:19:17PM

| Species | s T | Total | Total | Total | Net Cubic Ft/ | | CF/ | Total CCF | | Total MBF | |
|---------------|--------|--------|--------|--------|---------------|-------|------|-----------|--------|-----------|-------|
| | | Trees | Logs | Tons | Tree | Log | LF | Gross | Net | Gross | Net |
| DOUG FIR | | 11,992 | 24,851 | 18,958 | 55.10 | 26.59 | 0.84 | 6,652 | 6,607 | 2,434 | 2,357 |
| WHEMLOCK | | 6,874 | 13,230 | 10,874 | 48.53 | 25.21 | 0.82 | 3,398 | 3,336 | 1,128 | 1,047 |
| DOUG FIR | L | 3,574 | 8,299 | 8,178 | 80.03 | 34.47 | 1.02 | 2,869 | 2,860 | 1,067 | 1,042 |
| WHEMLOCK | L | 1,569 | 3,202 | 4,314 | 85.84 | 42.06 | 1.21 | 1,348 | 1,347 | 442 | 433 |
| R ALDER | | 1,504 | 1,858 | 498 | 11.52 | 9.33 | 0.34 | 181 | 173 | 71 | 68 |
| BL MAPLE | | 310 | 310 | 133 | 9.55 | 9.55 | 0.56 | 50 | 30 | 18 | 11 |
| PS FIR | | 102 | 137 | 70 | 23.99 | 17.86 | 0.60 | 24 | 24 | 7 | 7 |
| WR CEDAR | | 6 | 12 | 22 | 155.86 | 77.93 | 2.44 | 9 | 9 | 3 | 3 |
| Totals | | 25,930 | 51,899 | 43,047 | 55.48 | 27.72 | 0.87 | 14,533 | 14,386 | 5,169 | 4,966 |

| Wood Type Species | Total | Total | Total | Net Cubic Ft/ | | CF/ | Total CCF | | Total MBF | |
|----------------------|--------|--------|--------|---------------|-------|------|-----------|--------|-----------|-------|
| | Trees | Logs | Tons | Tree | Log | LF | Gross | Net | Gross | Net |
| C | 24,116 | 49,731 | 42,416 | 58.81 | 28.52 | 0.89 | 14,301 | 14,183 | 5,080 | 4,888 |
| H | 1,814 | 2,169 | 631 | 11.19 | 9.36 | 0.36 | 231 | 203 | 89 | 78 |
| Totals | 25,930 | 51,899 | 43,047 | 55.48 | 27.72 | 0.87 | 14,533 | 14,386 | 5,169 | 4,966 |



Forest Practices Application/Notification
Notice of Decision

FPA/N No: 2937212
Effective Date: 02/06/2020
Expiration Date: 02/06/2023
Shut Down Zone: 660
EARR Tax Credit: Eligible Non-eligible
Reference: Groot VRH Thin RMZ
30-099599

Decision

- Notification 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.
- Closed Applicant has withdrawn FPA/N.

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.

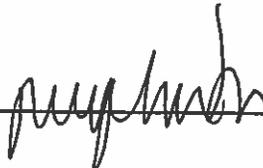
Issued By: Jon Byerly

Region: Pacific Cascade

Title: Forest Practices Forester

Date: 02/06/2020

Copies to: Landowner, Timber Owner and Operator.

Issued in person: Landowner Timber Owner Operator By: 

Appeal Information

You have thirty (30) days to appeal this Decision and any related State Environmental Policy Act determinations to the Pollution Control Hearings Board in writing at the following addresses:

Physical address: 1111 Israel Rd. SW, Ste 301, Tumwater, WA 98501

Mailing address: P.O. BOX 40903, OLYMPIA, WA 98504-0903

Information regarding the Pollution Control Hearings Board can be found at: <http://www.eluho.wa.gov/>

At the same time you file an appeal with the Pollution Control Hearings Board, also send a copy of the appeal to the Department of Natural Resources' region office and the Office of the Attorney General at the following addresses:

Office of the Attorney General
Natural Resources Division
1125 Washington Street SE
PO Box 40100
Olympia, WA 98504-0100

And

Department Of Natural Resources
Pacific Cascade Region
PO Box 280
Castle Rock WA 98611

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: <http://www.dnr.wa.gov/businesspermits/forestpractices>. Notify DNR of new Operators within 48 hours.

Continuing Forest Land 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 forest land 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 land 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 forest land obligation, the seller must pay the buyer's costs related to continuing forest land obligations, including all legal costs and reasonable attorneys' fees incurred by the buyer in enforcing the continuing forest land obligation against the seller.

Failure by the seller to send the required notice to the 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 forest land obligation prior to sale.

DNR affidavit of mailing:

| | | | |
|---|---|------------------------|-----|
| On this day _____, | I placed in the United States mail at _____ | Castle Rock _____, | WA, |
| (date) | | (post office location) | |
| postage paid, a true and accurate copy of this document. Notice of Decision FPA # _____ | | | |
| _____ | _____ | | |
| (Printed name) | (Signature) | | |

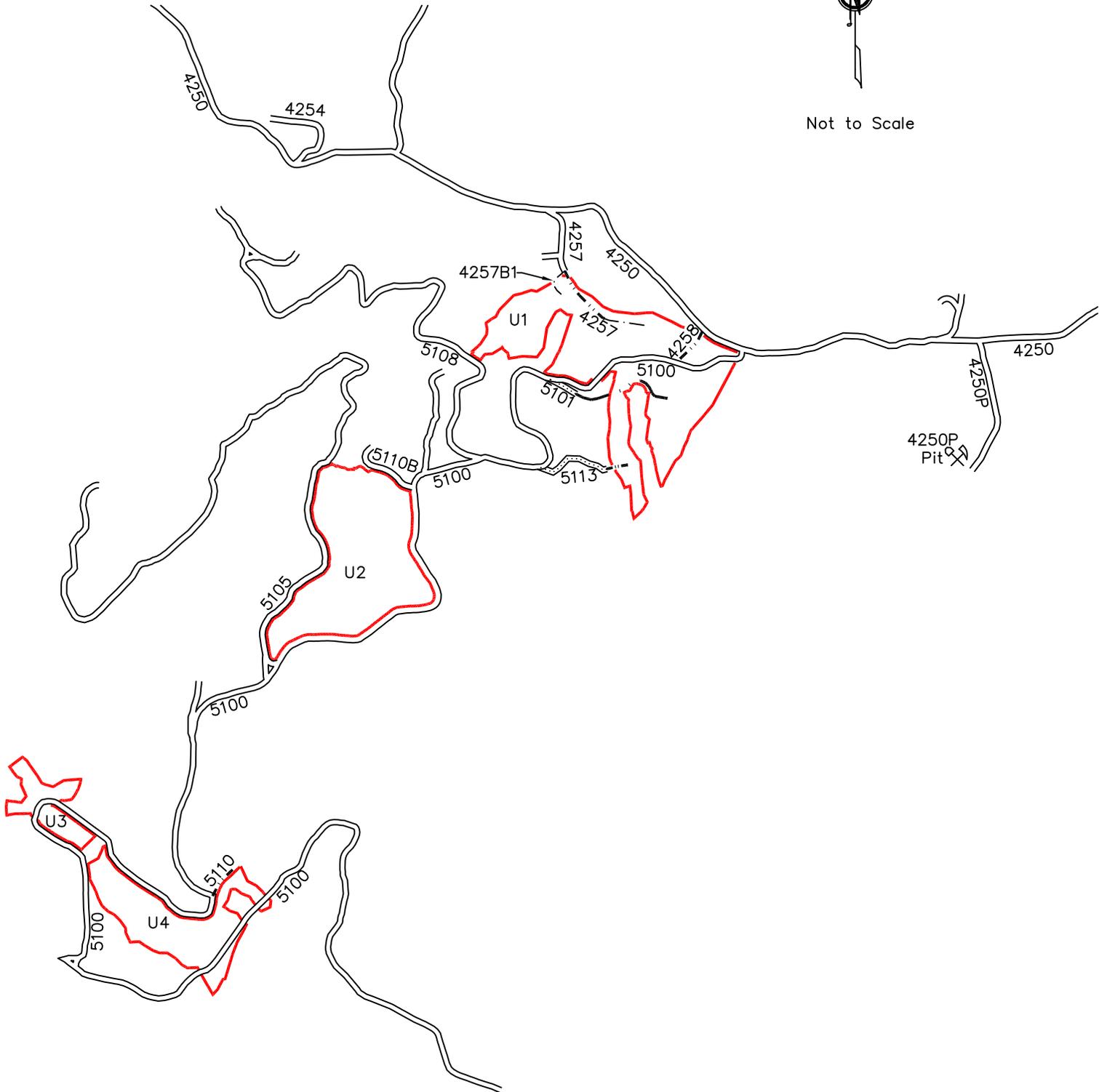
GROOT VRH THIN RMZ

OVERVIEW ROAD PLAN MAP

Map page 1 of 5



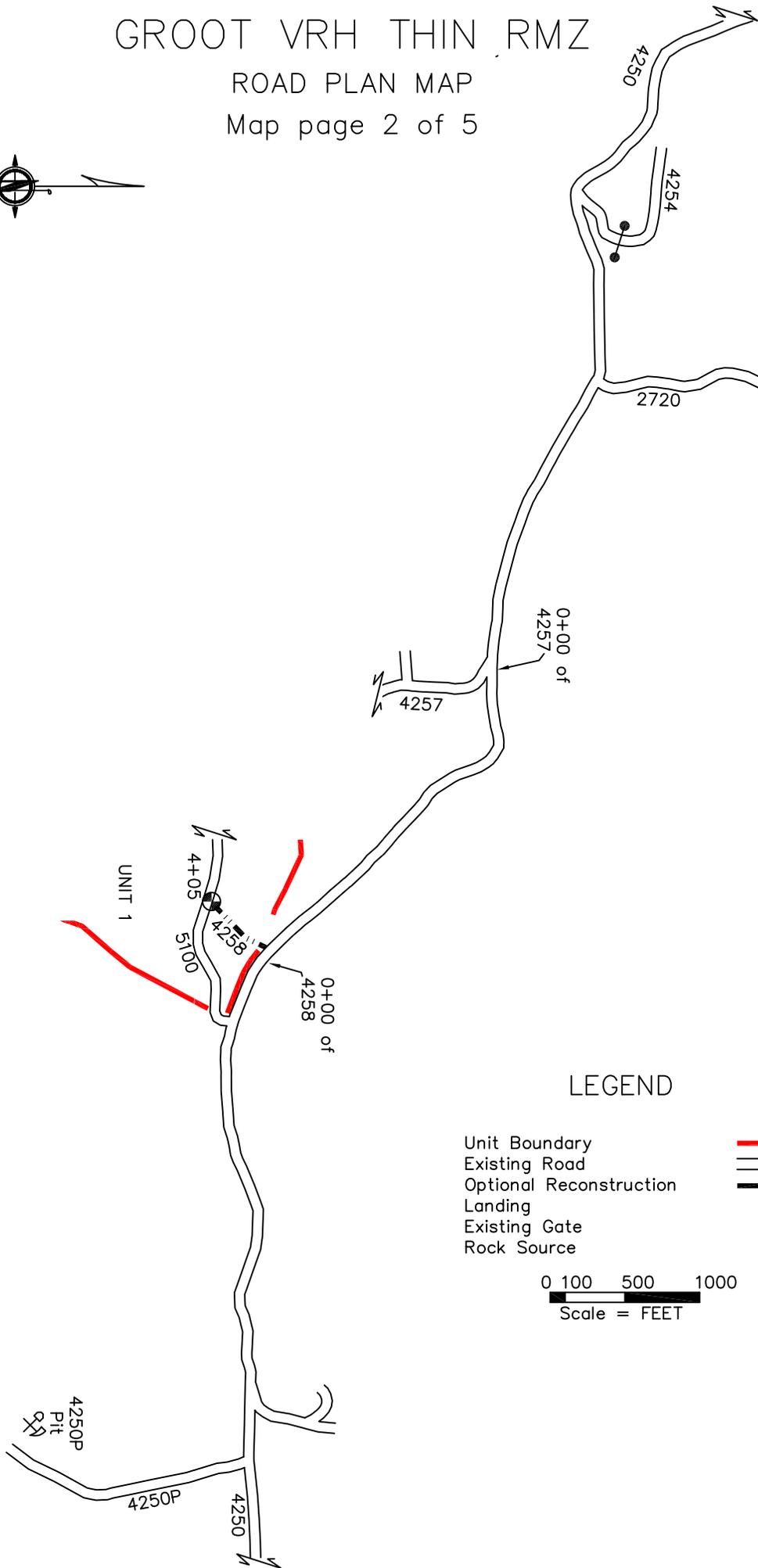
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GROOT VRH THIN RMZ

ROAD PLAN MAP

Map page 2 of 5



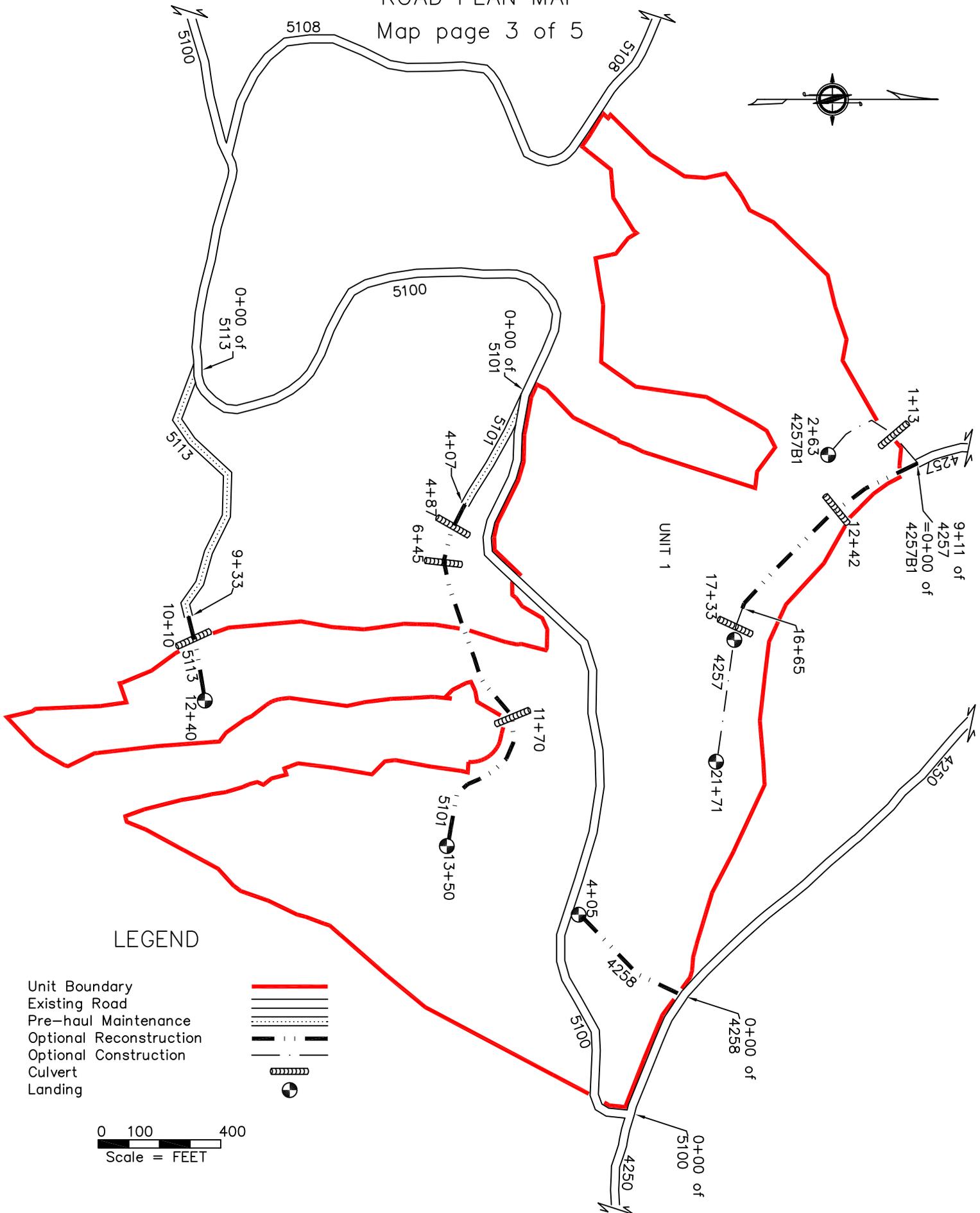
LEGEND

- Unit Boundary
- Existing Road
- Optional Reconstruction
- Landing
- Existing Gate
- Rock Source

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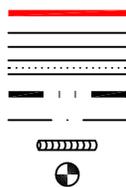
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ROAD PLAN MAP
Map page 3 of 5



LEGEND

- Unit Boundary
- Existing Road
- Pre-haul Maintenance
- Optional Reconstruction
- Optional Construction
- Culvert
- Landing

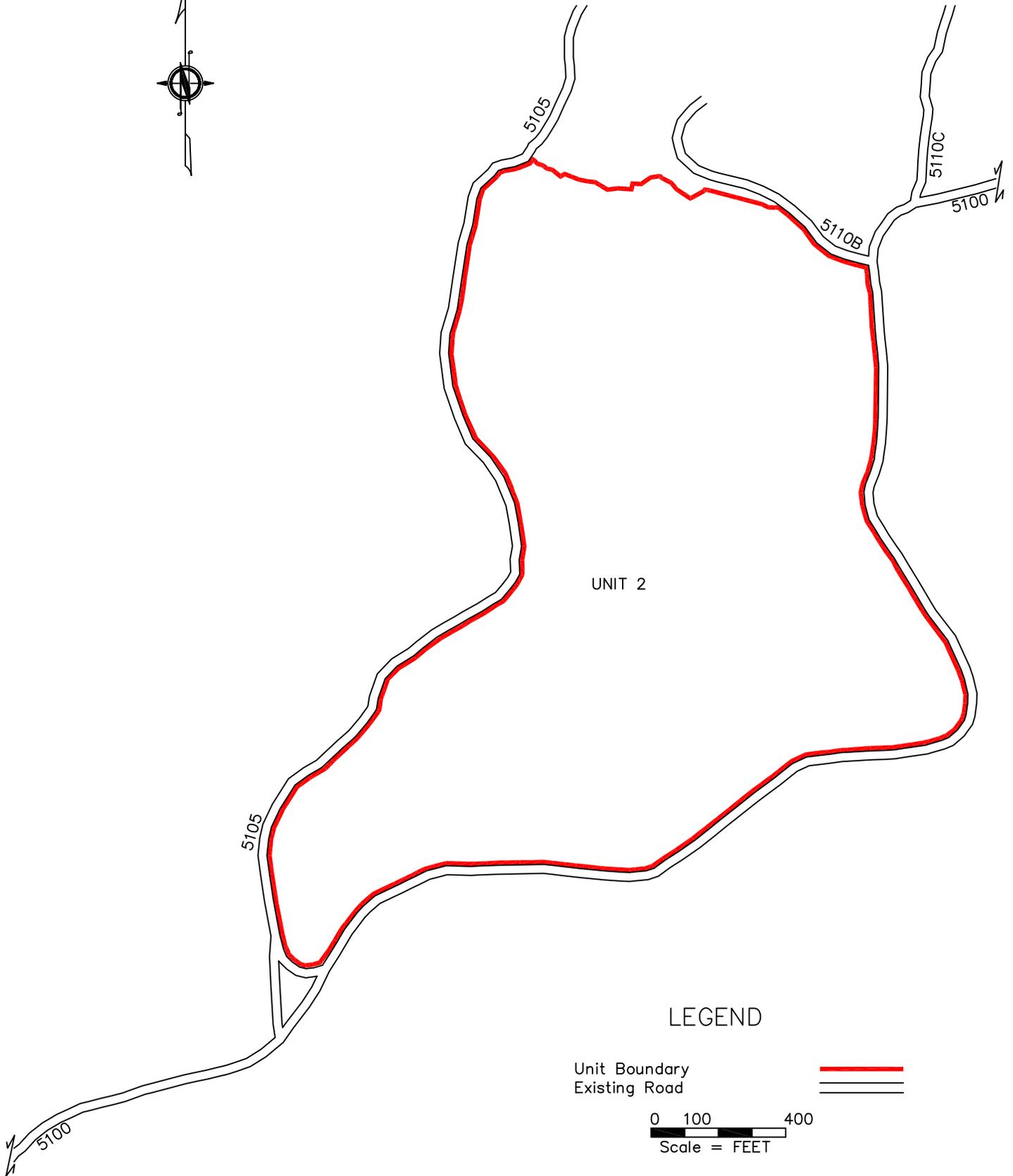


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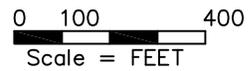
ROAD PLAN MAP

Map page 4 of 5



LEGEND

Unit Boundary
Existing Road



GROOT VRH THIN RMZ

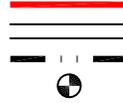
ROAD PLAN MAP

Map page 5 of 5

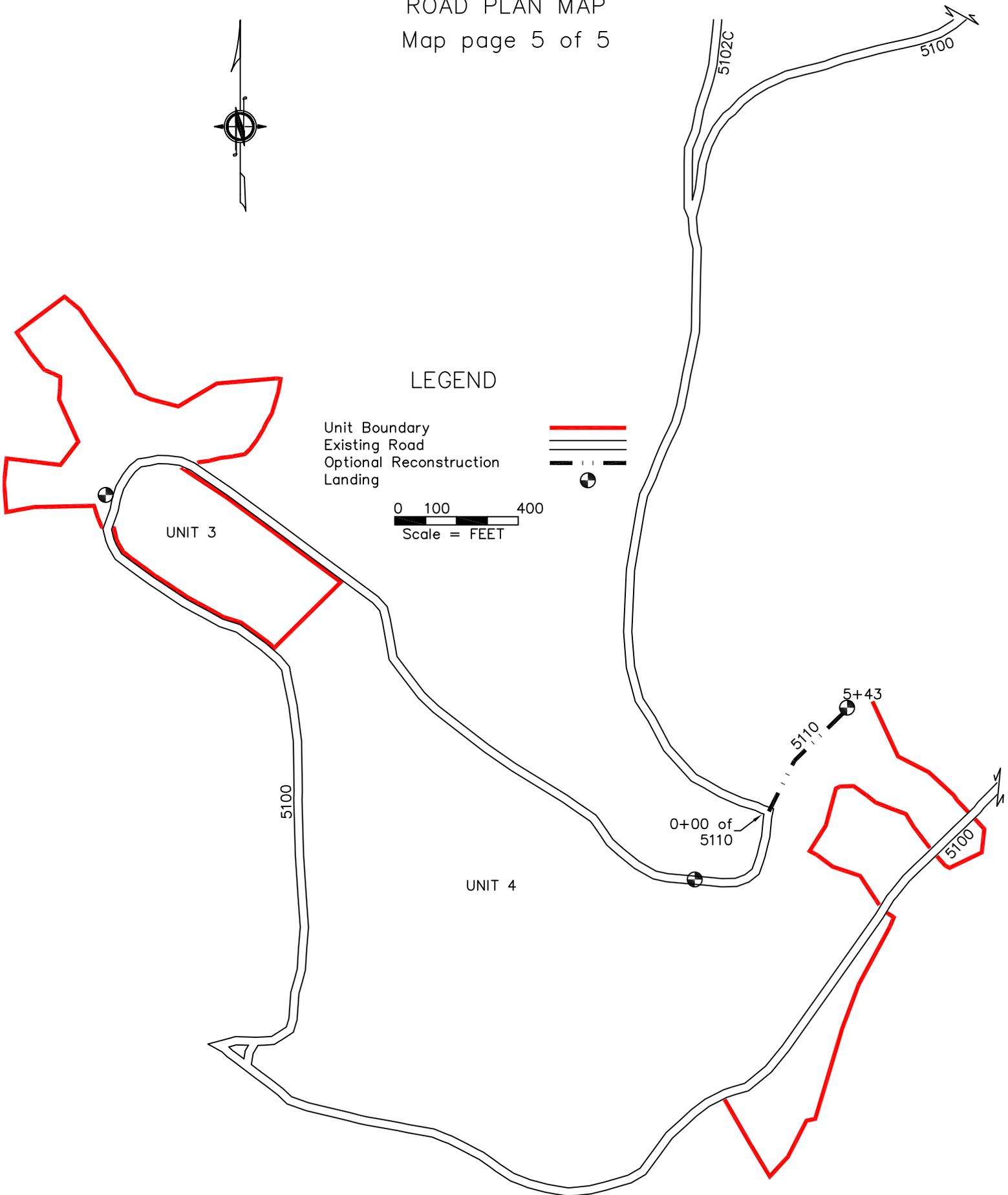


LEGEND

- Unit Boundary
- Existing Road
- Optional Reconstruction
- Landing



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Scale = FEET



STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

GROOT VRH THIN RMZ TIMBER SALE ROAD PLAN
COWLITZ COUNTY
ST HELENS DISTRICT
PACIFIC CASCADE REGION

AGREEMENT NO.: 30-099599

STAFF ENGINEER: BRETT WALLACHY

DATE: FEBRUARY 5, 2020

DRAWN & COMPILED BY: ALICIA COMPTON

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> |
|-------------|-----------------|----------------------|
| 5101 | 0+00 to 4+07 | Pre-haul maintenance |
| 5113 | 0+00 to 9+33 | 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> |
|-------------|-----------------|----------------|
| 4257 | 9+11 to 16+65 | Reconstruction |
| 4257 | 16+65 to 21+71 | Construction |
| 4257B1 | 0+00 to 2+63 | Construction |
| 4258 | 0+00 to 4+05 | Reconstruction |
| 5101 | 4+07 to 13+50 | Reconstruction |
| 5110 | 0+00 to 5+43 | Reconstruction |
| 5113 | 9+33 to 12+40 | Reconstruction |

0-4 CONSTRUCTION

Construction includes, but is not limited to clearing and grubbing; excavation and embankment; ditch construction; acquisition and installation of drainage structures; shaping and compaction; manufacture and application of rock; acquisition and application of erosion control.

0-5 RECONSTRUCTION

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

| <u>Road</u> | <u>Requirements</u> |
|-------------|--|
| 4257 | Clearing, grubbing, excavation, embankment, ditch construction, culverts, rock, and erosion control. |
| 4258 | Clearing, grubbing, excavation, embankment, ditch construction, rock, and erosion control. |
| 5101 | Clearing, grubbing, excavation, embankment, ditch construction, culverts, rock, and erosion control. |
| 5110 | Shaping, rock, and erosion control. |
| 5113 | Clearing, grubbing, excavation, embankment, ditch construction, culverts, rock, and erosion control. |

0-6 PRE-HAUL MAINTENANCE

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

| <u>Road</u> | <u>Requirements</u> |
|-------------|--|
| 5101 | Brushing, ditch cleaning, and maintenance grading. |
| 5113 | Brushing, ditch cleaning, and maintenance grading. |

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 clearing, grubbing, stripping overburden, ripping, and pre-screening. 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.

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.

1-7 TEMPORARY ROAD CLOSURE

Purchaser shall notify the Contract Administrator a minimum of 3 business days before the closure of any road. Construction may not close the following roads.

| |
|-------------|
| <u>Road</u> |
| 4250 |

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:

- Stakes, orange ribbon, orange paint, reference points.

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 haul, other than timber cut on the right-of-way, without written approval from the Contract Administrator.

1-22 WORK NOTIFICATIONS

Purchaser shall notify the Contract Administrator a minimum of 3 business 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:

- Brushing
- Ditch cleaning
- Maintenance grading
- Subgrade re/construction
- Culvert installations
- Shaping & compaction
- Rock application
- Post-re/construction erosion control application
- Abandonment
- Post-abandonment erosion control application

1-25 ACTIVITY TIMING RESTRICTION

The specified activities are not allowed during the listed closure period(s) unless authorized in writing by the Contract Administrator.

| <u>Activity</u> | <u>Closure Period</u> |
|--------------------------------------|-----------------------|
| Road construction and reconstruction | October 1 to April 30 |
| Stream crossing work | October 1 to April 30 |

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 and comply with 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.

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 6 inches on jaw/pit run roads.
- Wheel track rutting exceeds 4 inches on crushed rock roads.
- Wheel track rutting exceeds 8 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. Before and during any suspension, Purchaser shall protect the work from damage or deterioration.

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.

If tracked equipment is used on bridge or asphalt surfaces, Purchaser shall immediately cease all operations. Purchaser shall remove any dirt, rock, or other material tracked or spilled on the bridge or asphalt surface(s) and have surface(s) evaluated by the Contract Administrator or their designee for any damage caused by transporting equipment. Any damage to the surface(s) 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 Contact Administrator upon request. 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.

2-5 MAINTENANCE GRADING – EXISTING ROAD

On the following road(s), Purchaser shall shape the existing surface before timber haul.

| |
|-------------|
| <u>Road</u> |
| 5101 |
| 5113 |

2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS

Purchaser shall clean ditches, headwalls, and catchbasins. Work must be completed before maintenance grading and must be done in accordance with the TYPICAL SECTION SHEET. Pulling ditch material across the road or mixing in with the road surface is not allowed.

| |
|-------------|
| <u>Road</u> |
| 5101 |
| 5113 |

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

3-1 BRUSHING

On the following road(s), Purchaser shall cut vegetative material up to 5 inches in diameter, including limbs, as shown on the BRUSHING SECTION DETAIL. Brushing must be achieved by cutting of brush, trees, and branches. Root systems and stumps of cut vegetation may not be disturbed unless directed by the Contract Administrator. Purchaser shall remove brushing debris from the road surface, ditchlines, and culvert inlets and outlets.

| |
|-------------|
| <u>Road</u> |
| 5101 |
| 5113 |

3-2 BRUSHING RESTRICTION

Pulling, digging, pushing over, and other non-cutting methods used for vegetation removal may not be used for brushing. Excavator buckets, log loaders and similar equipment may not be used for brushing unless otherwise approved in writing by the Contract Administrator.

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, 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.

3-8 PROHIBITED DECKING AREAS

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

- Within the grubbing limits.
- Within 25 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 the uphill side of the road.

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. Grubbing must be completed before starting excavation and embankment.

3-12 STUMP PLACEMENT

Purchaser shall place grubbed stumps outside of the grubbing limits and in compliance with all other clauses in this road plan. Stumps must be positioned 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 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 maintenance grading.

3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS

Waste areas for organic debris are located as listed below.

| <u>Road</u> | <u>Disposal Location</u> |
|-------------|--------------------------|
| 4250P | Right |

3-23 PROHIBITED DISPOSAL AREAS

Purchaser shall not place organic debris in the following areas:

- Within 25 feet of a cross drain culvert.
- Within 50 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 the uphill side of the road.

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 grubbing limits on the downhill side of the road unless otherwise detailed in this road plan.

3-30 EXCLUSION OF DOZER BLADES

Purchaser shall not use dozer blades for the piling of organic debris.

SECTION 4 – EXCAVATION

4-2 PIONEERING

Pioneering may not extend past construction that will be completed during the current construction season. 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 12 percent adverse.
- Minimum curve radius is 60 feet at centerline.
- Maximum grade change for sag vertical curves is 12% in 100 feet.
- Maximum grade change for crest vertical curves is 8% in 100 feet.

4-5 CUT SLOPE RATIO

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

| <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 |
| 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 2 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 road(s), 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.

| <u>Road</u> | <u>Stations</u> |
|-------------|-----------------|
| 4257 | 9+11 to 16+65 |
| 4258 | 0+00 to 4+05 |
| 5101 | 4+07 to 13+50 |
| 5113 | 9+33 to 12+40 |

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.

4-35 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.

4-38 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.
- Outside the clearing limits.
- On the uphill side of the road.

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.

4-60 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.

4-61 SUBGRADE COMPACTION

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

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 may be new or used material and must meet the specifications in Clauses 10-15 through 10-24.

5-6 CULVERT TYPE

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

5-7 USED CULVERT MATERIAL

On temporary roads, Purchaser may install used culverts. All other roads must have new culverts installed.

5-8 TEMPORARY STREAM CULVERT INSTALLATION

Purchaser shall install temporary culverts as shown in the CULVERT LIST. Temporary stream culverts must be located in the natural channel of the stream. Temporary culverts must be removed as indicated in Clause 9-2 CULVERT REMOVAL FROM LIVE STREAM.

| <u>Road</u> | <u>Stations</u> |
|-------------|-----------------|
| 5113 | 10+10 |

5-15 CULVERT INSTALLATION

Culvert installation must be in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL. Corrugated Polyethylene pipe must be installed in a manner consistent with the manufacturer’s recommendations. Culverts shall be banded using lengths of no less than 10 feet, and no more than one length less than 16 feet. Shorter section of banded culvert shall be installed at the inlet end.

5-16 APPROVAL FOR LARGER CULVERT INSTALLATION

Purchaser shall obtain written approval from the Contract Administrator for the installation of culverts 24 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 depth of cover of not less than 1 foot of compacted subgrade over the top of the culvert at the shallowest point.

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 at the outlet. 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.

5-25 CATCH BASINS

Purchaser shall construct catch basins in accordance with CULVERT AND DRAINAGE SPECIFICATION DETAIL. Minimum dimensions of catch basins are 2 feet wide and 4 feet long.

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 on the CULVERT LIST that specify the placement of rock at the inlet. Rock must be placed on shoulders and slopes around culvert inlets. 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. Headwall installation is subject to approval by the Contract Administrator.

5-27 ARMORING FOR STREAM CROSSING CULVERTS

Purchaser shall place inlet armor in conjunction with or immediately following construction of the embankment at culverts designated as stream crossings on the CULVERT LIST. The type of armor and the amount of material must be consistent with the specifications listed on the CULVERT LIST. Rock must be placed around culvert inlet. Rock may not restrict the flow of water into culvert inlets. Armor installation is subject to approval by the Contract Administrator.

5-33 NATIVE SURFACE ROADS

If overwintered, native surface roads must be waterbarred by November 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 100 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(s) 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(s), a joint operating plan must be developed. All parties shall follow this plan. Purchaser shall notify the Contract Administrator a minimum of 3 business days before starting any operations in the listed locations.

| <u>Source</u> | <u>Location</u> |
|---------------|-----------------|
| 4250P Pit | S18, T9N, R3E |

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.

| <u>Possible Source</u> | <u>Phone</u> |
|------------------------|--------------|
| Gardner Rock | 360-274-6720 |

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 3 business days before starting any operations in the rock source.

| <u>Source</u> |
|---------------|
| 4250P Pit |

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. 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.

6-37 4-INCH JAW RUN ROCK

| | |
|---------------------------|-------------|
| % Passing 4" square sieve | 95% |
| % Passing U.S. #40 sieve | 16% maximum |
| % Passing U.S. #200 sieve | 5% maximum |

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.

6-50 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" |

6-55 ROCK APPLICATION MEASURED BY COMPACTED DEPTH

Measurement of specified rock depths, are defined as the compacted depth(s) 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 rock for culverts is on a cubic yard truck measure basis. Purchaser shall 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 on a weekly basis during rocking operations.

6-70 APPROVAL BEFORE ROCK APPLICATION

Purchaser shall obtain written approval from the Contract Administrator for subgrade re/construction before rock application.

6-71 ROCK APPLICATION

Purchaser shall apply rock in accordance with the specifications 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.

6-75 OPTIONAL ROCK EXCEPTION

On the following roads, if hauling takes place from May 1 to September 30 Purchaser may provide and place less rock than shown on the ROCK LIST, when approved in writing by the Contract Administrator. Rock may be used on any road within this road plan at the Purchasers discretion. Purchaser may also spread rock, reclaim, and spread elsewhere.

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> |
|-------------|-----------------|
| 4257 | 9+11 to 21+71 |
| 4257B1 | 0+00 to 2+63 |
| 4258 | 0+00 to 4+05 |
| 5101 | 0+00 to 13+50 |
| 5110 | 0+00 to 5+43 |
| 5113 | 0+00 to 12+40 |

SECTION 8 – EROSION CONTROL

8-2 PROTECTION FOR EXPOSED SOIL

Purchaser shall provide and evenly spread a layer of straw to all exposed soils within 50 feet of a stream or wetland. Soils must be covered before the first anticipated storm event.

8-15 REVEGETATION

Purchaser shall spread grass seed on all exposed soils resulting from road work activities using manual dispersion. Other methods of covering must be approved in writing by the Contract Administrator. Required seed not spread by the termination of this contract will become the property of the state.

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.

8-25 GRASS SEED

Purchaser shall evenly spread the seed mixture listed below on all exposed soil at a rate of 50 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> |
|--|--------------------|
| Perennial Rye | 35-45 |
| Red Fescue | 30-40 |
| Highland Bent | 5-15 |
| White Clover | 10-20 |
| 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> |
|-------------|-----------------|
| 5101 | 4+07 |
| 5113 | 9+33 |

9-2 CULVERT REMOVAL FROM LIVE STREAM

On the following road(s), Purchaser shall remove existing culverts and puncheons from live streams and leave the resulting channel open with excavation slope and excavated channel width as specified. Culvert and puncheon removal from live streams must be in accordance with the FPA.

| <u>Road</u> | <u>Stations</u> | <u>Excavated Channel Width</u> | <u>Slope Ratio</u> |
|-------------|-----------------|--------------------------------|--------------------|
| 5101 | 7+50 | 4' | 1.5:1 |
| 5113 | 10+10 | 4' | 1.5:1 |

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.

9-21 ROAD ABANDONMENT

Purchaser shall abandon the following roads before the termination of this contract.

| <u>Road</u> | <u>Stations</u> | <u>Type</u> |
|-------------|-----------------|-------------|
| 5101 | 4+07 to 13+50 | Light |
| 5113 | 9+33 to 12+40 | Light |

9-22 LIGHT ABANDONMENT

- Construct non-drivable waterbars according to the attached NON-DRIVABLE WATERBAR DETAIL at a maximum spacing that will produce a vertical drop of no more than 10 feet between waterbars or between natural drainage paths and with a maximum spacing of 100 feet, or as marked in the field.
- 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 must be outsloped to provide positive drainage. Outlets must be on stable locations.
- Block roads with earthen barricades in accordance with the attached EARTHEN BARRICADE DETAIL.
- Remove culverts.
- Remove ditch cross drain culverts and leave the resulting trench open.
- Slope all trench walls and approach embankments no steeper than 1.5:1.
- Apply grass seed concurrently with abandonment and in accordance with Section 8 EROSION CONTROL.
- Cover, concurrently with abandonment, all exposed soils within 50 feet of any live stream, with a layer of straw.

SECTION 10 MATERIALS

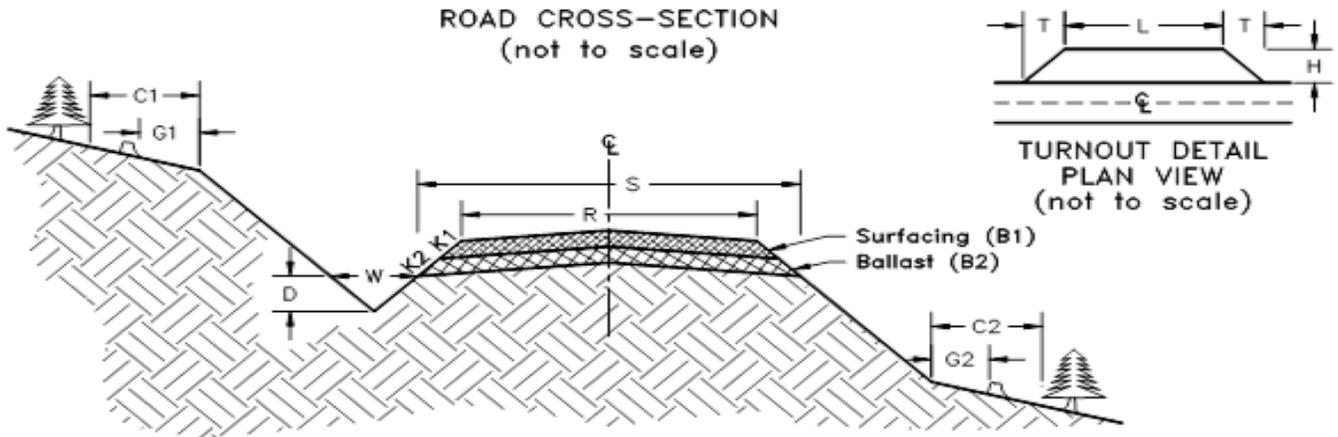
10-17 CORRUGATED PLASTIC CULVERT

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.

10-22 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.

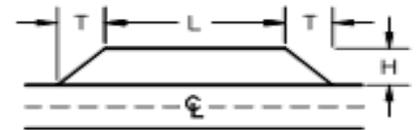
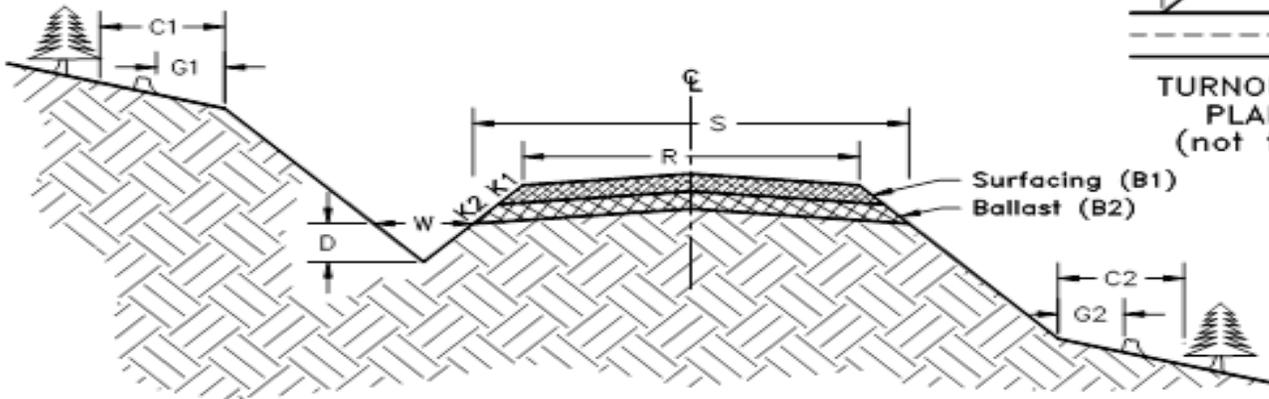
TYPICAL SECTION SHEET



| Road Name | From Station | To Station | Tolerance Class | Width (ft) | | Ditch (ft) | | Crown (%) | Grubbing Limits (ft) | | Clearing Limits (ft) | |
|-----------|--------------|------------|-----------------|--------------|----------|------------|-----------|-----------|----------------------|----|----------------------|----|
| | | | | Subgrade (S) | Road (R) | Width (W) | Depth (D) | | G1 | G2 | C1 | C2 |
| 4257 | 9+11 | 16+65 | B | 16 | 12 | 3 | 1 | 4 | 0 | 0 | 0 | 0 |
| 4257 | 16+65 | 21+71 | C | 16 | 12 | 3 | 1 | 4 | 0 | 0 | 0 | 0 |
| 4257B1 | 0+00 | 2+63 | C | 16 | 12 | 3 | 1 | 4 | 0 | 0 | 0 | 0 |
| 4258 | 0+00 | 4+05 | B | 16 | 12 | 3 | 1 | 4 | 0 | 0 | 0 | 0 |
| 5101 | 0+00 | 4+07 | A | - | 12 | 3 | 1 | 4 | - | - | - | - |
| 5101 | 4+07 | 13+50 | B | 16 | 12 | 3 | 1 | 4 | 0 | 0 | 0 | 0 |
| 5110 | 0+00 | 5+43 | B | 16 | 12 | 3 | 1 | 4 | 0 | 0 | 0 | 0 |
| 5113 | 0+00 | 9+33 | A | - | 12 | 3 | 1 | 4 | - | - | - | - |
| 5113 | 9+33 | 12+40 | B | 16 | 12 | 3 | 1 | 4 | 0 | 0 | 0 | 0 |

ROCK LIST
(Page 1 of 1)

ROAD CROSS-SECTION
(not to scale)



TURNOUT DETAIL
PLAN VIEW
(not to scale)

4-INCH JAW RUN ROCK

| | | | | Compacted | | | | | | | | | |
|--------|---------|---------|-------------|------------|---------|----------|----------|-----------|--------------|-------|-------|--|--|
| Road | From | To | Rock | Rock | CY/ | No. of | CY | Rock | Turnout (ft) | | | | |
| Name | Station | Station | Slope (H:V) | Depth (in) | Station | Stations | Subtotal | Source | Length | Width | Taper | | |
| | | | K2 | B2 | | | | 4250P Pit | L | H | I | | |
| All | * | - | - | - | - | - | 586 | | | | | | |
| 4257 | Culvert | - | - | - | - | - | 2 | | | | | | |
| 4257 | Culvert | - | - | - | - | - | 2 | | | | | | |
| 4257B1 | Culvert | - | - | - | - | - | 2 | | | | | | |
| 5101 | Culvert | - | - | - | - | - | 6 | | | | | | |

REQUIRED 4-INCH JAW RUN ROCK TOTAL 598 Cubic Yards

* Optional rock, see Road Plan Clause 6-75

LIGHT LOOSE RIP RAP

| | | | | Compacted | | | | | | | | | |
|------|---------|---------|-------------|------------|---------|----------|----------|-----------|--------------|-------|-------|--|--|
| Road | From | To | Rock | Rock | CY/ | No. of | CY | Rock | Turnout (ft) | | | | |
| Name | Station | Station | Slope (H:V) | Depth (in) | Station | Stations | Subtotal | Source | Length | Width | Taper | | |
| | | | K2 | B2 | | | | 4250P Pit | L | H | I | | |
| 5113 | Culvert | - | - | - | - | - | 10 | | | | | | |

REQUIRED LIGHT LOOSE RIP RAP TOTAL 10 Cubic Yards

CULVERT LIST

| Road | | Culvert | | Length (ft) | | | Erosion rock | | | Bedding/backfill | | Construction | Culvert marker | | |
|--------|---------|---------------|-------|-------------|-----------|-------|--------------|-------------|------|------------------|------|--------------|----------------|--------------|-------------|
| Name | Station | Diameter (in) | Gauge | Culvert | Downspout | Flume | Inlet (CY) | Outlet (CY) | Type | (CY) | Type | Staked (Y/N) | Inlet (Y/N) | Outlet (Y/N) | Remarks |
| 4257 | 12+42 | 18 | - | 30 | - | - | 1 | 1 | 4" | - | NT | N | N | N | Cross drain |
| 4257 | 17+33 | 18 | - | 30 | - | - | 1 | 1 | 4" | - | NT | N | N | N | Cross drain |
| 4257B1 | 1+13 | 18 | - | 30 | - | - | 1 | 1 | 4" | - | NT | N | N | N | Cross drain |
| 5101 | 4+87 | 18 | - | 30 | - | - | 1 | 1 | 4" | - | NT | N | N | N | Cross drain |
| 5101 | 6+45 | 18 | - | 30 | - | - | 1 | 1 | 4" | - | NT | N | N | N | Cross drain |
| 5101 | 11+70 | 18 | - | 30 | - | - | 1 | 1 | 4" | - | NT | N | N | N | Cross drain |
| 5113 | 10+10 | 24 | - | 40 | - | - | 5 | 5 | LL | - | NT | N | N | N | Stream |

Key

- Downspout- Full round pipe
- Flume- Half round pipe
- 4"- 4-INCH JAW RUN ROCK
- LL- LIGHT LOOSE RIP RAP
- NT- NATIVE MATERIAL
- DOL- Ditchout left
- DOR- Ditchout right

COMPACTION LIST

| | | | | <u>Maximum</u> | | | | <u>Maximum</u> | <u>Maximum</u> |
|-------------|----------------|----------------|---------------------|-----------------|-----------------------|------------------|------------------|------------------|-------------------|
| | | | | <u>Depth</u> | | <u>Equipment</u> | <u>Minimum</u> | <u>Operating</u> | <u>Amount of</u> |
| <u>Road</u> | <u>From</u> | <u>To</u> | | <u>Per Lift</u> | <u>Equipment</u> | <u>Weight</u> | <u>Number</u> | <u>Speed</u> | <u>Deflection</u> |
| <u>Name</u> | <u>Station</u> | <u>Station</u> | <u>Type</u> | <u>(inches)</u> | <u>Type</u> | <u>(pounds)</u> | <u>of Passes</u> | <u>(MPH)</u> | <u>(inches)</u> |
| All | - | - | Maintenance grading | - | Vibratory Smooth Drum | 20000 | 5 | 3 | 1 |
| All | - | - | Subgrade | - | Vibratory Smooth Drum | 20000 | 4 | 3 | 3 |
| All | - | - | Embankment | 12 | Vibratory Smooth Drum | 20000 | 4 | 3 | 2 |
| All | - | - | Fill | 24 | Vibratory Smooth Drum | 20000 | 4 | 3 | 2 |
| All | - | - | Rock | 12 | Vibratory Smooth Drum | 20000 | 5 | 3 | 1 |
| All | - | - | Waste Area | 24 | Excavation | 30000 | - | - | 4 |

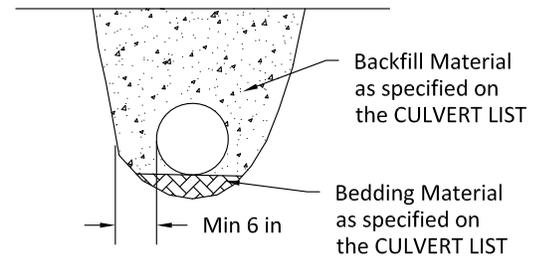
CULVERT AND DRAINAGE SPECIFICATION DETAIL
PAGE 1 OF 2

INSTALLATION REQUIREMENTS:

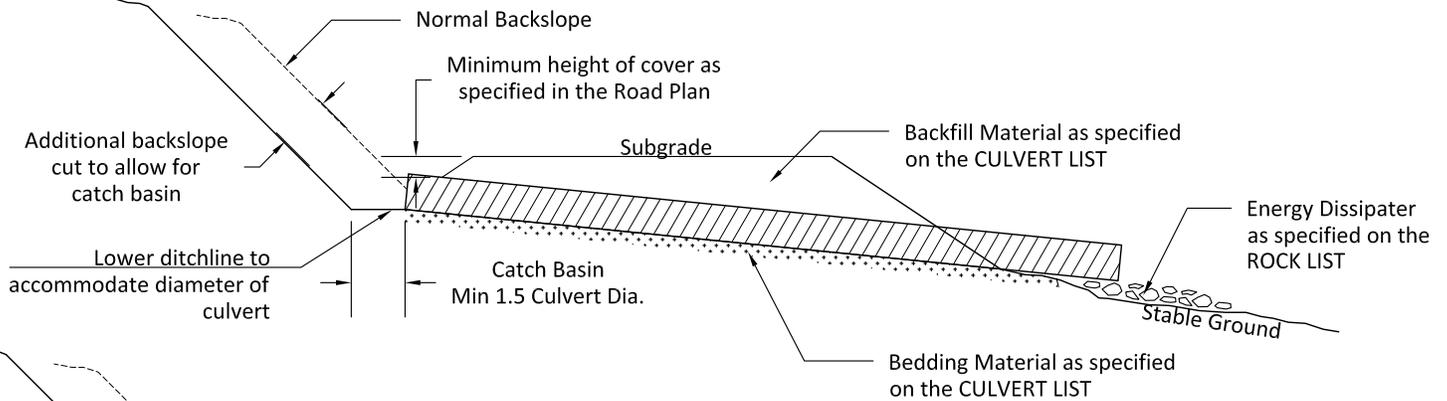
1. Proper preparation of foundation and placement of any required bedding material shall precede the installation of all culverts. This includes necessary leveling of the native trench bottom and compaction of required bedding material to form a uniform, dense, unyielding base. The pipe must be uniformly 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

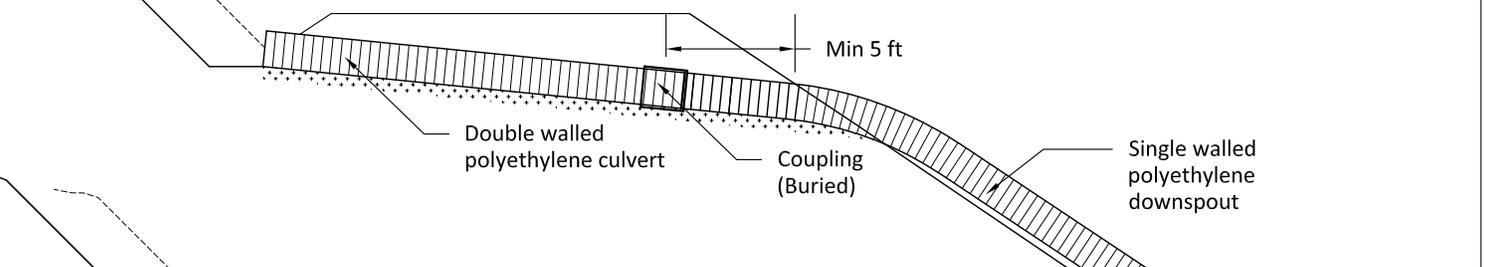
CROSS SECTION



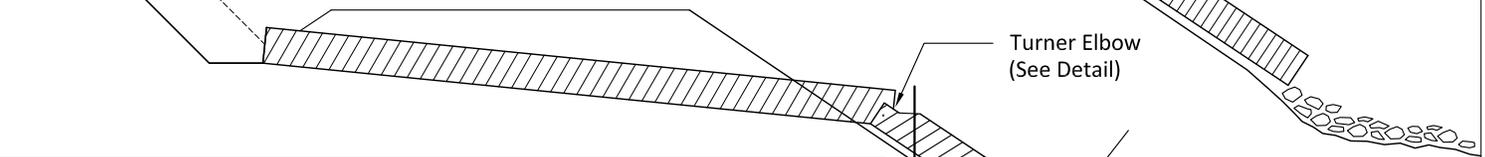
CULVERT PROFILE (TYPICAL)



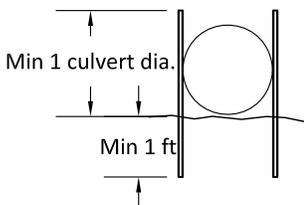
CULVERT WITH DOWNSPOUT OPTION 1



CULVERT WITH DOWNSPOUT OPTION 2

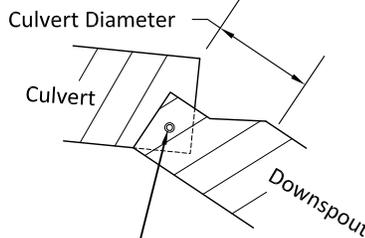


SUPPORT STAKES

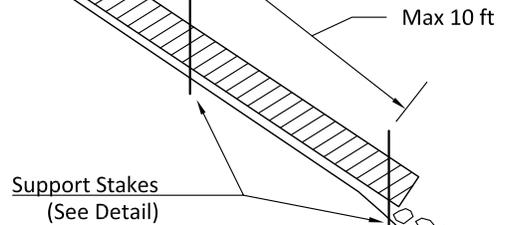


Stake Material: T-post with rust protection coating.
Connections: Bolt support stakes to the culvert with $\frac{5}{8}$ " u-bolts, with washers on both the inside and outside of the culvert.
Alternative staking methods may be approved, in writing, by the Contract Administrator.

TURNER ELBOW

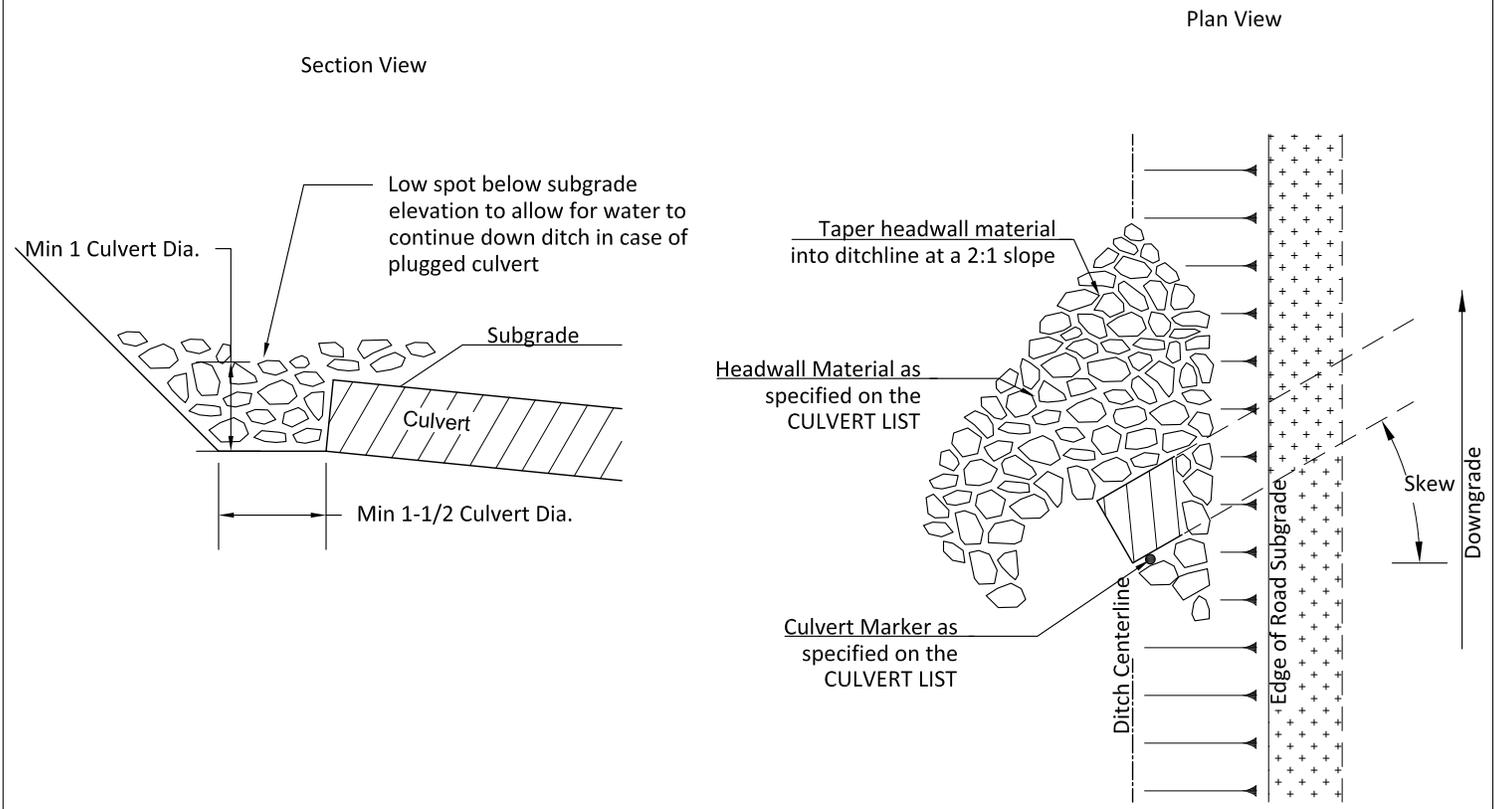


Downspout must be 6 inches larger in diameter than the culvert.

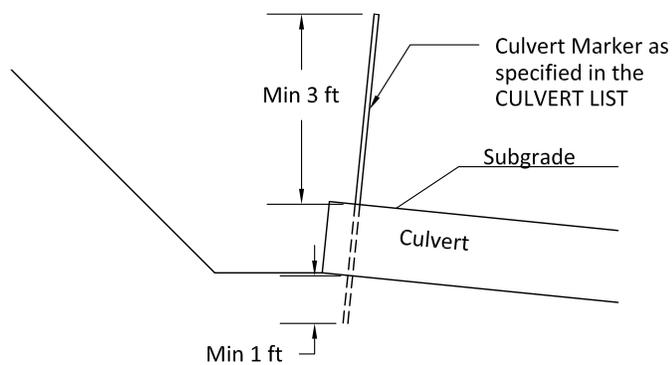


CULVERT AND DRAINAGE SPECIFICATION DETAIL
PAGE 2 OF 2

HEADWALLS

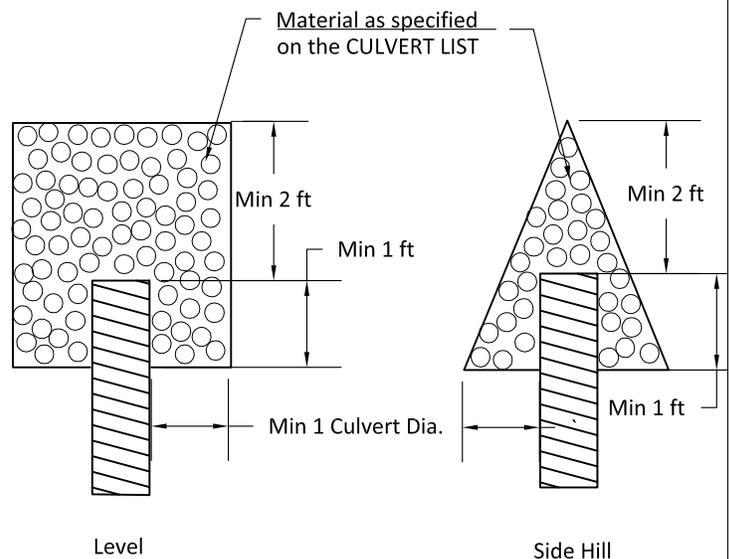


CULVERT MARKERS



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 Dissipator 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 construction materials. Remove slides from ditches and the roadway. Repair fill-failures 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

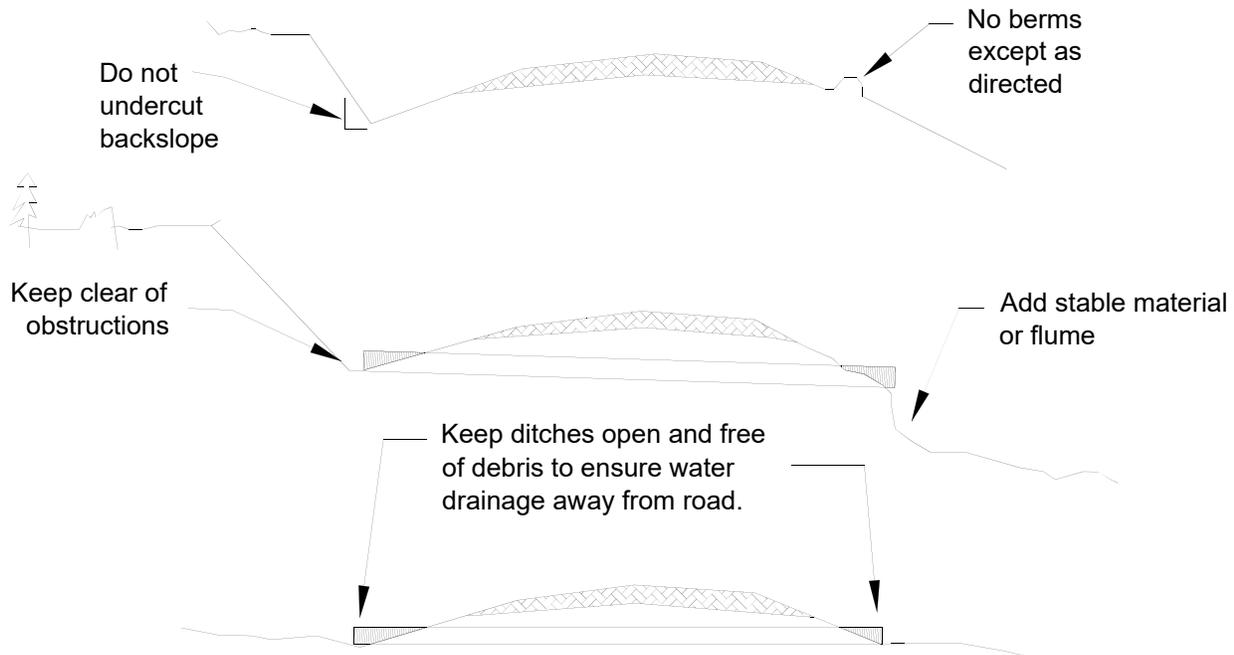
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

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.



STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

GROOT ROCK SOURCE DEVELOPMENT PLAN
4250P Pit
Page 1 of 2

1. Vegetation shall be cleared a minimum of 10 feet beyond the top of the overburden top of cut.
2. Stumps shall be grubbed a minimum of 5 feet beyond the top of the overburden top of cut.
3. Overburden shall be stripped to rock a minimum of 5 feet beyond the top of all pit faces and sloped no steeper than a 1:1 to daylight.
4. The Operator shall submit an informational drilling and shooting plan to the Contract Administrator prior to any drilling. (Form #M-126PAC)
5. Drilling and rock extraction may begin when the Contract Administrator has approved the clearing and grubbing, overburden removal, and informational drilling and shooting plan.
6. Pit faces shall not exceed 30 feet in height. Faces with heights over 20 feet shall be sloped at $\frac{1}{4}$:1. Working bench width shall be a minimum of 20 feet.
7. The pit floor shall have continuity of slope and be left in a smooth and neat condition, providing drainage to the southwest 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.
8. No sediment shall enter live water. Due to proximity to top of stream draw, to minimize potential sediment delivery it may be necessary to sub-shoot a free draining rock trench into the pit floor to allow for the capture of pit floor run-off and sediment.
9. The location and amount of material to be placed in a temporary stockpile are subject to approval of the Contract Administrator. All stockpiled material shall be maintained in a neat and useable condition.
10. Oversize material remaining in the pit 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 as directed by the Contract Administrator.

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

GROOT ROCK SOURCE DEVELOPMENT PLAN
4250P Pit
Page 2 of 2

11. 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.
12. At the end of operations, pit faces and walls shall be scaled and cleared of loose and overhanging material; benches shall have safety berms constructed or access blocked to highway vehicles. 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 animal or human life.
13. All exposed soil in the waste area shall be revegetated in accordance with ROAD PLAN clause 8-15 through 8-25.
14. The pit area shall be worked and left in a condition that future operations may proceed in an orderly manner.
15. Upon completion of operations, the site shall be cleared of all temporary structures and left in a neat and presentable condition. Access shall be blocked with rip rap as directed by the Contract Administrator.

At the completion of rock source operations, the Contractor shall obtain written approval of final rock source condition and compliance with the terms of this plan.

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):

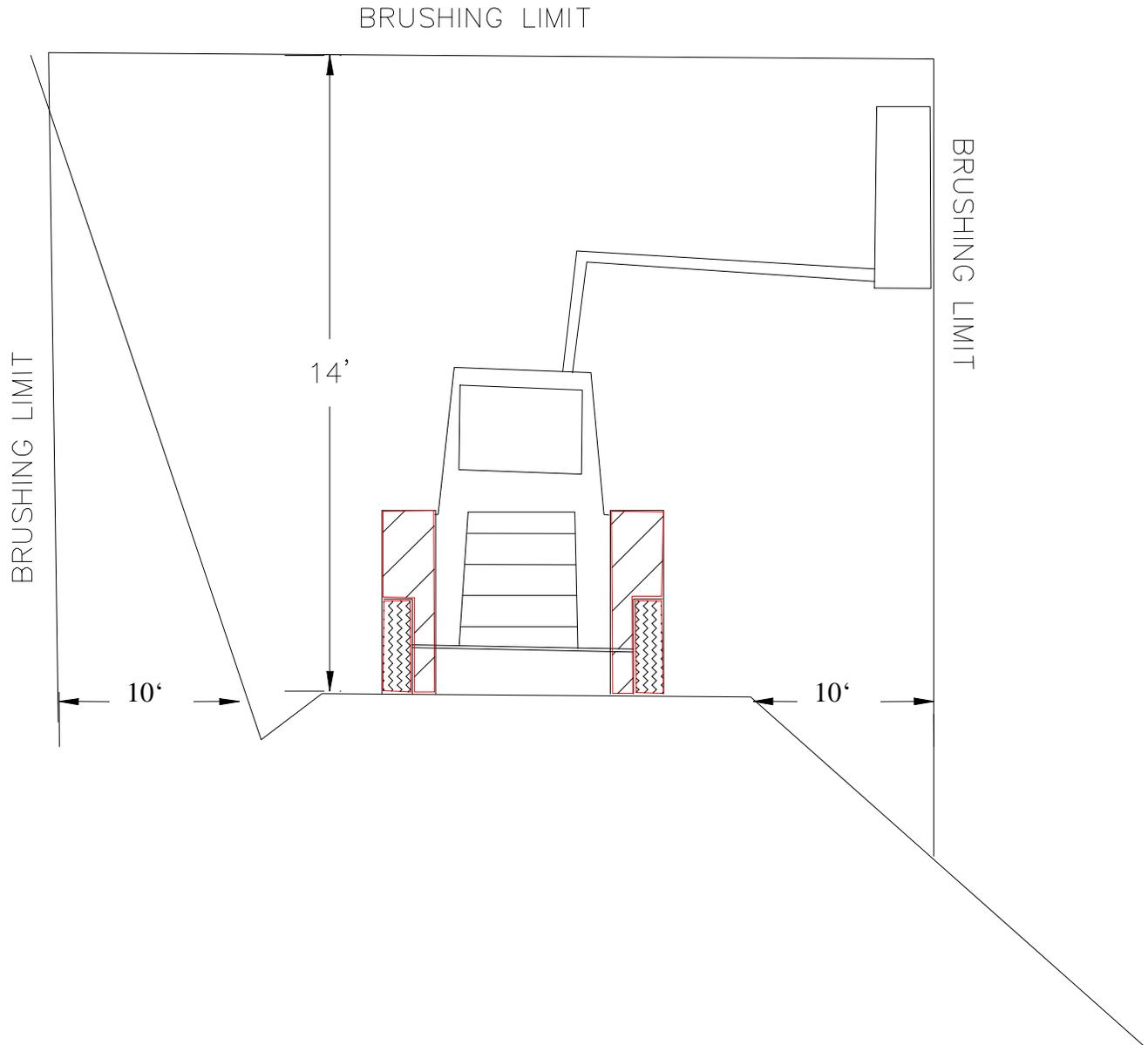
23. Submitted by: _____ Date: _____

24. Received by: _____ Date: _____

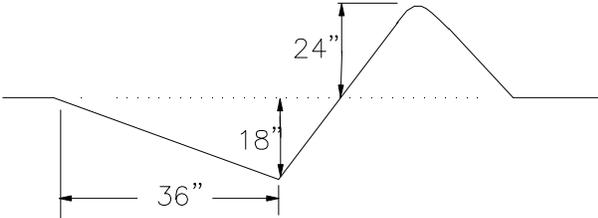
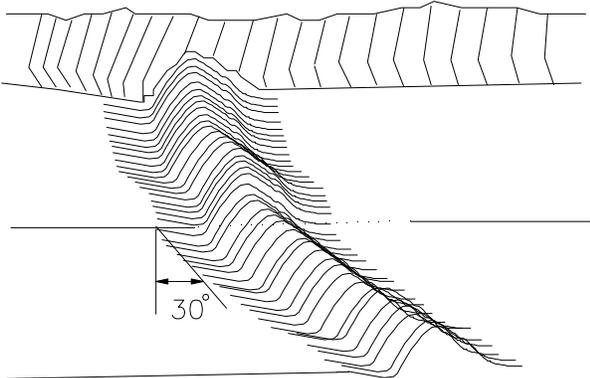
Note: Attach copies of manufacturer=s data sheet(s) for explosive and caps.

M-126PAC (03/04)

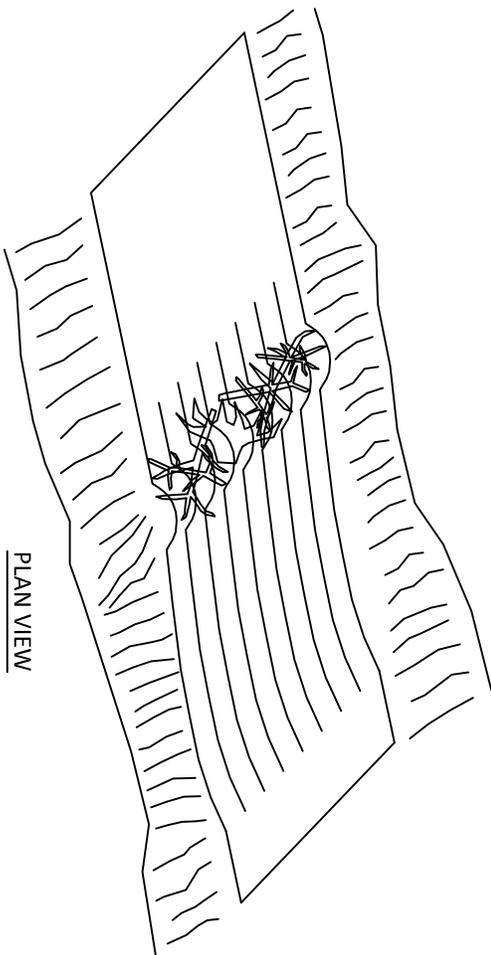
BRUSHING SECTION DETAIL



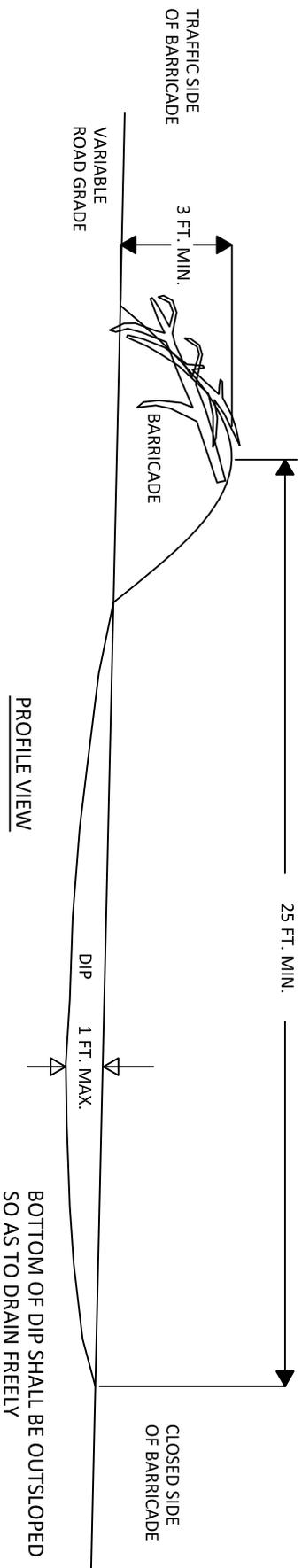
NON-DRIVABLE WATER BAR DETAIL



EARTHEN BARRICADE DETAIL



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



SUMMARY Road Development Estimate
 REGION Pacific Cascade
 DISTRICT St Helens

SALE/PROJECT NAME Groot VRH THIN RMZ

AGREEMENT NO. 30-099599

| ROAD NAME | 4257, 4257B1 | 4257, 4258, 5101, 5110, 5113 | 5101, 5113 |
|---------------------------------------|-------------------|---------------------------------|-------------|
| ROAD STANDARD | Construction | Reconstruction | Maintenance |
| NUMBER OF STATIONS | 7.69 | 29.52 | 13.40 |
| CLEARING & GRUBBING | \$ 1,486 | \$ 2,293 | \$ - |
| EXCAVATION AND FILL | \$ 2,307 | \$ 7,055 | \$ - |
| MISC. MAINTENANCE | \$ 130 | \$ 587 | \$ 1,163 |
| ROAD ROCK | Optional \$ 1,988 | \$ 7,889 | \$ - |
| | Required \$ - | \$ - | \$ - |
| | Total \$ 5,842 | \$ 11,742 | \$ - |
| ROCK STOCKPILE PROD | \$ - | \$ - | \$ - |
| CULVERTS AND FLUMES | \$ 1,048 | \$ 3,076 | \$ - |
| STRUCTURES | \$ - | \$ - | \$ - |
| MOBILIZATION | \$ 2,267 | \$ 2,267 | \$ 2,267 |
| TOTAL COSTS | \$ 13,079 | \$ 27,019 | \$ 3,430 |
| COST PER STATION | \$ 1,701 | \$ 915 | \$ 256 |
| ROAD DEACTIVATION & ABANDONMENT COSTS | | \$ 5,976 | |

| | |
|---|-----------------|
| TOTAL (All Roads) | \$49,504 |
| TOTAL (Minus Optional Rock) | \$39,627 |
| SALE VOLUME MBF | 3491 |
| TOTAL \$/MBF | \$ 14.18 |
| TOTAL \$/MBF (Minus Optional Rock) | \$ 11.35 |

ESTIMATED BY Brett Wallachy

CREATION DATE 11/1/2019

ROCK SOURCE SUMMARY

[REDACTED]

SALE/PROJECT NAME Groot VRH THIN RMZ
CONTRACT # 30-099599

[REDACTED]

PIT NAME 4250P Pit
LOCATION S18, T9N, R3E

[REDACTED]

Distance to waste area (feet) 100

[REDACTED]

ASSUMED ROCK SHRINK/SWELL FACTOR 1.25

ASSUMED ROCK DENSITY TONS/CY 1.3

[REDACTED]

MISCELLANEOUS

ROCK PIT PREPARATION

| | | | | |
|----------------------|-----------|------------|----|-------------|
| Grubbing | \$ 272.00 | per hour x | 10 | \$ 2,720.00 |
| Stripping overburden | \$ 482.00 | per hour x | 10 | \$ 4,820.00 |

WASTE AREA REVEGETATION

| | | | | |
|---------------|---------|-------------|----|-----------|
| Grass seeding | \$ 3.34 | per pound x | 50 | \$ 167.00 |
|---------------|---------|-------------|----|-----------|

[REDACTED]

MISCELLANEOUS TOTAL \$ 7,707.00

MOBILIZATION

SALE/PROJECT NAME Groot VRH THIN RMZ
CONTRACT # 30-099599

PRE-HAUL/CONSTRUCTION EQUIPMENT

MOBILIZATION

| | | | |
|-------------------------------|-------------|----------|-------------|
| End dump | \$ 100.00 | each x 2 | \$ 200.00 |
| Dozer, small | \$ 500.00 | each x 1 | \$ 500.00 |
| Dozer, large | \$ 1,000.00 | each x 1 | \$ 1,000.00 |
| Brusher | \$ 500.00 | each x 1 | \$ 500.00 |
| Excavator, small | \$ 500.00 | each x 1 | \$ 500.00 |
| Excavator, large | \$ 1,000.00 | each x 1 | \$ 1,000.00 |
| Roller | \$ 500.00 | each x 1 | \$ 500.00 |
| Jaw (mobile, includes set up) | \$ 1,500.00 | each x 1 | \$ 1,500.00 |
| | | SUBTOTAL | \$ 5,700.00 |

POST-HAUL/ABANDONMENT EQUIPMENT

MOBILIZATION

| | | | |
|------------------|-----------|----------|-------------|
| End dump | \$ 100.00 | each x 1 | \$ 100.00 |
| Dozer, small | \$ 500.00 | each x 1 | \$ 500.00 |
| Excavator, small | \$ 500.00 | each x 1 | \$ 500.00 |
| | | SUBTOTAL | \$ 1,100.00 |

MOBILIZATION TOTAL \$ 6,800.00

SUMMARY OF ROAD

SALE/PROJECT NAME Groot VRH THIN RMZ
 CONTRACT # 30-099599
 ROAD NAME 4257

Total road length (stations) 21+71
 Optional reconstruction (stations) 7+54
 Optional construction (stations) 5+06
 Distance to 425OP Pit (miles) 1.50

OPTIONAL RECONSTRUCTION

CLEARING & GRUBBING

Clearing & grubbing \$ 95.20 per station x 7.54 \$ 717.81

EXCAVATION AND FILL

Reconstruction \$ 138.00 per station x 7.54 \$ 1,040.52

Shape & compact subgrade \$ 23.99 per station x 7.54 \$ 180.88

MISC. MAINTENANCE

Grass seeding \$ 3.34 per pound x 21 \$ 69.38

ROAD ROCK

OPTIONAL

4-INCH JAW RUN ROCK \$ 10.81 per CY x 119 \$ 1,289.55

Rock haul \$ 97.00 per hour x 4 round trip haul (miles) 3.14 \$ 379.72

Spread & compact rock \$ 2.04 per CY x 119 \$ 242.77

CULVERTS AND FLUMES

18" Polyethylene, double wall \$ 17.47 per foot x 30 \$ 524.04

OPTIONAL RECONSTRUCTION SUBTOTAL \$ 4,444.66

OPTIONAL CONSTRUCTION

CLEARING & GRUBBING

Clearing & grubbing \$ 193.20 per station x 5.06 \$ 977.59

EXCAVATION AND FILL

Construction \$ 276.00 per station x 5.06 \$ 1,396.56

Shape & compact subgrade \$ 23.99 per station x 5.06 \$ 121.39

MISC. MAINTENANCE

Grass seeding \$ 3.34 per pound x 26 \$ 85.36

ROAD ROCK

OPTIONAL

4-INCH JAW RUN ROCK \$ 10.81 80 \$ 867.18

Rock haul \$ 97.00 per hour x 3 round trip haul (miles) 3.38 \$ 279.21

Spread & compact rock \$ 2.04 per CY x 80 \$ 163.25

CULVERTS AND FLUMES

18" Polyethylene, double wall \$ 17.47 per foot x 30 \$ 524.04

OPTIONAL CONSTRUCTION SUBTOTAL \$ 4,414.57

TOTAL ROAD COST \$ 8,859.24

SUMMARY OF ROAD

SALE/PROJECT NAME Groot VRH THIN RMZ

CONTRACT # 30-099599

ROAD NAME 4257B1

Optional construction (stations) 2+63

Distance to 4250P Pit (miles) 1.50

OPTIONAL CONSTRUCTION

CLEARING & GRUBBING

Clearing & grubbing \$ 193.20 per station x 2.63 \$ 508.12

EXCAVATION AND FILL

Construction \$ 276.00 per station x 2.63 \$ 725.88

Shape & compact subgrade \$ 23.99 per station x 2.63 \$ 63.09

MISC. MAINTENANCE

Grass seeding \$ 3.34 per pound x 13 \$ 44.36

ROAD ROCK

OPTIONAL

4-INCH JAW RUN ROCK \$ 10.81 per CY x 42 \$ 453.32

Rock haul \$ 97.00 per hour x 1.4 round trip haul (miles) 3.05 \$ 140.19

Spread & compact rock \$ 2.04 per CY x 42 \$ 85.34

CULVERTS AND FLUMES

18" Polyethylene, double wall \$ 17.47 per foot x 30 \$ 524.04

TOTAL ROAD COST \$ 2,544.34

SUMMARY OF ROAD

SALE/PROJECT NAME Groot VRH THIN RMZ
 CONTRACT # 30-099599
 ROAD NAME 4258

Optional reconstruction (stations) 4+05
 Distance to 4250P Pit (miles) 0.84

OPTIONAL RECONSTRUCTION

CLEARING & GRUBBING

Clearing & grubbing \$ 95.20 per station x 4.05 \$ 385.56

EXCAVATION AND FILL

Reconstruction \$ 138.00 per station x 4.05 \$ 558.90

Shape & compact subgrade \$ 23.99 per station x 4.05 \$ 97.16

MISC. MAINTENANCE

Grass seeding \$ 3.34 per pound x 11 \$ 37.26

ROAD ROCK

OPTIONAL

4-INCH JAW RUN ROCK \$ 10.81 per CY x 64 \$ 689.76

Rock haul \$ 97.00 per hour x 1.3 round trip haul (miles) 1.76 \$ 124.86

Spread & compact rock \$ 2.04 per CY x 64 \$ 129.85

TOTAL ROAD COST \$ 2,023.36

SUMMARY OF ROAD

SALE/PROJECT NAME Groot VRH THIN RMZ
 CONTRACT # 30-099599
 ROAD NAME 5101

Total road length (stations) 13+50
 Required pre-haul maintenance (stations) 4+07
 Optional reconstruction (stations) 9+43
 Distance to 4250P Pit (miles) 1.25

REQUIRED PRE-HAUL MAINTENANCE

MISC. MAINTENANCE

| | | | | |
|---------------------|----------|---------------|------|-----------|
| Brushing | \$ 43.88 | per station x | 4.07 | \$ 178.61 |
| Ditch cleaning | \$ 20.58 | per station x | 4.07 | \$ 83.76 |
| Maintenance grading | \$ 13.26 | per station x | 4.07 | \$ 53.96 |
| Maintenance rolling | \$ 9.09 | per station x | 4.07 | \$ 37.00 |

REQUIRED PRE-HAUL MAINTENANCE SUBTOTAL \$ 353.33

OPTIONAL RECONSTRUCTION

CLEARING & GRUBBING

| | | | | |
|---------------------|----------|---------------|------|-----------|
| Clearing & grubbing | \$ 95.20 | per station x | 9.43 | \$ 897.74 |
|---------------------|----------|---------------|------|-----------|

EXCAVATION AND FILL

| | | | | |
|--------------------------|-----------|---------------|------|-------------|
| Reconstruction | \$ 379.00 | per station x | 9.43 | \$ 3,573.97 |
| Shape & compact subgrade | \$ 23.99 | per station x | 9.43 | \$ 226.22 |

MISC. MAINTENANCE

| | | | | |
|---------------|---------|-------------|----|----------|
| Grass seeding | \$ 3.34 | per pound x | 26 | \$ 86.77 |
|---------------|---------|-------------|----|----------|

ROAD ROCK

OPTIONAL

| | | | | |
|-----------------------|----------|------------|--------------------------------|-------------|
| 4-INCH JAW RUN ROCK | \$ 10.81 | | 150 | \$ 1,622.25 |
| Rock haul | \$ 97.00 | per hour x | 4 round trip haul (miles) 2.83 | \$ 428.40 |
| Spread & compact rock | \$ 2.04 | per CY x | 150 | \$ 305.40 |

CULVERTS AND FLUMES

| | | | | |
|-------------------------------|----------|------------|----|-------------|
| 18" Polyethylene, double wall | \$ 17.47 | per foot x | 90 | \$ 1,572.11 |
|-------------------------------|----------|------------|----|-------------|

ROAD DEACTIVATION & ABANDONMENT

| | | | | |
|---------------------------------------|-------------|------------------|------|-----------|
| Light abandonment | \$ 102.20 | per station x | 9.43 | \$ 963.75 |
| Fill removal | \$ 2.30 | per cubic yard x | 300 | \$ 690.00 |
| Live water removal, diversion/pumping | \$ 84.00 | each x | 1 | \$ 84.00 |
| Cross drain removal and disposal | \$ 243.00 | each x | 3 | \$ 729.00 |
| Stream puncheon removal | \$ 327.00 | each x | 1 | \$ 327.00 |
| Grass seeding | \$ 3.34 | per pound x | 43 | \$ 144.61 |
| Straw mulching | \$ 3,151.40 | per acre x | 0.3 | \$ 945.42 |

OPTIONAL RECONSTRUCTION SUBTOTAL \$ 12,596.64

TOTAL ROAD COST \$ 12,949.96

SUMMARY OF ROAD

SALE/PROJECT NAME Groot VRH THIN RMZ
CONTRACT # 30-099599
ROAD NAME 5110

Optional reconstruction (stations) 5+43
Distance to 4250P Pit (miles) 3.28

OPTIONAL RECONSTRUCTION

EXCAVATION AND FILL

| | | | | | | | |
|--------------------------|----|--------|---------------|------|--|----|--------|
| Reconstruction | \$ | 138.00 | per station x | 5.43 | | \$ | 749.34 |
| Shape & compact subgrade | \$ | 23.99 | per station x | 5.43 | | \$ | 130.27 |

MISC. MAINTENANCE

| | | | | | | | |
|---------------|----|------|-------------|----|--|----|-------|
| Grass seeding | \$ | 3.34 | per pound x | 15 | | \$ | 49.96 |
|---------------|----|------|-------------|----|--|----|-------|

ROAD ROCK

| | | | | | | | |
|-----------------------|----|-------|------------|----|-------------------------|------|-----------|
| OPTIONAL | | | | | | | |
| 4-INCH JAW RUN ROCK | \$ | 10.81 | per CY x | 86 | | \$ | 924.79 |
| Rock haul | \$ | 97.00 | per hour x | 6 | round trip haul (miles) | 6.66 | \$ 568.89 |
| Spread & compact rock | \$ | 2.04 | per CY x | 86 | | \$ | 174.10 |

TOTAL ROAD COST \$ 2,597.35

SUMMARY OF ROAD

SALE/PROJECT NAME Groot VRH THIN RMZ
 CONTRACT # 30-099599
 ROAD NAME 5113

Total road length (stations) 12+40
 Required pre-haul maintenance (stations) 9+33
 Optional reconstruction (stations) 3+07
 Distance to 4250P Pit (miles) 1.60

REQUIRED PRE-HAUL MAINTENANCE

MISC. MAINTENANCE

| | | | | |
|---------------------|----------|---------------|------|-----------|
| Brushing | \$ 43.88 | per station x | 9.33 | \$ 409.44 |
| Ditch cleaning | \$ 20.58 | per station x | 9.33 | \$ 192.01 |
| Maintenance grading | \$ 13.26 | per station x | 9.33 | \$ 123.69 |
| Maintenance rolling | \$ 9.09 | per station x | 9.33 | \$ 84.82 |

REQUIRED PRE-HAUL MAINTENANCE SUBTOTAL \$ 809.96

OPTIONAL RECONSTRUCTION

CLEARING & GRUBBING

| | | | | |
|---------------------|----------|---------------|------|-----------|
| Clearing & grubbing | \$ 95.20 | per station x | 3.07 | \$ 292.26 |
|---------------------|----------|---------------|------|-----------|

EXCAVATION AND FILL

| | | | | |
|--------------------------|-----------|---------------|------|-----------|
| Reconstruction | \$ 138.00 | per station x | 3.07 | \$ 423.66 |
| Shape & compact subgrade | \$ 23.99 | per station x | 3.07 | \$ 73.65 |

MISC. MAINTENANCE

| | | | | |
|----------------|-------------|-------------|-----|-----------|
| Grass seeding | \$ 3.34 | per pound x | 8 | \$ 28.25 |
| Straw mulching | \$ 3,151.40 | per acre x | 0.1 | \$ 315.14 |

ROAD ROCK

OPTIONAL

| | | | | |
|-----------------------|----------|------------|----------------------------------|-----------|
| 4-INCH JAW RUN ROCK | \$ 10.81 | | 48 | \$ 522.85 |
| Rock haul | \$ 97.00 | per hour x | 1.9 round trip haul (miles) 3.61 | \$ 185.56 |
| LIGHT LOOSE RIP RAP | \$ 11.79 | per CY x | 10 | \$ 117.89 |
| Rock haul | \$ 97.00 | per hour x | 0.9 round trip haul (miles) 3.61 | \$ 83.53 |
| Spread & compact rock | \$ 2.04 | per CY x | 48 | \$ 98.43 |

CULVERTS AND FLUMES

| | | | | |
|-------------------------------|----------|------------|----|-----------|
| 24" Polyethylene, double wall | \$ 24.49 | per foot x | 40 | \$ 979.62 |
|-------------------------------|----------|------------|----|-----------|

ROAD DEACTIVATION & ABANDONMENT

| | | | | |
|---------------------------------------|-------------|------------------|------|-----------|
| Light abandonment | \$ 102.20 | per station x | 3.07 | \$ 313.75 |
| Fill removal | \$ 2.30 | per cubic yard x | 300 | \$ 690.00 |
| Live water removal, diversion/pumping | \$ 84.00 | each x | 1 | \$ 84.00 |
| Stream culvert removal and disposal | \$ 327.00 | each x | 1 | \$ 327.00 |
| Grass seeding | \$ 3.34 | per pound x | 14 | \$ 47.08 |
| Straw mulching | \$ 3,151.40 | per acre x | 0.2 | \$ 630.28 |

OPTIONAL RECONSTRUCTION SUBTOTAL \$ 5,212.96

TOTAL ROAD COST \$ 6,022.92



WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOREST EXCISE TAX ROAD SUMMARY SHEET

Region:

Timber Sale Name:

Application Number:

EXCISE TAX APPLICABLE ACTIVITIES

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

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

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

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

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

EXCISE TAX EXEMPT ACTIVITIES

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

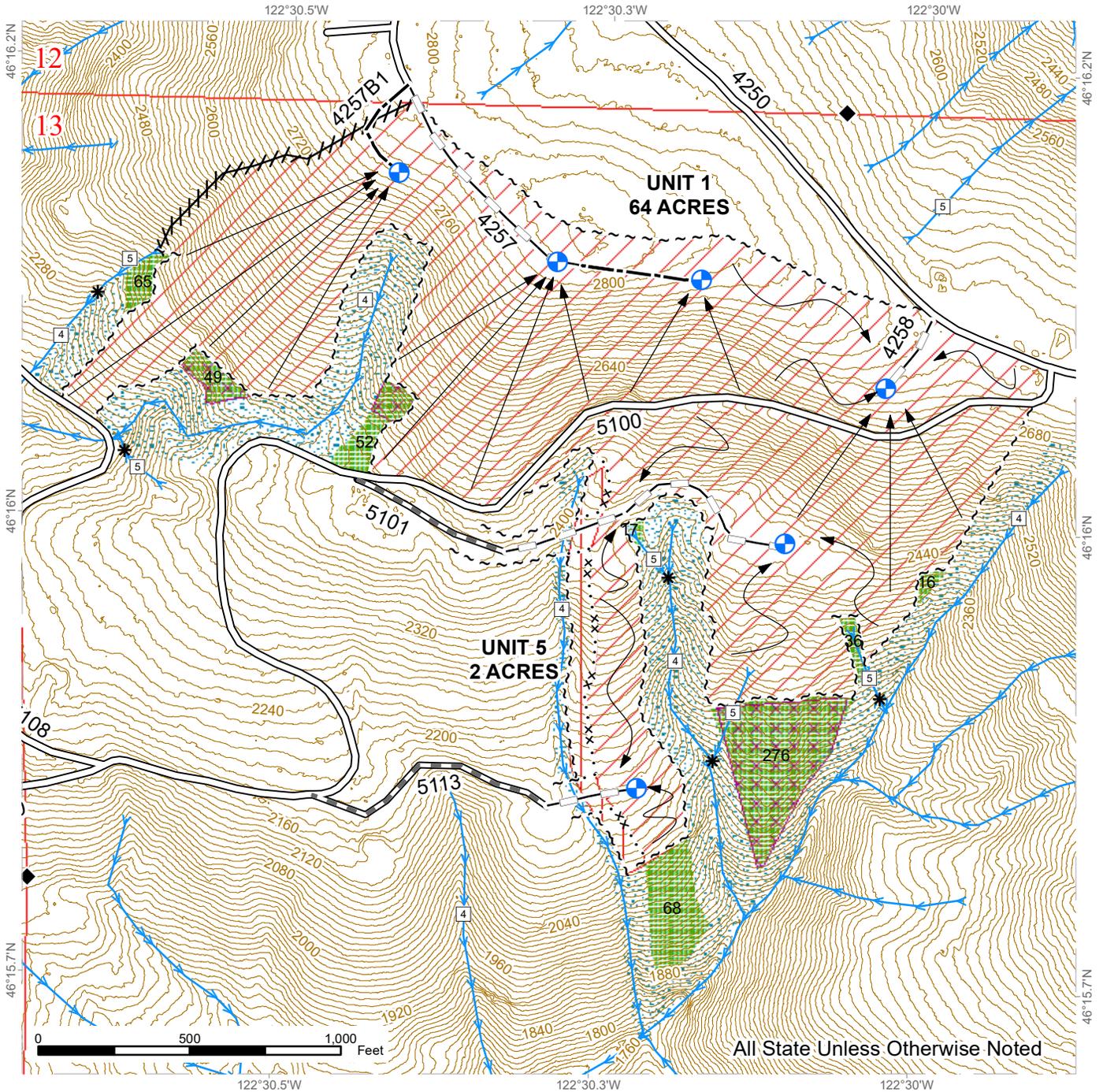
Temporary Reconstruction: **linear feet**
Roads to be reconstructed (optional and required) and then abandoned

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: GROOT VRH THIN RMZ
AGREEMENT#: 30-099599
TOWNSHIP(S): T09R02E
TRUST(S): Agricultural School (4), Normal School (8), Scientific School (10)

REGION: Pacific Cascade Region
COUNTY(S): Cowlitz
ELEVATION RGE: 1059-2800



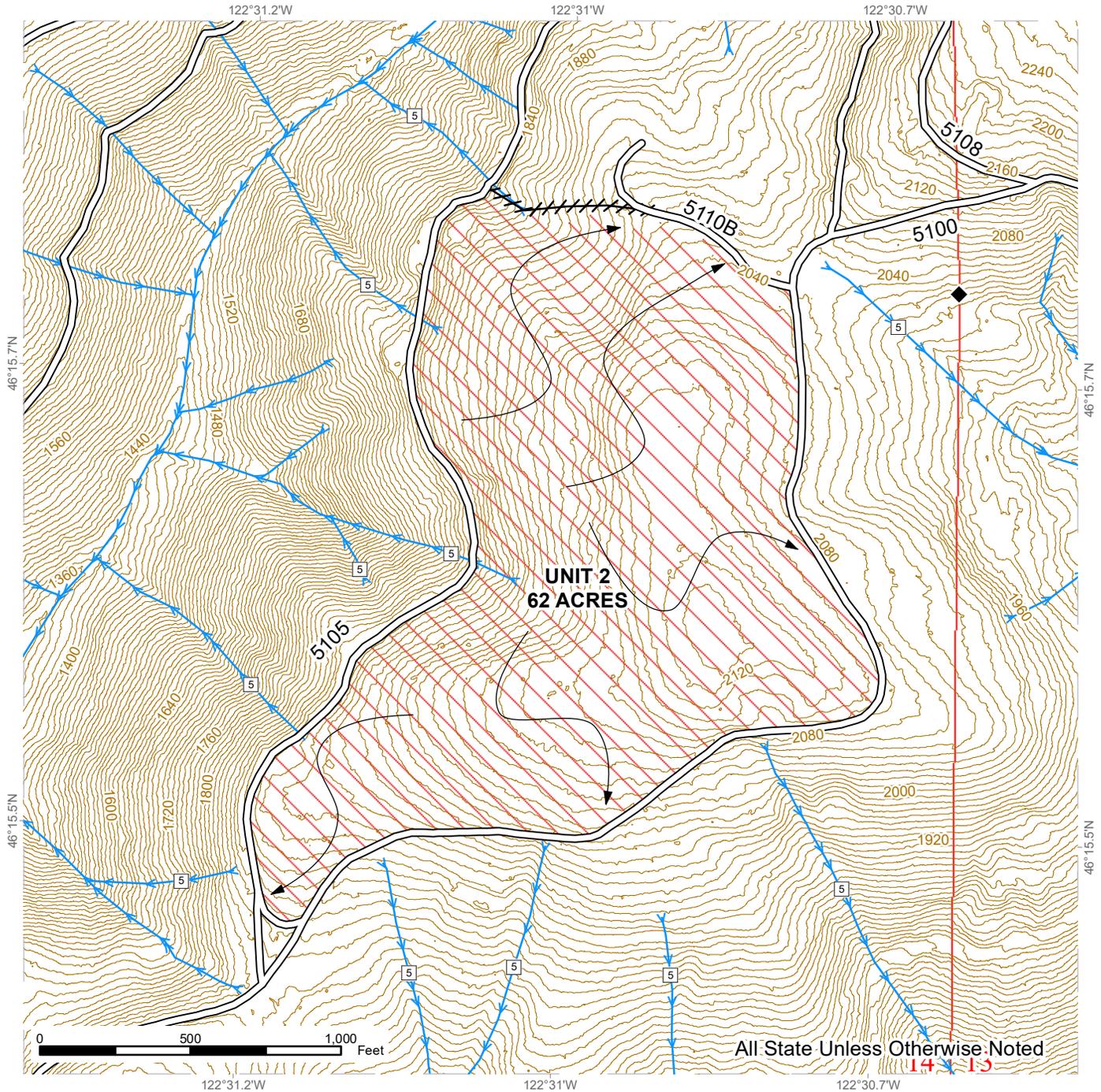
| | | | | | |
|--|-----------------------------|--|-------------------------------|--|--------------------|
| | Ground Harvest | | Sale Boundary Tags | | Streams |
| | Cable Harvest | | Special Mgmt Area | | Stream Type |
| | Variable Retention Harvest | | Flag Line | | Stream Type Break |
| | Riparian Restoration | | Existing Roads | | Survey Monument |
| | Leave Tree Area | | Required Pre-Haul Maintenance | | Landing - Proposed |
| | Riparian Mgt Zone | | Optional Construction | | |
| | Forested Wetland | | Optional Reconstruction | | |
| | Potentially Unstable Slopes | | | | |



LOGGING PLAN MAP

SALE NAME: GROOT VRH THIN RMZ
AGREEMENT#: 30-099599
TOWNSHIP(S): T09R02E
TRUST(S): Agricultural School (4), Normal School (8), Scientific School (10)

REGION: Pacific Cascade Region
COUNTY(S): Cowlitz
ELEVATION RGE: 1059-2800

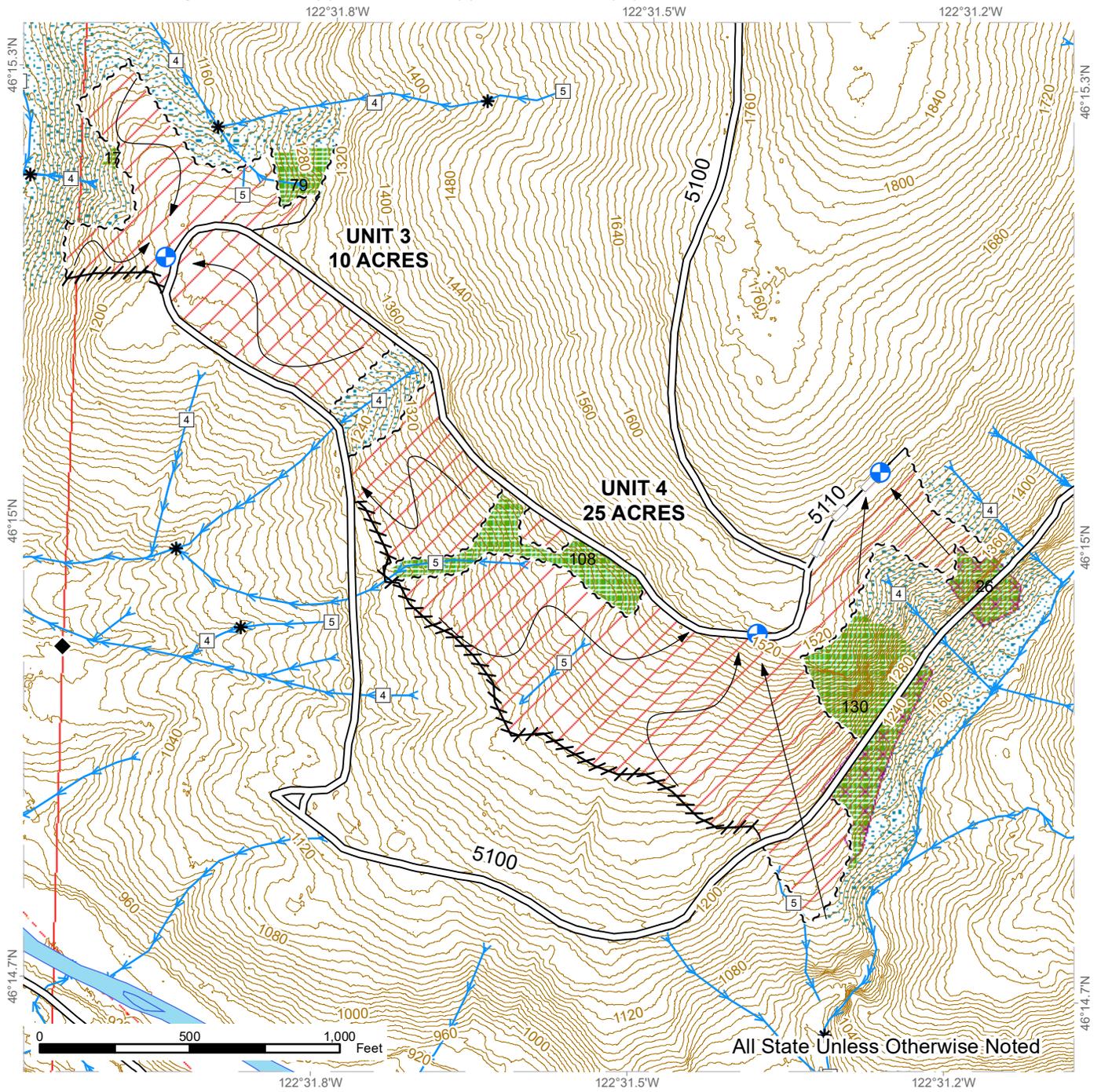


| | | | | | |
|--|---------------------------|--|----------------|--|-------------------|
| | Ground Harvest | | Flag Line | | Streams |
| | Cable Harvest | | Existing Roads | | Stream Type |
| | Variable Density Thinning | | | | Stream Type Break |
| | | | | | Survey Monument |

LOGGING PLAN MAP

SALE NAME: GROOT VRH THIN RMZ
AGREEMENT#: 30-099599
TOWNSHIP(S): T09R02E
TRUST(S): Agricultural School (4), Normal School (8), Scientific School (10)

REGION: Pacific Cascade Region
COUNTY(S): Cowlitz
ELEVATION RGE: 1059-2800



All State Unless Otherwise Noted

| | | | | | |
|--|-----------------------------|--|-------------------------|--|--------------------|
| | Ground Harvest | | Sale Boundary Tags | | Streams |
| | Cable Harvest | | Timber Type Change | | Stream Type |
| | Variable Retention Harvest | | Flag Line | | Stream Type Break |
| | Leave Tree Area | | Existing Roads | | Survey Monument |
| | Riparian Mgt Zone | | Optional Reconstruction | | Landing - Proposed |
| | Potentially Unstable Slopes | | | | |



SOUTH TOUTLE-DEER CREEK AGREEMENT

THIS AGREEMENT, made and entered into this 31st day of January, 1967, by and between WEYERHAEUSER COMPANY, a Washington corporation, herein called "Weyerhaeuser," and STATE OF WASHINGTON, acting by and through the Department of Natural Resources, herein called "State," WITNESSETH:

I

A. Weyerhaeuser hereby grants and conveys to State, its successors and assigns, a permanent nonexclusive easement upon, over, and along rights of way 60 feet in width upon, over, and across the lands in Cowlitz County, described on the attached Exhibit A, being 30 feet on each side of the center line of the existing roads located approximately as shown on the attached Exhibit C.

Subject as to said lands to all matters of public record.

B. State hereby grants and conveys to Weyerhaeuser, its successors and assigns, a permanent nonexclusive easement upon, over, and along rights of way 60 feet in width upon, over, and across the lands in Cowlitz County, described on the attached Exhibit B, being 30 feet on each side of the center line of the existing roads located approximately as shown on the attached Exhibit C.

II

The parties hereto hereby agree that the rights hereinabove granted by one party hereto to the other shall be subject to the following terms and conditions:

1. The easements are conveyed for the purposes of reconstruction, use and maintenance of said existing roads for the purpose of hauling forest products and other valuable materials and to provide access to and from lands now owned or hereafter acquired by the parties hereto for land management and administrative activities.

Recording File 656039, Vol 737, Page 047 Thru 059

Cowlitz County

2. Each party hereto reserves for itself, its successors and assigns, the right at all times and for any purpose to go upon, cross, and recross at any place on grade or otherwise said rights of way on lands owned by it and use the roads on said rights of way in a manner that will not unreasonably interfere with the rights granted to the other party hereunder.

3. Each party hereto may grant to third parties, upon such terms as it chooses, any or all of the rights reserved by it herein; provided, that use by such party shall be subject to the terms and conditions of this agreement and shall not unreasonably interfere with the rights granted to the other party hereunder.

4. Each party hereto may permit its respective contractors, licensees, purchasers of timber or other valuable materials, and their agents, hereinafter individually referred to as "Permittee" and collectively referred to as "Permittees," to exercise the rights granted to it herein; provided, that when a party hereto or one of its Permittees plans to use any portion of said roads for the purpose of hauling timber or other valuable materials, such party shall notify the other thereof at least fifteen (15) days prior to the commencement of use of said rights, advising of the portion of road to be used, the approximate dates, when such use thereof will begin and end, and of the approximate volumes of forest products or valuable materials to be hauled and forthwith upon the completion of such use notify the other party thereof.

5. The cost of road maintenance and resurfacing shall be allocated on the basis of respective uses of said roads. When any party uses a road, that party shall perform or cause to be performed, or contribute or cause to be contributed, that share of maintenance and resurfacing occasioned by such use as hereinafter provided. During periods when a road is being used solely by one party, such party shall maintain that portion of said road

so used to the standards existing at the time use is commenced. Annually in the spring, or as often as the parties shall mutually agree, the parties hereto shall meet to establish necessary maintenance provisions for those roads, or portions thereof, which both parties plan to use during the same periods of time. Such provisions shall include, but shall not be limited to:

(a) the appointment of a maintainer, which may be one of the parties hereto or any third party, who will perform or cause to be performed at a reasonable and agreed upon rate the maintenance and resurfacing of the road or the portion thereof being used; and

(b) a method of payment by which each party using said road or a portion thereof, shall pay its pro rata share of the cost incurred by said maintainer in maintaining or resurfacing said road or portion thereof.

For purposes of this agreement, maintenance is defined as the work normally necessary to preserve and keep the roadway, road structure and road facilities as nearly as possible in their present condition or as hereafter improved.

6. Each party using any portion of a road shall repair, or cause to be repaired, at its sole cost and expense, that damage to said road occasioned by it which is in excess of that which it would cause through normal and prudent usage of said road. Should inordinate damage to a road occur which is not caused by an authorized user of said road, the parties hereto shall meet to agree upon the cost of replacement, the party to undertake the replacement, and the shares of replacement cost to be borne by each user of said road.

7. Unless the parties hereto agree in writing to share the costs of improvements in advance of such improvements being made, such improvements shall be solely for the account of the improver.

8. Each party hereto reserves to itself all timber now on or hereafter growing within the rights of way on its said lands.

9. Each party hereto shall require each of its Permittees, before using any of said roads on the lands of the other party hereto, to:

(a) Obtain and during the term of such use, maintain a policy of liability insurance in a form generally acceptable in the trade and customary in the area of said rights of way, insuring said Permittee against liability arising out of its operations, including use of vehicles. Minimum amounts of insurance shall be:

(1) For log haulers, One Hundred Thousand Dollars (\$100,000.00) for injury to one person, Three Hundred Thousand Dollars (\$300,000.00) for any one occurrence, and One Hundred Thousand Dollars (\$100,000.00) property damage for any one occurrence;

(2) For fern cutters, bough cutters, shake cutters, or other miscellaneous users operating pickup trucks, light trucks (under one (1) ton) or passenger cars for the purpose of transporting miscellaneous forest products, Twenty-five Thousand (\$25,000.00) for injury to one person, Fifty Thousand (\$50,000.00) for any one occurrence, and Five Thousand (\$5,000.00) property damage for any one occurrence; or

(3) Such other limits as the parties hereto may agree upon in writing from time to time.

(b) Deliver to each party hereto a certificate from the insurer or said Permittee certifying that coverage is not less than the above named amounts is in force and that, in the event of cancellation or modification of such coverage, the insurer will give each party hereto ten (10) days written notice prior to any cancellation or modification.

10. It is understood and agreed between the parties that this agreement terminates and supersedes the South Toutle Agreement No. 18, dated November 2, 1964, recorded in Volume 722, at pages 157 through 193, Records of Cowlitz County, Washington, as supplemented by the First Supplemental Agreement, Deer Creek Addition, dated September 1, 1965, Recorded in Volume 722, at pages 194 through 200, Records of Cowlitz County, Washington, between the parties hereto and that this agreement is granted in lieu of the easements provided for in said agreement and supplement.

IN WITNESS WHEREOF, the parties hereto have executed this instrument, in duplicate, as of the day and year first above written.

WEYERHAEUSER COMPANY

By: *H. E. Morgan, Jr.*
Vice President

Attest: *Mary B. Mosier*
Assistant Secretary

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

By: *Bert L. Cole*
BERT L. COLE
Commissioner of Public Lands

17th February 67
By: *[Signature]*
Richard Anthony Gaud

STATE OF WASHINGTON }
COUNTY OF PIERCE } ss.

On this 9th day of ~~January~~ February, 1967, before me personally appeared H. E. MORGAN, JR. and MARY B. MOSIER, to me known to be the Vice President and Assistant Secretary, respectively, of WEYERHAEUSER COMPANY, the corporation that executed the within and foregoing instrument, and acknowledged

said instrument to be the free and voluntary act and deed of said corporation, for the uses and purposes therein mentioned, and on oath stated that they were authorized to execute said instrument and that the seal affixed is the corporate seal of said corporation.

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

Edward W. Mathewson
Notary Public in and for the State of Washington, residing at Tacoma.

STATE OF WASHINGTON }
COUNTY OF THURSTON } ss.

February
On this 21st day of ~~January~~, 1967, before me personally appeared BERT L. COLE, to me known to be the Commissioner of Public Lands, and ex officio administrator of the STATE OF WASHINGTON, Department of Natural Resources, the Department that executed the within and foregoing instrument on behalf of the State of Washington, and acknowledged said instrument to be the free and voluntary act and deed of the State of Washington for the uses and purposes therein mentioned, and on oath stated that he was authorized to execute said instrument and that the seal affixed is the official seal of the Commissioner of Public Lands for the State of Washington.

IN WITNESS WHEREOF, I have hereunto set my hand and seal the day and year set forth above.

Paul E. Krause
Notary Public in and for the State of Washington, residing at Olympia.

South Toutle - Deer Creek

Weyerhaeuser Lands

| | | | | |
|---|-------------|--------|----|------|
| Fr. N $\frac{1}{2}$ of NE $\frac{1}{4}$; SW $\frac{1}{4}$ of NE $\frac{1}{4}$; Fr. N $\frac{1}{2}$ of NW $\frac{1}{4}$; SE $\frac{1}{4}$ of NW $\frac{1}{4}$; W $\frac{1}{2}$ of SW $\frac{1}{4}$; N $\frac{1}{2}$ of SE $\frac{1}{4}$ | Section 1- | 9N-1E | of | W.M. |
| Fr. E $\frac{1}{2}$ of NE $\frac{1}{4}$; NE $\frac{1}{4}$ of SE $\frac{1}{4}$; S $\frac{1}{2}$ of SE $\frac{1}{4}$ | Section 2- | 9N-1E | of | W.M. |
| E $\frac{1}{2}$ of SE $\frac{1}{4}$ | Section 10- | 9N-1E | of | W.M. |
| NE $\frac{1}{4}$; S $\frac{1}{2}$ of NW $\frac{1}{4}$; NW $\frac{1}{4}$ of SW $\frac{1}{4}$ | Section 11- | 9N-1E | of | W.M. |
| SW $\frac{1}{4}$ of NW $\frac{1}{4}$; N $\frac{1}{2}$ of SW $\frac{1}{4}$; NW $\frac{1}{4}$ of SE $\frac{1}{4}$; | | | | |
| S $\frac{1}{2}$ of SE $\frac{1}{4}$ | Section 12- | 9N-1E | of | W.M. |
| NE $\frac{1}{4}$ of NE $\frac{1}{4}$ | Section 13- | 9N-1E | of | W.M. |
| E $\frac{1}{2}$ of NE $\frac{1}{4}$; SE $\frac{1}{4}$ | Section 15- | 9N-1E | of | W.M. |
| NW $\frac{1}{4}$ of NE $\frac{1}{4}$; S $\frac{1}{2}$ of NE $\frac{1}{4}$; NE $\frac{1}{4}$ of SE $\frac{1}{4}$ | Section 21- | 9N-1E | of | W.M. |
| N $\frac{1}{2}$ of NE $\frac{1}{4}$; NE $\frac{1}{4}$ of NW $\frac{1}{4}$; SW $\frac{1}{4}$ of NW $\frac{1}{4}$; | | | | |
| N $\frac{1}{2}$ of SW $\frac{1}{4}$; NW $\frac{1}{4}$ of SE $\frac{1}{4}$ | Section 22- | 9N-1E | of | W.M. |
| W $\frac{1}{2}$ of NW $\frac{1}{4}$; NW $\frac{1}{4}$ of SW $\frac{1}{4}$; S $\frac{1}{2}$ of SW $\frac{1}{4}$; | | | | |
| SW $\frac{1}{4}$ of SE $\frac{1}{4}$ | Section 23- | 9N-1E | of | W.M. |
| S $\frac{1}{2}$ of NW $\frac{1}{4}$; N $\frac{1}{2}$ of SW $\frac{1}{4}$; SE $\frac{1}{4}$ of SW $\frac{1}{4}$; | | | | |
| SW $\frac{1}{4}$ of SE $\frac{1}{4}$ | Section 25- | 9N-1E | of | W.M. |
| N $\frac{1}{2}$ of NE $\frac{1}{4}$; SE $\frac{1}{4}$ of NE $\frac{1}{4}$ | Section 26- | 9N-1E | of | W.M. |
| | | | | |
| S $\frac{1}{2}$ of SE $\frac{1}{4}$ | Section 13- | 10N-1E | of | W.M. |
| SE $\frac{1}{4}$ of SE $\frac{1}{4}$ | Section 21- | 10N-1E | of | W.M. |
| E $\frac{1}{2}$ of NE $\frac{1}{4}$ | Section 24- | 10N-1E | of | W.M. |
| SW $\frac{1}{4}$ of SW $\frac{1}{4}$ | Section 25- | 10N-1E | of | W.M. |
| SE $\frac{1}{4}$ of SE $\frac{1}{4}$ | Section 26- | 10N-1E | of | W.M. |
| S $\frac{1}{2}$ of NW $\frac{1}{4}$; E $\frac{1}{2}$ of SW $\frac{1}{4}$; SW $\frac{1}{4}$ of SE $\frac{1}{4}$ | Section 27- | 10N-1E | of | W.M. |
| E $\frac{1}{2}$ of NE $\frac{1}{4}$ | Section 28- | 10N-1E | of | W.M. |
| N $\frac{1}{2}$ of NE $\frac{1}{4}$ | Section 34- | 10N-1E | of | W.M. |
| North $\frac{1}{2}$; SE $\frac{1}{4}$ | Section 35- | 10N-1E | of | W.M. |
| | | | | |
| Lot 4 | Section 1- | 8N-2E | of | W.M. |
| Fr. N $\frac{1}{2}$ of NE $\frac{1}{4}$ | Section 5- | 8N-2E | of | W.M. |
| | | | | |
| SW $\frac{1}{4}$ of NE $\frac{1}{4}$; Fr. N $\frac{1}{2}$ of NW $\frac{1}{4}$; | | | | |
| SE $\frac{1}{4}$ of NW $\frac{1}{4}$; NE $\frac{1}{4}$ of SW $\frac{1}{4}$; SE $\frac{1}{4}$ | Section 1- | 9N-2E | of | W.M. |
| Fr. N $\frac{1}{2}$ of NW $\frac{1}{4}$ | Section 2- | 9N-2E | of | W.M. |
| Fr. W $\frac{1}{2}$ of NE $\frac{1}{4}$; Fr. NW $\frac{1}{4}$; W $\frac{1}{2}$ of SE $\frac{1}{4}$ | Section 3- | 9N-2E | of | W.M. |
| SE $\frac{1}{4}$ of SE $\frac{1}{4}$ | Section 5- | 9N-2E | of | W.M. |
| Fr. N $\frac{1}{2}$ of NW $\frac{1}{4}$; Lot 6; Fr. S $\frac{1}{2}$ of SW $\frac{1}{4}$ | Section 6- | 9N-2E | of | W.M. |
| NW $\frac{1}{4}$ of NE $\frac{1}{4}$; S $\frac{1}{2}$ of NE $\frac{1}{4}$; NE $\frac{1}{4}$ of NW $\frac{1}{4}$; | | | | |
| NE $\frac{1}{4}$ of SE $\frac{1}{4}$; S $\frac{1}{2}$ of SE $\frac{1}{4}$ | Section 7- | 9N-2E | of | W.M. |
| NW $\frac{1}{4}$ of SW $\frac{1}{4}$; S $\frac{1}{4}$ of SW $\frac{1}{4}$ | Section 8- | 9N-2E | of | W.M. |
| NW $\frac{1}{4}$ of NE $\frac{1}{4}$; S $\frac{1}{2}$ of NE $\frac{1}{4}$; NW $\frac{1}{4}$; N $\frac{1}{2}$ of SW $\frac{1}{4}$; | | | | |
| SE $\frac{1}{4}$ of SW $\frac{1}{4}$; SE $\frac{1}{4}$ | Section 9- | 9N-2E | of | W.M. |
| N $\frac{1}{2}$ of NE $\frac{1}{4}$; SE $\frac{1}{4}$ of NE $\frac{1}{4}$; S $\frac{1}{2}$ of NW $\frac{1}{4}$; | | | | |
| NE $\frac{1}{4}$ of SW $\frac{1}{4}$; SE $\frac{1}{4}$ | Section 11- | 9N-2E | of | W.M. |
| W $\frac{1}{2}$ of SW $\frac{1}{4}$; SE $\frac{1}{4}$ of SE $\frac{1}{4}$ | Section 13- | 9N-2E | of | W.M. |
| N $\frac{1}{2}$ of NE $\frac{1}{4}$; SW $\frac{1}{4}$ of NE $\frac{1}{4}$; NE $\frac{1}{4}$ of SW $\frac{1}{4}$; | | | | |
| S $\frac{1}{2}$ of SW $\frac{1}{4}$; NW $\frac{1}{4}$ of SE $\frac{1}{4}$ | Section 15- | 9N-2E | of | W.M. |
| NW $\frac{1}{4}$ of SW $\frac{1}{4}$; S $\frac{1}{2}$ of SW $\frac{1}{4}$ | Section 16- | 9N-2E | of | W.M. |
| North $\frac{1}{2}$; N $\frac{1}{2}$ of SW $\frac{1}{4}$; SE $\frac{1}{4}$ of SW $\frac{1}{4}$; | | | | |
| NE $\frac{1}{4}$ of SE $\frac{1}{4}$; SW $\frac{1}{4}$ of SE $\frac{1}{4}$ | Section 17- | 9N-2E | of | W.M. |
| N $\frac{1}{2}$ of NE $\frac{1}{4}$; SW $\frac{1}{4}$ of NE $\frac{1}{4}$; Lot 1; | | | | |
| Fr. S $\frac{1}{2}$ of NW $\frac{1}{4}$; N $\frac{1}{2}$ of SE $\frac{1}{4}$ | Section 18- | 9N-2E | of | W.M. |
| N $\frac{1}{2}$ of NE $\frac{1}{4}$; SE $\frac{1}{4}$ of NE $\frac{1}{4}$ | Section 20- | 9N-2E | of | W.M. |
| NW $\frac{1}{4}$ of NE $\frac{1}{4}$; S $\frac{1}{2}$ of NE $\frac{1}{4}$; NW $\frac{1}{4}$; E $\frac{1}{2}$ of | | | | |
| SW $\frac{1}{4}$; N $\frac{1}{2}$ of SE $\frac{1}{4}$ | Section 21- | 9N-2E | of | W.M. |
| North $\frac{1}{2}$; SE $\frac{1}{4}$ | Section 22- | 9N-2E | of | W.M. |

Exhibit A

| | |
|--|---------------------------|
| North $\frac{1}{2}$; SW $\frac{1}{4}$; N $\frac{1}{2}$ of SE $\frac{1}{4}$; SE $\frac{1}{4}$ of SE $\frac{1}{4}$ | Section 23- 9N-2E of W.M. |
| W $\frac{1}{2}$ of SW $\frac{1}{4}$ | Section 24- 9N-2E of W.M. |
| S $\frac{1}{2}$ of NW $\frac{1}{4}$; SW $\frac{1}{4}$; NW $\frac{1}{4}$ of SE $\frac{1}{4}$; S $\frac{1}{2}$ of SE $\frac{1}{4}$ | Section 25- 9N-2E of W.M. |
| W $\frac{1}{2}$ of NE $\frac{1}{4}$; E $\frac{1}{2}$ of NW $\frac{1}{4}$ | Section 26- 9N-2E of W.M. |
| N $\frac{1}{2}$ of NE $\frac{1}{4}$; SE $\frac{1}{4}$ of NE $\frac{1}{4}$; SW $\frac{1}{4}$ of NW $\frac{1}{4}$; W $\frac{1}{2}$ of SW $\frac{1}{4}$; SE $\frac{1}{4}$ | Section 27- 9N-2E of W.M. |
| SW $\frac{1}{4}$ of SW $\frac{1}{4}$ | Section 29- 9N-2E of W.M. |
| N $\frac{1}{2}$ of NE $\frac{1}{4}$ | Section 31- 9N-2E of W.M. |
| S $\frac{1}{2}$ of NE $\frac{1}{4}$; N $\frac{1}{2}$ of NW $\frac{1}{4}$; SE $\frac{1}{4}$ of NW $\frac{1}{4}$ | Section 32- 9N-2E of W.M. |
| NE $\frac{1}{4}$; NW $\frac{1}{4}$ of SW $\frac{1}{4}$; S $\frac{1}{2}$ of SW $\frac{1}{4}$; NW $\frac{1}{4}$ of SE $\frac{1}{4}$; S $\frac{1}{2}$ of SE $\frac{1}{4}$ | Section 33- 9N-2E of W.M. |
| NE $\frac{1}{4}$; NE $\frac{1}{4}$ of SE $\frac{1}{4}$; S $\frac{1}{2}$ of SE $\frac{1}{4}$ | Section 35- 9N-2E of W.M. |
| Fr. S $\frac{1}{2}$ of NW $\frac{1}{4}$; NE $\frac{1}{4}$ of SW $\frac{1}{4}$; N $\frac{1}{2}$ of SE $\frac{1}{4}$; SE $\frac{1}{4}$ of SE $\frac{1}{4}$ | Section 19-10N-2E of W.M. |
| S $\frac{1}{2}$ of SW $\frac{1}{4}$ | Section 20-10N-2E of W.M. |
| S $\frac{1}{2}$ of SW $\frac{1}{4}$; W $\frac{1}{2}$ of SE $\frac{1}{4}$ | Section 25-10N-2E of W.M. |
| NW $\frac{1}{4}$ of NW $\frac{1}{4}$ | Section 29-10N-2E of W.M. |
| NE $\frac{1}{4}$ of NE $\frac{1}{4}$ | Section 30-10N-2E of W.M. |
| Lot 4 | Section 31-10N-2E of W.M. |
| SW $\frac{1}{4}$ of SE $\frac{1}{4}$ | Section 33-10N-2E of W.M. |
| SE $\frac{1}{4}$ | Section 34-10N-2E of W.M. |
| S $\frac{1}{2}$ of NE $\frac{1}{4}$; S $\frac{1}{2}$ of SW $\frac{1}{4}$; NE $\frac{1}{4}$ of SE $\frac{1}{4}$; S $\frac{1}{2}$ of SE $\frac{1}{4}$ | Section 35-10N-2E of W.M. |
| Lot 4 | Section 4- 8N-3E of W.M. |
| Lot 1 | Section 5- 8N-3E of W.M. |
| Lot 2; S $\frac{1}{2}$ of NE $\frac{1}{4}$; Fr. N $\frac{1}{2}$ of NW $\frac{1}{4}$; SW $\frac{1}{4}$ of NW $\frac{1}{4}$ | Section 3- 9N-3E of W.M. |
| Fr. N $\frac{1}{2}$ of NE $\frac{1}{4}$; SW $\frac{1}{4}$ of NE $\frac{1}{4}$ | Section 4- 9N-3E of W.M. |
| Fr. W $\frac{1}{2}$ of NE $\frac{1}{4}$; Fr. E $\frac{1}{2}$ of NW $\frac{1}{4}$; South $\frac{1}{2}$ | Section 5- 9N-3E of W.M. |
| Lot 2; Fr. N $\frac{1}{2}$ of NW $\frac{1}{4}$; SE $\frac{1}{4}$ of NW $\frac{1}{4}$ | Section 6- 9N-3E of W.M. |
| NE $\frac{1}{4}$; E $\frac{1}{2}$ of W $\frac{1}{2}$; N $\frac{1}{2}$ of SE $\frac{1}{4}$; SW $\frac{1}{4}$ of SE $\frac{1}{4}$ | Section 7- 9N-3E of W.M. |
| NE $\frac{1}{4}$ of NE $\frac{1}{4}$; SW $\frac{1}{4}$ of SW $\frac{1}{4}$ | Section 9- 9N-3E of W.M. |
| NW $\frac{1}{4}$ of NW $\frac{1}{4}$ | Section 15- 9N-3E of W.M. |
| NW $\frac{1}{4}$ of SW $\frac{1}{4}$; S $\frac{1}{2}$ of S $\frac{1}{2}$ | Section 17- 9N-3E of W.M. |
| SE $\frac{1}{4}$ of SE $\frac{1}{4}$ | Section 21- 9N-3E of W.M. |
| S $\frac{1}{2}$ of S $\frac{1}{2}$ | Section 25- 9N-3E of W.M. |
| NW $\frac{1}{4}$ of SW $\frac{1}{4}$; S $\frac{1}{2}$ of S $\frac{1}{2}$ | Section 27- 9N-3E of W.M. |
| N $\frac{1}{2}$ of NE $\frac{1}{4}$; SW $\frac{1}{4}$ of NE $\frac{1}{4}$; N $\frac{1}{2}$ of NW $\frac{1}{4}$; SE $\frac{1}{4}$ of NW $\frac{1}{4}$; NE $\frac{1}{4}$ of SW $\frac{1}{4}$; S $\frac{1}{2}$ of SW $\frac{1}{4}$; SE $\frac{1}{4}$ | Section 28- 9N-3E of W.M. |
| N $\frac{1}{2}$ of N $\frac{1}{2}$; NW $\frac{1}{4}$ of SW $\frac{1}{4}$; S $\frac{1}{2}$ of S $\frac{1}{2}$ | Section 29- 9N-3E of W.M. |
| Fr. S $\frac{1}{2}$ of S $\frac{1}{2}$ | Section 30- 9N-3E of W.M. |
| W $\frac{1}{2}$ of NE $\frac{1}{4}$; Fr. N $\frac{1}{2}$ of NW $\frac{1}{4}$; SE $\frac{1}{4}$ of NW $\frac{1}{4}$; SE $\frac{1}{4}$ | Section 31- 9N-3E of W.M. |
| NE $\frac{1}{4}$ | Section 32- 9N-3E of W.M. |
| S $\frac{1}{2}$ of NE $\frac{1}{4}$; E $\frac{1}{2}$ of NW $\frac{1}{4}$; SW $\frac{1}{4}$ | Section 33- 9N-3E of W.M. |
| SW $\frac{1}{4}$ of NW $\frac{1}{4}$ | Section 34- 9N-3E of W.M. |
| Fr. N $\frac{1}{2}$ of NW $\frac{1}{4}$; SE $\frac{1}{4}$ of NW $\frac{1}{4}$; NE $\frac{1}{4}$ of SW $\frac{1}{4}$; SW $\frac{1}{4}$ of SW $\frac{1}{4}$; W $\frac{1}{2}$ of SE $\frac{1}{4}$ | Section 31-10N-3E of W.M. |
| S $\frac{1}{2}$ of NE $\frac{1}{4}$; E $\frac{1}{2}$ of SW $\frac{1}{4}$; N $\frac{1}{2}$ of SE $\frac{1}{4}$ | Section 32-10N-3E of W.M. |
| N $\frac{1}{2}$ of SW $\frac{1}{4}$; SE $\frac{1}{4}$ of SW $\frac{1}{4}$; S $\frac{1}{2}$ of SE $\frac{1}{4}$ | Section 33-10N-3E of W.M. |
| Lots 1, 2, 3 and 4 | Section 4- 8N-4E of W.M. |
| NW $\frac{1}{4}$ of NE $\frac{1}{4}$; S $\frac{1}{2}$ of NE $\frac{1}{4}$; Fr. N $\frac{1}{2}$ of NW $\frac{1}{4}$ | Section 31- 9N-4E of W.M. |
| SE $\frac{1}{4}$ of SE $\frac{1}{4}$ | Section 32- 9N-4E of W.M. |

South Toutle - Deer Creek

State Lands

| | |
|--|---------------------------|
| $W\frac{1}{2}$ of $SW\frac{1}{4}$ | Section 36-10N-1E of W.M. |
| Fr. $N\frac{1}{2}$ of $NE\frac{1}{4}$; Fr. $NW\frac{1}{4}$ | Section 4- 8N-2E of W.M. |
| $SE\frac{1}{4}$ of $NW\frac{1}{4}$ | Section 2- 9N-2E of W.M. |
| Fr. $NE\frac{1}{4}$; $NE\frac{1}{4}$ of $SW\frac{1}{4}$; $S\frac{1}{2}$ of $SW\frac{1}{4}$; $N\frac{1}{2}$ of $SE\frac{1}{4}$; $SE\frac{1}{4}$ of $SE\frac{1}{4}$ | Section 4- 9N-2E of W.M. |
| Lot 5 | Section 6- 9N-2E of W.M. |
| $NE\frac{1}{4}$; $N\frac{1}{2}$ of $NW\frac{1}{4}$; $SW\frac{1}{4}$ of $NW\frac{1}{4}$ | Section 8- 9N-2E of W.M. |
| North $\frac{1}{2}$; $SW\frac{1}{4}$ of $SW\frac{1}{4}$; $N\frac{1}{2}$ of $SE\frac{1}{4}$; $SE\frac{1}{4}$ of $SE\frac{1}{4}$ | Section 10- 9N-2E of W.M. |
| $W\frac{1}{2}$ of $NE\frac{1}{4}$; $NW\frac{1}{4}$; $S\frac{1}{2}$ of $SW\frac{1}{4}$ | Section 12- 9N-2E of W.M. |
| $SE\frac{1}{4}$ of $NE\frac{1}{4}$; $E\frac{1}{2}$ of $SE\frac{1}{4}$ | Section 14- 9N-2E of W.M. |
| $SE\frac{1}{4}$ | Section 16- 9N-2E of W.M. |
| $N\frac{1}{2}$ of $SW\frac{1}{4}$ | Section 22- 9N-2E of W.M. |
| $N\frac{1}{2}$ of $NE\frac{1}{4}$; $SW\frac{1}{4}$ of $NE\frac{1}{4}$; $S\frac{1}{2}$ of $NW\frac{1}{4}$ | Section 24- 9N-2E of W.M. |
| $SE\frac{1}{4}$ of $NE\frac{1}{4}$; $W\frac{1}{2}$ of $W\frac{1}{2}$; $SE\frac{1}{4}$ of $SW\frac{1}{4}$; $NW\frac{1}{4}$ of $SE\frac{1}{4}$; $S\frac{1}{2}$ of $SE\frac{1}{4}$ | Section 26- 9N-2E of W.M. |
| $NW\frac{1}{4}$ of $NE\frac{1}{4}$; $S\frac{1}{2}$ of $NE\frac{1}{4}$; $E\frac{1}{2}$ of $NW\frac{1}{4}$; $E\frac{1}{2}$ of $SW\frac{1}{4}$; $N\frac{1}{2}$ of $SE\frac{1}{4}$; $SW\frac{1}{4}$ of $SE\frac{1}{4}$ | Section 28- 9N-2E of W.M. |
| $S\frac{1}{2}$ of $SE\frac{1}{4}$ | Section 30- 9N-2E of W.M. |
| $N\frac{1}{2}$ of $SW\frac{1}{4}$; $SE\frac{1}{4}$ of $SW\frac{1}{4}$; $NE\frac{1}{4}$ of $SE\frac{1}{4}$; $SW\frac{1}{4}$ of $SE\frac{1}{4}$ | Section 32- 9N-2E of W.M. |
| $E\frac{1}{2}$ of $NW\frac{1}{4}$; $NE\frac{1}{4}$ of $SW\frac{1}{4}$; $S\frac{1}{2}$ of $SW\frac{1}{4}$ | Section 36- 9N-2E of W.M. |
| $N\frac{1}{2}$ of $NE\frac{1}{4}$; $W\frac{1}{2}$ of $NW\frac{1}{4}$; $SW\frac{1}{4}$; $N\frac{1}{2}$ of $SE\frac{1}{4}$; $SE\frac{1}{4}$ of $SE\frac{1}{4}$ | Section 36-10N-2E of W.M. |
| $SE\frac{1}{4}$ of $NE\frac{1}{4}$; $N\frac{1}{2}$ of $SW\frac{1}{4}$; $SE\frac{1}{4}$ | Section 4- 9N-3E of W.M. |
| $NE\frac{1}{4}$ of $SW\frac{1}{4}$; $S\frac{1}{2}$ of $SW\frac{1}{4}$; $W\frac{1}{2}$ of $SE\frac{1}{4}$; Lot 5 | Section 6- 9N-3E of W.M. |
| $NE\frac{1}{4}$ of $NE\frac{1}{4}$; $S\frac{1}{2}$ of $NE\frac{1}{4}$; $N\frac{1}{2}$ of $SE\frac{1}{4}$; $SE\frac{1}{4}$ of $SE\frac{1}{4}$ | Section 8- 9N-3E of W.M. |
| $NW\frac{1}{4}$ of $NE\frac{1}{4}$; $N\frac{1}{2}$ of $NW\frac{1}{4}$; $SW\frac{1}{4}$ of $NW\frac{1}{4}$; $SW\frac{1}{4}$ | Section 10- 9N-3E of W.M. |
| $N\frac{1}{2}$ of $NE\frac{1}{4}$; $SE\frac{1}{4}$ of $NE\frac{1}{4}$; $N\frac{1}{2}$ of $NW\frac{1}{4}$; $E\frac{1}{2}$ of $SE\frac{1}{4}$; $SW\frac{1}{4}$ of $SE\frac{1}{4}$ | Section 16- 9N-3E of W.M. |
| $NE\frac{1}{4}$; $NE\frac{1}{4}$ of $SE\frac{1}{4}$ | Section 18- 9N-3E of W.M. |
| $S\frac{1}{2}$ of $S\frac{1}{2}$ | Section 26- 9N-3E of W.M. |
| $NE\frac{1}{4}$ of $SE\frac{1}{4}$; $SW\frac{1}{4}$ of $SW\frac{1}{4}$ | Section 32- 9N-3E of W.M. |
| $NE\frac{1}{4}$ of $NE\frac{1}{4}$ | Section 36- 9N-3E of W.M. |
| $S\frac{1}{2}$ of $NW\frac{1}{4}$; $NE\frac{1}{4}$ of $SW\frac{1}{4}$; $W\frac{1}{2}$ of $SE\frac{1}{4}$ | Section 32- 9N-4E of W.M. |