

Washington DNR Timber Sales Program

**The documents for Salty VRH RMZ timber sale have been changed as follows:**

**Documents amended:**

Brief Description	DATE	Initials
Notice of Sale: Fees due on day of sale have been corrected to \$89,403.00.	10/13/2020	kw
Notice of Sale/Roads: <del>82.25 stations of abandonment.</del> <b>40.39 stations of required abandonment. 36.12 stations of optional abandonment</b> <del>357 stations of required pre-haul maintenance.</del>	10/13/2020	mr



TIMBER NOTICE OF SALE

SALE NAME: SALTY VRH RMZ

AGREEMENT NO: 30-97966

AUCTION: November 19, 2020 starting at 10:00 a.m., COUNTY: Cowlitz
Pacific Cascade Region Office, Castle Rock, WA

SALE LOCATION: Sale located approximately 10 miles northeast of Woodland

PRODUCTS SOLD AND SALE AREA:

All timber, except trees marked with blue paint, trees bound out by yellow "Leave Tree Area" tags with pink flagging, snags, and all down timber greater than 36 inches diameter bounded by the following: white "Timber Sale Boundary" tags, pink flagging; pink flagging along reprod and the PH-1000, PH-1023, and PH-1023A roads in Unit 1. Unit 2; white "Timber Sale Boundary" tags, pink flagging; pink flagging along reprod and the PH-1000, PH-1003, PH-1025, PH-1027, and PH-1028 roads. Unit 3; white "Timber Sale Boundary" tags, pink flagging and the PH-1000, PH-1175 roads. Unit 4; white "Timber Sale Boundary" tags, pink flagging; pink flagging along reprod, the PH-1177, PH-1177B roads. Unit 5; white "Timber Sale Boundary" tags, pink flagging and the PH-1100 road. Unit 6; white "Timber Sale Boundary" tags, pink flagging and the PH-1100. Unit 7; white "Timber Sale Boundary" tags, pink flagging; pink flagging along reprod, and the PH-1100, and PH-1150 roads. Units 8 and 9 ROW units; orange "Right-of-Way" tags with orange flagging. Unit 10; pit expansion white "Timber Sale Boundary" tags, pink flagging. Units 11 and 12 - RFRS units, adjacent to Unit 3 are bounded by white "Timber Sale Boundary" tags, pink flagging. Unit 13; ROW orange "Right-of-Way" tags, orange flagging.

All forest products above located on part(s) of Sections 13, 24 and 25 all in Township 6 North, Range 1 East, Sections 18, 19 and 20 all in Township 6 North, Range 2 East, W.M., containing 252 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, and MBF by Grade (1P, 2P, 3P, SM, 1S, 2S, 3S, 4S, UT). Rows include Douglas fir, Hemlock, Red alder, Red cedar, Maple, Noble fir, and Sale Total.

MINIMUM BID: \$1,746,000.00 BID METHOD: Sealed Bids

PERFORMANCE SECURITY: \$100,000.00 SALE TYPE: Lump Sum

EXPIRATION DATE: October 31, 2022 ALLOCATION: Export Restricted



## TIMBER NOTICE OF SALE

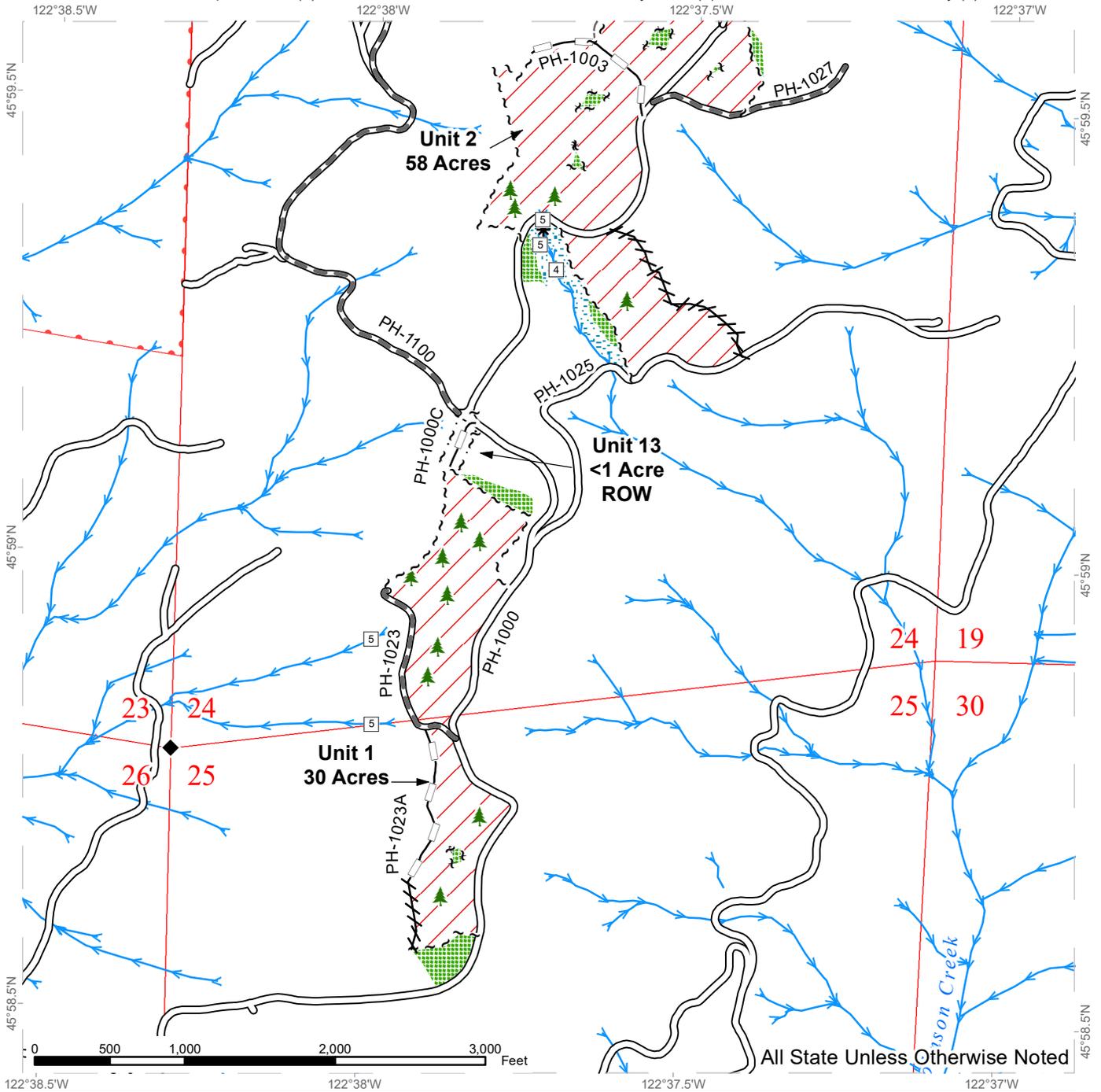
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- BID DEPOSIT:** \$174,600.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.
- HARVEST METHOD:** Cable, and Ground based equipment. This sale is estimated to be 90% ground-based and 10% cable/cable assist. A detailed felling and yarding plan shall be required prior to any harvest activities. Ground-based yarding is restricted to slopes of 40% or less. For additional harvest requirements, refer to the H-140 clause in the contract. Ground Based Yarding will not be permitted from November 1 to April 30 unless authorized in writing by the Contract Administrator.
- ROADS:** 18.54 stations of required construction. 3.52 stations of required reconstruction. 5.58 stations of optional construction. 26.02 stations of optional reconstruction. 263.92 stations of required prehaul maintenance. 33.20 stations of optional prehaul maintenance. 40.39 stations of abandonment. 36.12 stations of optional road abandonment if built. Rock for construction, reconstruction, and pre-haul maintenance under this contract may be obtained at no cost to the Purchaser from the following rock source; The PH-3700 Pit located in Section 20, Township 06 North, Range 02 East, WM. Rock used in accordance with the quantities on the ROCK LIST may be obtained from an approved commercial source at the Purchaser's expense. Rock sources are subject to written approval by the Contract Administrator before their use. Road construction will not be permitted from October 1 to April 30 unless authorized in writing by the Contract Administrator. The hauling of forest products 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:** \$89,403.00 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 has approximately 424 MBF of high quality 2 saw DF, 107 MBF of high quality 3 saw DF, 245 MBF of high quality 2 saw WH, and 77 MBF of high quality 3 saw WH, see cruise for details. PCP 1-1 gate keys may be obtained from the Pacific Cascade Region office. Dust abatement required on the PH-1000 road. See contract clause C-130.

# TIMBER SALE MAP

**SALE NAME:** SALTY VRH RMZ  
**AGREEMENT #:** 30-097966  
**TOWNSHIP(S):** T6R1E, T6R2E  
**TRUST(S):** Capitol Grant (7), Charitable/Educational/Penal & Reformatory Instit. (6), Common School and Indemnity (3), Scientific School (10)

**REGION:** Pacific Cascade Region  
**COUNTY(S):** Cowlitz  
**ELEVATION RGE:** 1457-2433

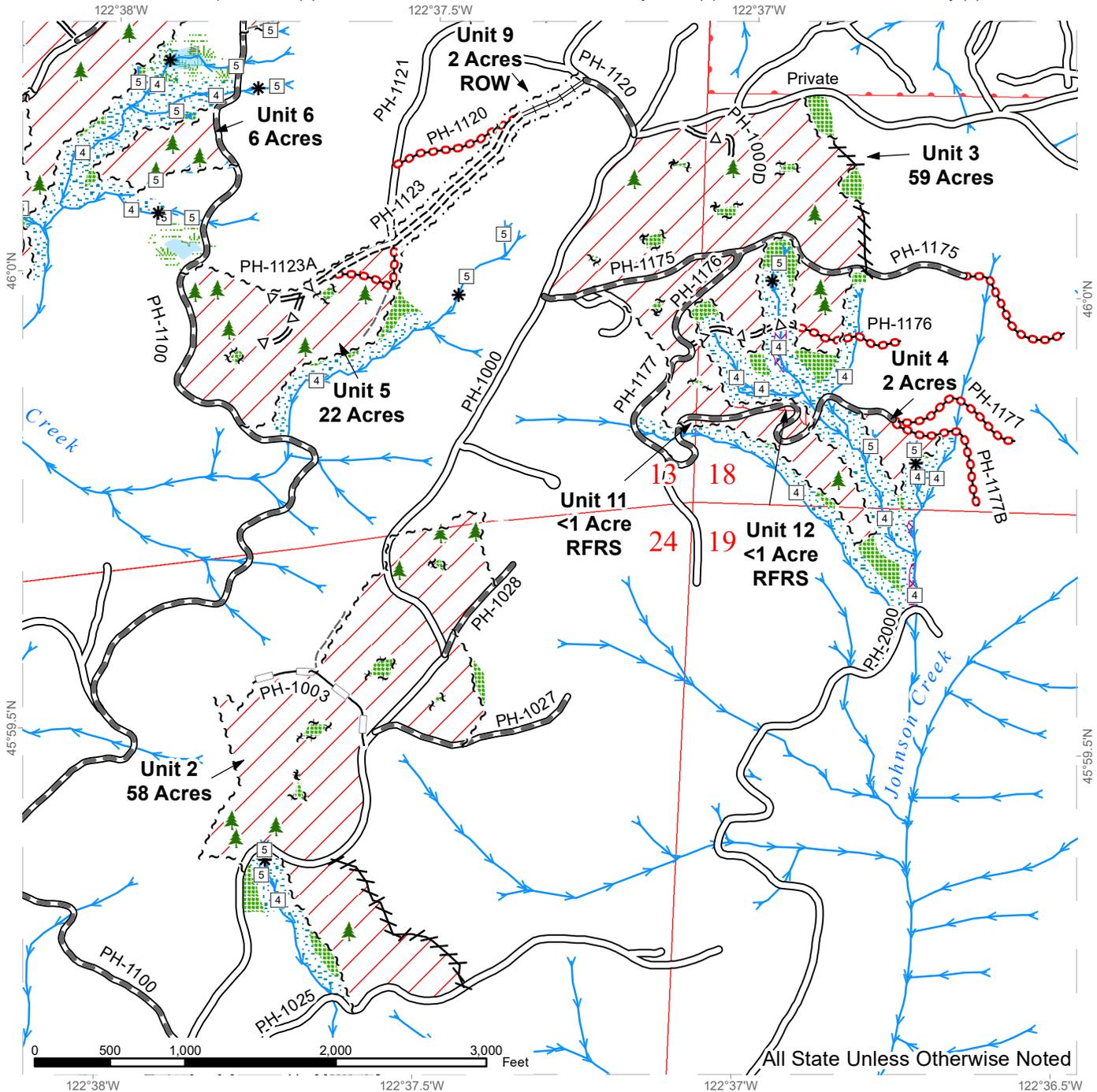


Variable Retention Harvest	Sale Boundary Tags	Existing Roads	Streams
Leave Tree Area	Leave Tree Tags	Required Pre-Haul Maintenance	Stream Type 4
Riparian Mgt Zone	Right of Way Tags	Optional Reconstruction	Stream Type 5
DNR Managed Lands	Flag Line	Old Grades/Trails	Stream Break
			Leave Tree Area <1/4-acre
			Survey Monument

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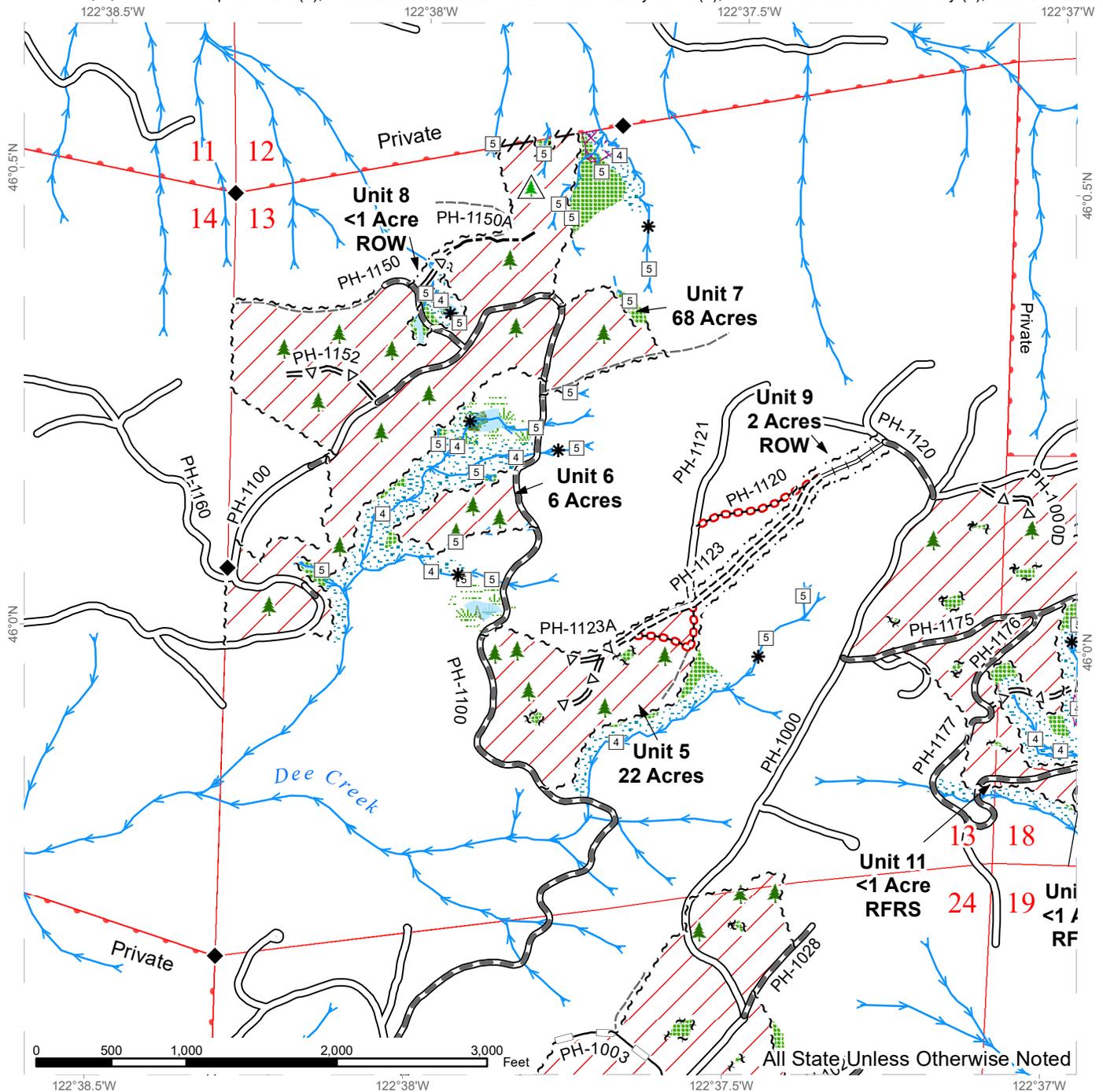
Variable Retention Harvest	Sale Boundary Tags	Existing Roads	Streams
Hardwood Conversion	Leave Tree Tags	Required Pre-Haul Maintenance	Stream Type 4
Leave Tree Area	Right of Way Tags	Required Construction	Stream Type 5
Riparian Mgt Zone	Flag Line	Required Reconstruction	Stream Break
Forested Wetland		Optional Pre-Haul Maintenance	Leave Tree Area <1/4-acre
Wetland Mgt Zone		Optional Reconstruction	
Potentially Unstable Slopes		Required Abandonment	
DNR Managed Lands		Old Grades/Trails	



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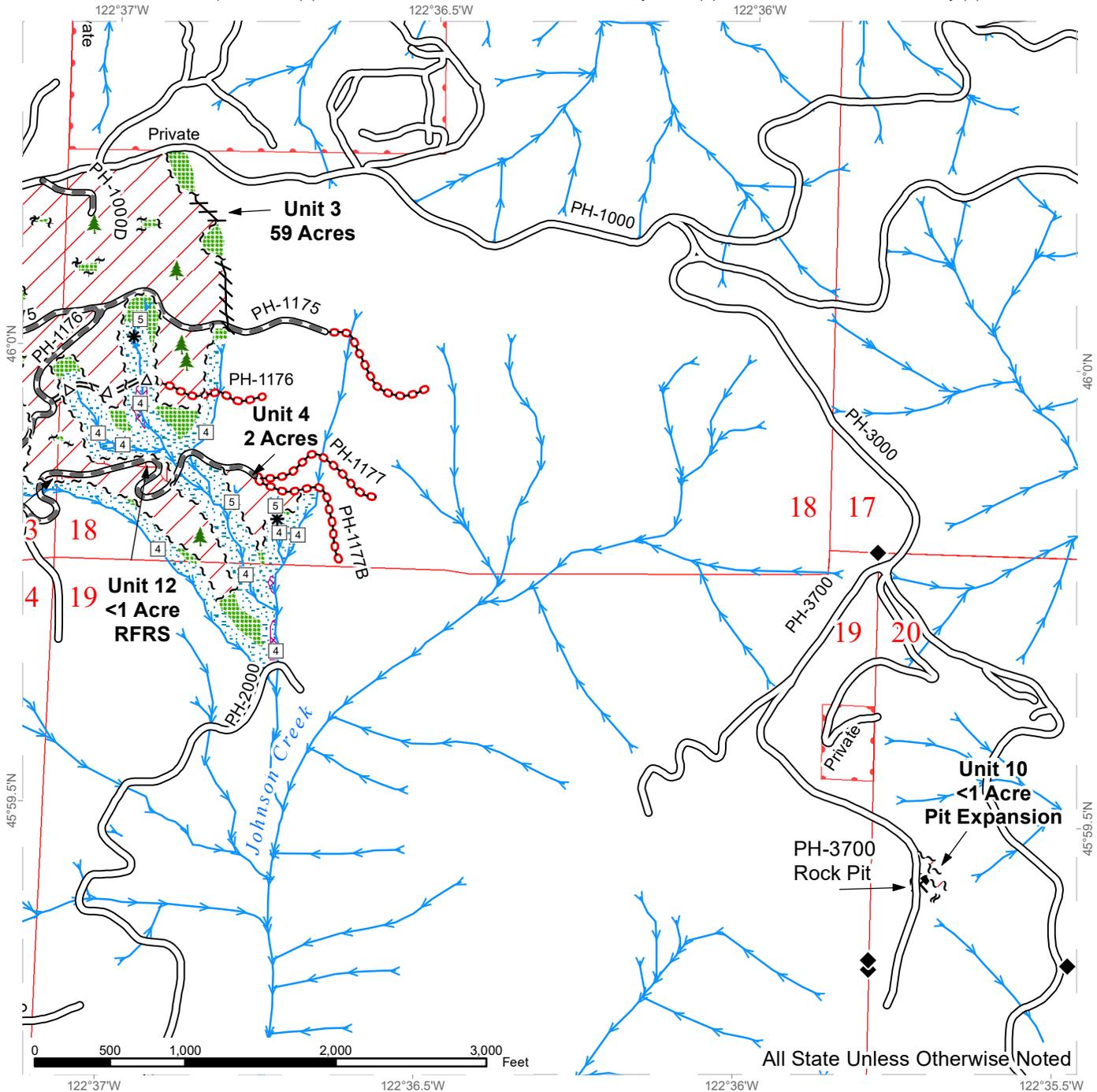
Variable Retention Harvest	Sale Boundary Tags	Existing Roads	Streams
Hardwood Conversion	Leave Tree Tags	Required Pre-Haul Maintenance	Stream Type 4
Leave Tree Area	Right of Way Tags	Required Construction	Stream Type 5
Riparian Mgt Zone	Flag Line	Required Reconstruction	Stream Break
Forested Wetland	Optional Pre-Haul Maintenance	Optional Construction	Leave Tree Area <1/4-acre
Wetland Mgt Zone	Optional Construction	Optional Reconstruction	Non-Tradeable Leave Trees
Potentially Unstable Slopes	Required Abandonment	Old Grades/Trails	Survey Monument
DNR Managed Lands			



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All State Unless Otherwise Noted

Variable Retention Harvest	Sale Boundary Tags	Existing Roads	Streams
Hardwood Conversion	Leave Tree Tags	Required Pre-Haul Maintenance	Stream Type 4
Leave Tree Area	Flag Line	Optional Pre-Haul Maintenance	Stream Type 5
Riparian Mgt Zone	Required Abandonment	Stream Break	Leave Tree Area <1/4-acre
Potentially Unstable Slopes		Rock Pit	Survey Monument
DNR Managed Lands			



# DRIVING MAP

**SALE NAME:** SALTY VRH RMZ

**AGREEMENT#:** 30-097966

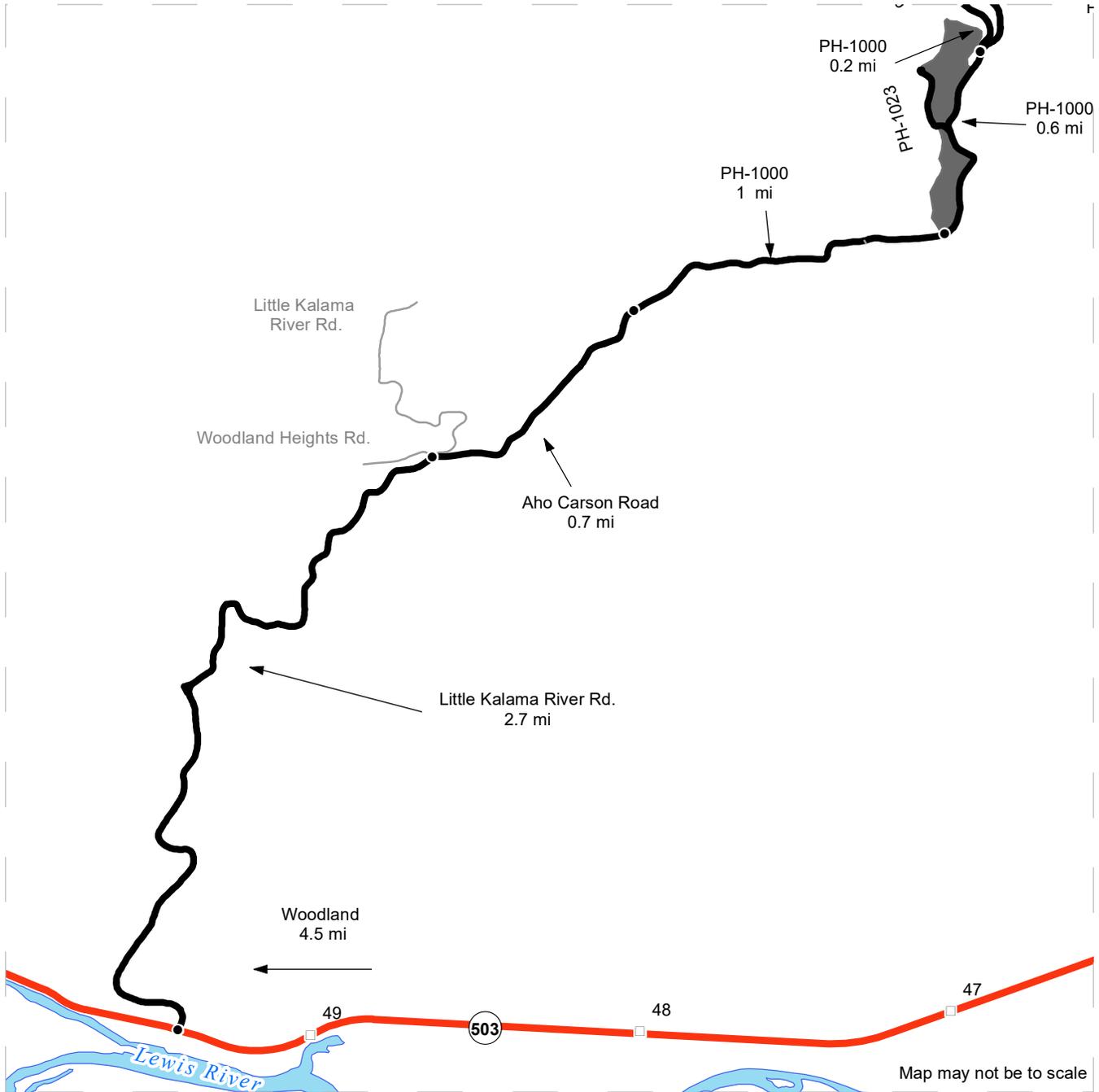
**TOWNSHIP(S):** T6R1E, T6R2E

**TRUST(S):** Capitol Grant (7), Charitable/Educational/Penal & Reformatory Instit. (6), Common School and Indemnity (3), Scientific School (10)

**REGION:** Pacific Cascade Region

**COUNTY(S):** Cowlitz

**ELEVATION RGE:** 1457-2433



	Timber Sale Unit
	Highway
	Haul Route
	Other Road
	Milepost Markers
	Distance Indicator

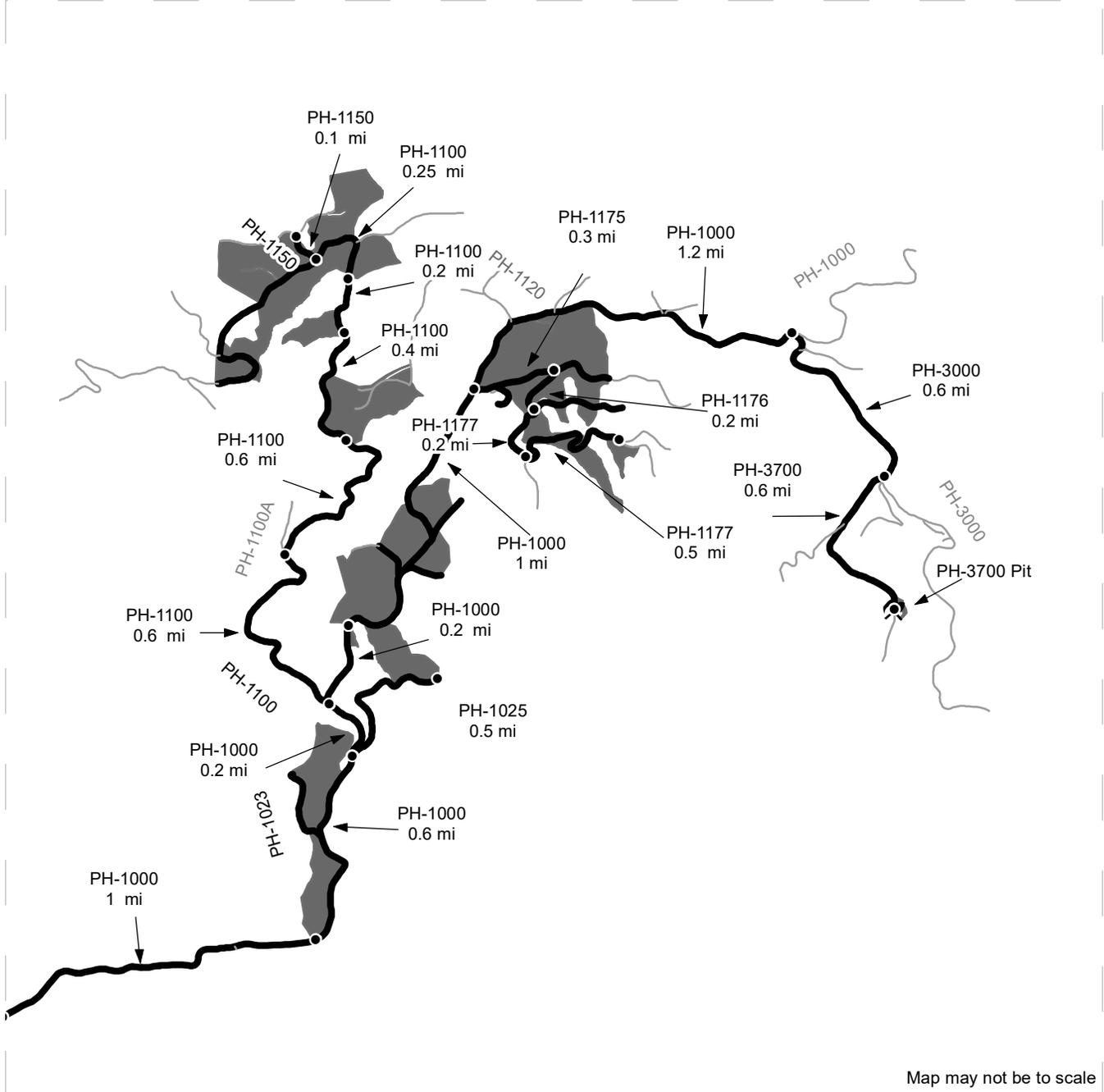
**DRIVING DIRECTIONS:**  
 "See Attachment"



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**SALE NAME:** SALTY VRH RMZ  
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**REGION:** Pacific Cascade Region  
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**ELEVATION RGE:** 1457-2433



- Timber Sale Unit
- Haul Route
- Other Road
- Distance Indicator
- Rock Pit

**DRIVING DIRECTIONS:**  
 "See Attachment"



## **Salty VRH RMZ Driving Directions**

From Woodland head east on SR-503, turn left (north) onto Little Kalama River Rd. and travel 2.7 miles, turn right (east) onto Aho Carson Rd. for 0.7 miles (the road will turn from pavement to gravel and become the PH-1000).

### **Unit 1**

Continue on the PH-1000 for 1 mile to Unit 1.

### **Unit 2**

To Unit 2, continue on the PH-1000 for 0.6 miles to the PH-1000/PH-1100 junction. Keep right (north) on the PH-1000 and continue for 0.2 miles.

### **Units 3, 4, 11, and 12**

To access Units 3 & 4 continue on the PH-1000 for 1 mile to the PH-1000/PH-1175 junction. To access Unit 4 turn right (east) on to the PH-1175, continue on the PH-1175 for 0.3 miles, turn right (SW) on to the PH-1176, continue on for 0.2 miles, keep right (SW) at junction on to the PH-1177 for 0.2 miles, continue on the PH-1177 for 0.5 miles to Unit 4. Units 11 and 12 are located off the PH-1177 adjacent to Unit 3.

### **Unit 9 (ROW)**

To access Unit 9 (ROW) continue on the PH-1000 from the PH-1000/PH-1175 junction for 0.25 miles and turn left (NW) on the PH-1120.

### **Unit 10 (Pit Expansion) / PH-3700 Pit**

To access the PH-3700 Pit, continue on the PH-1000 from the PH-1000/PH-1175 junction for 1.2 miles, turn right (SE) onto the PH-3000 and continue for 0.6 miles to the PH-3000/PH-3700 junction, then turn right (SW) and continue on the PH-3700 for 0.6 miles to the PH-3700 Pit.

### **Units 5, 6, 7, and 8 (ROW)**

From the PH-1000/PH-1100 junction turn left (NW) on to the PH-1100. To Unit 5 continue on PH-1100 for 0.6 miles to the PH-1100/PH-1100A junction and keep right (NE) on the PH-1100 for 0.6 miles. To Unit 6 continue on the PH-1100 for 0.4 miles. To Unit 7 continue on the PH-1100 for 0.2 miles. To Unit 8 (ROW) continue on the PH-1100 for 0.25 miles then turn right (NW) on to the PH-1150 and continue for 0.1 miles.

### **Unit 13 (ROW)**

To Unit 13, continue on the PH-1000 for 0.6 miles to the PH-1000/PH-1100 junction. Turn left (northwest) on the PH-1100 and continue for 0.2 miles.

**STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES**

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

**Export Restricted Lump Sum AGREEMENT NO. 30-097966**

**SALE NAME: SALTY VRH 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-011 Right to Remove Forest Products and Contract Area

Purchaser was the successful bidder on November 19, 2020 and the sale was confirmed on \_\_\_\_\_. The State, as owner, agrees to sell to Purchaser, and Purchaser agrees to purchase as much of the following forest products as can be cut and removed during the term of this contract: All timber, except trees marked with blue paint, trees bound out by yellow "Leave Tree Area" tags with pink flagging, snags, and all down timber greater than 36 inches diameter bounded by the following: white "Timber Sale Boundary" tags, pink flagging; pink flagging along reprod and the PH-1000, PH-1023, and PH-1023A roads in Unit 1. Unit 2; white "Timber Sale Boundary" tags, pink flagging; pink flagging along reprod and the PH-1000, PH-1003, PH-1025, PH-1027, and PH-1028 roads. Unit 3; white "Timber Sale Boundary" tags, pink flagging and the PH-1000, PH-1175 roads. Unit 4; white "Timber Sale Boundary" tags, pink flagging; pink flagging along reprod, the PH-1177, PH-1177B roads. Unit 5; white "Timber Sale Boundary" tags, pink flagging and the PH-1100 road. Unit 6; white "Timber Sale Boundary" tags, pink flagging and the PH-1100. Unit 7; white "Timber Sale Boundary" tags, pink flagging; pink flagging along reprod, and the PH-1100, and PH-1150 roads. Units 8 and 9 ROW units; orange "Right-of-Way" tags with orange flagging. Unit 10; pit expansion white "Timber Sale Boundary" tags, pink flagging. Units 11 and 12 - RFRS units, adjacent to unit 3 are bounded by white "Timber Sale Boundary" tags, pink flagging. Unit 13; ROW orange "Right-of-Way" tags, orange flagging.

All forest products above located on approximately 252 acres on part(s) of Sections 13, 24, and 25 all in Township 6 North, Range 1 East, Sections 18, 19, and 20 all in Township 6 North, Range 2 East W.M. in Cowlitz County(s) as designated on the sale area and as shown on the attached timber sale map.

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	Riparian Forest Restoration Strategy

G-031 Contract Term

Purchaser shall 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-051 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 total contract price.

For the second extension, not to exceed 1 year, payment of at least 90 percent of the total contract price.

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 total contract price.

All payments, except the initial deposit, will be deducted from the total contract price to determine the unpaid portion of the contract.

- e. Payment of \$681.00 per acre per annum for the acres on which an operating release has not been issued for Units 1-10 and 13. Payment of \$97.00 per acre per annum for the acres on which an operating release has not been issued for Units 10 and 11.
- 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-091 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, the added forest products become a part of this contract. The State shall determine the volume added and shall calculate the increase to the total contract price using the rates set forth in clause G-101, G-102, or G-103. If the sale area is reduced, the State shall determine the volume to be reduced. The State shall calculate the reduction to the total contract price using the rates set forth in clause G-101, G-102, or G-103.

G-101 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 the Scribner log scale volume, as defined by the Northwest Log Rules Advisory Group, shall be determined by the Contract Administrator. Added forest products shall be paid for at the following contract payment rates per Mbf Scribner log scale.

The pricing schedule has not been set for the sale.

G-111 Title and Risk of Loss

Title to the forest products under this contract passes to the Purchaser after they are removed from the sale area, if adequate advance payment or payment security has been provided to the State under this contract. Purchaser bears all risk of loss of, or damage to, and has an insurable interest in, the forest products described in this contract from the time the sale is confirmed under RCW 79.15.120. Breach of this contract shall have no effect on this provision.

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

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

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

**G-120 Responsibility for Work**

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

**G-121 Exceptions**

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

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

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

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

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

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

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

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

#### G-140 Indemnity

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

#### G-150 Insurance

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

#### G-160 Agents

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

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

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

G-170 Assignment and Delegation

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

G-180 Modifications

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

G-190 Contract Complete

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

G-200 Notice

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

G-210 Violation of Contract

G-220 State Suspends Operations

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

G-210 Violation of Contract

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

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

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

#### G-220 State Suspends 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; PH-1000 (0+00 to 227+26) PH-1000C, PH-1000D, PH-1003, PH-1023, PH-1023A, PH-1025, PH-1027, PH-1028, PH-1100, PH-1120, PH-1123, PH-1123A, PH-1123B, PH-1150, PH-1150A, PH-1152, PH-1175, PH-1176, PH-1177, PH-1177B, PH-3000 (239+12 to 205+51), PH-3700. 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 PH-1000, PH-1100, PH-3700, unless authority is granted in writing by the Contract Administrator.

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:

Easement, including the terms and provisions thereof,  
For: Road  
In Favor of: Weyerhaeuser Company  
Disclosed by Application No.: 50-033674  
Granted: 4/15/1969  
Expires: Indefinite

Easement, including the terms and provisions thereof,  
For: Road  
In Favor of: Burlington Northern Inc.  
Disclosed by Application No.: 50-033876  
Granted: 4/8/1970  
Expires: Indefinite

Easement, including the terms and provisions thereof,  
For: Road  
In Favor of: Swanberg Brothers  
Disclosed by Application No.: 50-034106  
Granted: 9/2/1969  
Expires: Indefinite

Easement, including the terms and provisions thereof,  
For: Road  
In Favor of: International Paper Company  
Disclosed by Application No.: 50-037761  
Granted: 1/22/1975  
Expires: Indefinite

Easement, including the terms and provisions thereof,  
For: Road  
In Favor of: Weyerhaeuser Company  
Disclosed by Application No.: 50-052283  
Granted: 6/6/1991  
Expires: Indefinite

Easement, including the terms and provisions thereof,  
For: Road  
In Favor of: Cyril O. & Sharon R. Gillette  
Disclosed by Application No.: 50-055160  
Granted: 2/8/1973  
Expires: Indefinite

Easement, including the terms and provisions thereof,

For: Road  
In Favor of: International Paper Company  
Disclosed by Application No.: 50-055161  
Granted: 12/22/1977  
Expires: Indefinite

Easement, including the terms and provisions thereof,  
For: Road Use Permit  
In Favor of: CT Resources LLC  
Disclosed by Application No.: 50-098112  
Granted: 1/2/2019  
Expires: Indefinite

Lease, including the terms and provisions thereof,  
For: Land Use License  
In Favor of: Washington Department of Fish & Wildlife  
Disclosed by Application No.: 60-095576  
Granted: 5/2/2017  
Expires: 6/30/2022

Lease, including the terms and provisions thereof,  
For: Tailholds  
In Favor of: Hadaller Logging Inc.  
Disclosed by Application No.: 60-PC1920  
Granted: 4/3/2019  
Expires: 12/31/2021

Special Notations: Roads are used to access Davis Peak communication site lease in Sec. 20, T6N. R2E.

Section P: Payments and Securities

P-011 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 Clause P-020, 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-020 Payment for Forest Products

Purchaser agrees to pay the total, lump sum contract price of \$941,361.00. The total contract price consists of a \$0.00 contract bid price plus \$941,361.00 in fees. Fees collected shall be retained by the state unless the contract is adjusted via the G-066 clause. Purchaser shall be liable for the entire purchase price, and will not be entitled to any refunds or offsets unless expressly stated in this contract.

THE PURCHASE PRICE SHALL NOT BE AFFECTED BY ANY FACTORS, INCLUDING: the amount of forest products actually present within the contract area, the actual acreage covered by the contract area, the amount or volume of forest products actually cut or removed by purchaser, whether it becomes physically impossible or uneconomic to remove the forest products, and whether the subject forest products have been lost or damaged by fire or any other cause. The only situations Purchaser may not be liable for the full purchase price are governed by clause G-066, concerning governmental regulatory actions taken during the term of the contract.

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-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 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-010 Cutting and Yarding Schedule

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

H-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-016 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. A skid trail will not exceed 14 feet in width, including rub trees.
- b. Skid trails shall not cover more than 5 percent of the total acreage on one unit.
- c. Location of the skid trails must be marked by Purchaser and 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. Purchaser will not have more than two skid trails open to active skidding at any one time. All other skid trails used for skidding timber will be closed.
- h. Once a skid trail is closed, Purchaser will not reopen a skid trail unless approved in writing by the Contract Administrator.
- i. 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 8 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-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 harvest 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-051 Branding and Painting

Purchaser shall provide a State of Washington registered log brand, acceptable to the State, unless the State agrees to furnish the brand. 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-080 Snags Not to be Felled

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

H-120 Harvesting Equipment

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

H-125 Log Suspension Requirements

Lead-end suspension is required for all yarding activities.

H-126 Tailholds on State Land

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

H-127 Tailholds on Private Land

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

H-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.

Cable assist operations will not be permitted on slopes over 80%.

Ground based yarding equipment will not be permitted on slopes over 40%.

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

In concurrence with S-035 Logging Debris Clean Up; Logging slash shall be piled in 10'x10' piles or in a manner approved in writing by the Contract Administrator in an effort to create plantable spots.

Danger trees in or adjacent to harvest units shall be addressed in a manner consistent with WAC 296-54-507.

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

H-190 Completion of Settings

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

H-220 Protection of Residual or Adjacent Trees

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

H-230 Tops and Limbs Outside the Sale Boundary

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

H-250 Additional Falling Requirements

Within harvest units, all non-merchantable hardwood stems 2 inches DBH and over 10 feet tall, shall be felled concurrently with felling operations. Areas of young or immature timber may be excluded from this requirement by the Contract Administrator.

Section C: Construction and Maintenance

C-040 Road Plan

Road construction and associated work provisions of the Road Plan for this sale, dated 10/3/2019 are hereby made a part of this contract.

C-050 Purchaser Road Maintenance and Repair

Purchaser shall perform work at their own expense on PH-1000 (0+00 to 227+26) PH-1000C, PH-1000D, PH-1003, PH-1023, PH-1023A, PH-1025, PH-1027, PH-1028, PH-1100, PH-1120, PH-1123, PH-1123A, PH-1123B, PH-1150, PH-1150A, PH-1152, PH-1175, PH-1176, PH-1177, PH-1177B, PH-3000 (239+12 to 205+51), PH-3700. 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 other roads used not covered 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-130 Dust Abatement

Purchaser shall abate dust on the PH-1000 from Station 0+00 to 17+03.

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-070 Water Supply

Purchaser shall provide, during the "closed season", a water supply with a minimum capacity of 300 gallons for rapid filling of pump trucks or trailers at a location designated by the Contract Administrator.

## S-100 Stream Cleanout

Slash or debris which enters all 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 or other releases of hazardous material/waste during operations conducted under this contract.

## b. Hazardous Materials Spill Prevention

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

c. Hazardous Materials Spill Containment, Control and Cleanup

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

d. Hazardous Material Release Reporting

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

- Department of Emergency Management (contact information below).
- National Response Center (contact information below).
- Appropriate Department of Ecology (DOE) regional office (contact information below).
- DNR Contract Administrator

DOE - Northwest Region: 1-425-649-7000  
(Island, King, Kitsap, San Juan, Skagit, Snohomish, and Whatcom counties)

DOE - Southwest Region: 1-360-407-6300  
(Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Mason, Lewis, Pacific, Pierce, Skamania, Thurston, and Wahkiakum counties)

DOE - Central Region: 1-509-575-2490  
(Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, and Yakima counties)

DOE - Eastern Region: 1-509-329-3400  
(Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, and Whitman counties)

Department of Emergency Management 24-hour Number: 1-800-258-5990

National Response Center: 1-800-424-8802

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-013 Liquidated Damages or Failure to Perform

The following clauses provide for payments by Purchaser to the State for breaches of the terms of this contract other than failure to perform. These payments are agreed to as liquidated damages and not as penalties. They are reasonable estimates of anticipated harm to the State, which will be 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.

Clause P-020 governs Purchaser's liability in the event Purchaser fails to perform any of the contract requirements other than the below liquidated damage clauses without written approval by the State. Purchaser's failure to pay for all or part of the forest products sold in this contract prior to expiration of the contract term results in substantial injury to the State. Therefore, Purchaser agrees to pay the State the full lump sum contract price in P-020 in the event of failure to perform.

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 harvest units.

SIGNATURES

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

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

STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

\_\_\_\_\_  
Purchaser

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

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

Pacific Cascade Region Manager

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

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

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

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

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

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

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

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

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

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

\_\_\_\_\_

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

**Schedule A**  
**Riparian Forest Restoration Strategy**

Schedule A

Riparian Forest Restoration Strategy

Units 11 and 12: Riparian Forest Restoration Strategy Hardwood Conversion

All reserve trees are marked with a ring of blue paint.

No conifers will be harvested.

Any snags felled for safety reasons must remain on-site and shall be left as close as possible to their original location.

Logging damage to advanced regeneration is to be avoided where operationally feasible.

A 50-foot Equipment Exclusion Zone (EEZ) from the edge of the 100-year floodplain is to be observed throughout the unit. The EEZ is defined as any area within 25 feet of the white Timber Sale Boundary tags.

Skid roads shall be marked by the Purchaser and approved by the Contract Administrator prior to felling operations.

## PRE-CRUISE NARRATIVE

Sale Name: <b>Salty VRH RMZ</b>	Region: <b>Pacific Cascade</b>
Agreement #: <b>30-097966</b>	District: <b>Yacolt District</b>
Contact Forester: Mike Rutledge Phone / Location: (360)791-6640	County(s): Cowlitz
Alternate Contact: Scott Hancock Phone / Location: (360)608-9294	Other information:

Type of Sale: Lump Sum	
Harvest System: Ground based	90
Harvest System: Uphill Cable	10
Enter % of sale acres	

### UNIT ACREAGES AND METHOD OF DETERMINATION:

Unit # Harvest R/W or RMZ WMZ	Legal Description <small>(Enter only one legal for each unit)</small> Sec/Twp/Rng	Grant or Trust	Gross Proposal Acres	Deductions from Gross Acres (No harvest acres)				Net Harvest Acres	Acreage Determinatio n  <small>(List method and error of closure if applicable)</small>
				RMZ/ WMZ Acres	Leave Tree Acres	Existing Road Acres	Other Acres (describe)		
1 VRH	Sec. 25 / T06N / R01E.	06	34	0	3	1	0	30	GPS (Trimble)
2 VRH	Sec. 24 / T06N / R01E. Sec. 13 / T06N / R01E.	03, 07	69	4	3	4	0	58	GPS (Trimble)
3 VRH	Sec. 13 / T06N / R01E. Sec. 18 / T06N / R02E.	03, 10	89	20	6	4	0	59	GPS (Trimble)
4 VRH	Sec. 18 / T06N / R02E.	10	8	6	0	0	0	2	GPS (Trimble)
5 VRH	Sec. 13 / T06N / R01E.	03	28	4	1	1	0	22	GPS (Trimble)
6 VRH	Sec. 13 / T06N / R01E.	03	14	5	0	0	3	6	GPS (Trimble)
7 VRH	Sec. 13 / T06N / R01E.	03	90	11	5	4	2	68	GPS (Trimble)
8 ROW	Sec. 13 / T06N / R01E.	03	<1	0	0	0	0	<1	GPS (Trimble)
9 ROW	Sec. 13 / T06N / R01E.	03	2	0	0	0	0	2	GPS (Trimble)

10 Pit Exapn	Sec. 20 / T06N / R02E.	01	<1	0	0	0	0	<1	GPS (Trimble)
11 RFRS	Sec. 13 / T06N / R01E. Sec. 18 / T06N / R02E.	03, 10	<1	0	0	0	0	<1	GPS (Trimble)
12 RFRS	Sec. 18 / T06N / R02E.	10	<1	0	0	0	0	<1	GPS (Trimble)
13 ROW	Sec. 25 / T06N / R01E.	06	<1	0	0	0	0	<1	GPS (Trimble)
<b>TOTAL ACRES</b>			339	50	18	14	5	252	

Other Acres: Acreage excluded from units 6 and 7 was deemed to be non-productive timberland based on assessment with Pacific Cascade Region silviculturist.

### HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription: (Leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
1	Unit 1 is bounded by white "Timber Sale Boundary" tags, pink flagging, re-prod, and the PH-1000. Clumped leave trees are bounded by yellow "Leave Tree Area" tags and pink flagging. Individual leave trees are marked with blue paint.	VRH	Leave Tree Total = 272 Painted Blue = 47
2	Unit 2 is bounded by white "Timber Sale Boundary" tags, pink flagging, re-prod, PH-1000, PH-1025, and PH-1027. Clumped leave trees are bounded by yellow "Leave Tree Area" tags and pink flagging. Individual leave trees are marked with blue paint.	VRH	Leave Tree Total = 502 Painted Blue = 21
3	Unit 3 is bounded by white "Timber Sale Boundary" tags, pink flagging, re-prod, and the PH-1000. Clumped leave trees are bounded by yellow "Leave Tree Area" tags and pink flagging. Individual leave trees are marked with blue paint.	VRH	Leave Tree Total = 526 Painted Blue = 31
4	Unit 4 is bounded by white "Timber Sale Boundary" tags, pink flagging, and the PH-1177/PH-1177A	VRH	Leave Tree Total = 22 Painted Blue = 0
5	Unit 5 is bounded by white "Timber Sale Boundary" tags, pink flagging, re-prod, and the PH-1100. Clumped leave trees are bounded by yellow "Leave Tree Area"	VRH	Leave Tree Total = 186 Painted Blue = 27

	tags and pink flagging. Individual leave trees are marked with blue paint.		
6	Unit 6 is bounded by white "Timber Sale Boundary" tags, pink flagging, re-prod, and the PH-1100. Clumped leave trees are bounded by yellow "Leave Tree Area" tags and pink flagging. Individual leave trees are marked with blue paint.	VRH	Leave Tree Total = 49 Painted Blue = 12
7	Unit 7 is bounded by white "Timber Sale Boundary" tags, pink flagging, re-prod, and the PH-1100. Clumped leave trees are bounded by yellow "Leave Tree Area" tags and pink flagging. Individual leave trees are marked with blue paint.	VRH	Leave Tree Total = 583 Painted Blue = 160
8	Unit 8 is bounded in orange "Right-of-Way" Tags and orange flagging.	ROW	
9	Unit 9 is bounded in orange "Right-of-Way" Tags and orange flagging.	ROW	
10	Unit 10 is bounded by white "Timber Sale Boundary" tags, pink flagging, and the PH-3700.	Pit Expansion	
11	Unit 11 is bounded White "Timber Sale Boundary" tags with pink flagging that delineate the RMZ no-entry zone. All conifer within the RFRS unit are marked with blue paint.	RFRS Hardwood Conversion area adjacent to Unit 3	All conifers have been marked for retention with a single band of blue paint.
12	Unit 12 is bounded White "Timber Sale Boundary" tags with pink flagging that delineate the RMZ no-entry zone. All conifer within the RFRS unit are marked with blue paint.	RFRS Hardwood Conversion area adjacent to Unit 3	All conifers have been marked for retention with a single band of blue paint.
13	Unit 13 is bounded in orange "Right-of-Way" Tags and orange flagging.	ROW	

**OTHER PRE-CRUISE INFORMATION:**

Unit #	Primary,secondary Species / Estimated Volume (MBF)	Access information (Gates, locks, etc.)	Photos, traverse maps required
1	914 DF, WH, RA, RC	Unit 1 access via the PH-1000. Volume is based on estimate.	1"=400ft
2	1310 DF, WH, RA, RC	Unit 2 access via the PH-1000. Volume is based on estimate.	1"=400ft
3	1292 DF, WH, RA	Unit 3 access via the PH-1000 & PH-1175. Volume is based on estimate.	1"=400ft

4	17 DF, WH, RA	Unit 4 access via the PH-1000 to the PH-1175, to the PH-1177. Volume is based on estimate	1"=400ft
5	509 DF, WH, RA, RC	Unit 5 access via the PH-1000 & 1100. Volume is based on estimate.	1"=400ft
6	128 DF, WH, RA, RC	Unit 6 access via the PH-1100. Volume is based on estimate.	1"=400ft
7	1706 DF, WH, RA, RC	Unit 7 access via the PH-1100. Volume is based on estimate.	1"=400ft
8	2 DF, WH, RA, RC	Unit 8 access via the PH-1100 to the PH-1150. Volume is based on estimate.	1"=400ft
9	5 DF, WH, RA	Unit 2 access via the PH-1000 to the PH-1120. Volume is based on estimate.	1"=400ft
10	5 DF, WH	Unit 10 access via the PH-1000 to the PH-3000 to the Ph-3700. Volume is based on estimate.	1"=400ft
11	2 RA	Unit 11 access via the PH-1000 & PH-1177. Volume is based on estimate.	1"=400ft
12	3 RA, BM	Unit 12 access via the PH-1000 & PH-1177. Volume is based on estimate.	1"=400ft
13	2 RA, DF	Unit 1 access via the PH-1000. Volume is based on estimate.	1"=400ft
TOTAL MBF	5895		1"=400ft

**REMARKS:**

Volume estimates based on previous timber sales in the vicinity of similar age and structure and/or RS FRIS

Prepared By: Mike Rutledge Date: 10/09/2018	Title: NRS-2	CC:
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# Cruise Narrative

<b>Sale Name:</b> Salty	<b>Region:</b> Pacific Cascade
<b>App. #:</b> 30-097966	<b>District:</b> Yacolt District
<b>Lead Cruiser:</b> Kalvin Bailey	<b>Completion date:</b> 11/15/2018
<b>Other Cruisers:</b> Alex Chaney, Dan Clark	

**Unit acreage specifications:**

Unit #	Cruised acres	Cruised acres agree with sale acres? Yes/No	If acres do not agree explain why.
1	30	Yes	
2	58	Yes	
3	63	No	combined with unit 4, 11 & 12
5	22	Yes	
6	6	Yes	
7	68	Yes	
8	1	Yes	
9	2	Yes	
10	1	Yes	
13	1	Yes	
Total	252		

**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	40/33.61	4.5'	208'x208'	1:2	30
2	VP	46.94	4.5'	208'x208'	1:2	61
3	VP	40/33.61	4.5'	208'x208'	1:2	61
5	VP	40/33.61	4.5'	208'x208'	1:2	20
6	VP	40	4.5'	208'x208'	Cruise all	5
7	VP	40/33.61	4.5'	208'x208'	1:2	68
8	ITS	NA	4.5'	NA	NA	NA
9	ITS	NA	4.5'	NA	NA	NA
10	ITS	NA	4.5'	NA	NA	NA
13	ITS	NA	4.5'	NA	NA	NA

**Sale/Cruise Description:**

<b>Minor species cruise intensity:</b>	Cruised on appropriate plots.					
<b>Minimum cruise spec:</b>	40% Of Form- Factor at 16 feet D.O.B or 5 inch Top, and merchantable top.					
<b>Avg. ring count by sp:</b>	<b>DF =</b>	8	<b>WH =</b>	NA	<b>SS =</b>	NA
<b>Leave/take tree description:</b>	Leave tree clumps are bounded with yellow "Leave Tree Area" tags and pink					

	flagging, individual leave trees are marked with a single band of blue paint.
<b>Sort Description:</b>	<p><b>HA</b>– 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><b>HB</b> – 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><b>R</b> – 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>

**Field observations:**

Salty Timber Sale:

This sale consist of 7units and 6 right of ways located off Aho Carson road.

Unit 1 is a dominant Douglas-fir stand with a few Alders mixed in. North section of the unit was mostly 30 year old Douglas-fir with some 70 year old Douglas-fir mixed in and the South section of the unit was all 70 year old Douglas-fir. The average total tree height for the 30 year old Douglas-fir is 80ft and the Bol. Height for the 70 year old Douglas-fir the average is 90ft. The average DBH for the 30 year old Douglas-fir is 14” and the average DBH for the 70 year old Douglas-fir is 28”. The average total height for Alder is 70ft with a DBH of 11”. This unit is ground base logging and there is some storm/wind damage which results in broken tops.

Most of unit 2 is a young uniform Douglas-fir stand with a couple Western Hemlocks within the stand. The South part of the unit is bigger Douglas-fir and it’s more open and brushy. Average DBH for Douglas-fir in the unit was 16” with an average Bol. Height of 56ft and average DBH for Western Hemlock is 28” with a Bol. Height of 60ft. There’s a quad trail going through the middle of the unit.

Units 3, 4, 5, 6 and 7 are mixed species stands consisting of Douglas-fir, Hemlock, Alder, Big leaf maple, Red cedar and Noble fir. Average DBH for Douglas-fir is 21”, Western Hemlock is 20”, Red alder is 12”, Big leaf maple is 18” and Noble fir is 20”. The average Bol. Height for Douglas-fir is 75ft, Western Hemlock is 67ft, Red alder is 52ft, Big leaf maple is 46ft and Noble fir is 63ft.

90% of this Sale is ground based and 10% is uphill cable. The majority of the timber in this sale is domestic with moderate storm damage. All roads are drivable but some roads will need a little Pre-Haul maintenance. No gate keys required for access.

Grants: 01, 03, 07.06,10

Prepared by: A. Chaney

Title: Timber Cruiser

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																	
T06N R01E S25 Ty00U1 THRU T06N R01E S25 Ty0U13				Project: <b>SALTY</b>										Page <b>1</b>							
				Acres <b>252.00</b>										Date <b>8/8/2019</b>			Time <b>10:55:07AM</b>				
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	36-99					
DF	CU	CU			100.0	155											3	9		0.00	19.6
DF	HB	2S	12	.7	1,693	1,682	424				79	21				100	39	14	276	1.75	6.1
DF	HB	3S	4	.9	428	424	107			100						100	40	10	147	1.05	2.9
DF	D	2S	41	3.4	5,557	5,368	1,353				36	64	2	5	3	90	37	15	347	2.30	15.5
DF	D	3S	30	2.0	4,015	3,935	992	22	78				0	9	11	80	36	8	90	0.75	43.8
DF	D	4S	8	.6	999	993	250	95	5				33	38	10	19	24	5	28	0.37	36.0
DF	D	UT	5		587	587	148	43	27	13	17		44	22		34	21	6	42	0.50	13.9
<b>DF</b>	<b>Totals</b>		62	3.3	13,434	12,989	3,273	16	29	26	30		5	9	5	80	27	9	94	0.94	137.7
RA	CU	CU			100.0	37											5	7		0.00	7.6
RA	D	UT	33		558	558	141	74	15	8	2		18	38	10	34	24	6	34	0.49	16.6
RA	D	2S	6	11.1	116	103	26			100				51	49		34	13	184	1.90	.6
RA	D	3S	10		164	164	41		100					59	9	32	33	10	125	0.98	1.3
RA	D	4S	23	2.2	394	386	97		100				0	86	4	9	30	9	66	0.73	5.8
RA	D	4S	28		460	460	116	100					13	54	0	33	29	6	39	0.44	11.8
<b>RA</b>	<b>Totals</b>		8	3.4	1,730	1,671	421	52	38	9	1		9	56	5	29	23	7	38	0.54	43.7
WH	CU	CU			100.0	97											3	13		0.00	7.8
WH	HB	2S	16	1.0	980	970	245			63	37					100	40	15	337	1.93	2.9
WH	HB	3S	5	2.2	312	305	77		100							100	39	10	143	0.94	2.1
WH	D	2S	52	5.0	3,237	3,074	775			24	76	1	3	1	95		38	16	382	2.47	8.1
WH	D	3S	15	2.2	877	857	216	20	80				2	18	20	60	34	8	86	0.92	10.0
WH	D	4S	6	.3	399	398	100	94	6				16	32	25	27	28	6	32	0.43	12.3
WH	D	UT	4		235	235	59	38			62		42	29	28		27	7	67	0.63	3.5
WH	RO	3S	2	11.1	77	69	17			100				48	52		34	19	440	4.04	.2
<b>WH</b>	<b>Totals</b>		28	4.9	6,214	5,908	1,489	11	17	23	49		3	8	6	82	28	10	126	1.22	46.9
BM	CU	CU			100.0	5											7	6		0.00	.7
BM	D	UT	70		83	83	21	56	24	20			11	22	20	47	27	6	41	1.10	2.0
BM	D	4S	30	6.4	38	36	9		100					100			30	9	65	0.88	.5
<b>BM</b>	<b>Totals</b>		1	5.8	126	119	30	39	47	14			8	45	14	33	23	6	36	0.98	3.3
RC	D	3S	96	7.0	155	144	36	2	33	12	52				7	93	38	12	233	2.40	.6
RC	D	4S	4		5	5	1	100						100			21	5	20	0.34	.2
<b>RC</b>	<b>Totals</b>		1	6.8	160	149	38	5	32	12	51		3	7	90		34	10	173	2.04	.9
NF	D	2S	65		21	21	5			100						100	40	14	290	1.52	.1
NF	D	3S	28		9	9	2		100							100	40	9	120	0.76	.1
NF	D	4S	7		2	2	1	100						100			21	6	30	0.32	.1
<b>NF</b>	<b>Totals</b>		0		32	32	8	7	27	66			7		93		34	10	147	0.97	.2
<b>Totals</b>				3.8	21,695	20,868	5,259	17	26	23	33		5	13	6	77	26	8	90	0.94	232.6



TC PSTATS		<b>PROJECT STATISTICS</b>							PAGE	<b>2</b>		
		<b>PROJECT SALTY</b>							DATE	8/8/2019		
TWP	RGE	SC	TRACT	TYPE		ACRES			PLOTS	TREES	CuFt	BdFt
06N	01E	25	SALTY	00U1	THR	252.00			249	1,189	S	W
06N	01E	25	SALTY	00U13								
CL	68.1		COEFF	<b>BASAL AREA/ACRE</b>			# OF PLOTS REQ.			INF. POP.		
SD:	1.00		VAR.	S.E.%	LOW	AVG	HIGH	5	10	15		
WR CEDAR			876.8	55.5	1	2	3					
NOBLE F			1578.0	99.9	0	0	0					
<b>TOTAL</b>			45.8	2.9	184	190	195	84	21	9		
CL	68.1		COEFF	<b>NET BF/ACRE</b>			# OF PLOTS REQ.			INF. POP.		
SD:	1.0		VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR			89.7	5.7	12,252	12,989	13,727					
WHEMLOCK			165.6	10.5	5,289	5,908	6,528					
R ALDER			210.6	13.3	1,448	1,671	1,894					
BL MAPLE			551.5	34.9	77	119	160					
WR CEDAR			916.9	58.1	62	149	235					
NOBLE F			1578.0	99.9	0	32	64					
<b>TOTAL</b>			53.7	3.4	20,158	20,868	21,578	115	29	13		
CL	68.1		COEFF	<b>NET CUFT FT/ACRE</b>			# OF PLOTS REQ.			INF. POP.		
SD:	1.0		VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR			88.8	5.6	3,296	3,492	3,688					
WHEMLOCK			164.3	10.4	1,432	1,598	1,764					
R ALDER			207.4	13.1	474	545	617					
BL MAPLE			532.6	33.7	49	73	98					
WR CEDAR			894.9	56.7	25	59	92					
NOBLE F			1578.0	99.9	0	7	14					
<b>TOTAL</b>			50.1	3.2	5,591	5,774	5,958	100	25	11		
CL	68.1		COEFF	<b>V_BAR/ACRE</b>			# OF PLOTS REQ.			INF. POP.		
SD:	1.0		VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR					109	115	122					
WHEMLOCK			58.9	3.7	106	118	131					
R ALDER			103.8	6.6	65	76	86					
BL MAPLE			380.3	24.1	25	38	51					
WR CEDAR			842.9	53.4	38	91	144					
NOBLE F			1578.0	99.9	0	202	403					
<b>TOTAL</b>			53.6	3.4	106	110	114	115	29	13		

T06N R01E S25 T00U1	T06N R01E S25 T00U1
Twp <b>06N</b> Rge <b>01E</b> Sec <b>25</b> Tract <b>SALTY</b> Type <b>00U1</b> Acres <b>30.00</b> Plots <b>30</b> Sample Trees <b>41</b> CuFt <b>S</b> BdFt <b>W</b>	

Spp	So	Gr	%	Bd. Ft. per Acre					Total	Percent Net Board Foot Volume								Average Log				Logs Per /Acre					
										Net BdFt	Def%	Gross	Net	Net MBF	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						36-99
DF	CU	CU		100.0		204												2	13		0.00	13.1					
DF	HB	2S	2			488	488	15			100							40	14	290	1.85	1.7					
DF	DM	2S	57	3.5	12,915	12,465		374		14	86			5	5	6	84	35	17	403	2.57	30.9					
DF	DM	3S	21	5.1	4,888	4,638		139	5	95				1	17	5	77	36	9	105	0.87	44.2					
DF	DM	4S	6		1,327	1,327		40	94	6				26	42		32	26	6	30	0.34	43.8					
DF	DM	UT	14		2,885	2,885		87	44	37	8	12		32	30		38	26	7	51	0.49	57.1					
<b>DF</b>	<b>Totals</b>		98	4.0	22,708	21,803		654	13	25	11	51		9	13	5	74	28	9	114	1.00	190.8					
RA	CU	CU		100.0		21												3	5		0.00	6.3					
RA	DM	4S	100		430	430		13	100						53		47	34	6	44	0.38	9.7					
<b>RA</b>	<b>Totals</b>		2	4.6	450	430		13	100						53		47	21	6	27	0.36	16.0					
<b>Type Totals</b>				4.0	23,158	22,233		667	14	25	11	50		9	13	5	73	28	9	108	0.96	206.7					

**T06N R01E S25 T00U2** **T06N R01E S25 T00U2**  
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt  
 06N 01E 25 SALTY 00U2 58.00 61 89 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	36-99						
DF		CU	CU		100.0	31												2	8		0.00	45.1
DF		HB	3S	1	4.4	374	358	21		100						100		40	9	127	1.06	2.8
DF		DM	2S	30	4.5	5,727	5,470	317			61	39		0	7	3	89	36	14	293	2.15	18.7
DF		DM	3S	54	1.9	10,323	10,129	588	20	80					5	11	84	36	8	89	0.72	113.8
DF		DM	4S	12	.6	2,251	2,237	130	98	2				38	40	2	21	23	5	25	0.36	88.7
DF		DM	UT	3		471	471	27	79			21		100				14	6	19	0.33	25.1
<b>DF</b>	<b>Totals</b>			100	2.7	19,178	18,665	1,083	24	46	18	12		7	10	7	76	25	7	63	0.73	294.2
WH		DM	2S	92	5.0	72	68	4				100				100		40	16	380	2.99	.2
WH		DM	4S	8		5	5	0		100				100				18	8	30	0.87	.2
<b>WH</b>	<b>Totals</b>			0	4.7	77	74	4		7		93		7		93		29	12	205	2.33	.4
<b>Type Totals</b>					2.7	19,255	18,739	1,087	24	46	18	12		7	10	7	76	25	7	64	0.73	294.5

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)										Page 1										
		Project: SALTY										Date 8/8/2019										
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T06N R01E S25 T00U3										T06N R01E S25 T00U3												
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt													
06N	01E	25	SALTY	00U3	63.00	61	91	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	Dia	Bd	CF/ Lf		
								5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99	Ft	In	Ft				
DF		CU	CU		100.0	226											5	10		0.00	14.9	
DF		HB	2S	18	1.6	1,731	1,703			82	18				100	40	13	235	1.59		7.3	
DF		HB	3S	2		219	219		100						100	40	10	150	1.16		1.5	
DF		DM	2S	52	2.1	4,951	4,848			25	75			5	95	39	16	382	2.49		12.7	
DF		DM	3S	19	.3	1,842	1,837		38	62				17	18	65	35	8	83	0.80	22.2	
DF		DM	4S	5	2.7	432	420		100				13	58	29		24	6	29	0.44	14.6	
DF		DM	UT	4		349	349			3	56	40		44	24		21	14	149	1.67	2.3	
<b>DF</b>	<b>Totals</b>			50	3.8	9,750	9,376		591	12	15	30	44	2	9	5	84	28	10	124	1.25	75.5
WH		CU	CU														2	12		0.00	4.5	
WH		HB	2S	21		1,415	1,415		89		64	36			100	40	15	381	2.03		3.7	
WH		DM	2S	53	6.1	3,679	3,456		218		26	74		7	93	38	15	337	2.45		10.3	
WH		DM	3S	13	2.4	904	882		56	17	83		2	31	9	58	32	8	79	0.97	11.2	
WH		DM	4S	6	1.1	397	392		25	91	9		20	40	40		27	6	32	0.50	12.3	
WH		DM	UT	2		129	129		8	22		78	78		22		24	14	159	1.64	.8	
WH		RO	3S	5	11.1	310	276		17			100		48	52		34	19	440	4.04	.6	
<b>WH</b>	<b>Totals</b>			35	4.1	6,834	6,550		413	8	12	28	52	3	12	2	83	30	11	151	1.48	43.4
RA		CU	CU		100.0	67											3	8		0.00	22.2	
RA		DM	UT	26		707	707		45	90	10		34	53	14		21	5	26	0.42	27.5	
RA		DM	2S	8	5.0	223	211		13		100			100		30	13	171	1.77		1.2	
RA		DM	3S	15		387	387		24		100			100		30	10	116	0.92		3.3	
RA		DM	4S	26	3.9	721	693		44		100			76	10	14	30	9	64	0.74	10.8	
RA		DM	4S	25		664	664		42	100				67	33		32	6	44	0.45	15.0	
<b>RA</b>	<b>Totals</b>			14	3.8	2,768	2,662		168	49	43	8		9	73	3	16	20	7	33	0.54	80.1
BM		DM	UT	100		24	24		2	14	86			14	86		22	7	35	0.88	.7	
<b>BM</b>	<b>Totals</b>			0		24	24		2	14	86			14	86		22	7	35	0.88	.7	
<b>Type Totals</b>					3.9	19,376	18,612		1,173	16	18	26	41	3	20	3	73	25	9	93	1.08	199.6

T TSPCSTGR	Species, Sort Grade - Board Foot Volumes (Type)										Page 1										
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T06N R01E S25 T00U5										T06N R01E S25 T00U5											
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt												
06N	01E	25	SALTY	00U5	22.00	20	26	S	W												
Spp	S	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
					Net	Gross	Net		Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/Lf	
	T	rt	ad	BdFt	Def%			Net MBF	5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99	Ft	In	Ft		
DF	CU	CU			100.0	670											4	9		0.00	19.4
DF	HB	2S		44	.6	8,308	8,261	182		77	23				100		40	14	298	1.87	27.7
DF	HB	3S		5		986	986	22	100						100		40	10	156	1.12	6.3
DF	DM	2S		32	3.5	6,205	5,989	132		51	49			12		88	37	15	336	2.02	17.8
DF	DM	3S		13		2,431	2,431	53	39	61			6	14	80		35	8	80	0.71	30.4
DF	DM	4S		4		632	632	14	92	8			39	13	48		24	6	29	0.39	21.8
DF	DM	UT		2		370	370	8		100					100		40	9	120	0.76	3.1
<b>DF</b>	<b>Totals</b>			73	4.8	19,602	18,669	411	8	15	50	26	2	6	2	90	30	10	147	1.24	126.6
WH	CU	CU															5			0.00	13.3
WH	HB	2S		36	3.1	1,947	1,886	41		100					100		40	13	259	1.66	7.3
WH	DM	2S		39	7.9	2,180	2,007	44			100				100		40	18	516	3.26	3.9
WH	DM	3S		11		550	550	12	33	67				64	36		35	8	79	0.97	6.9
WH	DM	4S		14		703	703	15	100					24	76		38	5	40	0.42	17.6
<b>WH</b>	<b>Totals</b>			20	4.4	5,380	5,146	113	17	7	37	39			10	90	28	8	105	1.11	49.0
RA	DM	4S		100		770	770	17	100				60	40			21	6	25	0.29	30.8
<b>RA</b>	<b>Totals</b>			3		770	770	17	100				60	40			21	6	25	0.29	30.8
BM	CU	CU															5			0.00	4.2
BM	DM	UT		49		238	238	5	100				29		71		29	5	31	0.53	7.7
BM	DM	4S		51		240	240	5		100				100			30	9	70	0.83	3.4
<b>BM</b>	<b>Totals</b>			2		477	477	10	50	50			14	50	35		21	6	31	0.63	15.3
RC	DM	3S		87	6.7	413	385	8		100					100		40	10	140	1.59	2.8
RC	DM	4S		13		55	55	1	100					100			21	5	20	0.34	2.8
<b>RC</b>	<b>Totals</b>			2	5.9	468	440	10	13	87				13	87		31	8	80	1.16	5.5
<b>Type Totals</b>					4.5	26,697	25,502	561	14	15	44	27	4	7	3	86	28	9	112	1.08	227.3

T06N R01E S25 T00U6	T06N R01E S25 T00U6
Twp <b>06N</b> Rge <b>01E</b> Sec <b>25</b> Tract <b>SALTY</b> Type <b>00U6</b> Acres <b>6.00</b> Plots <b>5</b> Sample Trees <b>24</b> CuFt <b>S</b>	BdFt <b>W</b>

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
									Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/ Lf	
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf	
WH		CU	CU														2	15		0.00	5.5
WH		HB	2S	24	.9	2,748	2,725	16			100						40	14	282	1.75	9.6
WH		HB	3S	18		2,009	2,009	12			100						40	10	164	0.95	12.2
WH		DM	2S	36	2.3	4,202	4,103	25			40	60		10		90	38	16	376	2.23	10.9
WH		DM	3S	10	4.4	1,155	1,104	7	36	64						100	40	8	99	0.79	11.2
WH		DM	4S	12		1,257	1,257	8	90	10			18	7	56	18	30	6	36	0.51	34.5
<b>WH</b>	<b>Totals</b>			60	1.5	11,372	11,199	67	14	25	39	22	2	4	6	87	33	9	133	1.06	84.1
RA		CU	CU														10			0.00	1.7
RA		DM	UT	25		1,516	1,516	9	42	20		38	45		38	17	16	6	34	0.73	45.0
RA		DM	3S	10		609	609	4			100				100		32	10	120	1.06	5.1
RA		DM	4S	8	12.5	522	456	3			100				100		36	8	70	0.87	6.5
RA		DM	4S	57		3,421	3,421	21	100				13	11		77	30	6	46	0.44	73.9
<b>RA</b>	<b>Totals</b>			32	1.1	6,068	6,003	36	68	23		10	19	6	20	56	25	6	45	0.56	132.2
BM		CU	CU														7			0.00	1.4
BM		DM	UT	100		983	983	6	29		71		9		71	21	29	8	78	2.36	12.7
<b>BM</b>	<b>Totals</b>			5		983	983	6	29		71		9		71	21	26	8	70	2.36	14.1
DF		DM	UT	100		524	524	3	100				14			86	23	6	35	0.57	15.0
<b>DF</b>	<b>Totals</b>			3		524	524	3	100				14			86	23	6	35	0.57	15.0
<b>Type Totals</b>					1.3	18,947	18,709	112	34	23	27	16	8	5	14	74	28	7	76	0.86	245.4

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)										Page 1								
		Project: SALTY										Date 8/8/2019								
												Time 10:55:08AM								
T06N R01E S25 T00U7										T06N R01E S25 T00U7										
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt											
06N	01E	25	SALTY	00U7	68.00	68	124	S	W											
S Sp	So T	Gr rt	%	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	Dia	Bd	CF/ Lf	
								5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99	Ft	In	Ft		
WH	CU	CU		100.0	358											4	15		0.00	20.1
WH	HB	2S	11	1.0	1,449	1,434	98		40	60				100		39	15	356	2.03	4.0
WH	HB	3S	7	2.6	978	953	65	100						100		39	10	139	0.94	6.8
WH	DM	2S	54	4.5	7,362	7,033	478		25	75		1	1	1	97	38	16	398	2.44	17.7
WH	DM	3S	16	2.3	2,115	2,067	141	20	80			2	16	22	61	34	8	89	0.91	23.3
WH	DM	4S	6		751	751	51	94	6			19	41	33	7	25	6	31	0.38	24.6
WH	DM	UT	6		751	751	51	41		59		37	34	29		27	6	61	0.57	12.3
<b>WH</b>	<b>Totals</b>		56	5.6	13,765	12,990	883	11	20	18	51	4	7	8	81	27	10	119	1.14	108.9
DF	CU	CU														2	15		0.00	6.8
DF	HB	2S	25		1,768	1,768	120		77	23				100		38	14	286	1.75	6.2
DF	HB	3S	11		744	744	51	100						100		39	10	152	0.99	4.9
DF	DM	2S	39	2.5	2,767	2,697	183		42	58		4		5	91	37	15	332	2.12	8.1
DF	DM	3S	17		1,134	1,134	77	32	68				11	15	74	37	8	93	0.71	12.2
DF	DM	4S	8		541	541	37	82	18			34	24	20	22	26	6	34	0.39	16.1
<b>DF</b>	<b>Totals</b>		30	1.0	6,954	6,885	468	12	23	36	29	4	4	6	86	30	10	127	1.07	54.4
RA	CU	CU		100.0	67											14	5		0.00	4.5
RA	DM	UT	46		1,280	1,280	87	70	16	13		6	35	13	46	27	6	40	0.52	32.1
RA	DM	2S	7	16.7	223	186	13		100					100		40	13	200	2.03	.9
RA	DM	3S	7		196	196	13	100						100		40	10	150	1.06	1.3
RA	DM	4S	28		744	744	51	100					100		30	9	68	0.70	10.9	
RA	DM	4S	12		327	327	22	100				8	80	12		29	6	40	0.56	8.3
<b>RA</b>	<b>Totals</b>		12	3.7	2,838	2,733	186	45	42	13		4	53	6	37	27	6	47	0.59	58.1
BM	CU	CU		100.0	18											15	6		0.00	1.2
BM	DM	UT	69		122	122	8	55	45				40	60		25	6	38	1.15	3.2
BM	DM	4S	31	14.3	64	54	4	100					100		30	9	60	0.93	.9	
<b>BM</b>	<b>Totals</b>		1	13.4	203	176	12	38	62				58	42		24	6	34	0.94	5.3
RC	DM	3S	100	7.1	440	409	28	3	13	16	68			9	91	37	13	292	2.95	1.4
<b>RC</b>	<b>Totals</b>		2	7.1	440	409	28	3	13	16	68			9	91	37	13	292	2.95	1.4
NF	DM	2S	65		78	78	5		100					100		40	14	290	1.52	.3
NF	DM	3S	28		32	32	2	100						100		40	9	120	0.76	.3
NF	DM	4S	7		8	8	1	100					100		21	6	30	0.32	.3	
<b>NF</b>	<b>Totals</b>		1		119	119	8	7	27	66			7	93		34	10	147	0.97	.8
<b>Type Totals</b>				4.1	24,319	23,312	1,585	15	24	23	38	4	12	7	77	28	9	102	1.00	228.8

T06N R01E S25 T00U8										T06N R01E S25 T00U8			
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt				
06N	01E	25	SALTY	00U8	1.00	1	9	S	W				

Spp	So	Gr	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre	
								Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/		
								5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf		
DF	DM	3S	66	480	480	0	100				100				36	11	160	1.21	3.0		
DF	DM	4S	34	240	240	0	100					25	25	50		26	5	27	0.29	9.0	
<b>DF</b>	<b>Totals</b>		49	720	720	1	33	67					8	8	83		29	7	60	0.58	12.0
RA	DM	4S	33	186	186	0	100				100				20	8	40	0.64	4.7		
RA	DM	4S	67	373	373	0	100					100				27	5	27	0.26	14.0	
<b>RA</b>	<b>Totals</b>		38	559	559	1	67	33					33	67			25	6	30	0.33	18.6
WH	CU	CU													4	9	0.00		2.0		
WH	DM	4S	100	200	200	0	100					30	30	40	32	5	33	0.27	6.0		
<b>WH</b>	<b>Totals</b>		14	200	200	0	100					30	30	40	25	6	25	0.26	8.0		
<b>Type Totals</b>				1,479	1,479	1	55	45					17	33	4	46	26	6	38	0.40	38.6

T06N R01E S25 T00U9	T06N R01E S25 T00U9
Twp <b>06N</b> Rge <b>01E</b> Sec <b>25</b> Tract <b>SALTY</b> Type <b>00U9</b> Acres <b>2.00</b> Plots <b>1</b> Sample Trees <b>15</b> CuFt <b>S</b>	BdFt <b>W</b>

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	36-99						
DF		CU	CU		100.0	1,030												5	10		0.00	41.2
DF		DM	2S	64	7.2	18,540	17,201	34			49	51					100	38	14	278	1.91	61.8
DF		DM	3S	29	6.3	8,137	7,622	15	23	77					15	85		36	8	92	0.79	82.4
DF		DM	4S	5		1,442	1,442	3	71	29			43	36	21			23	6	28	0.38	51.5
DF		DM	UT	2		309	309	1	100					100				27	5	30	0.46	10.3
<b>DF</b>	<b>Totals</b>			87	9.8	29,458	26,574	53	12	24	31	33	2	3	5	89		28	10	107	1.06	247.2
WH		DM	2S	75		2,992	2,992	6			45	55				100		36	14	293	1.93	10.2
WH		DM	3S	13		544	544	1		100					38	63		34	9	80	0.94	6.8
WH		DM	4S	12		442	442	1	100					38	31	31		30	6	32	0.42	13.6
<b>WH</b>	<b>Totals</b>			13		3,978	3,978	8	11	14	34	41		4	9	87		33	9	130	1.09	30.6
<b>Type Totals</b>					8.6	33,436	30,552	61	12	22	32	34	2	3	6	89		29	9	110	1.07	277.8



<b>T06N R01E S25 T0U13</b>										<b>T06N R01E S25 T0U13</b>				
<b>Twp</b>	<b>Rge</b>	<b>Sec</b>	<b>Tract</b>	<b>Type</b>	<b>Acres</b>	<b>Plots</b>	<b>Sample Trees</b>	<b>CuFt</b>	<b>BdFt</b>					
<b>06N</b>	<b>01E</b>	<b>25</b>	<b>SALTY</b>	<b>0U13</b>	<b>1.00</b>	<b>1</b>	<b>8</b>	<b>S</b>	<b>W</b>					

Spp	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs Per /Acre					
								Net BdFt	Def%	Gross	Net	Net MBF	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						36-99
RA	DM	4S	100		1,200	1,200	1	100					17	50	33		28	5	30	0.36	40.0				
<b>RA</b>	<b>Totals</b>		48		1,200	1,200	1	100					17	50	33		28	5	30	0.36	40.0				
DF	DM	3S	71		920	920	1	43	57					100			30	8	77	0.64	12.0				
DF	DM	4S	22		280	280	0	100					57	43			20	5	23	0.20	12.0				
DF	DM	UT	7		80	80	0	100					100				18	5	20	0.40	4.0				
<b>DF</b>	<b>Totals</b>		52		1,280	1,280	1	59	41				19	81			24	6	46	0.46	28.0				
<b>Type Totals</b>					2,480	2,480	2	79	21				18	66	16		26	6	36	0.40	68.0				

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	SALTY		DATE	8/8/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	01E	25	SALTY	00U1	30.00	30	125	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		30	125	4.2						
CRUISE		11	41	3.7	3,121		1.3			
DBH COUNT										
REFOREST										
COUNT		19	83	4.4						
BLANKS										
100 %										
<b>STAND SUMMARY</b>										
	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	36	94.3	17.6	70	38.1	160.0	22,708	21,803	5,437	5,407
R ALDER	5	9.7	10.3	56	1.7	5.6	450	430	128	125
<b>TOTAL</b>	<b>41</b>	<b>104.0</b>	<b>17.1</b>	<b>69</b>	<b>40.1</b>	<b>165.6</b>	<b>23,158</b>	<b>22,233</b>	<b>5,565</b>	<b>5,532</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	<b>SAMPLE TREES - BF</b>				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	84.4	14.1		427	497	566				
R ALDER	29.2	14.5		39	46	53				
<b>TOTAL</b>	<b>95.0</b>	<b>14.8</b>		<b>376</b>	<b>442</b>	<b>507</b>	<b>360</b>	<b>90</b>	<b>40</b>	
CL:	68.1 %	COEFF	<b>SAMPLE TREES - CF</b>				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	75.5	12.6		103	118	133				
R ALDER	27.9	13.8		12	13	15				
<b>TOTAL</b>	<b>85.8</b>	<b>13.4</b>		<b>91</b>	<b>105</b>	<b>119</b>	<b>294</b>	<b>74</b>	<b>33</b>	
CL:	68.1 %	COEFF	<b>TREES/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	55.3	10.3		85	94	104				
R ALDER	309.3	57.4		4	10	15				
<b>TOTAL</b>	<b>60.8</b>	<b>11.3</b>		<b>92</b>	<b>104</b>	<b>116</b>	<b>153</b>	<b>38</b>	<b>17</b>	
CL:	68.1 %	COEFF	<b>BASAL AREA/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	41.5	7.7		148	160	172				
R ALDER	318.4	59.1		2	6	9				
<b>TOTAL</b>	<b>37.2</b>	<b>6.9</b>		<b>154</b>	<b>166</b>	<b>177</b>	<b>57</b>	<b>14</b>	<b>6</b>	
CL:	68.1 %	COEFF	<b>NET BF/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	45.0	8.3		19,983	21,803	23,623				
R ALDER	327.0	60.7		169	430	691				
<b>TOTAL</b>	<b>41.4</b>	<b>7.7</b>		<b>20,525</b>	<b>22,233</b>	<b>23,941</b>	<b>71</b>	<b>18</b>	<b>8</b>	
CL:	68.1 %	COEFF	<b>NET CUFT FT/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	44.5	8.3		4,961	5,407	5,853				
R ALDER	326.2	60.6		49	125	200				
<b>TOTAL</b>	<b>40.4</b>	<b>7.5</b>		<b>5,117</b>	<b>5,532</b>	<b>5,947</b>	<b>68</b>	<b>17</b>	<b>8</b>	
CL:	68.1 %	COEFF	<b>V-BAR/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR				125	136	148				
R ALDER	327.0	60.7		30	77	123				
<b>TOTAL</b>	<b>331.5</b>	<b>61.5</b>		<b>124</b>	<b>134</b>	<b>145</b>	<b>4,545</b>	<b>1,136</b>	<b>505</b>	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	SALTY		DATE	8/8/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	01E	25	SALTY	00U2	58.00	61	262	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		61	262	4.3						
CRUISE		20	88	4.4	8,219		1.1			
DBH COUNT										
REFOREST										
COUNT		39	173	4.4						
BLANKS		2								
100 %										
<b>STAND SUMMARY</b>										
	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	87	141.5	16.1	56	50.0	200.8	19,178	18,665	5,400	5,392
WHEMLOCK	1	.2	28.0	60	0.1	.8	77	74	24	24
<b>TOTAL</b>	<b>88</b>	<b>141.7</b>	<b>16.2</b>	<b>56</b>	<b>50.2</b>	<b>201.6</b>	<b>19,255</b>	<b>18,739</b>	<b>5,425</b>	<b>5,416</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	<b>SAMPLE TREES - BF</b>				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	130.0	14.0		189	219	250				
WHEMLOCK										
<b>TOTAL</b>	<b>128.3</b>	<b>13.7</b>		<b>191</b>	<b>222</b>	<b>252</b>	<b>658</b>	<b>164</b>	<b>73</b>	
CL:	68.1 %	COEFF	<b>SAMPLE TREES - CF</b>				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	106.6	11.5		54	61	68				
WHEMLOCK										
<b>TOTAL</b>	<b>105.4</b>	<b>11.3</b>		<b>55</b>	<b>62</b>	<b>69</b>	<b>443</b>	<b>111</b>	<b>49</b>	
CL:	68.1 %	COEFF	<b>TREES/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	51.3	6.6		132	142	151				
WHEMLOCK	781.0	99.9		0	0	0				
<b>TOTAL</b>	<b>51.0</b>	<b>6.5</b>		<b>132</b>	<b>142</b>	<b>151</b>	<b>104</b>	<b>26</b>	<b>12</b>	
CL:	68.1 %	COEFF	<b>BASAL AREA/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	45.2	5.8		189	201	212				
WHEMLOCK	781.0	99.9		0	1	2				
<b>TOTAL</b>	<b>44.4</b>	<b>5.7</b>		<b>190</b>	<b>202</b>	<b>213</b>	<b>79</b>	<b>20</b>	<b>9</b>	
CL:	68.1 %	COEFF	<b>NET BF/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	45.4	5.8		17,581	18,665	19,750				
WHEMLOCK	781.0	99.9		0	74	148				
<b>TOTAL</b>	<b>44.6</b>	<b>5.7</b>		<b>17,669</b>	<b>18,739</b>	<b>19,809</b>	<b>80</b>	<b>20</b>	<b>9</b>	
CL:	68.1 %	COEFF	<b>NET CUFT FT/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	45.4	5.8		5,079	5,392	5,705				
WHEMLOCK	781.0	99.9		0	24	49				
<b>TOTAL</b>	<b>44.5</b>	<b>5.7</b>		<b>5,108</b>	<b>5,416</b>	<b>5,725</b>	<b>79</b>	<b>20</b>	<b>9</b>	
CL:	68.1 %	COEFF	<b>V-BAR/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR				88	93	98				
WHEMLOCK	781.0	99.9		0	96	192				
<b>TOTAL</b>	<b>312.4</b>	<b>40.0</b>		<b>88</b>	<b>93</b>	<b>98</b>	<b>3,896</b>	<b>974</b>	<b>433</b>	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	SALTY		DATE	8/8/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	01E	25	SALTY	00U3	63.00	61	282	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		61	282	4.6						
CRUISE		21	91	4.3	5,842	1.6				
DBH COUNT										
REFOREST										
COUNT		37	188	5.1						
BLANKS		3								
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	32	34.0	21.1	65	18.0	82.6	9,750	9,376	2,661	2,618
WHEMLOCK	33	21.1	22.4	64	12.2	57.7	6,834	6,550	1,892	1,892
R ALDER	25	37.3	13.5	47	10.1	36.9	2,768	2,662	866	851
BL MAPLE	1	.3	17.0	48	0.1	.6	24	24	13	13
<b>TOTAL</b>	<i>91</i>	<i>92.7</i>	<i>18.7</i>	<i>58</i>	<i>41.1</i>	<i>177.8</i>	<i>19,376</i>	<i>18,612</i>	<i>5,432</i>	<i>5,374</i>
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	10	15	
DOUG FIR	68.3	12.1		340	387	433				
WHEMLOCK	48.8	8.5		376	411	446				
R ALDER	60.4	12.3		75	85	96				
BL MAPLE										
<b>TOTAL</b>	<i>78.9</i>	<i>8.3</i>		<i>284</i>	<i>309</i>	<i>335</i>	<i>249</i>	<i>62</i>	<i>28</i>	
CL:	68.1 %	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	54.2	9.6		95	105	115				
WHEMLOCK	43.1	7.5		109	117	126				
R ALDER	57.3	11.7		24	28	31				
BL MAPLE										
<b>TOTAL</b>	<i>68.1</i>	<i>7.1</i>		<i>81</i>	<i>87</i>	<i>94</i>	<i>185</i>	<i>46</i>	<i>21</i>	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	110.9	14.2		29	34	39				
WHEMLOCK	150.5	19.3		17	21	25				
R ALDER	169.4	21.7		29	37	45				
BL MAPLE	781.0	99.9		0	0	1				
<b>TOTAL</b>	<i>59.4</i>	<i>7.6</i>		<i>86</i>	<i>93</i>	<i>100</i>	<i>141</i>	<i>35</i>	<i>16</i>	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	104.9	13.4		72	83	94				
WHEMLOCK	151.6	19.4		47	58	69				
R ALDER	166.0	21.2		29	37	45				
BL MAPLE	781.0	99.9		0	1	1				
<b>TOTAL</b>	<i>48.8</i>	<i>6.2</i>		<i>167</i>	<i>178</i>	<i>189</i>	<i>95</i>	<i>24</i>	<i>11</i>	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	103.3	13.2		8,137	9,376	10,614				
WHEMLOCK	153.2	19.6		5,267	6,550	7,834				
R ALDER	171.0	21.9		2,080	2,662	3,244				
BL MAPLE	781.0	99.9		0	24	49				
<b>TOTAL</b>	<i>56.5</i>	<i>7.2</i>		<i>17,267</i>	<i>18,612</i>	<i>19,957</i>	<i>127</i>	<i>32</i>	<i>14</i>	

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT	SALTY			DATE	8/8/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES		PLOTS	TREES	CuFt	BdFt
06N	01E	25	SALTY	00U3	63.00		61	282	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	10	15	
CL:	68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		103.9	13.3	2,270	2,618	2,967				
WHEMLOCK		152.3	19.5	1,523	1,892	2,260				
R ALDER		169.0	21.6	667	851	1,035				
BL MAPLE		781.0	99.9	0	13	27				
<b>TOTAL</b>		53.8	6.9	5,004	5,374	5,744	116	29	13	
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR				98	113	128				
WHEMLOCK		40.1	5.1	91	114	136				
R ALDER		75.8	9.7	56	72	88				
BL MAPLE		781.0	99.9	0	44	89				
<b>TOTAL</b>		347.9	44.5	97	105	112	4,833	1,208	537	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	SALTY		DATE	8/8/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	01E	25	SALTY	00U5	22.00	20	98	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		20	98	4.9						
CRUISE		7	26	3.7	2,105	1.2				
DBH COUNT										
REFOREST										
COUNT		13	67	5.2						
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	17	45.3	22.6	87	26.5	126.0	19,602	18,669	4,854	4,716
WHEMLOCK	5	24.5	18.1	70	10.3	44.0	5,380	5,146	1,505	1,505
R ALDER	1	15.4	10.0	56	2.7	8.4	770	770	184	184
BL MAPLE	2	7.7	14.2	46	2.2	8.4	477	477	202	202
WR CEDAR	1	2.8	20.0	63	1.3	6.0	468	440	195	195
<b>TOTAL</b>	<b>26</b>	<b>95.7</b>	<b>19.2</b>	<b>74</b>	<b>44.0</b>	<b>192.8</b>	<b>26,697</b>	<b>25,502</b>	<b>6,941</b>	<b>6,802</b>
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	10	15	
DOUG FIR	59.2	14.8		411	482	553				
WHEMLOCK	64.6	32.1		258	380	502				
R ALDER										
BL MAPLE	54.4	50.9		32	65	98				
WR CEDAR										
<b>TOTAL</b>	<b>71.6</b>	<b>14.3</b>		<b>344</b>	<b>401</b>	<b>459</b>	<b>213</b>	<b>53</b>	<b>24</b>	
CL:	68.1 %	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	46.9	11.7		104	118	131				
WHEMLOCK	64.3	31.9		74	108	143				
R ALDER										
BL MAPLE	13.9	13.0		23	27	30				
WR CEDAR										
<b>TOTAL</b>	<b>59.2</b>	<b>11.8</b>		<b>91</b>	<b>103</b>	<b>115</b>	<b>146</b>	<b>36</b>	<b>16</b>	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	79.3	18.2		37	45	54				
WHEMLOCK	124.5	28.5		18	25	32				
R ALDER	255.5	58.6		6	15	24				
BL MAPLE	314.6	72.1		2	8	13				
WR CEDAR	326.2	74.8		1	3	5				
<b>TOTAL</b>	<b>57.2</b>	<b>13.1</b>		<b>83</b>	<b>96</b>	<b>108</b>	<b>138</b>	<b>34</b>	<b>15</b>	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	79.3	18.2		103	126	149				
WHEMLOCK	117.6	27.0		32	44	56				
R ALDER	255.5	58.6		3	8	13				
BL MAPLE	314.6	72.1		2	8	14				
WR CEDAR	326.2	74.8		2	6	10				
<b>TOTAL</b>	<b>36.9</b>	<b>8.5</b>		<b>176</b>	<b>193</b>	<b>209</b>	<b>57</b>	<b>14</b>	<b>6</b>	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	82.7	19.0		15,130	18,669	22,207				
WHEMLOCK	118.3	27.1		3,751	5,146	6,541				

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT	SALTY			DATE	8/8/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES		PLOTS	TREES	CuFt	BdFt
06N	01E	25	SALTY	00U5	22.00		20	98	S	W
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
R ALDER		255.5	58.6	319	770	1,221				
BL MAPLE		314.6	72.1	133	477	821				
WR CEDAR		326.2	74.8	111	440	769				
<b>TOTAL</b>		<b>46.7</b>	<b>10.7</b>	<b>22,772</b>	<b>25,502</b>	<b>28,232</b>	<b>92</b>	<b>23</b>	<b>10</b>	
CL:	68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		81.2	18.6	3,838	4,716	5,594				
WHEMLOCK		117.8	27.0	1,098	1,505	1,911				
R ALDER		255.5	58.6	76	184	292				
BL MAPLE		314.6	72.1	56	202	348				
WR CEDAR		326.2	74.8	49	195	341				
<b>TOTAL</b>		<b>41.5</b>	<b>9.5</b>	<b>6,155</b>	<b>6,802</b>	<b>7,450</b>	<b>73</b>	<b>18</b>	<b>8</b>	
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR				120	148	176				
WHEMLOCK				85	117	149				
R ALDER				38	92	145				
BL MAPLE		152.2	34.9	16	57	98				
WR CEDAR		113.4	26.0	18	73	128				
<b>TOTAL</b>		<b>414.8</b>	<b>95.1</b>	<b>118</b>	<b>132</b>	<b>146</b>	<b>7,233</b>	<b>1,808</b>	<b>804</b>	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	SALTY		DATE	8/8/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	01E	25	SALTY	00U6	6.00	5	24	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		5	24	4.8						
CRUISE		5	24	4.8	804		3.0			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
<b>STAND SUMMARY</b>										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK	10	40.6	19.0	71	18.4	80.0	11,372	11,199	2,959	2,959
R ALDER	9	77.6	13.0	53	19.9	72.0	6,068	6,003	1,879	1,879
BL MAPLE	4	8.3	26.6	45	6.2	32.0	983	983	855	855
DOUG FIR	1	7.5	14.0	52	2.1	8.0	524	524	195	195
<b>TOTAL</b>	<b>24</b>	<b>134.0</b>	<b>16.2</b>	<b>58</b>	<b>47.7</b>	<b>192.0</b>	<b>18,947</b>	<b>18,709</b>	<b>5,889</b>	<b>5,889</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	<b>SAMPLE TREES - BF</b>				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	82.3	27.4		277	382	487				
R ALDER	97.4	34.4		87	132	178				
BL MAPLE				157	157	157				
DOUG FIR										
<b>TOTAL</b>	<b>103.6</b>	<b>22.1</b>		<b>188</b>	<b>241</b>	<b>295</b>	<b>448</b>	<b>112</b>	<b>50</b>	
CL:	68.1 %	COEFF	<b>SAMPLE TREES - CF</b>				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	66.5	22.1		75	96	117				
R ALDER	97.4	34.4		32	48	65				
BL MAPLE				145	145	145				
DOUG FIR										
<b>TOTAL</b>	<b>69.9</b>	<b>14.9</b>		<b>69</b>	<b>81</b>	<b>93</b>	<b>204</b>	<b>51</b>	<b>23</b>	
CL:	68.1 %	COEFF	<b>TREES/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	105.9	52.6		19	41	62				
R ALDER	98.5	48.9		40	78	116				
BL MAPLE	179.4	89.1		1	8	16				
DOUG FIR	223.6	111.1			7	16				
<b>TOTAL</b>	<b>40.2</b>	<b>20.0</b>		<b>107</b>	<b>134</b>	<b>161</b>	<b>80</b>	<b>20</b>	<b>9</b>	
CL:	68.1 %	COEFF	<b>BASAL AREA/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	106.1	52.7		38	80	122				
R ALDER	72.4	36.0		46	72	98				
BL MAPLE	163.0	81.0		6	32	58				
DOUG FIR	223.6	111.1			8	17				
<b>TOTAL</b>	<b>22.8</b>	<b>11.3</b>		<b>170</b>	<b>192</b>	<b>214</b>	<b>26</b>	<b>6</b>	<b>3</b>	
CL:	68.1 %	COEFF	<b>NET BF/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	123.2	61.2		4,343	11,199	18,056				
R ALDER	88.7	44.1		3,357	6,003	8,648				
BL MAPLE	196.3	97.6		24	983	1,943				
DOUG FIR	223.6	111.1			524	1,106				
<b>TOTAL</b>	<b>66.3</b>	<b>32.9</b>		<b>12,547</b>	<b>18,709</b>	<b>24,871</b>	<b>217</b>	<b>54</b>	<b>24</b>	

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT	SALTY			DATE	8/8/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES		PLOTS	TREES	CuFt	BdFt
06N	01E	25	SALTY	00U6	6.00		5	24	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	10	15	
CL:	68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		114.1	56.7	1,281	2,959	4,637				
R ALDER		78.1	38.8	1,149	1,879	2,609				
BL MAPLE		158.8	78.9	181	855	1,530				
DOUG FIR		223.6	111.1		195	412				
<b>TOTAL</b>		39.9	19.9	4,720	5,889	7,057	79	20	9	
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		123.2	61.2	54	140	226				
R ALDER		88.7	44.1	47	83	120				
BL MAPLE		196.3	97.6	1	31	61				
DOUG FIR		223.6	111.1		65	138				
<b>TOTAL</b>		66.3	32.9	65	97	130	217	54	24	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	SALTY		DATE	8/8/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	01E	25	SALTY	00U7	68.00	68	360	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
		PLOTS	TREES	PER PLOT	TREES	TREES				
TOTAL		68	360	5.3						
CRUISE		24	124	5.2	8,037		1.5			
DBH COUNT										
REFOREST										
COUNT		41	232	5.7						
BLANKS		3								
100 %										
<b>STAND SUMMARY</b>										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK	65	56.7	18.8	66	25.1	108.8	13,765	12,990	3,427	3,367
DOUG FIR	31	21.7	20.4	78	10.9	49.0	6,954	6,885	1,726	1,726
R ALDER	17	34.7	13.8	51	9.7	35.9	2,838	2,733	958	943
BL MAPLE	5	4.1	15.7	36	1.4	5.5	203	176	123	118
WR CEDAR	5	.7	32.8	77	0.7	4.1	440	409	154	154
NOBLE F	1	.3	20.0	104	0.1	.6	119	119	26	26
<b>TOTAL</b>	<i>124</i>	<i>118.2</i>	<i>17.8</i>	<i>63</i>	<i>48.4</i>	<i>204.0</i>	<i>24,319</i>	<i>23,312</i>	<i>6,415</i>	<i>6,336</i>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	<b>SAMPLE TREES - BF</b>				<b># OF TREES REQ.</b>		<b>INF. POP.</b>	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		71.7	9.0	408	449	489				
DOUG FIR		54.6	10.1	383	427	470				
R ALDER		78.6	19.6	81	101	120				
BL MAPLE		64.5	32.1	50	74	98				
WR CEDAR				780	780	780				
NOBLE F										
<b>TOTAL</b>		<i>76.5</i>	<i>7.0</i>	<i>362</i>	<i>389</i>	<i>416</i>	<i>234</i>	<i>58</i>	<i>26</i>	
CL:	68.1 %	COEFF	<b>SAMPLE TREES - CF</b>				<b># OF TREES REQ.</b>		<b>INF. POP.</b>	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		64.1	8.1	103	112	121				
DOUG FIR		46.5	8.6	96	105	114				
R ALDER		73.9	18.5	30	36	43				
BL MAPLE		72.8	36.2	44	68	93				
WR CEDAR				295	295	295				
NOBLE F										
<b>TOTAL</b>		<i>68.4</i>	<i>6.2</i>	<i>97</i>	<i>104</i>	<i>110</i>	<i>187</i>	<i>47</i>	<i>21</i>	
CL:	68.1 %	COEFF	<b>TREES/ACRE</b>				<b># OF PLOTS REQ.</b>		<b>INF. POP.</b>	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		100.7	12.2	50	57	64				
DOUG FIR		145.9	17.7	18	22	25				
R ALDER		137.2	16.6	29	35	41				
BL MAPLE		346.5	42.0	2	4	6				
WR CEDAR		608.4	73.7	0	1	1				
NOBLE F		824.6	99.9	0	0	1				
<b>TOTAL</b>		<i>46.8</i>	<i>5.7</i>	<i>111</i>	<i>118</i>	<i>125</i>	<i>88</i>	<i>22</i>	<i>10</i>	
CL:	68.1 %	COEFF	<b>BASAL AREA/ACRE</b>				<b># OF PLOTS REQ.</b>		<b>INF. POP.</b>	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		87.5	10.6	97	109	120				
DOUG FIR		134.9	16.3	41	49	57				
R ALDER		135.4	16.4	30	36	42				
BL MAPLE		344.8	41.8	3	6	8				
WR CEDAR		608.4	73.7	1	4	7				
NOBLE F		824.6	99.9	0	1	1				

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT	SALTY			DATE	8/8/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES		PLOTS	TREES	CuFt	BdFt
06N	01E	25	SALTY	00U7	68.00		68	360	S	W
CL:	68.1 %	COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
<b>TOTAL</b>		43.5	5.3	193	204	215	76	19	8	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		88.9	10.8	11,591	12,990	14,389				
DOUG FIR		132.5	16.1	5,780	6,885	7,990				
R ALDER		139.5	16.9	2,271	2,733	3,195				
BL MAPLE		327.3	39.7	106	176	246				
WR CEDAR		608.4	73.7	108	409	711				
NOBLE F		824.6	99.9	0	119	237				
<b>TOTAL</b>		51.8	6.3	21,850	23,312	24,775	107	27	12	
CL:	68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		89.2	10.8	3,003	3,367	3,731				
DOUG FIR		132.7	16.1	1,449	1,726	2,004				
R ALDER		136.7	16.6	787	943	1,100				
BL MAPLE		360.4	43.7	66	118	170				
WR CEDAR		608.4	73.7	41	154	268				
NOBLE F		824.6	99.9	0	26	53				
<b>TOTAL</b>		47.5	5.8	5,971	6,336	6,701	90	23	10	
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK				107	119	132				
DOUG FIR		25.4	3.1	118	140	163				
R ALDER				63	76	89				
BL MAPLE		204.5	24.8	19	32	45				
WR CEDAR		584.8	70.9	26	99	173				
NOBLE F		824.6	99.9	0	202	403				
<b>TOTAL</b>		302.5	36.7	107	114	121	3,654	914	406	

TC TSTATS		STATISTICS								PAGE	1
		PROJECT				SALTY				DATE	8/8/2019
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
06N	01E	25	SALTY	00U8	1.00	1	9	S	W		
				TREES	ESTIMATED	PERCENT					
		PLOTS	TREES	PER PLOT	TOTAL	SAMPLE					
					TREES	TREES					
TOTAL		1	9	9.0							
CRUISE		1	9	9.0	29		31.1				
DBH COUNT											
REFOREST											
COUNT											
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	3	9.0	13.0	63	2.3	8.3	720	720	199	199	
R ALDER	3	14.0	10.0	55	2.4	7.7	559	559	156	156	
WHEMLOCK	3	6.0	9.3	53	0.9	2.9	200	200	52	52	
<b>TOTAL</b>	<b>9</b>	<b>29.0</b>	<b>10.9</b>	<b>57</b>	<b>5.7</b>	<b>18.9</b>	<b>1,479</b>	<b>1,479</b>	<b>407</b>	<b>407</b>	
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	10	15		
DOUG FIR	109.0	75.4		20	80	140					
R ALDER	43.3	30.0		28	40	52					
WHEMLOCK	17.3	12.0		29	33	37					
<b>TOTAL</b>	<b>97.1</b>	<b>34.3</b>		<b>34</b>	<b>51</b>	<b>69</b>	<b>422</b>	<b>106</b>	<b>47</b>		
CL:	68.1 %	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	118.2	81.8		4	22	40					
R ALDER	55.8	38.6		7	11	15					
WHEMLOCK	20.2	14.0		7	9	10					
<b>TOTAL</b>	<b>106.1</b>	<b>37.5</b>		<b>9</b>	<b>14</b>	<b>19</b>	<b>505</b>	<b>126</b>	<b>56</b>		

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	SALTY		DATE	8/8/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	01E	25	SALTY	00U9	2.00	1	15	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		1	15	15.0						
CRUISE		1	15	15.0	240		6.3			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
<b>STAND SUMMARY</b>										
	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	10	103.0	20.0	71	50.1	223.8	29,458	26,574	7,641	7,447
WHEMLOCK	5	17.0	19.1	63	7.7	33.7	3,978	3,978	1,096	1,094
<b>TOTAL</b>	<b>15</b>	<b>120.0</b>	<b>19.8</b>	<b>70</b>	<b>57.8</b>	<b>257.5</b>	<b>33,436</b>	<b>30,552</b>	<b>8,737</b>	<b>8,541</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	<b>SAMPLE TREES - BF</b>				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	67.8	22.6		200	258	316				
WHEMLOCK	81.5	40.5		139	234	329				
<b>TOTAL</b>	<b>69.5</b>	<b>18.6</b>		<b>204</b>	<b>250</b>	<b>296</b>	<b>207</b>	<b>52</b>	<b>23</b>	
CL:	68.1 %	COEFF	<b>SAMPLE TREES - CF</b>				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	64.6	21.5		57	72	88				
WHEMLOCK	71.8	35.7		41	64	87				
<b>TOTAL</b>	<b>64.6</b>	<b>17.3</b>		<b>58</b>	<b>70</b>	<b>82</b>	<b>179</b>	<b>45</b>	<b>20</b>	

TC TSTATS				<b>STATISTICS</b>				PAGE	1	
				PROJECT	SALTY		DATE	8/8/2019		
<b>TWP</b>	<b>RGE</b>	<b>SECT</b>	<b>TRACT</b>	<b>TYPE</b>	<b>ACRES</b>	<b>PLOTS</b>	<b>TREES</b>	<b>CuFt</b>	<b>BdFt</b>	
<b>06N</b>	<b>01E</b>	<b>25</b>	<b>SALTY</b>	<b>0U10</b>	1.00	1	6	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		1	6	6.0						
CRUISE		1	6	6.0	21		28.6			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
<b>STAND SUMMARY</b>										
	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	6	21.0	23.9	77	13.4	65.6	9,280	8,800	2,375	2,375
<b>TOTAL</b>	<b>6</b>	<b>21.0</b>	<b>23.9</b>	<b>77</b>	<b>13.4</b>	<b>65.6</b>	<b>9,280</b>	<b>8,800</b>	<b>2,375</b>	<b>2,375</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	<b>SAMPLE TREES - BF</b>				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	69.7	31.0		260	377	494				
<b>TOTAL</b>	<b>69.7</b>	<b>31.0</b>		<b>260</b>	<b>377</b>	<b>494</b>	<b>231</b>	<b>58</b>	<b>26</b>	
CL:	68.1 %	COEFF	<b>SAMPLE TREES - CF</b>				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	57.0	25.4		77	103	129				
<b>TOTAL</b>	<b>57.0</b>	<b>25.4</b>		<b>77</b>	<b>103</b>	<b>129</b>	<b>155</b>	<b>39</b>	<b>17</b>	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	SALTY		DATE	8/8/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	01E	25	SALTY	0U13	1.00	1	8	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		1	8	8.0						
CRUISE		1	8	8.0	56		14.3			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
<b>STAND SUMMARY</b>										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
R ALDER	4	40.0	9.6	49	6.5	20.0	1,200	1,200	404	404
DOUG FIR	4	16.0	12.6	64	3.9	13.7	1,280	1,280	309	309
<b>TOTAL</b>	<b>8</b>	<b>56.0</b>	<b>10.5</b>	<b>53</b>	<b>10.4</b>	<b>33.7</b>	<b>2,480</b>	<b>2,480</b>	<b>713</b>	<b>712</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	<b>SAMPLE TREES - BF</b>				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
R ALDER		27.2	15.6	25	30	35				
DOUG FIR		62.9	35.9	51	80	109				
<b>TOTAL</b>		<b>77.7</b>	<b>29.3</b>	<b>39</b>	<b>55</b>	<b>71</b>	<b>275</b>	<b>69</b>	<b>31</b>	
CL:	68.1 %	COEFF	<b>SAMPLE TREES - CF</b>				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
R ALDER		48.7	27.9	7	10	13				
DOUG FIR		78.2	44.7	11	19	28				
<b>TOTAL</b>		<b>78.2</b>	<b>29.5</b>	<b>10</b>	<b>15</b>	<b>19</b>	<b>278</b>	<b>70</b>	<b>31</b>	

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

T06N R01E S25 Ty00U1	30.0
T06N R01E S25 Ty00U2	58.0
T06N R01E S25 Ty0U1	1.0

**Project SALTY**  
**Acres 252.00**

**Page No 1**  
**Date: 8/8/2019**  
**Time 10:55:11AM**

Species	Total	Total	Total	Net Cubic Ft/		CF/	Total CCF		Total MBF	
	Trees	Logs	Tons	Tree	Log	LF	Gross	Net	Gross	Net
DOUG FIR	15,948	29,772	25,294	55.18	29.56	0.96	8,875	8,800	3,385	3,273
WHEMLOCK	6,022	9,831	13,017	66.87	40.96	1.28	4,068	4,027	1,566	1,489
R ALDER	5,860	9,096	3,834	23.45	15.11	0.57	1,394	1,374	436	421
WR CEDAR	108	216	347	136.60	68.30	2.03	148	148	40	38
BL MAPLE	519	642	497	35.54	28.71	1.06	188	184	32	30
NOBLE F	18	55	51	97.68	32.56	0.96	18	18	8	8
<b>Totals</b>	28,474	49,613	43,041	51.10	29.33	0.97	14,690	14,551	5,467	5,259

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	22,096	39,874	38,709	58.80	32.58	1.05	13,109	12,992	4,999	4,808
H	6,379	9,739	4,331	24.43	16.00	0.60	1,582	1,559	468	451
<b>Totals</b>	28,474	49,613	43,041	51.10	29.33	0.97	14,690	14,551	5,467	5,259



Forest Practices Application/Notification  
**Notice of Decision**

FPA/N No: 2936814  
Effective Date: 09/05/2019  
Expiration Date: 09/05/2022  
Shut Down Zone: 660  
EARR Tax Credit:  Eligible     Non-eligible  
Reference: Salty VRH RMZ  
30-097783

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.

NOTE:

Refer to WAC 222-24-042 (2) for culvert installation requirements in Type Np and Ns waters.

Refer to WAC 222-30-050(1) & (2) for felling and bucking within type Np and Ns waters

Refer to WAC 222-30-021 (2) (a) for equipment limitation zones associated with perennial and seasonal streams.

Issued By: Jon Byerly

Region: Pacific Cascade

Title: Forest Practices Forester

Date: 09/05/2019

Copies to:     Landowner, Timber Owner and Operator.

Issued in person:     Landowner  Timber Owner  Operator By: Jacquie Spahr

**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:**

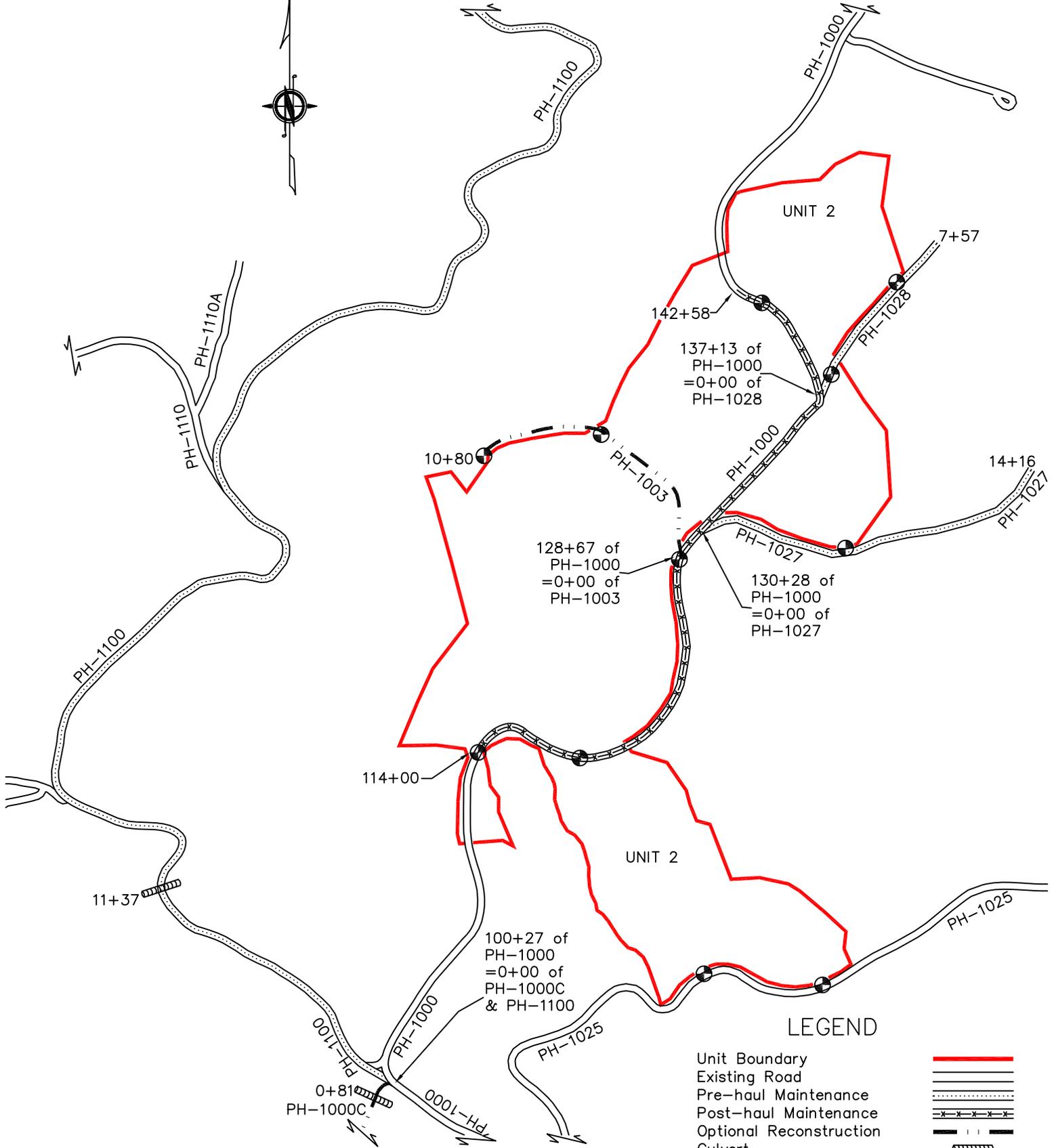
On this day _____,	I placed in the United States mail at _____	Castle Rock	_____	WA,
(date)		(post office location)		
postage paid, a true and accurate copy of this document. Notice of Decision FPA # _____				
_____	_____			
(Printed name)	(Signature)			



# SALTY VRH RMZ

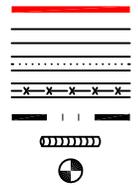
## ROAD PLAN MAP

Map page 2 of 5



### LEGEND

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



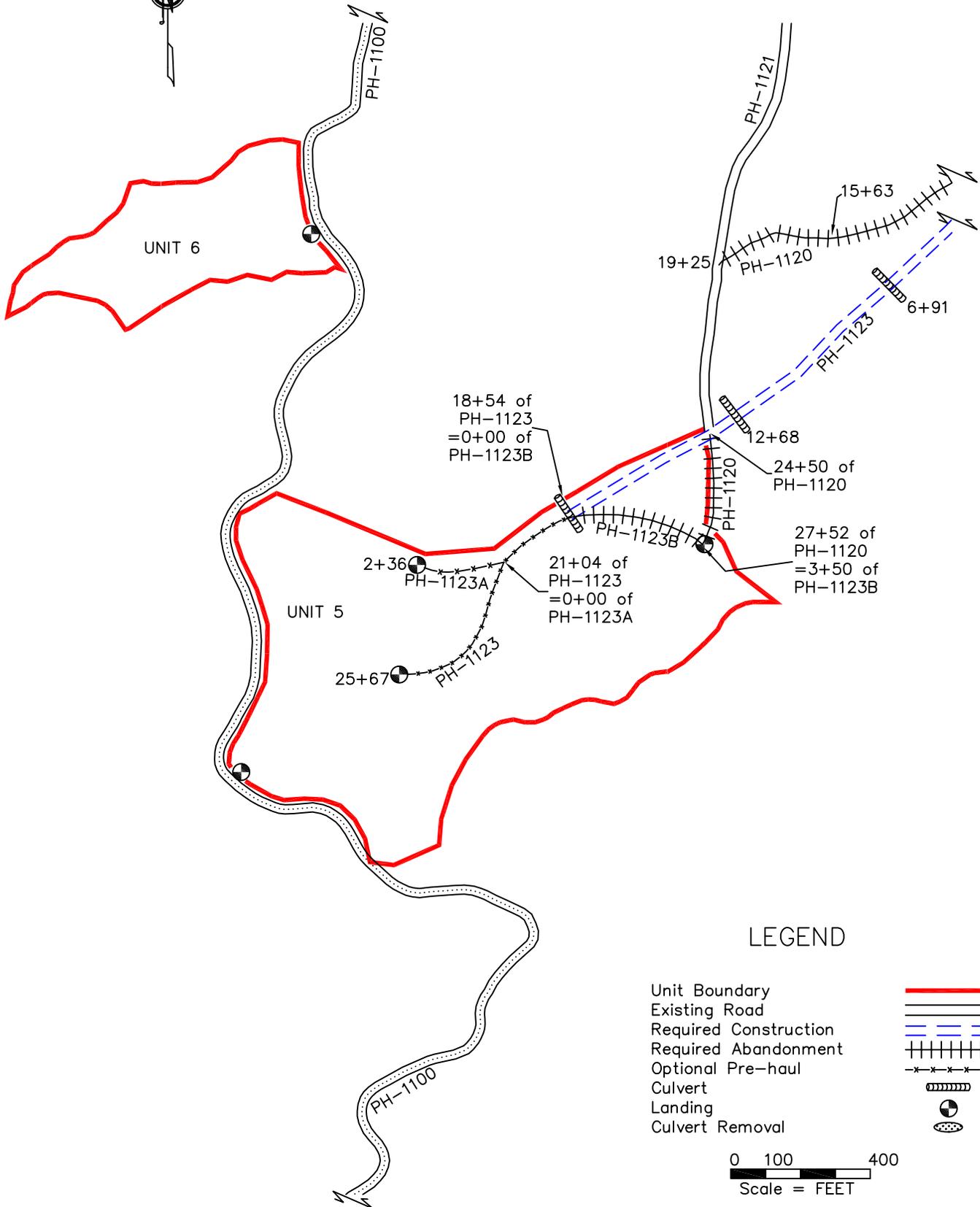
0 100 500  
Scale = FEET



# SALTY VRH RMZ

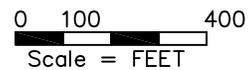
## ROAD PLAN MAP

Map page 4 of 5



### LEGEND

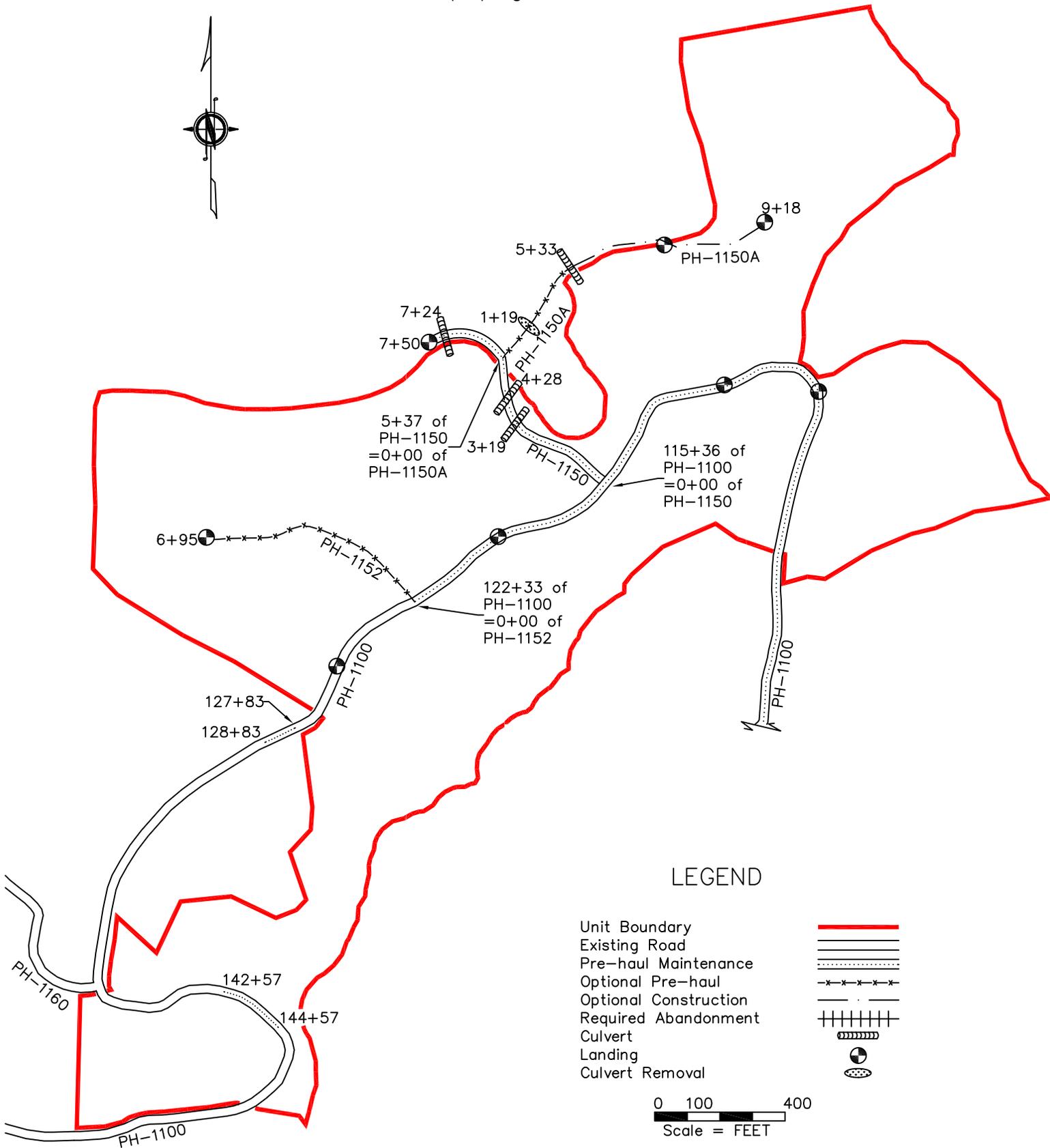
- Unit Boundary
- Existing Road
- Required Construction
- Required Abandonment
- Optional Pre-haul
- Culvert
- Landing
- Culvert Removal



# SALTY VRH RMZ

## ROAD PLAN MAP

Map page 5 of 5



STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

SALTY VRH RMZ TIMBER SALE ROAD PLAN  
COWLITZ COUNTY  
YACOLT DISTRICT

AGREEMENT NO.: 30-097966

STAFF ENGINEER: SCOTT HANNA

CREATED DATE: 12/19/2018

DRAWN & COMPILED BY: ALICIA COMPTON

MODIFIED DATE: 10/03/2019

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>
PH-1000	0+00 to 17+03	pre-haul maintenance
PH-1000	58+00 to 88+96	post-haul maintenance
PH-1000	114+00 to 142+58	post-haul maintenance
PH-1023	0+00 to 13+00	pre-haul maintenance
PH-1027	0+00 to 14+16	pre-haul maintenance
PH-1028	0+00 to 7+57	pre-haul maintenance
PH-1100	0+00 to 122+33	pre-haul maintenance
PH-1100	127+83 to 128+83	pre-haul maintenance
PH-1100	142+57 to 144+57	pre-haul maintenance
PH-1120	0+00 to 4+68	pre-haul maintenance
PH-1120	4+68 to 8+20	reconstruction
PH-1123	0+00 to 18+54	construction
PH-1150	0+00 to 7+50	pre-haul maintenance
PH-1175	0+00 to 30+21	pre-haul maintenance
PH-1176	0+00 to 8+51	pre-haul maintenance
PH-1177	0+00 to 35+93	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>
PH-1000C	0+00 to 3+40	reconstruction
PH-1000D	0+00 to 5+40	pre-haul maintenance
PH-1003	0+00 to 10+80	reconstruction
PH-1023A	0+00 to 11+82	reconstruction
PH-1123	18+54 to 25+67	pre-haul maintenance
PH-1123A	0+00 to 2+36	pre-haul maintenance
PH-1150A	0+00 to 3+60	pre-haul maintenance
--	3+60 to 9+18	construction
PH-1152	0+00 to 6+95	pre-haul maintenance
PH-1176	8+51 to 16+27	pre-haul maintenance

**0-4 CONSTRUCTION**

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

**0-5 RECONSTRUCTION**

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
PH-1120	4+68 to 8+20	Subgrade widening and ditch construction; clearing and grubbing; acquisition and installation of drainage structures; grade, shape and compact subgrade; manufacture, application and compaction of rock; acquisition and application of erosion control materials.
PH-1000C	0+00 to 3+40	
PH-1003	0+00 to 10+80	
PH-1023A	0+00 to 11+82	

**0-6 PRE-HAUL MAINTENANCE**

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
PH-1000	0+00 to 17+03	Grade, shape and compact existing surface prior to chemical application; acquisition and application of chemical treatment for dust abatement.
PH-1000D	0+00 to 5+40	Brush; clean ditches; grade, shape and compact existing surface; manufacture, application and compaction of rock; acquisition and application of erosion control materials.
PH-1023	0+00 to 13+00	Clean ditches; acquisition and installation of drainage structures; grade, shape and compact existing surface; manufacture, application and compaction of rock; acquisition and application of erosion control materials.
PH-1027	0+00 to 14+16	Brush; clean ditches; clean inlets and outlets; acquisition and application of erosion control materials.
PH-1028	0+00 to 7+57	
PH-1100	0+00 to 122+33	Grub old-growth stumps marked with an orange painted "X" and backfill with SELECT PIT RUN ROCK; clean inlets and outlets; acquisition and installation of drainage structures; remove vegetation berms by grading the inside and outside edges of the road way prior to cleaning ditches; clean ditches; manufacture, application and compaction of rock; acquisition and application of erosion control materials.
PH-1100	127+83 to 128+83	Manufacture, application and compaction of spot patch rock.
PH-1100	142+57 to 144+57	
PH-1120	0+00 to 4+68	Clean ditches; acquisition and installation of drainage structures; grade, shape and compact existing surface; manufacture, application and compaction of rock; acquisition and application of erosion control materials.

**0-6 PRE-HAUL MAINTENANCE CONT.**

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
PH-1123	18+54 to 25+67	Brush; clean ditches; acquisition and installation of drainage structures; grade, shape and compact existing surface; manufacture, application and compaction of rock; acquisition and application of erosion control materials.
PH-1123A	0+00 to 2+36	
PH-1150	0+00 to 7+50	
PH-1150A	0+00 to 3+60	
PH-1152	0+00 to 6+95	
PH-1175	0+00 to 30+21	Brush; clean ditches; clean inlets and outlets; grade, shape and compact existing surface prior to rock application; manufacture, application and compaction of rock; acquisition and application of erosion control materials.
PH-1176	0+00 to 8+51	
PH-1176	8+51 to 16+27	Brush; manufacture, application and compaction of spot patch rock.
PH-1177	0+00 to 35+93	Brush; clean ditches; clean inlets and outlets; grade, shape and compact existing surface prior to rock application; manufacture, application and compaction of rock; acquisition and application of erosion control materials.

**0-7 POST-HAUL MAINTENANCE**

This project includes post-haul road maintenance listed in Clause 9-5 POST-HAUL MAINTENANCE.9-5

**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, stripping, end haul and waste disposal, drilling, shooting and processing rock. 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 calendar days before the closure of any road.

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

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

**1-9 DAMAGED METALLIC COATING**

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

**1-15 ROAD MARKING**

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

- Construction: Stakes with orange ribbon, orange paint and reference points;
- Reconstruction: Blue paint for culverts;
- Maintenance: Orange paint plus blue paint for culverts, orange painted “X” for stumps to be grubbed on PH-1100;
- Stream Crossing Removals: Stakes with blue ribbon for stream grade and alignment.

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

Purchaser shall perform work on the following road(s) in accordance with the reference points set in the field for grade and alignment. Reconstruction of existing road grades must conform to the original location except where construction staked or designed.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
PH-1123	0+00 to 18+54	centerline stakes, reference points
PH-1150A	3+60 to 9+18	centerline stakes, 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.

**1-20 COMPLETE BY DATE**

Purchaser shall complete pre-haul road work before the start of timber haul.

**1-21 HAUL APPROVAL**

Purchaser shall not use roads under this road plan for timber hauling without written approval from the Contract Administrator.

**1-22 WORK NOTIFICATIONS**

Purchaser shall notify the Contract Administrator a minimum of 3 calendar days before work begins.

**1-23 ROAD WORK PHASE APPROVAL**

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

- Subgrade construction with compaction
- Rock application with compaction
- Road abandonment with erosion control
- Pit development and closure

**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. Restrictions for hauling forest products are specified in contract clause H-130 HAULING SCHEDULE.

<u>Activity</u>	<u>Closure Period</u>
all road 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:

- 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.

**1-31 SPEED LIMITS**

On the following road(s), speeds are limited to 10 mph.

<u>Road</u>	<u>Stations</u>
PH-1000	0+00 to 17+03

**1-33 SNOW PLOWING RESTRICTION**

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

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

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

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

**1-43 ROAD WORK AROUND UTILITIES**

Road work is in close proximity to a utility. Known utilities are listed, but it is the Purchaser’s responsibility to identify any utilities not listed. Purchaser shall work in accordance with all applicable laws or rules concerning utilities. Purchaser is responsible for all notification, including “call before you dig”, and liabilities associated with the utilities and their rights-of-way.

<u>Road</u>	<u>Stations</u>	<u>Utility</u>	<u>Utility Contact</u>
PH-1000	0+00 to 17+03	Underground	811

SECTION 2 – MAINTENANCE

**2-1 GENERAL ROAD MAINTENANCE**

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

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

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

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

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

**2-4 PASSAGE OF LIGHT VEHICLES**

Purchaser shall maintain the following road(s) in a condition that will allow the passage of light administrative vehicles.

<u>Road</u>	<u>Stations</u>
PH-1000	0+00 to 227+26
PH-1100	0+00 to 122+33
PH-3000	0+00 to 21+75

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

On the following road(s), Purchaser shall use a grader to shape the existing surface before rock application or chemical application.

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
PH-1000 Pre-Haul	0+00 to 17+03	Grade and shape in accordance with TYPICAL SECTION SHEET.
PH-1000 Post-Haul	58+00 to 88+96	
PH-1000 Post-Haul	114+00 to 142+58	
PH-1000D	0+00 to 5+40	
PH-1023	3+00 to 13+00	
PH-1100	0+00 to 122+33	Grade off the grass vegetation along the inside and outside edges of the travel way prior to cleaning ditches.
PH-1120	0+00 to 4+68	Grade and shape in accordance with TYPICAL SECTION SHEET.
PH-1123	18+54 to 25+67	
PH-1123A	0+00 to 2+36	
PH-1150	0+00 to 7+50	
PH-1150A	0+00 to 3+60	
PH-1152	0+00 to 6+95	
PH-1175	0+00 to 20+00	
PH-1176	0+00 to 8+51	
PH-1177	0+00 to 35+93	

**2-6 CLEANING CULVERTS**

On the following road(s), Purchaser shall clean the inlets and outlets of all culverts and shall obtain written approval from the Contract Administrator before rock application.

<u>Road</u>	<u>Stations</u>
PH-1027	0+00 to 14+16
PH-1028	0+00 to 7+57
PH-1100	0+00 to 122+33
PH-1175	0+00 to 30+21
PH-1176	0+00 to 8+51
PH-1177	0+00 to 35+93

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

On the following road(s), Purchaser shall clean ditches, headwalls, and catchbasins. Work must be completed before rock application and must be done in accordance with the TYPICAL SECTION DETAIL and CULVERT AND DRAINAGE SPECIFICATION DETAIL. Pulling ditch material across the road or mixing in with the road surface is not allowed.

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
PH-1000 Post-Haul	58+00 to 88+96	Purchaser shall clean ditches using a hydraulic mounted excavator unless authorized in writing by the Contract Administrator.
PH-1000 Post-Haul	114+00 to 142+58	
PH-1000D	0+00 to 5+40	
PH-1023	0+00 to 13+00	
PH-1027	0+00 to 14+16	
PH-1028	0+00 to 7+57	
PH-1100	0+00 to 122+33	
PH-1120	0+00 to 4+68	
PH-1123	18+54 to 25+67	
PH-1123A	0+00 to 2+36	
PH-1150	0+00 to 7+50	
PH-1150A	0+00 to 3+60	
PH-1152	0+00 to 6+95	
PH-1175	0+00 to 30+21	
PH-1176	0+00 to 8+51	
PH-1177	0+00 to 35+93	

## SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

### 3-1 BRUSHING

On the following road(s), Purchaser shall cut vegetative material up to 3 inches in diameter, including limbs, as shown on the ROAD BRUSHING DETAIL. Brushing must be achieved by mechanical 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>	<u>Stations</u>
PH-1000D	0+00 to 5+40
PH-1027	0+00 to 14+16
PH-1028	0+00 to 7+57
PH-1123	18+54 to 25+67
PH-1123A	0+00 to 2+36
PH-1150	0+00 to 7+50
PH-1150A	0+00 to 3+60
PH-1152	0+00 to 6+95
PH-1175	0+00 to 30+21
PH-1176	0+00 to 16+27
PH-1177	0+00 to 35+93

### 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 and within waste and debris areas, or if not marked in the field, between the clearing limits specified on the TYPICAL SECTION SHEET. Clearing must be completed before starting excavation and embankment.

### **3-8 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%.
- On uphill side of road prism.
- Against standing trees unless approved by the Contract Administrator.

### **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. Purchaser shall remove stumps using a hydraulic mounted excavator unless authorized in writing by the Contract Administrator. Stumps over 22 inches diameter must be split. Stumps over 40 inches must be quartered. Grubbing must be completed before starting excavation and embankment.

### **3-12 STUMP PLACEMENT**

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

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

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

### **3-20 ORGANIC DEBRIS DEFINITION**

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

### **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 rock application.

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

Waste areas for organic debris are located as listed below or within the cleared right-of-way or in natural openings or at areas approved in writing by the Contract Administrator.

<u>Road</u>	<u>Disposal Location</u>	<u>Requirements</u>
PH-3700	See ROCK SOURCE DEVELOPMENT PLAN	Organic debris larger than one cubic foot in volume shall be separated from waste material as defined under Clause 4-35 WASTE MATERIAL DEFINITION.

**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%.
- On uphill side of road prism.
- 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.

**3-24 BURYING ORGANIC DEBRIS RESTRICTED**

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

**3-25 SCATTERING ORGANIC DEBRIS**

Purchaser shall scatter organic debris outside of the clearing limits or in natural openings on the downhill side of the road as directed by the Contract Administrator. Where natural openings are unavailable or restrictive, alternate debris disposal methods are subject to the written approval of the Contract Administrator.

**3-31 PILING**

Purchaser shall pile organic debris no closer than 40 feet from standing timber and no higher than 20 feet in areas specified in Clause 3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS. Piles must be free of rock and soil.

**3-32 END HAULING ORGANIC DEBRIS**

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

## 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 5% in 100 feet.
- Maximum grade change for crest vertical curves is 4% 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	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>
PH-1000C	0+00 to 3+40
PH-1003	0+00 to 10+80
PH-1023A	0+00 to 11+82
PH-1120	4+68 to 8+20

**4-12 FULL BENCH CONSTRUCTION**

Where side slopes exceed 45%, Purchaser shall use full bench construction for the entire subgrade width.

**4-21 TURNOUTS**

Purchaser shall construct turnouts as designated on the ROCK LIST. Purchaser shall construct turnouts intervisible with a maximum distance of 900 feet between turnouts. Locations may be adjusted to fit the final subgrade alignment and sight distances. Locations changes are subject to written approval by the Contract Administrator. Minimum dimensions are shown on the ROCK LIST.

**4-22 TURNAROUNDS**

Purchaser shall construct optional turnarounds as designated on the ROCK LIST. Optional turnarounds must be no larger than 30 feet long and 30 feet wide. Locations are subject to written approval by the Contract Administrator.

**4-25 DITCH CONSTRUCTION AND RECONSTRUCTION**

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

**4-28 DITCH DRAINAGE**

Ditches must drain to cross-drain culverts or ditchouts.

**4-29 DITCHOUTS**

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

**4-35 WASTE MATERIAL DEFINITION**

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

**4-36 DISPOSAL OF WASTE MATERIAL**

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

**4-37 WASTE AREA LOCATION**

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

<u>Road</u>	<u>Comments</u>
PH-3700 Pit	See ROCK SOURCE DEVELOPMENT PLAN

#### **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.
- On side slopes steeper than 45%.
- On uphill side of road prism.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Within the operational area for cable landings.
- Against standing timber.

#### **4-48 NATIVE MATERIAL**

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

#### **4-55 ROAD SHAPING**

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

#### **4-56 DRY WEATHER SHAPING**

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

#### **4-60 FILL COMPACTION**

Purchaser shall compact all embankment and waste material in accordance with the COMPACTION LIST by routing equipment over the entire width of each lift. A plate compactor must be used for embankment and waste area segments too narrow to accommodate equipment. Waste material may be placed by end-dumping or side-casting until sufficiently wide enough to support the equipment.

#### **4-61 SUBGRADE COMPACTION**

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

**4-62 DRY WEATHER COMPACTION**

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

**4-63 EXISTING SURFACE COMPACTION**

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

**SECTION 5 – DRAINAGE**

**5-5 CULVERTS**

Purchaser shall install culverts as part of this contract. Culverts must be installed concurrently with subgrade work and must be installed before subgrade compaction and rock application. Culvert locations and the minimum requirements for culvert length and diameter are designated on the CULVERT LIST. Culvert, downspout, and flume lengths may be adjusted to fit as-built conditions and may not terminate directly on unprotected soil.

**5-6 CULVERT TYPE**

On the following road(s), Purchaser may install culverts made of steel or plastic in accordance with Clauses 10-15 through 10-24. All other culverts shall be made of plastic.

<u>Road</u>	<u>Stations</u>
PH-1023A	2+10, 5+80
PH-1150A	5+33

**5-7 USED CULVERT MATERIAL**

On the following road(s), Purchaser may install used culverts. All other culverts must have new culverts installed. Purchaser shall obtain approval from the Contract Administrator for the quality of the used culverts before installation.

<u>Road</u>	<u>Stations</u>
PH-1023A	2+10, 5+80
PH-1150A	5+33

**5-12 UNUSED MATERIALS STATE PROPERTY**

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

**5-13 CONTINGENCY CULVERTS**

The following culverts will be supplied by the Purchaser and are available for installation as directed by the Contract Administrator.

<u>Road</u>	<u>Quantity</u>	<u>Size</u>
On any portion of road(s) used for timber or rock haul.	1	18" x 30' culvert
	1	18" x 40' culvert

**5-15 CULVERT INSTALLATION**

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

**5-17 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 and at all culverts on the CULVERT LIST that specify the placement of rock. Energy dissipater installation is subject to approval by the Contract Administrator.

**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. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets. Minimum specifications require that rock be placed at a width of one culvert diameter on each side of the culvert opening, and to a height of one culvert diameter above the top of the culvert. Rock may not restrict the flow of water into culvert inlets or catch basins. Placement must be by zero-drop-height method only. No placement by end dumping or dropping of rock is allowed. Rock type shall meet the specifications in Clause 6-41 SELECT PIT RUN ROCK.

**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 calendar days before starting any operations in the listed locations.

<u>Source</u>	<u>Location</u>
PH-3700 Pit	Section 20, Township 6 North, Range 2 East, W.M.

**6-5 ROCK FROM COMMERCIAL SOURCE**

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

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

Purchaser shall conduct rock source development and use at the following sources, in accordance with the written ROCK SOURCE DEVELOPMENT PLAN prepared by the state and included in this road plan. Upon completion of operations, the rock source must be left in the condition specified in the ROCK SOURCE DEVELOPMENT PLAN, and approved in writing by the Contract Administrator. Purchaser shall notify the Contract Administrator a minimum of 3 calendar days before starting any operations in the rock source.

<u>Source</u>	<u>Rock Type</u>
PH-3700 Pit	1½-INCH MINUS CRUSHED, 3-INCH MINUS CRUSHED, 4-INCH JAW RUN, SELECT PIT RUN

**6-13 ROCK EXPLORATION**

Purchaser shall provide an excavator and rock drill with operator for up to 12 hours of exploration of rock at the following site(s).

<u>Site</u>	<u>Location</u>
PH-1000C	NE of SW, Section 24, Township 6 North, Range 2 East, W.M.

**6-20 ROCK CRUSHING OPERATIONS**

Rock crushing operations must conform to the following specifications:

- Purchaser shall produce sieve analysis for crushing operations every 1000 yards for 1½-INCH MINUS CRUSHED, and 2000 yards for 3-INCH MINUS CRUSHED.
- Purchaser may use a commercial testing lab to produce sieve analyses.

**6-23 ROCK GRADATION TYPES**

Purchaser shall 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 when placed in hauling vehicles. The exact point of evaluation for conformance to specifications will be determined by the Contract Administrator. Gradation specifications shall be in accordance with Clauses 6-29 1½-INCH MINUS CRUSHED, 6-33 3-INCH MINUS CRUSHED, 6-37 4-INCH JAW RUN, and 6-41 SELECT PIT RUN.

**6-29 1 ½-INCH MINUS CRUSHED ROCK**

% Passing 1 ½" square sieve	100%
% Passing 1" square sieve	70 - 90%
% Passing 5/8" square sieve	50 - 80%
% Passing U.S. #4 sieve	30 - 50%
% Passing U.S. #40 sieve	3 - 18%
% Passing U.S. #200 sieve	7.5% 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.

**6-33 3-INCH MINUS CRUSHED ROCK**

% Passing 3" square sieve	100%
% Passing 2" square sieve	65 - 95%
% Passing 3/4" square sieve	28 - 70%
% Passing U.S. #4 sieve	10 - 35%
% Passing U.S. #200 sieve	0 - 10%

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.

**6-37 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.

**6-41 SELECT PIT RUN ROCK**

No more than 20 percent of the rock may be smaller than 8 inches in any dimension and no rock may be larger than 12 inches in any dimension. Select Pit Run rock may not contain organic debris, dirt, and trash. Rock may require processing to meet this specification.

**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.

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

Measurement of 3-INCH MINUS CRUSHED, 4-INCH JAW RUN, and SELECT PIT RUN rock for spot patching, junctions, landings, backfill, armoring and energy dissipaters is on a cubic yard truck measure basis. The Contract Administrator will measure each truck box before rock hauling. An average of such volumes for each truck will be used to tally the volume hauled. The Contract Administrator may periodically require that a load be flattened off and its volume calculated. Purchaser shall maintain load tally sheets, as shown in ROCK ACCOUNTABILITY DETAIL, for each truck 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 compaction before rock application.

**6-71 ROCK APPLICATION**

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

**6-72 ROCK APPLICATION AFTER HAULING**

On the following road(s), upon completion of all hauling operations, Purchaser shall apply 1½-INCH MINUS CRUSHED rock in accordance with the quantities shown on the ROCK LIST.

<u>Road</u>	<u>Stations</u>
PH-1000	58+00 to 88+96
PH-1000	114+00 to 142+58

**6-73 ROCK FOR WIDENED PORTIONS**

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

**6-75 OPTIONAL ROCK EXCEPTION**

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

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

<u>Road</u>	<u>Stations</u>
PH-1000C	0+00 to 3+40
PH-1000D	0+00 to 5+40
PH-1003	0+00 to 10+80
PH-1023A	0+00 to 11+82
PH-1123	18+54 to 25+67
PH-1123A	0+00 to 2+36
PH-1150A	0+00 to 3+60
PH-1150A	0+00 to 9+18
PH-1152	0+00 to 6+95
PH-1176	9+36 to 11+37
PH-1176	14+07 to 16+27

**6-76 DRY WEATHER ROCK COMPACTION**

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

**6-81 CHEMICAL TREATMENT FOR DUST ABATEMENT**

Purchaser shall treat the following roads with Magnesium Chloride for dust abatement. No other chemical may be used for dust abatement. The Magnesium Chloride may not be used for any other purposes.

<u>Road</u>	<u>Stations</u>
PH-1000	0+00 to 17+03

**6-82 CHEMICAL RESTRICTION**

Purchaser shall not allow chemicals used for dust abatement to enter any streams.

**6-84 MAGNESIUM CHLORIDE APPLICATION RATE**

Purchaser shall apply Magnesium Chloride to the surface at a rate not less than 0.5 gallons per square yard (approximately 77.8 gallons per station).

**6-85 CHEMICAL DUST ABATEMENT EQUIPMENT**

Application equipment used to spread dust abatement chemicals must be capable of uniform application. A tanker truck with a “slash pan” or “plate” is not acceptable. Field dilution must be accomplished within the application vehicle.

**6-86 TIMING FOR CHEMICAL APPLICATION**

Purchaser shall obtain prior written approval from the Contract Administrator for the timing of application for dust abatement chemicals. It is intended that dust abatement chemicals be applied during the summer season.

**SECTION 7 – STRUCTURES**

**7-5 STRUCTURE DEBRIS**

Purchaser shall not allow debris from the installation or removal of structures to enter any stream. Components removed from existing structures(s) must be removed from state land. Purchaser shall maintain a clean jobsite, with all materials stored away from the high water mark or other area presenting a risk of the materials entering a stream. Debris entering any stream must be removed immediately, and placed in the site(s) designated for stockpiling or disposal. Purchaser shall retrieve all material carried downstream from the jobsite.

**7-6 STREAM CROSSING INSTALLATION**

Purchaser shall install stream crossing structures in accordance with the manufacturer's requirements, and Forest Practice Application (FPA) permit.

SECTION 8 – EROSION CONTROL

**8-1 SEDIMENT CONTROL STRUCTURES**

Purchaser shall install sediment traps, silt fences, settling ponds or other methods as approved by the Contract Administrator.

**8-2 PROTECTION FOR EXPOSED SOIL**

Purchaser shall provide and evenly spread a 3-inch layer of straw to all exposed soils within 100 feet of a stream or wetland. Soils must be covered before the first anticipated storm event. Soils may not sit exposed during any rain event.

**8-15 REVEGETATION**

Purchaser shall spread grass seed on all exposed soils resulting from road work activities. Cover all exposed soils using manual dispersal methods. 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.

<u>Road</u>	<u>Qty (lbs)*</u>	<u>Type</u>
construction	67	grass seed
reconstruction	30	grass seed
maintenance	86	grass seed
abandonment	48	grass seed

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

**8-16 REVEGETATION SUPPLY**

The Purchaser shall provide the grass seed.

**8-17 REVEGETATION TIMING**

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

**8-19 ASSURANCE FOR SEEDED AREA**

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

**8-25 GRASS SEED**

Purchaser shall evenly spread the seed mixture listed below on all exposed soil 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>	<u>Minimum % germination</u>
Perennial Rye	35-45	90
Red Fescue	30-40	90
Highland Bent	5-15	85
White Clover	10-20	90
Inert and Other Crop	0.5	

SECTION 9 – POST-HAUL ROAD WORK

**9-1 EARTHEN BARRICADES**

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

<u>Road</u>	<u>Stations</u>
PH-1023A	0+00
PH-1120	8+20
PH-1150A	0+50
PH-1175	30+21
PH-1176	9+00
PH-1177	35+93
PH-1177B	0+00

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

On the following road(s), Purchaser shall remove existing culverts from live streams and leave the resulting channel open with excavation slope and excavated channel width as specified. Place excavated material in an area approved in writing by the Contract Administrator. Culvert removal from live streams must be in accordance with the FPA and STREAM DIVERSION PROCEDURE.

<u>Road</u>	<u>Stations</u>	<u>Excavated Channel Width</u>	<u>Slope Ratio (H):(V)</u>	<u>Comments</u>
PH-1150A	1+19	3	1.5:1	Reconstruct stream grade to approximately 15 percent slope between construction stakes.
PH-1175	31+53	5	1.5:1	Reconstruct stream grade to approximately 15 percent slope between construction stakes.
PH-1176	10+51	6	1.5:1	Match stream grade to existing culvert bed slope.
PH-1176	15+14	7	1.5:1	Reconstruct stream grade to approximately 20 percent slope between construction stakes.
PH-1176	20+64	5	1.5:1	Reconstruct stream grade to approximately 25 percent slope between construction stakes.
PH-1177	40+70	8	1.5:1	Reconstruct stream grade to approximately 18 percent slope between construction stakes.
PH-1177B	4+28	7	1.5:1	Reconstruct stream grade to approximately 22 percent slope between construction stakes.

**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 and as specified below.

<u>Road</u>	<u>Stations</u>	<u>Additional Requirements</u>
PH-1000	58+00 to 88+96	Clean ditches; clean inlets and outlets; grade, shape and compact existing surface prior to rock application; manufacture, application and compaction of rock.
PH-1000	114+00 to 142+58	

**9-10 LANDING DRAINAGE**

Purchaser shall provide for drainage of the landing surface.

**9-11 LANDING EMBANKMENT**

Purchaser shall slope landing embankments to the original construction specifications.

**9-21 ROAD ABANDONMENT**

Purchaser shall abandon the following roads before the termination of this contract. Work must be in accordance with the ROAD ABANDONMENT CROSS SECTIONS DETAIL, Clause 9-22 LIGHT ABANDONMENT and 9-23 MEDIUM ABANDONMENT.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
PH-1023A	0+00 to 11+82	light
PH-1120	8+20 to 15+63	light
	15+63 to 19+25	medium
	24+50 to 27+52	medium
PH-1123B	0+00 to 3+50	medium
PH-1150A	0+00 to 9+18	light
PH-1175	30+21 to 39+25	light
PH-1176	8+51 to 23+63	light
PH-1177	35+93 to 45+65	light
PH-1177B	0+00 to 9+90	light

## **9-22 LIGHT ABANDONMENT**

- Remove road shoulder berms except as directed.
- 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 20 feet between waterbars or between natural drainage paths and with a maximum spacing of 200 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.
- Remove all culverts in natural drainages in accordance with STREAM DIVERSION PROCEDURE, Clause 7-5 STRUCTURE DEBRIS, and Clause 9-2 CULVERT REMOVAL FROM LIVE STREAM. Place and compact the removed fill material in accordance with ROAD PRISM WASTE DETAIL.
- Remove ditch cross drain culverts and leave the resulting trench open in accordance with CROSS DRAIN REMOVAL DETAIL.
- Cover, concurrently with abandonment, all exposed soils within 50 feet of any live stream, with a 3-inch deep layer of straw.
- Apply grass seed concurrently with abandonment and in accordance with Section 8 EROSION CONTROL.

## **9-23 MEDIUM ABANDONMENT**

- Rip the surface to a minimum depth of 10 inches.
- Outslope the surface at a minimum of 30 percent.
- Remove road shoulder berms except as directed.
- Remove ditch cross drain culverts and leave the resulting trench open in accordance with CROSS DRAIN REMOVAL DETAIL.
- Scatter woody debris onto abandoned road surfaces.
- Apply grass seed concurrently with abandonment and in accordance with Section 8 EROSION CONTROL.

## SECTION 10 MATERIALS

### 10-15 CORRUGATED STEEL CULVERT

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

### 10-17 CORRUGATED PLASTIC CULVERT

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

### 10-21 METAL BAND

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

### 10-22 PLASTIC BAND

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

### 10-23 RUBBER CULVERT GASKETS

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

### 10-24 GAGE AND CORRUGATION

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

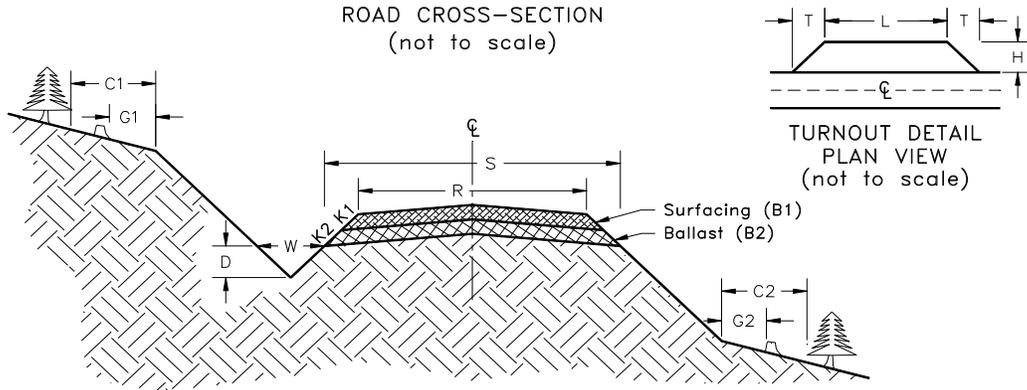
<u>Diameter</u>	<u>Gage</u>	<u>Corrugation</u>
18"	16 (0.064")	2 <sup>2</sup> / <sub>3</sub> " X 1/2"
24" to 48"	14 (0.079")	2 <sup>2</sup> / <sub>3</sub> " X 1/2"
54" to 96"	14 (0.079")	3" X 1"

### 10-31 MAGNESIUM CHLORIDE MATERIALS

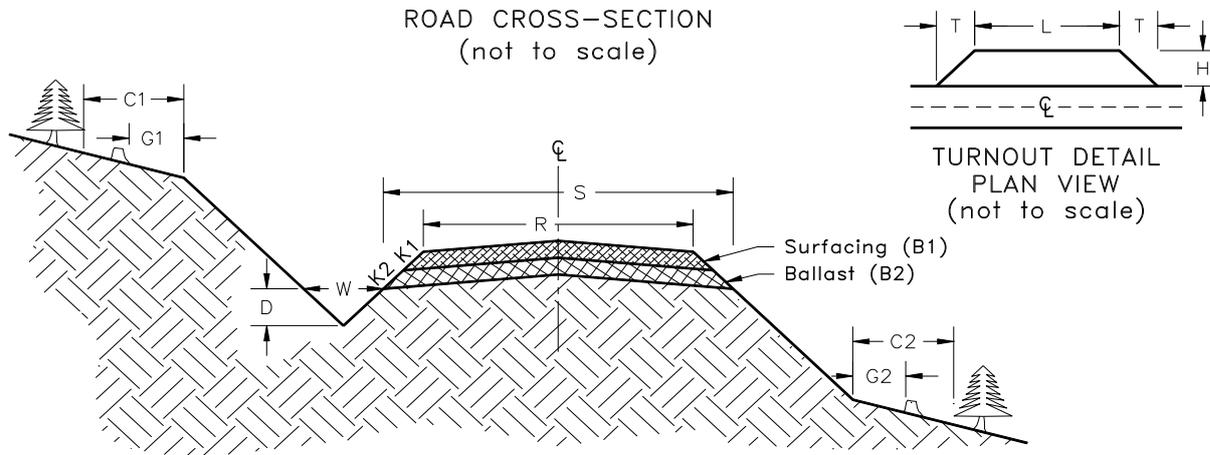
Magnesium Chloride is the chemical residue produced as a by-product of the potash production or natural salt brine, and supplied as a water solution. Percent solids must be 28% magnesium by mass, as supplied.

TYPICAL SECTION

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Road Number	From Station	To Station	Tolerance Class	Subgrade Width (feet)	Road Width (feet)	Ditch		Crown @ CL (inches)	Grubbing Limits (feet)		Clearing Limits (feet)	
						Width (feet)	Depth (feet)		G1	G2	C1	C2
PH-1000	0+00	17+03	A	--	14	--	--	4	--	--	--	--
--	58+00	88+96	A	16	14	3	1	4	--	--	--	--
--	114+00	142+58	A	16	14	3	1	4	--	--	--	--
PH-1000C	0+00	3+40	C	14	12	3	1	4	3	3	5	5
PH-1000D	0+00	5+40	C	14	12	3	1	4	--	--	--	--
PH-1003	0+00	10+80	C	14	12	3	1	4	3	3	5	5
PH-1023	0+00	3+00	C	13	12	3	1	4	--	--	--	--
--	3+00	13+00	C	14	12	3	1	4	--	--	--	--
PH-1023A	0+00	9+00	C	15	12	2	1	4	--	--	--	--
--	9+00	11+82	C	14	12	2	1	4	--	--	--	--
PH-1027	0+00	14+16	C	--	12	3	1	4	--	--	--	--
PH-1028	0+00	7+57	C	--	12	3	1	4	--	--	--	--
PH-1100	0+00	122+33	A	14	12	3	1	4	--	--	--	--
PH-1120	0+00	4+68	C	14	12	3	1	4	--	--	--	--
--	4+68	8+20	C	16	12	3	1	4	3	3	10	10
PH-1123	0+00	18+54	B	16	12	3	1	4	3	3	10	10
--	18+54	25+67	C	14	12	3	1	4	--	--	--	--
PH-1123A	0+00	2+36	C	14	12	3	1	4	--	--	--	--
PH-1150	0+00	7+50	C	15	12	3	1	4	--	--	--	--
PH-1150A	0+00	3+60	C	15	12	3	1	4	--	--	--	--
--	3+60	9+18	C	15	12	3	1	4	3	3	5	5
PH-1152	0+00	6+95	C	14	12	3	1	4	--	--	--	--
PH-1175	0+00	20+00	C	14	12	3	1	4	--	--	--	--
--	20+00	30+21	C	--	12	3	1	4	--	--	--	--
PH-1176	0+00	8+51	C	14	12	3	1	4	--	--	--	--
--	8+51	9+36	C	--	--	--	--	--	--	--	--	--
--	9+36	11+67	C	15	12	3	1	4	--	--	--	--
--	11+67	14+07	C	--	--	--	--	--	--	--	--	--
--	14+07	16+27	C	15	12	3	1	4	--	--	--	--
PH-1177	0+00	35+93	C	14	12	3	1	4	--	--	--	--



1½-INCH MINUS CRUSHED

Road Number	Road Attributes	*Optional Rock	From Station	To Station	Rock Slope	Compacted Rock Depth (inches)	Cubic Yard Per Station	# of Stations	Cubic Yard Subtotal	Rock Source	Turnout		
											Length (feet)	Width (feet)	Taper (feet)
					K1	B1				PH-3700 Pit	L	H	I
PH-1000	Post-Haul		58+00	88+96	1½:1	6	34	30.96	1053				
--	Post-Haul		114+00	142+58	1½:1	6	34	28.58	972				
PH-1023	--		0+00	3+00	1½:1	3	14	3.00	42				
--	JCT		--	--	1½:1	--	--	--	14				
PH-1023A	--	*	0+00	9+00	1½:1	3	14	9.00	126				
PH-1120	--		4+68	8+20	1½:1	3	14	3.52	49				
PH-1123	--		0+00	18+54	1½:1	3	14	18.54	260				
--	Turnouts		As approved by CA		1½:1	3	9	2	18		50	10	25
PH-1150	--		0+00	7+50	1½:1	3	14	7.50	105				
--	JCT		--	--	1½:1	--	--	--	14				

REQUIRED 1½-INCH MINUS CRUSHED TOTAL 2527 Cubic Yards  
OPTIONAL 1½-INCH MINUS CRUSHED TOTAL 126 Cubic Yards

Key:

- JCT - Junction
- CA - Contract Administrator

ROCK LIST  
Page 2 of 3

3-INCH MINUS CRUSHED

Road Number	Road Attributes	*Optional Rock	From Station	To Station	Rock Slope	Compacted Rock Depth (inches)	Cubic Yard Per Station	# of Stations	Cubic Yard Subtotal	Rock Source	Turnout		
											Length (feet)	Width (feet)	Taper (feet)
					<u>K1</u>	<u>B1</u>				PH-3700 Pit	<u>L</u>	<u>H</u>	<u>I</u>
PH-1100	--		0+00	19+11	1½:1	9	46	19.11	879				
--	TOL		9+70	10+70	1½:1	9	29	1	29		50	10	25
--	Spot Patch		22+00	23+00	1½:1	9	46	1	46				
--	--		30+38	37+27	1½:1	9	46	6.89	317				
--	--		46+84	56+00	1½:1	9	46	9.16	421				
--	TOL		55+00	56+00	1½:1	9	29	1	29		50	10	25
--	--		60+82	122+33	1½:1	9	46	61.51	2829				
--	TOR		66+27	67+27	1½:1	9	29	1	29		50	10	25
--	Spot Patch		127+83	128+83	1½:1	9	46	1	46				
--	Spot Patch		142+57	144+57	1½:1	9	46	2	92				
PH-1120	--		0+00	4+68	1½:1	9	46	4.68	215				
PH-1175	--		0+00	20+00	1½:1	9	46	20	920				
--	Turnouts		As approved by CA		1½:1	9	20	1	20		25	10	25
PH-1176	--		0+00	8+51	1½:1	6	30	8.51	255				
PH-1177	--		0+00	10+51	1½:1	6	30	10.51	315				
--	Turnouts		As approved by CA		1½:1	6	13	1	13		25	10	25

REQUIRED 3-INCH MINUS CRUSHED TOTAL 6455 Cubic Yards

Key:

TOR - Turnout Right  
TOL - Turnout Left

ROCK LIST  
Page 3 of 3

4-INCH JAW RUN

Road Number	Road Attributes	*Optional Rock	From Station	To Station	Rock Slope	Compacted	Cubic	# of	Cubic	Rock Source	Turnout\Turnaround		
						Rock Depth (inches)	Yard Per Station	Stations or Units	Yard Subtotal		Length (feet)	Width (feet)	Taper (feet)
					K2	B2				PH-3700 Pit	L	H	I
PH-1000C	--	*	0+00	3+40	1½:1	8	40	3.4	136				
PH-1000D	--	*	0+00	5+40	1½:1	8	40	5.4	216				
--	TA	*	As approved by CA		1½:1	8	30	1	30		30	30	
PH-1003	--	*	0+00	10+80	1½:1	8	40	10.8	432				
--	Turnouts	*	As approved by CA		1½:1	8	17	1	17		25	10	25
--	TA	*	As approved by CA		1½:1	8	30	1	30		30	30	
PH-1023	--		3+00	13+00	1½:1	8	40	10	400				
--	TOL		6+26	7+01	1½:1	8	17	1	17		25	10	25
--	LNDG-50'	*	13+00		1½:1	--	--	1	52				
PH-1023A	--	*	0+00	9+00	1½:1	8	43	9	387				
--	--	*	9+00	11+82	1½:1	8	40	2.82	113				
--	LNDG-60'	*	11+82		1½:1	--	--	1	77				
PH-1120	--		4+68	8+20	1½:1	12	67	3.52	236				
PH-1123	--		0+00	18+54	1½:1	12	67	18.54	1242				
--	Turnouts		As approved by CA		1½:1	12	41	2	82		50	10	25
--	--	*	18+54	25+67	1½:1	8	40	7.13	285				
--	TA	*	As approved by CA		1½:1	8	30	1	30		30	30	
PH-1123A	--	*	0+00	2+36	1½:1	8	40	2.36	94				
--	TA	*	As approved by CA		1½:1	8	30	1	30		30	30	
PH-1150	--		0+00	7+50	1½:1	8	43	7.5	323				
--	JCT		--	--	1½:1	8	--	--	43				
--	TA	*	As approved by CA		1½:1	8	30	1	30		30	30	
PH-1150A	--	*	0+00	9+18	1½:1	12	63	9.18	578				
--	TA	*	As approved by CA		1½:1	12	46	1	46		30	30	
--	LNDG-60'	*	5+58		1½:1	--	--	1	115				
PH-1152	--	*	0+00	6+95	1½:1	8	40	6.95	278				
--	LNDG-60'	*	6+95		1½:1	--	--	1	77				
PH-1176	Spot Patch	*	9+36	11+67	1½:1	12	63	2.31	146				
PH-1176	Spot Patch	*	14+07	16+27	1½:1	12	63	2.2	139				
PH-1177	--		10+51	35+93	1½:1	8	40	25.42	1017				
--	Turnouts		As approved by CA		1½:1	8	17	1	17		25	10	25

Key:

- TA - Turnaround
- TOR - Turnout Right
- TOL - Turnout Left
- JCT - Junction
- LNDG-50' - Landing - 50-Feet Diameter
- LNDG-60' - Landing - 60-Feet Diameter
- CA - Contract Administrator

REQUIRED 4-INCH JAW RUN TOTAL 3377 Cubic Yards  
OPTIONAL 4-INCH JAW RUN TOTAL 3338 Cubic Yards

ARMORING AND ENERGY DISSIPATORS

Road Number	Station	Description	Rock Type	C.Y. Total	Rock Source
All roads		Culvert armoring and energy dissipators	SELECT PIT RUN	16	PH-3700 Pit
PH-1100	0+00 to 72+44	Backfill for old-growth stump removals	SELECT PIT RUN	190	PH-3700 Pit

REQUIRED SELECT PIT RUN TOTAL 206 Cubic Yards

**CULVERT LIST**

Page 1 of 1

<u>Road Number</u>	<u>Location</u>	<u>Culvert</u>			<u>Armoring (Cubic Yards)</u>			<u>Backfill</u>	<u>Bedding</u>	<u>Culvert</u>	<u>Remarks</u>
		<u>Dia. (inches)</u>	<u>Length (feet)</u>	<u>Type</u>	<u>Inlet</u>	<u>Outlet</u>	<u>Type</u>	<u>Material</u>	<u>Material</u>	<u>Marker (Y/N)</u>	
PH-1000C	0+81	18	50	PD	0.5	0.5	SPR	NT	NT	N	
PH-1023	11+57	18	30	PD	0.5	0.5	SPR	NT	NT	N	
PH-1023A	2+10	18	30	XX	0.5	0.5	SPR	NT	NT	N	
	5+80	18	30	XX	0.5	0.5	SPR	NT	NT	N	
PH-1100	11+37	18	30	PD	0.5	0.5	SPR	NT	NT	N	
PH-1120	1+04	18	40	PD	0.5	0.5	SPR	NT	NT	N	
PH-1123	6+91	18	30	PD	0.5	0.5	SPR	NT	NT	N	
	12+68	18	30	PD	0.5	0.5	SPR	NT	NT	N	
	18+54	18	40	PD	0.5	0.5	SPR	NT	NT	N	
PH-1150	3+19	18	30	PD	0.5	0.5	SPR	NT	NT	N	
	4+28	24	40	PD	1	3	SPR	NT	NT	N	Type Np stream x-ing
	7+24	18	40	PD	0.5	0.5	SPR	NT	NT	N	
PH-1150A	5+33	18	30	XX	0.5	0.5	SPR	NT	NT	N	

**Key:**

- NT - Native (bank run)
- SPR - Select Pit Run
- GM - Galvanized Metal
- PD - Polyethylene Pipe Dual Wall
- XX - PD or GM

COMPACTION LIST

Page 1 of 1

<u>Road</u>	<u>Type</u>	<u>Max Depth Per Lift (inches)</u>	<u>Equipment Type</u>	<u>Equipment Weight (lbs)</u>	<u>Minimum Number of Passes</u>	<u>Maximum Operating Speed (mph)</u>	<u>Maximum Amount of Deflection (inches)</u>
All	Existing Surface	--	Vibratory Smooth Drum	20000	4	3	1
All	Subgrade	--	Vibratory Smooth Drum	20000	4	3	1
All	Embankment/Fill	12	Vibratory Smooth Drum	20000	4	3	1
All	Surfacing (1½-INCH MINUS CRUSHED)	6	Vibratory Smooth Drum	20000	4	3	1
All	Ballast (3-INCH MINUS CRUSHED)	9	Vibratory Smooth Drum	20000	4	3	2
All	Ballast (4-INCH JAW RUN)	8	Vibratory Smooth Drum	20000	4	3	2
All	Waste Areas	24	Excavation	28000	--	--	4
All	Culvert Bedding/Backfill	6	Vibratory Plate Compactor	260	--	--	1

# CULVERT AND DRAINAGE SPECIFICATION DETAIL

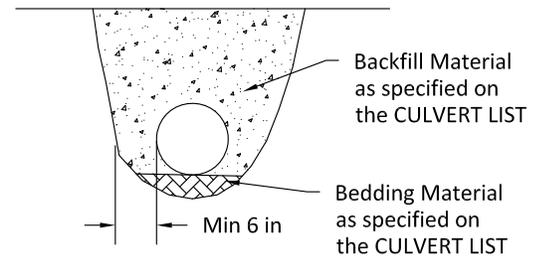
PAGE 1 OF 2

**INSTALLATION REQUIREMENTS:**

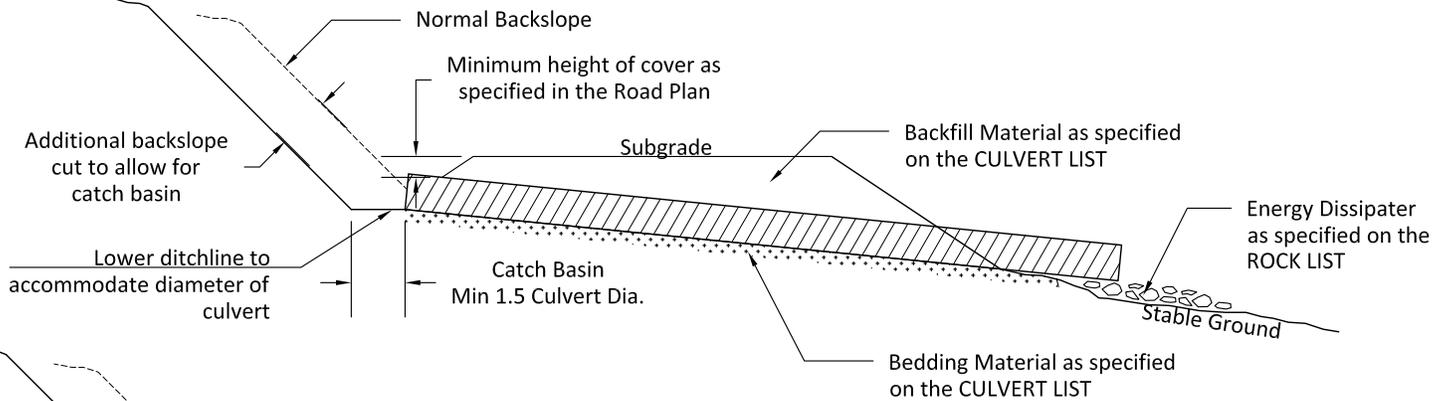
1. Proper preparation of foundation and placement of any required bedding material shall precede the installation of all culverts. This includes necessary leveling of the native trench bottom and compaction of required bedding material to form a uniform, dense, unyielding base. The pipe must be uniformly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

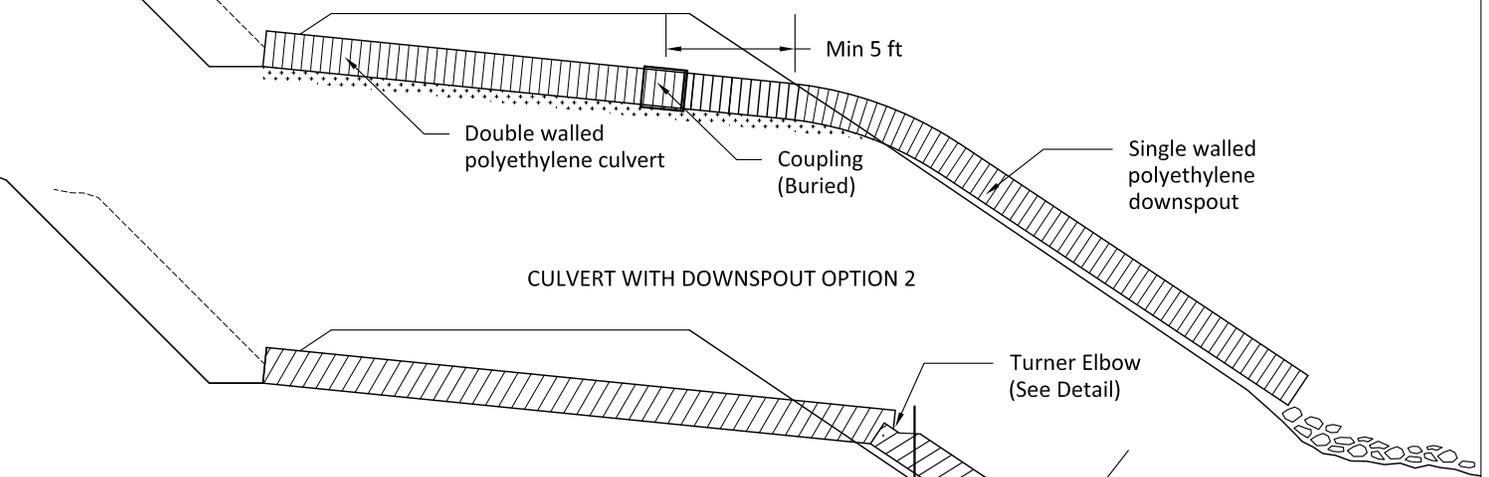
**CROSS SECTION**



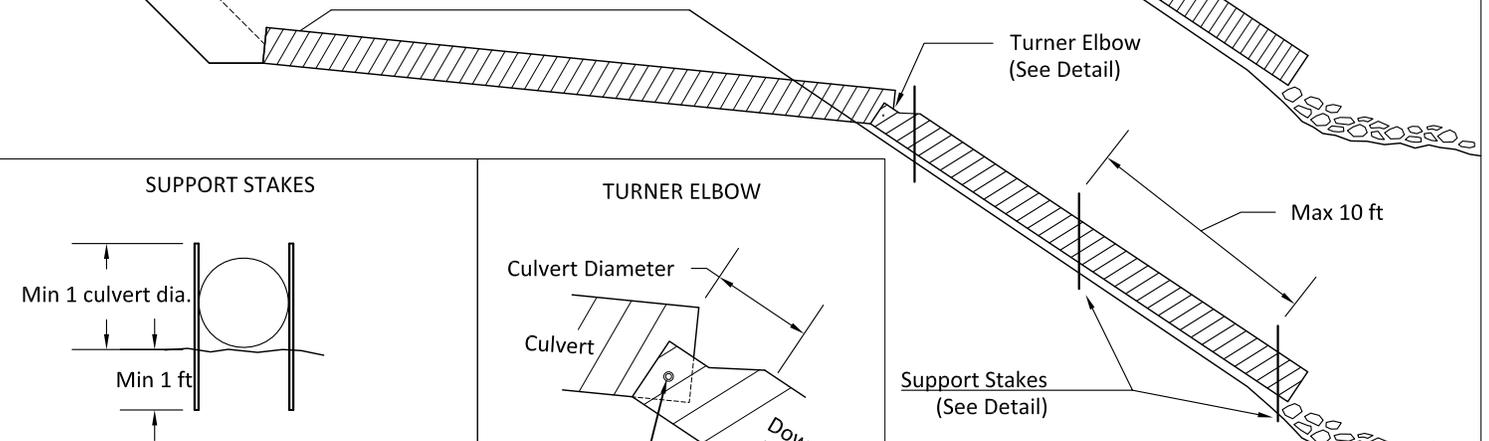
**CULVERT PROFILE (TYPICAL)**



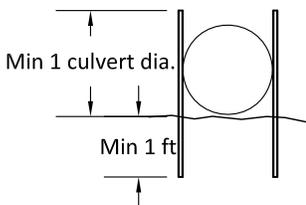
**CULVERT WITH DOWNSPOUT OPTION 1**



**CULVERT WITH DOWNSPOUT OPTION 2**

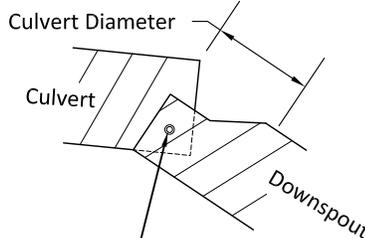


**SUPPORT STAKES**



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

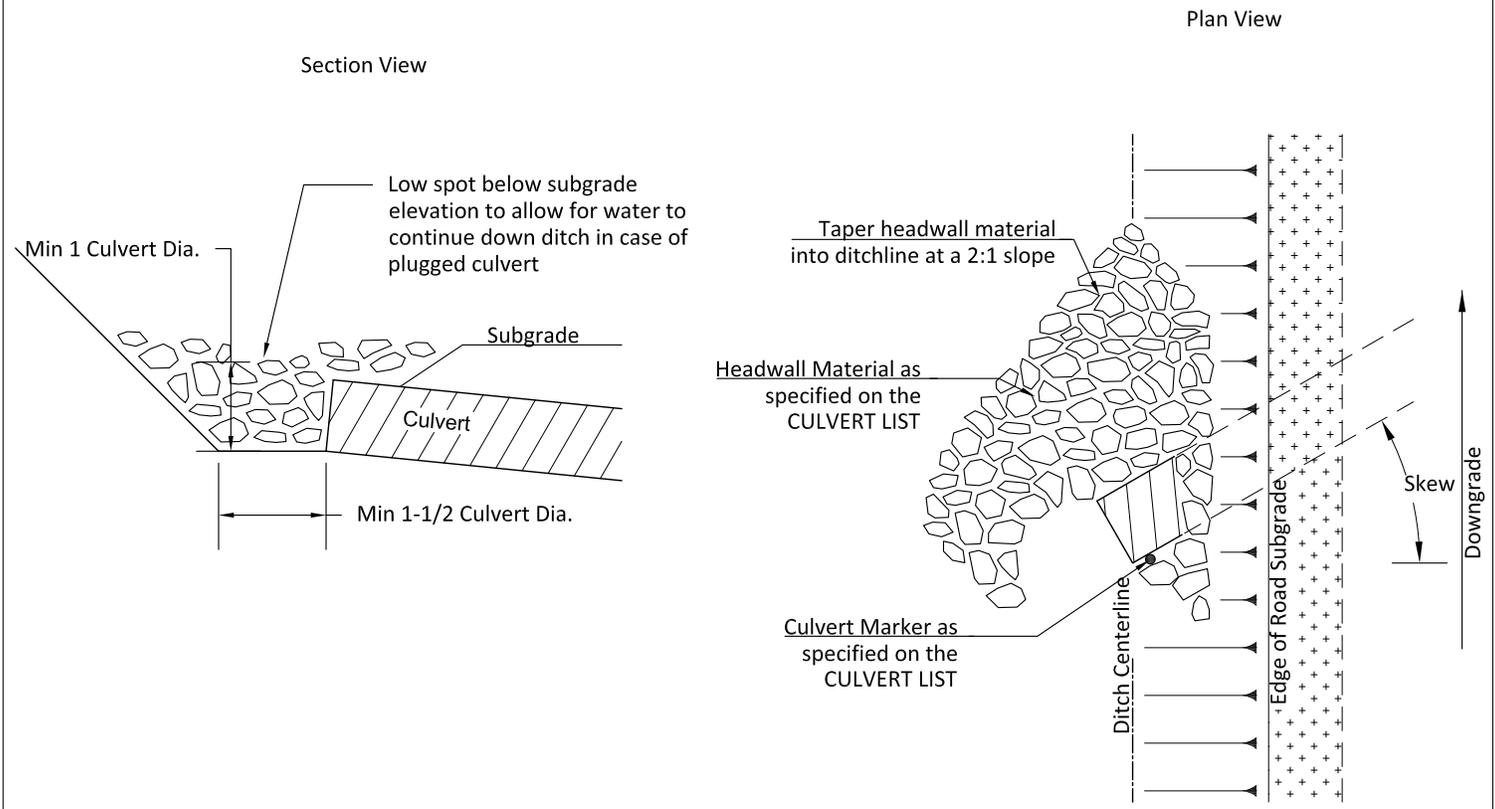
**TURNER ELBOW**



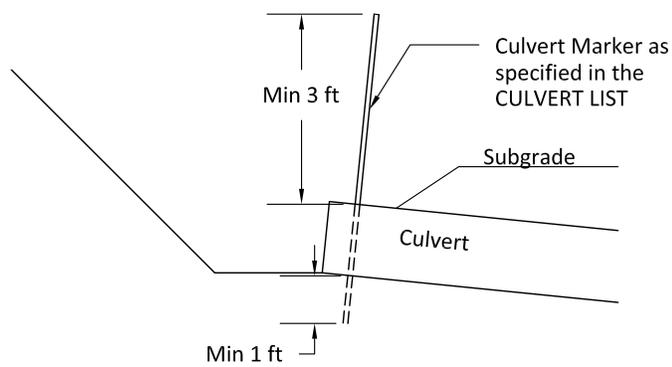
Bolted with 5/8" galvanized bolts and washers (both sides)  
 Downspout must be 6 inches larger in diameter than the culvert.

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

**HEADWALLS**

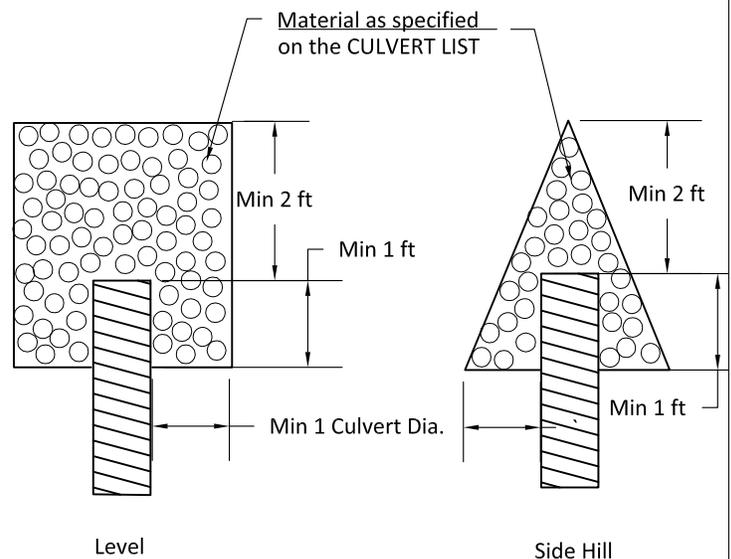


**CULVERT MARKERS**



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

**ENERGY DISSIPATORS**



Min Energy Dissipater Depth: 1 Culvert Dia.

**Cuts and Fills**

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

**Surface**

- Grade, shape, and compact 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.

**Preventative Maintenance**

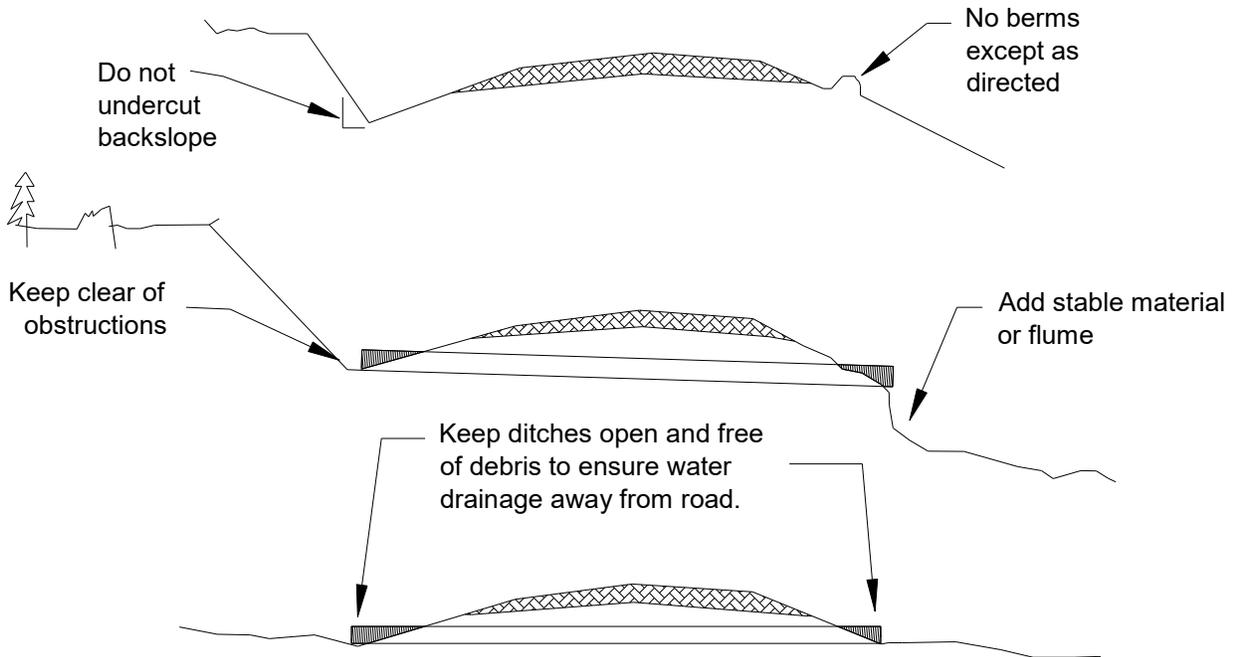
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

**Termination of Use or End of Season**

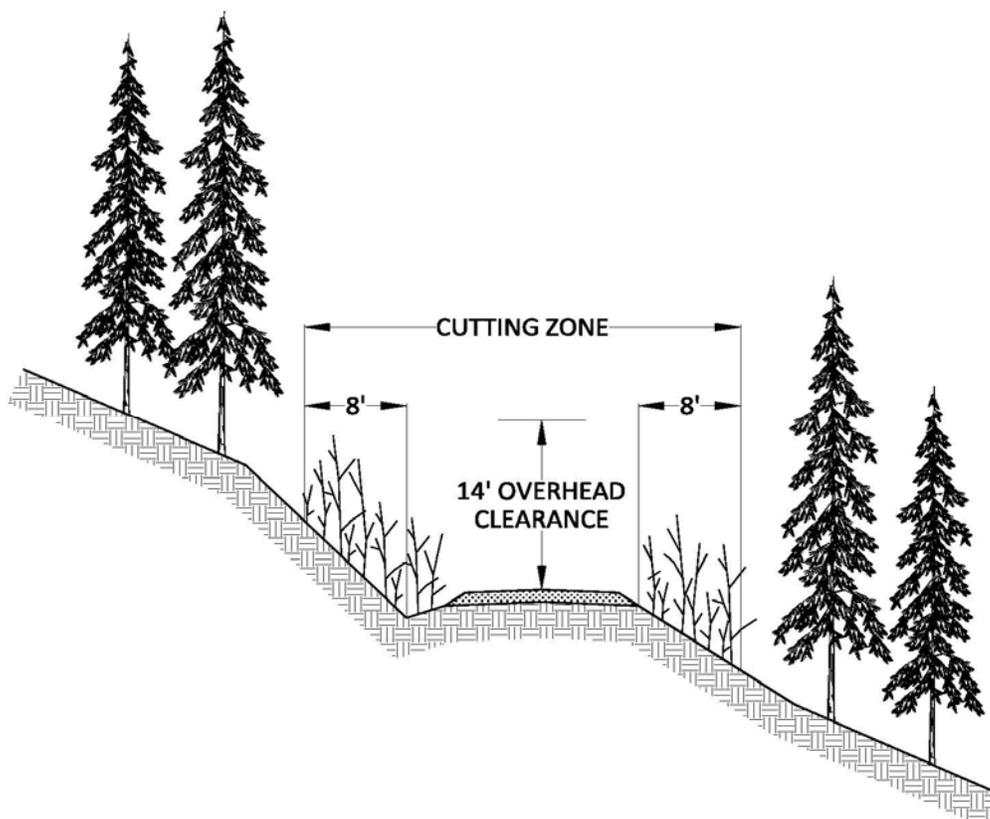
- At the conclusion of logging operations, ensure all conditions of these specifications have been met.

**Debris**

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



## ROAD BRUSHING DETAIL



### SPECIFICATIONS:

Brush shall be cut on the road surface and 8 ft. back from the back of road ditch and outside edge of running surface.

On the inside of switchbacks and tight curves, brush shall be cut back 16 ft. for visibility.

On truck turnouts or turnarounds, brush shall be cut 8 ft. back from outside edge of running surface.

Brush shall be cut to provide an overhead clearance of 14 ft. above the road running surface.

Brush shall be cut to within 6 in. of the ground.

Slash shall be removed from cut slopes above the road and scattered on embankment slopes.

Ditches and road surfaces shall be cleared of woody debris.

Culvert inlets and outlets shall be cleaned a minimum distance of two pipe diameters away.

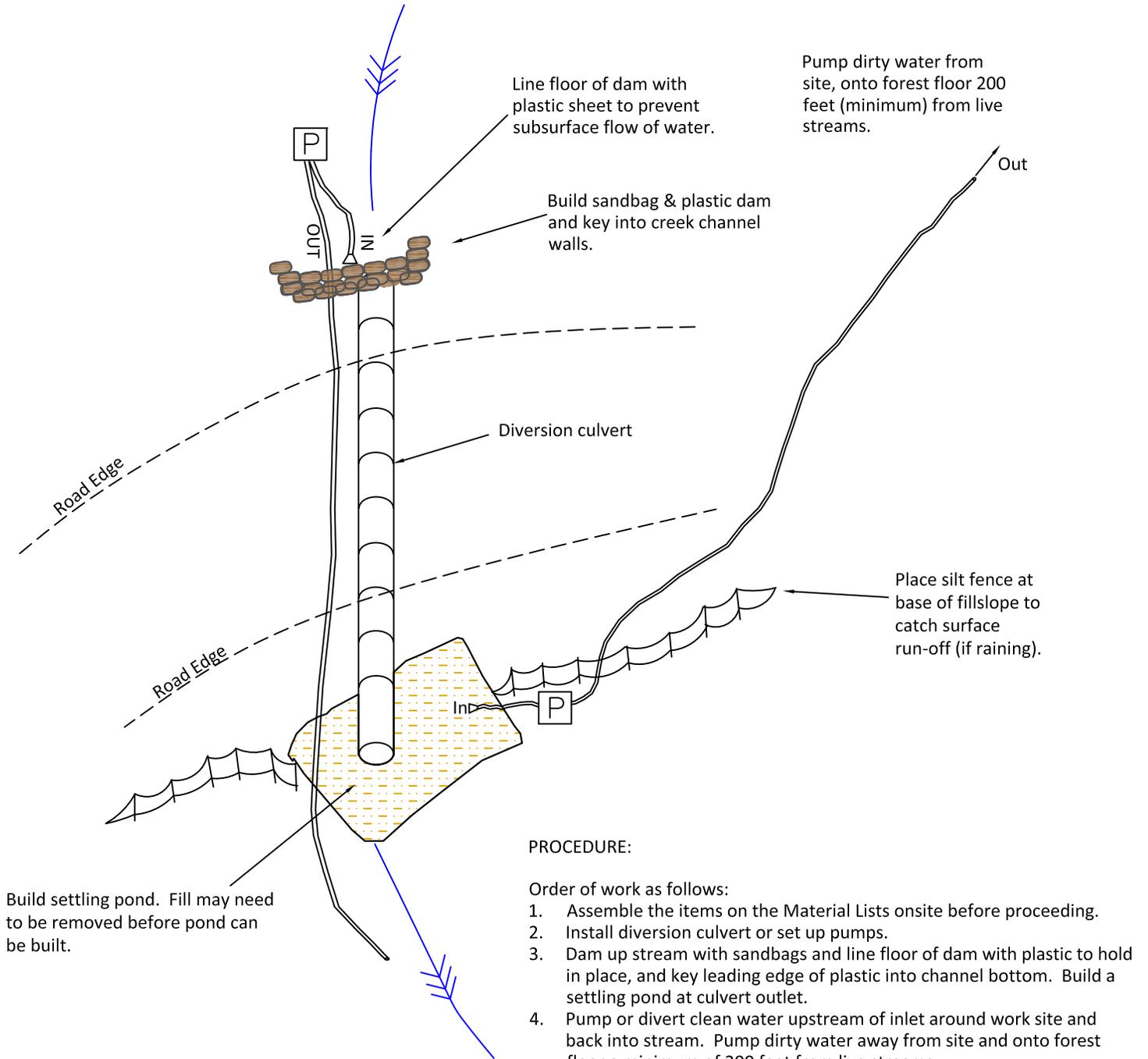
## STREAM DIVERSION PROCEDURE

For culvert installation or removal in live waters, sites shall be dewatered within the area of direct influence of the stream. Stream culvert installations or removals will occur as follows, any deviations shall be approved, in writing, by the Contract Administrator.

1. Prior to any work within the high waterline, Purchaser shall contact the Contract Administrator for an on-site pre-work to submit a plan for pumping and/or diverting all stream flow around the work area and pumping and/or diverting any groundwater flow from out of the work area, as approved, in writing, by the Contract Administrator. The SETTLING POND AND PUMP DETAIL, included herein, is an example of a pre-approved dewatering plan.
2. Once the stream has been pumped and/or diverted, stream flow shall not be allowed through the work area until all work below the ordinary high water line has been completed and approved, in writing, by the Contract Administrator.
3. Sedimentation shall be avoided during culvert installation or removal in accordance with Road Plan Clause 1-29 SEDIMENT RESTRICTION.
4. Per Road Plan Clause 8-1 SEDIMENT CONTROL STRUCTURES, Purchaser shall install silt fences or other suitable sediment control methods as approved by the Contract Administrator.
5. Backfill any settling ponds and remove any diversion culverts.
6. Maintain a clean jobsite in accordance with Road Plan Clause 7-5 STRUCTURE DEBRIS.

# SETTLING POND AND PUMP DETAIL

NOT TO SCALE



Build settling pond. Fill may need to be removed before pond can be built.

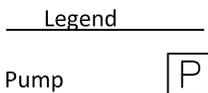
## PROCEDURE:

Order of work as follows:

1. Assemble the items on the Material Lists onsite before proceeding.
2. Install diversion culvert or set up pumps.
3. Dam up stream with sandbags and line floor of dam with plastic to hold in place, and key leading edge of plastic into channel bottom. Build a settling pond at culvert outlet.
4. Pump or divert clean water upstream of inlet around work site and back into stream. Pump dirty water away from site and onto forest floor a minimum of 200 feet from live streams.
5. Install/remove stream crossing structure.
6. Backfill any settling ponds.
7. Cover exposed soils in accordance with Section 8 EROSION CONTROL as stated within Road Plan.

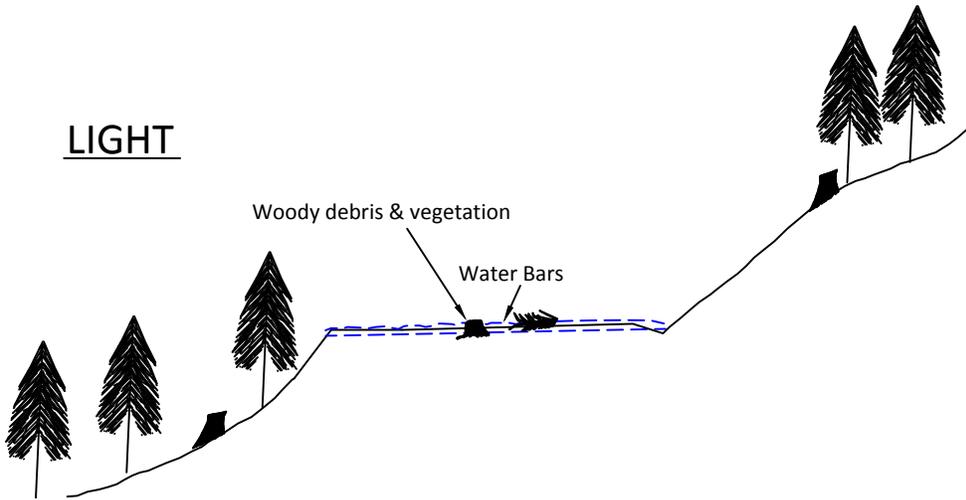
## Material Lists:

- 3 pumps, (one as a backup). The clean water pump (dam at culvert catch basin) shall have a minimum capacity of 1200 gallons per minute (gpm). The dirty water pump (settling pond) and the backup pump shall each have a minimum capacity of 600 gpm.
- Silt fence and stakes
- Plastic sheets
- Grass seed and bales of straw.

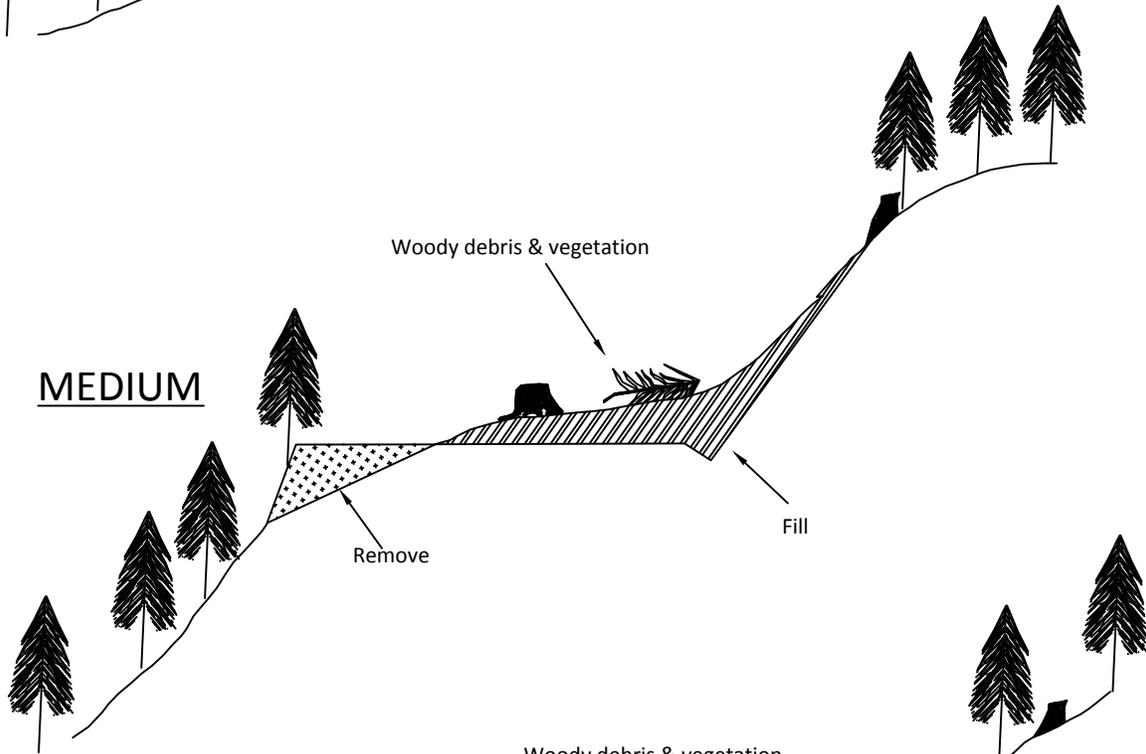


# ROAD ABANDONMENT CROSS SECTIONS

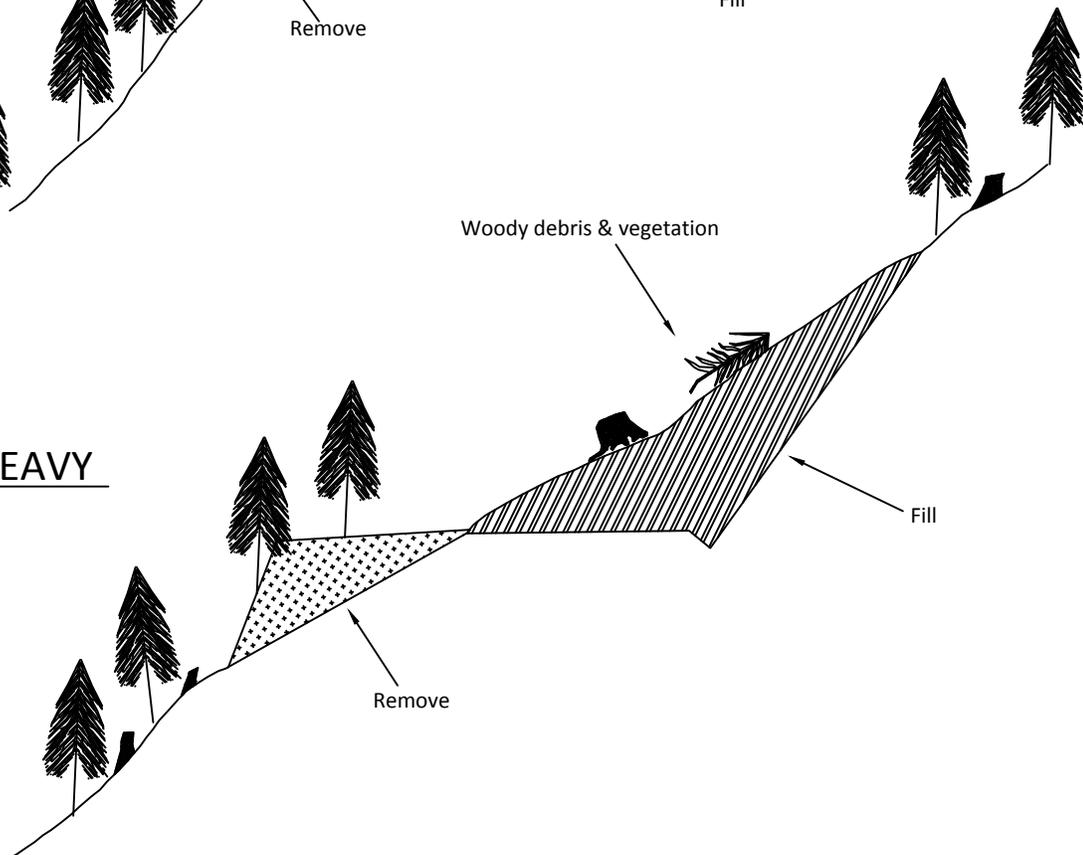
LIGHT



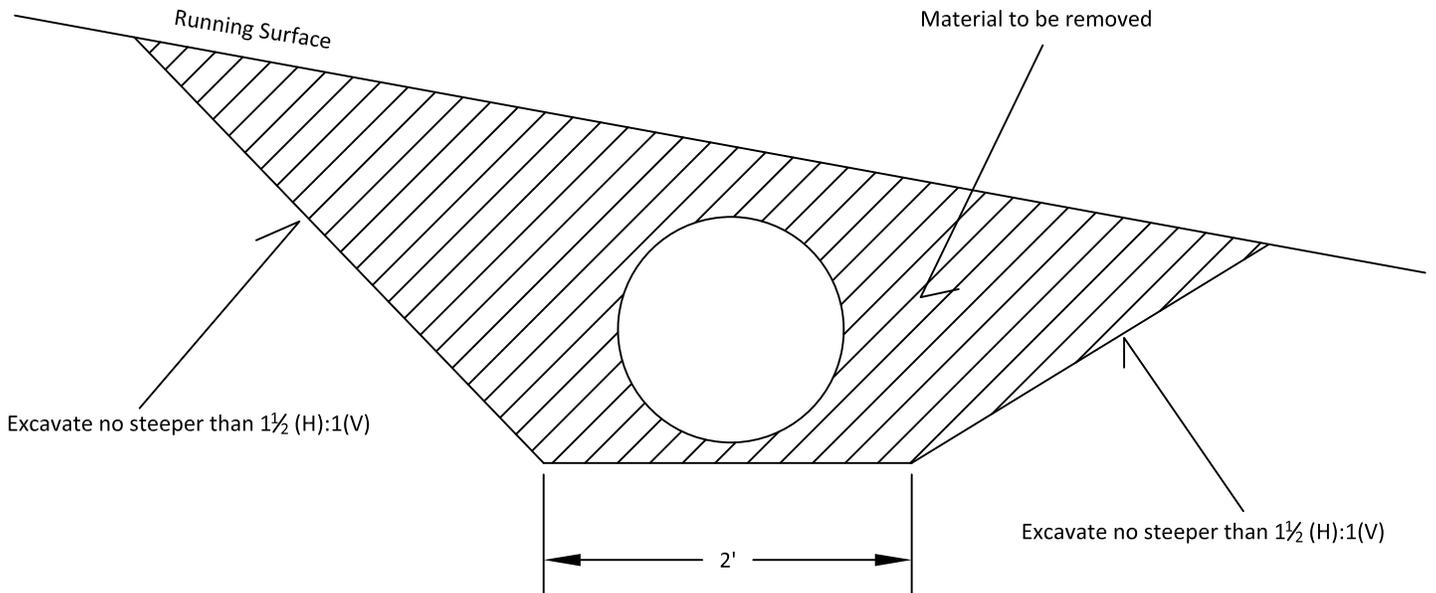
MEDIUM



HEAVY



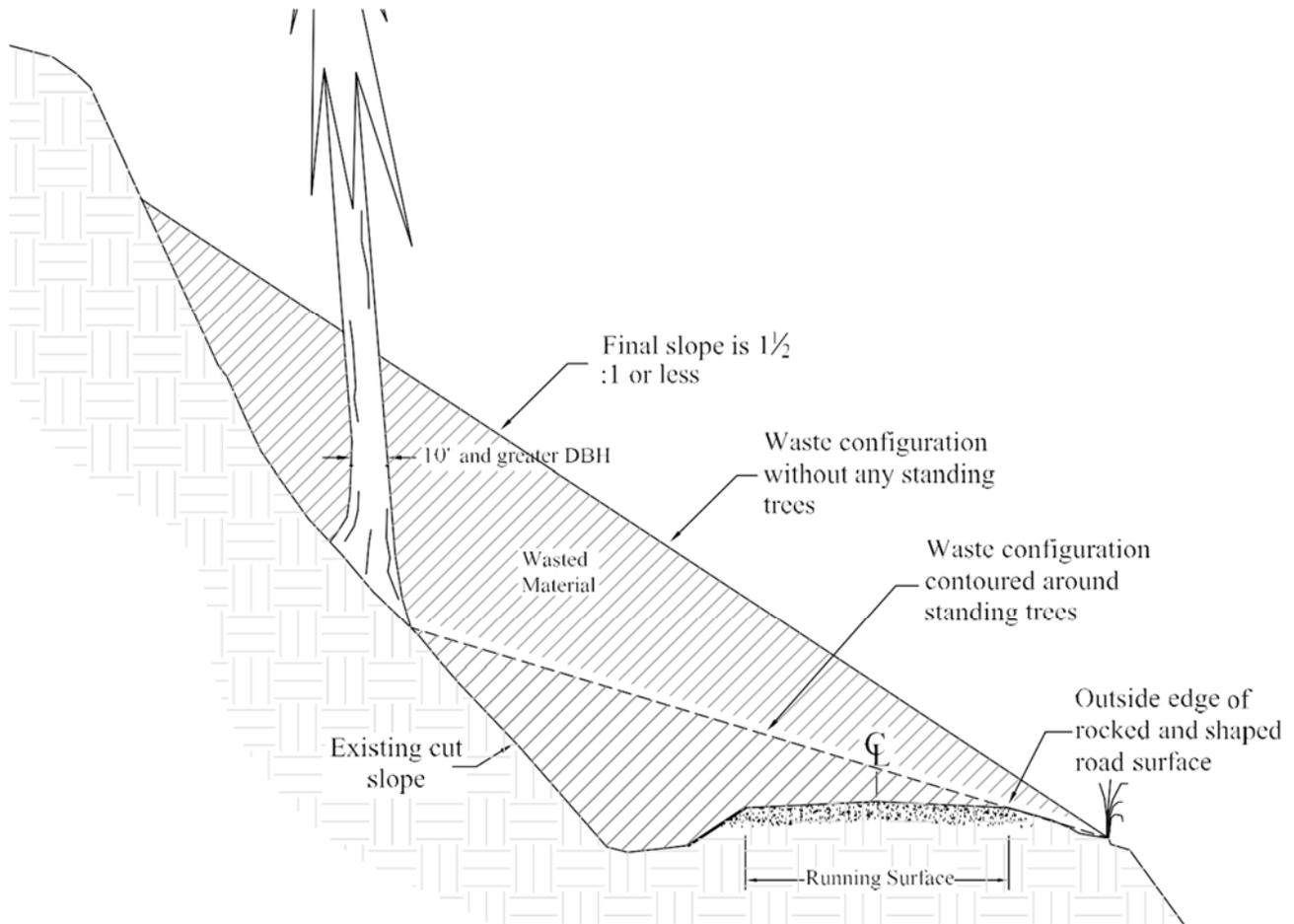
## CROSS DRAIN REMOVAL DETAIL



1) Excavated material may be wasted on the road surface on the downhill side of the excavation. Waste material shall be sloped no steeper than 1½ (H):1(V).

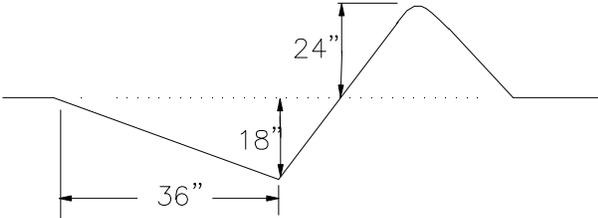
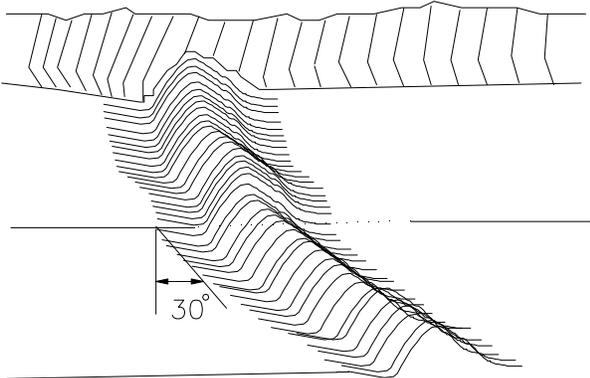
2) Resulting trench shall be keyed into the ditchline and sloped towards the outside edge of the road with a drop of at least 1 foot in 10 feet.

## ROAD PRISM WASTE DETAIL



1. Excavated material may be wasted in the road prism, including ditchline, as long as it is sloped no steeper than  $1\frac{1}{2}(H):1(V)$  and is placed at a minimum of 10 feet from the edge of excavation limits. Waste material shall not impede the natural drainage of water.
2. Waste shall be placed in 2-foot lifts and compacted by routing tracked excavation equipment over it.
3. A water bar shall be constructed immediately above the waste area.
4. All waste areas shall be grass seeded and covered with straw in accordance with Section 8 of Road Plan.
5. Woody debris shall not be buried in waste areas. Trees less than 10-inches DBH shall be cleared and scattered on top of the waste areas. Trees greater than 10-inches DBH shall be left in place, and the waste contoured around the base of the tree. Standing trees shall not be buried or partially buried by waste.

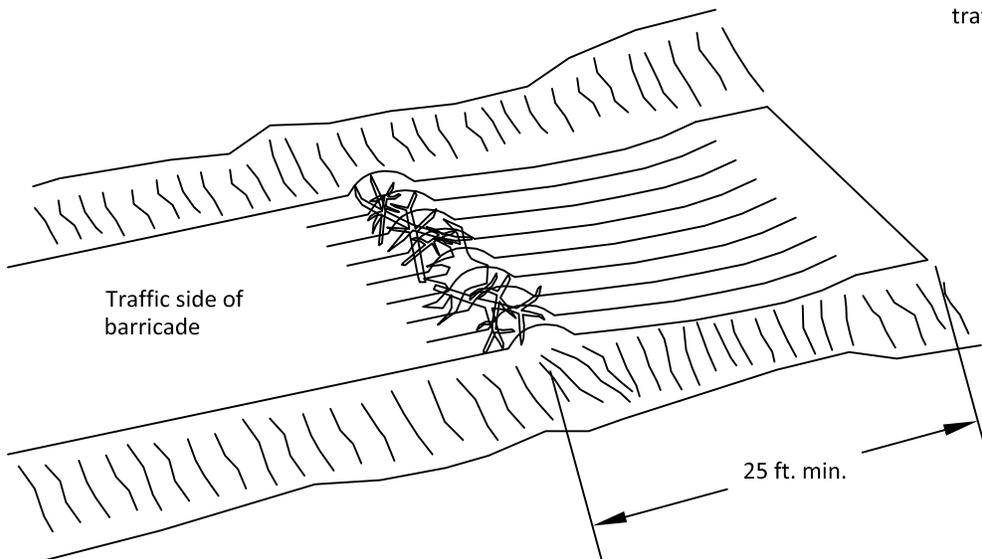
NON-DRIVABLE WATER BAR DETAIL



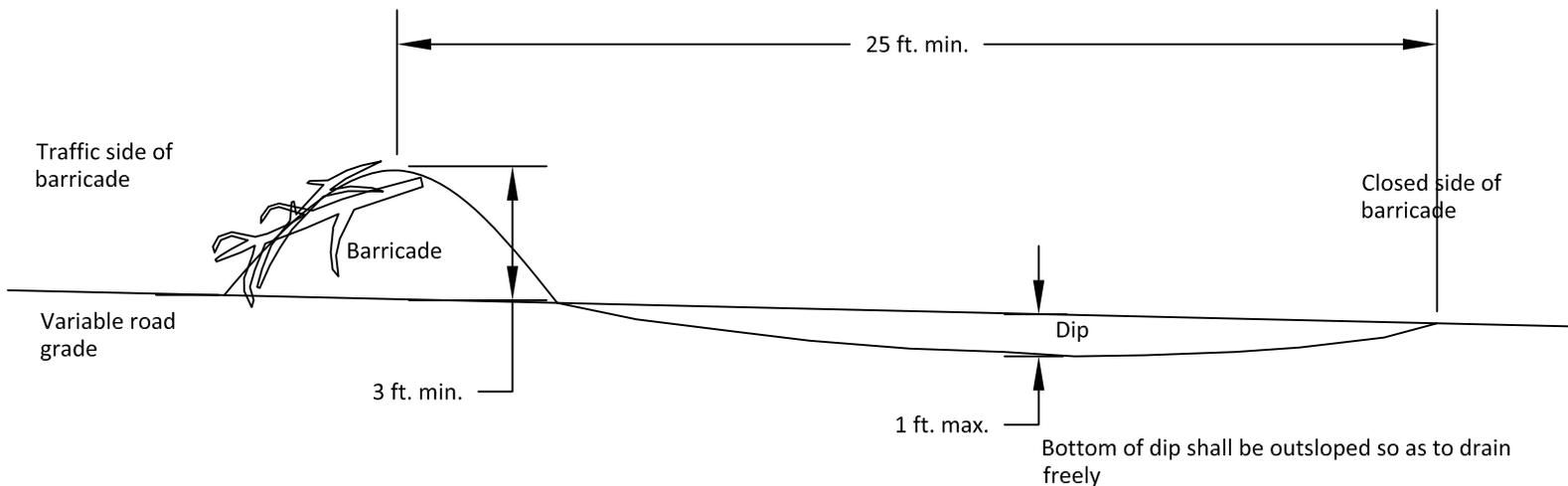
# EARTHEN BARRICADE DETAIL

PLAN VIEW  
(Not to scale)

Slash and root wads shall be incorporated into traffic side of the barricade.



PROFILE VIEW  
(Not to scale)





ROCK SOURCE DEVELOPMENT PLAN

PH-3700 Pit

Page 1 of 3

1. Purchaser shall arrange with the Contract Administrator to review the following designated pit(s) and examine the area before beginning any operations. A rock source plan of operations shall be developed and agreed upon by the Contract Administrator and Purchaser before beginning any operations.

<u>Pit Name</u>	<u>Legal Description</u>	<u>Maximum Pit Face Height</u>	<u>Requirements</u>
PH-3700 Pit	20, T06N, R02E	20 Feet	Mining shall occur in Area A as indicated on the ROCK SOURCE DEVELOPMENT PLAN MAP.

2. 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.
3. All vegetation including stumps shall be cleared a minimum of 25 feet beyond the top of all working faces. All trees shall be cleared within the Timber Sale Boundary tags. No additional trees shall be cut without written approval from Contract Administrator. The Purchaser shall maintain a minimum of 15 foot wide area stripped to rock from the pit face at all times.
4. All overburden shall be end hauled, placed, and compacted at the designated Waste Areas. Waste Area compaction requirements are specified in the COMPACTION LIST.
5. Root wads and organic debris larger than one cubic foot in volume shall be separated from overburden material and piled in the designated Waste Area.
6. Upon request by the Contract Administrator, the Purchaser will submit an informational drilling and shooting plan five working days prior to any drilling.
7. Drilling and rock extraction may begin when the Contract Administrator has approved, in writing, all of the clearing, grubbing and overburden removal.
8. Working bench width shall be a minimum of 20 feet.
9. Upon request by the Contract Administrator, the Purchaser will submit an informational drilling and shooting report after blasting has occurred.

ROCK SOURCE DEVELOPMENT PLAN

PH-3700 Pit

Page 2 of 3

10. The pit floor shall have continuity of slope with a smooth and neat condition that provides drainage at a minimum of 3 percent. All knobs, bumps, or extrusions shall be removed to the designated floor level by excavation or drill and shoot techniques. No sediment shall enter live water.
11. The location and amount of material deposited in a temporary stockpile is subject to approval by the Contract Administrator. All stockpiled material shall be maintained in a neat and useable condition.
12. 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 located as directed by the Contract Administrator.
13. Upon completion of pit operations, the following shall occur:
  - a. The maximum slope of pit walls must be consistent with recognized engineering standards for the type of material being excavated in accordance with the following table:

<u>Material</u>	<u>Maximum Slope Ratio (Horiz. :Vert.)</u>	<u>Maximum Slope Percent</u>
Sand	2:1	50
Gravel	1.5:1	67
Common Earth	1:1	100
Fractured Rock	½ :1	200
Solid Rock	0:1	vertical

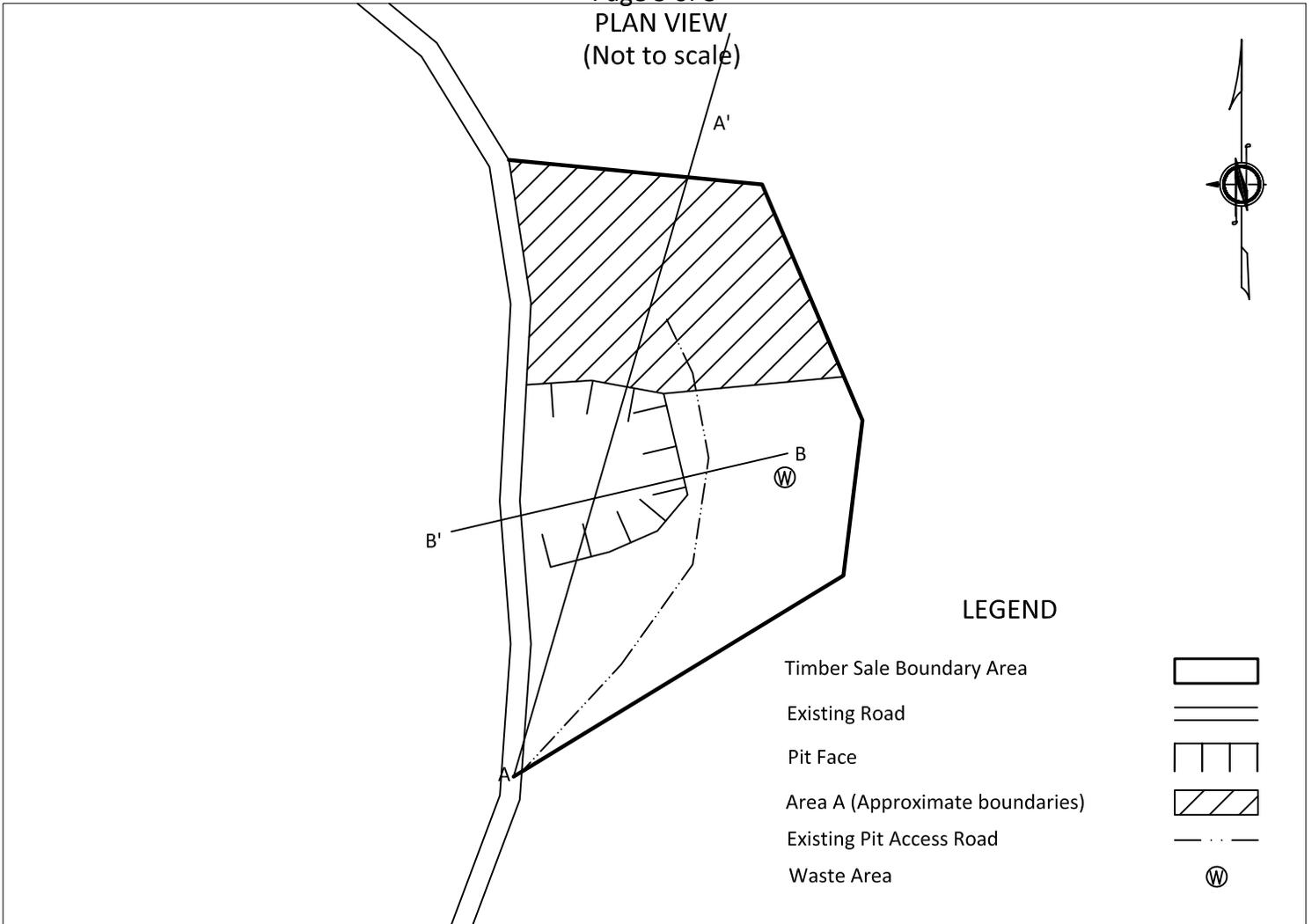
- b. Pit walls may not be undermined or over steepened. Pit walls must be maintained in a condition that minimizes the possibility of walls sliding or failing.
- c. Pit faces and walls shall be scaled and cleared of loose and overhanging material.
- d. Benches shall have safety berms constructed or access blocked to highway vehicles.
- e. The pit area will be left in a condition that will not endanger public safety, damage property, or be hazardous to animal or human life.
- f. All exposed soils in the Waste Areas shall be grass seeded in accordance with Section 8 of Road Plan.
- g. The pit area shall be worked and left in a condition that future operations may proceed in an orderly manner.
- h. The site shall be cleared of all temporary structures, equipment and rubbish, block access roads with existing on-site rip rap as directed by the Contract Administrator, and shall be left in a neat and presentable condition.
- i. The Purchaser shall obtain written approval of final rock source condition and compliance with the terms of this plan.

ROCK SOURCE DEVELOPMENT PLAN

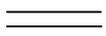
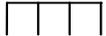
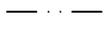
PH-3700 Pit

Page 3 of 3

PLAN VIEW  
(Not to scale)

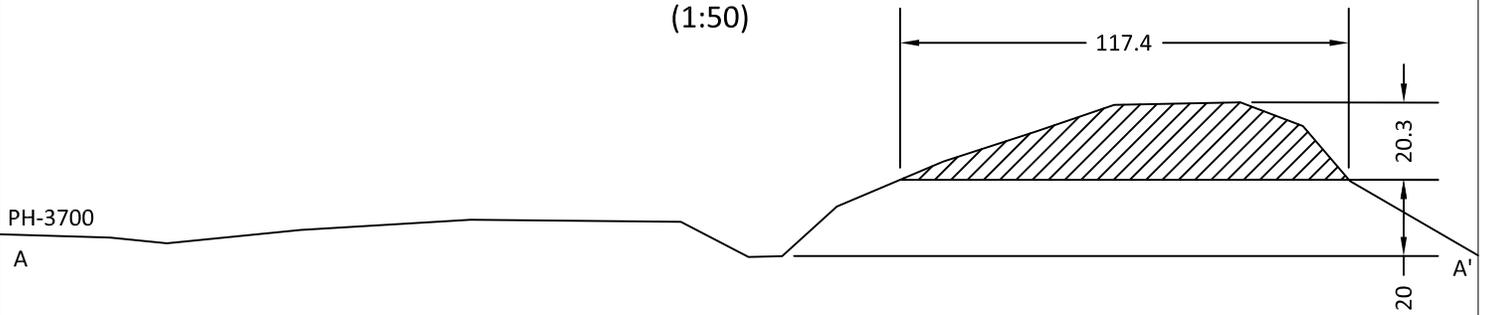


LEGEND

- Timber Sale Boundary Area 
- Existing Road 
- Pit Face 
- Area A (Approximate boundaries) 
- Existing Pit Access Road 
- Waste Area 

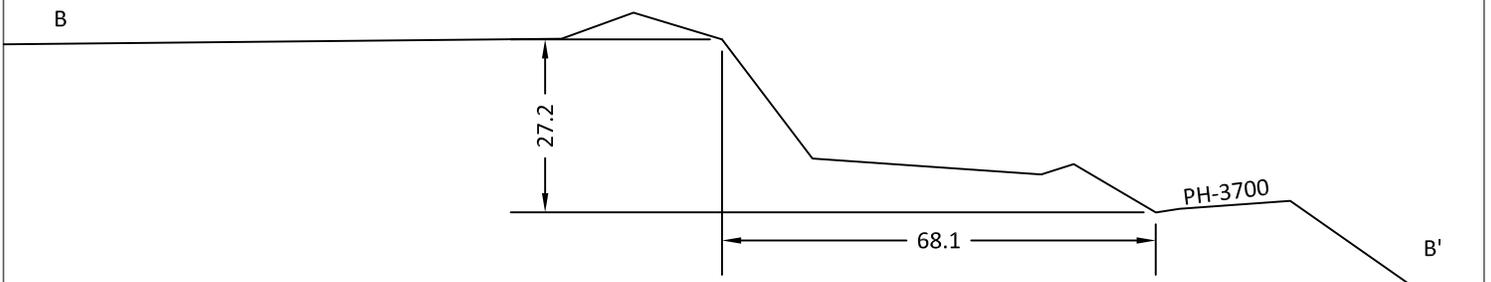
TYPICAL CROSS SECTIONS  
(1:50)

(Profile A)



TYPICAL CROSS SECTIONS  
(1:30)

(Profile B)



DEPARTMENT OF NATURAL RESOURCES  
ROAD DEVELOPMENT COST SUMMARY  
Page 1 of 8

REGION: PACIFIC CASCADE  
DISTRICT: YACOLT

SALE/PROJECT NAME: SALTY VRH RMZ

CONTRACT NUMBER: 30-097966

LEGAL DESCRIPTION: Section(s) 13, 24, 25, T06N, R01E; Section(s) 18,19, 20, T06N, R02E

ROAD NUMBER:	PH-1123, PH-1150A	PH-1000C, PH-1003, PH-1023A, PH-1120	PH-1000, PH-1000D, PH-1023, PH-1027, PH-1028, PH-1100, PH-1120, PH-1123, PH-1123A, PH-1150, PH-1150A, PH-1152, PH-1175, PH-1176, PH-1177
ROAD STANDARD:	Construction	Reconstruction	Maintenance
NUMBER OF STATIONS:	24.12	29.54	356.66
CLEARING AND GRUBBING:	\$2,653	\$1,579	
EXCAVATION AND FILL:	\$6,429	\$4,330	
MISC. MAINTENANCE:			\$37,377
ROCK:			
1½" Minus Crushed:			
3" Minus Crushed:	\$36,063	\$27,824	\$224,595
4" Jaw Run:			
Select Pit Run:			
CULVERTS AND FLUMES:	\$2,789	\$2,360	\$6,473
GENERAL EXPENSES:	\$4,314	\$3,248	\$24,160
MOBILIZATION:	\$3,600	\$3,600	\$3,600
TOTAL COSTS:	\$55,847	\$42,941	\$296,204
COST PER STATION:	\$2,315	\$1,454	\$830
ROAD ABANDONMENT COSTS:	\$15,858	TOTAL (All Roads) =	\$410,850
		TOTAL (All roads excluding optional rock) =	\$350,352
		SALE VOLUME MBF =	5,259
		TOTAL COST PER MBF (All Roads) =	\$78.12
		TOTAL COST PER MBF (All roads excluding optional rock) =	\$66.62

Compiled by: S. Hanna  
Created Date: 10/03/19

# CONSTRUCTION COSTS

SALE NAME: SALTY VRH RMZ

CONTRACT NUMBER: 30-097966

**CLEARING AND GRUBBING:**

<u>Road</u>	<u>% Sideslope</u>	<u>MBF/ac</u>	<u>Disposal Factor</u>	<u>Production</u>	<u>Width Factor</u>	<u>Cost/station</u>	<u>Total Stations</u>	<u>Sub-Total</u>
PH-1123	25	20	1.00	2.00	1.00	\$55	18.54	\$2,039.40
PH-1150A	25	20	1.00	2.00	1.00	\$55	5.58	\$613.80
<b>CLEAR AND GRUB TOTAL =</b>								<b>\$2,653.20</b>

**EXCAVATION:**

<u>Road</u>	<u>% Sideslope</u>	<u>Material Type</u>	<u>Exc. Type Fact.</u>	<u>Production</u>	<u>Width Factor</u>	<u>Cost/station</u>	<u>Total Stations</u>	<u>Sub-Total</u>
PH-1123	25	Common Soil	1.00	2.25	1.00	\$100	18.54	\$4,171.50
PH-1150A	25	Common Soil	1.00	2.25	1.00	\$100	5.58	\$1,255.50

**Grade, Shape and Compact Subgrade**

<u>Total Stations</u>	<u>Cost/Station</u>	<u>Sub-Total</u>
24.12	\$30.43	\$733.97

**Soil Erosion Control**

<u>Total Stations</u>	<u>Application Cost (\$/station)</u>	<u>Seed (lbs)</u>	<u>Cost (\$/lb)</u>	<u>Sub-Total</u>
24.12	\$5.00	67	\$2.20	\$268.00

**EXCAVATION TOTAL = \$6,428.97**

**BALLAST AND SURFACING:**

**Rock Processing & Application Costs**

PH-3700 Pit	
Average MPH	15
Delay (Hrs.)=	0.13
Cost / Hour =	\$98.00
CY / Load =	11

Pit Activity Description	PH-3700 Pit		
	1½" Minus (cy)	4" Jaw Run	Select Pit Run
Development	\$1.00	\$1.00	\$1.00
Drill & Shoot	\$3.00	\$3.00	\$3.00
Load Crusher	\$1.00	\$1.00	
Crushing	\$6.00	\$3.70	
Load Truck	\$1.00	\$1.00	\$1.00
Spread	\$1.40	\$1.40	\$7.30
Compact	\$0.75	\$0.75	
<b>Total Base Cost</b>	<b>\$14.15</b>	<b>\$11.85</b>	<b>\$12.30</b>

<u>Road</u>	<u>Rock Source</u>	<u>Optional Rock</u>	<u>R.T. Miles</u>	<u>Haul (\$/cy)</u>	<u>1½" Minus (cy)</u>	<u>4" Jaw Run (cy)</u>	<u>SPR (cy)</u>	<u>Sub-Total</u>
PH-1123	PH-3700 Pit		4.52	\$3.84	278	1,324	3	\$25,823.20
PH-1150A	--	Optional	11.64	\$8.07	0	513	1	\$10,239.33
<b>ROCK TOTAL =</b>								<b>\$36,062.53</b>

**CULVERTS:**

<u>Road</u>	<u>Description</u>	<u>Dia (inches)</u>	<u>Length (feet)</u>	<u>Cost/ft</u>	<u>Sub-total</u>
PH-1123	X-Drain	18	100	\$21.45	\$2,145.00
PH-1150B	X-Drain	18	30	\$21.45	\$643.50
<b>CULVERT TOTAL =</b>					<b>\$2,788.50</b>

# CONSTRUCTION COSTS

Page 3 of 8

## MOBILIZATION:

<u>Description</u>	<u>\$ per Move</u>	<u># of Moves</u>	<u>Sub-total</u>
Dump Trucks	200	4	\$800
Grader	500	1	\$500
Compactor	500	1	\$500
Excavator	1,000	1	\$1,000
Dozer (D8)	1,000	1	\$1,000
Front end loader	1,000	1	\$1,000
Rock crusher	\$5,000	1	\$5,000
Drill	\$500	1	\$500
Dozer (D5)	\$500	1	\$500
	<b>Total Mobilization =</b>		<b>\$10,800</b>
	<b>Average Mobilization Costs =</b>		<b>\$3,600.00</b>

## GENERAL EXPENSES:

	<b>SUB-TOTAL =</b>	<b>\$47,933.20</b>
Overhead & General Exp. Add	9%	<b>\$4,313.99</b>
	<b>MOBILIZATION SUBTOTAL =</b>	<b>\$3,600.00</b>
	<b>CONSTRUCTION TOTAL =</b>	<b>\$55,847.19</b>

# RECONSTRUCTION COSTS

SALE NAME: SALTY VRH RMZ

CONTRACT NUMBER: 30-097966

**CLEARING AND GRUBBING:**

Road	% Side Slope	MBF/Acre	Disposal Factor	Production	Width Factor	Cost/Station	Total Stations	Sub-Total
PH-1000C	10	5	1.00	1.25	1.00	\$40	3.40	\$170.00
PH-1003	25	25	1.00	2.22	1.00	\$40	10.80	\$959.04
PH-1023A	10	5	1.00	1.25	1.00	\$40	9.00	\$450.00
PH-1023A	10	5	1.00	1.25	1.00	\$40	2.82	\$141.00
PH-1120	20	25	1.00	2.22	1.00	\$40	3.52	\$312.58
<b>CLEAR AND GRUB TOTAL =</b>								<b>\$1,579.04</b>

**EXCAVATION:**

Road	% Sideslope	Material Type	Exc. Type Fact.	Production	Width Factor	Cost/Station	Total Stations	Sub-Total
PH-1000C	10	Common Soil	1.00	1.50	1.00	\$75	3.40	\$382.50
PH-1003	25	Common Soil	1.00	2.25	1.00	\$75	10.80	\$1,822.50
PH-1023A	10	Common Soil	1.00	1.50	1.00	\$75	9.00	\$1,012.50
PH-1023A	10	Common Soil	1.00	1.50	1.00	\$75	2.82	\$317.25
PH-1120	20	Common Soil	1.00	2.00	1.00	\$75	3.52	\$528.00

**Subgrade Grading and Compaction**

Total Stations	Cost/Station	Sub-Total
29.54	\$30.43	\$898.90

**Soil Erosion Control**

Total Stations	Application Cost (\$/station)	Seed (lbs)	Cost (\$/lb)	Sub-Total
29.54	\$5.00	30	\$2.20	\$213.70

**EXCAVATION TOTAL = \$4,330.10**

**BALLAST AND SURFACING :**

**Rock Processing & Application Costs**

	PH-3700 Pit
Average MPH	15
Delay (Hrs.)=	0.13
Cost / Hour =	\$98.00
CY / Load =	11

Pit Activity Description	PH-3700 Pit		
	1½" Minus (cy)	4" Jaw Run (cy)	Select Pit Run
Development	\$1.00	\$1.00	\$1.00
Drill & Shoot	\$3.00	\$3.00	\$3.00
Load Crusher	\$1.00	\$1.00	
Crushing	\$6.00	\$3.70	
Load Truck	\$1.00	\$1.00	\$1.00
Spread	\$1.40	\$1.40	\$7.30
Compact	\$0.75	\$0.75	
<b>Total Base Cost</b>	<b>\$14.15</b>	<b>\$11.85</b>	<b>\$12.30</b>

Road	Rock Source	Optional Rock	R.T. Miles	Haul (\$/cy)	1½" Minus (cy)	4" Jaw Run (cy)	SPR (cy)	Sub-Total
PH-1000C	PH-3700 Pit	Optional	6.89	\$5.25	0	136	1	\$2,343.15
PH-1003	--	Optional	5.93	\$4.68	0	479		\$7,917.87
PH-1023A	--	Optional	8.51	\$6.21	126	387	2	\$9,591.60
PH-1023A	--	Optional	8.73	\$6.35	0	190		\$3,458.00
PH-1120	--		4.10	\$3.59	49	236		\$4,513.10

**ROCK TOTAL \$27,823.72**

# RECONSTRUCTION COSTS

Page 5 of 8

## CULVERTS:

<u>Road</u>	<u>Description</u>	<u>Dia (inches)</u>	<u>Length (feet)</u>	<u>Cost/ft</u>	<u>Sub-total</u>
PH-1000C	X-Drain	18	50	\$21.45	\$1,072.50
PH-1023A	X-Drain	18	60	\$21.45	\$1,287.00
<b>CULVERT TOTAL =</b>					<b>\$2,359.50</b>

**SUB-TOTAL = \$36,092.36**

## GENERAL EXPENSES:

Overhead & General Exp. Add 9% **\$3,248.31**

**MOBILIZATION SUB-TOTAL = \$3,600.00**

**RECONSTRUCTION TOTAL = \$42,940.67**

# MAINTENANCE COSTS

Page 6 of 8

SALE NAME: SALTY VRH RMZ

CONTRACT NUMBER: 30-097966

**MISC. MAINTENANCE ITEMS:**

<u>Description</u>	<u>Cost/Station</u>	<u>Total Stations</u>	<u>Sub-Total</u>
ditch cleaning =	\$30.00	328.87	\$9,866.10
culvert cleanout =	\$7.32	218.71	\$1,600.96
Desod existing road edges =	\$25.00	122.33	\$3,058.25
grade, shape, and compact =	\$30.43	188.63	\$5,740.01
brushing =	\$24.62	137.08	\$3,374.91
Chemical application =	\$100.00	17.03	\$1,703.00
Rock exploration (excavator and rock drill) =	--	--	\$6,000.00
Old growth stump removal =	--	--	\$4,200.00

**Soil Erosion Control**

<u>Total Stations</u>	<u>Application Cost (\$/station)</u>	<u>Seed (lbs)</u>	<u>Cost (\$/lb)</u>	
328.87	\$5.00	86	\$2.20	\$1,833.55
				<b>SUB-TOTAL = \$37,376.78</b>

**CULVERTS:**

<u>Road</u>	<u>Description</u>	<u>Dia (inches)</u>	<u>Length (feet)</u>	<u>Cost/ft</u>	<u>Sub-total</u>
PH-1023	X-Drain	18	30	\$21.45	\$643.50
PH-1100	X-Drain	18	30	\$21.45	\$643.50
PH-1120	X-Drain	18	40	\$21.45	\$858.00
PH-1150	X-Drain	18	70	\$21.45	\$1,501.50
PH-1150	Stream x-ing	24	40	\$33.12	\$1,324.80
Extras*	X-Drain	18	70	\$21.45	\$1,501.50

\*Install as needed or directed by the contract administrator.

**CULVERT TOTAL = \$6,472.80**

# MAINTENANCE COSTS

**BALLAST AND SURFACING :**

**Rock Processing & Application Costs**

**Rock Haul Estimates**

	PH-3700 Pit
Ave. Speed =	15
Delay (Hrs.)=	0.13
Cost / Hour =	\$98.00
CY / Load =	11

Pit Activity Description	PH-3700 Pit			
	1½" Minus	3" Minus	4" Minus	Select Pit Run
Development	\$1.00	\$1.00	\$1.00	\$1.00
Drill & Shoot	\$3.00	\$3.00	\$3.00	\$3.00
Load Crusher	\$1.00	\$1.00	\$1.00	
Crushing	\$6.00	\$4.20	\$3.70	
Load Truck	\$1.00	\$1.00	\$1.00	\$1.00
Spread	\$1.40	\$1.40	\$1.40	\$7.30
Compact	\$0.75	\$0.75	\$0.75	
<b>Total Base Cost</b>	<b>\$14.15</b>	<b>\$12.15</b>	<b>\$11.85</b>	<b>\$12.30</b>

<u>Road</u>	<u>Rock Source</u>	<u>From Station</u>	<u>To Station</u>	<u>R.T. Miles</u>	<u>Haul (\$/cy)</u>	<u>1½" Minus (cy)</u>	<u>3" Minus</u>	<u>4" Jaw Run</u>	<u>SPR (cy)</u>	<u>Sub-Total</u>
PH-1000	PH-3700 Pit	58+00	88+96	7.84	\$5.81	1053	0	0		\$21,017.88
--	--	114+00	142+58	5.76	\$4.58	972	0	0		\$18,205.56
PH-1000D	--	0+00	5+40	3.87	\$3.46	0	0	246		\$3,766.26
PH-1023	--	0+00	3+00	8.30	\$6.09	56	0	0		\$1,133.44
--	--	3+00	13+00	8.55	\$6.24	0	0	469	1	\$8,502.75
PH-1100	--	0+00	19+11	7.18	\$5.42	0	908	0	26	\$16,414.28
--	--	22+00	23+00	7.67	\$5.72	0	46	0		\$822.02
--	--	30+38	37+27	8.10	\$5.97	0	346	0	30	\$6,817.62
--	--	46+84	56+00	8.77	\$6.37	0	421	0	95	\$9,570.57
--	--	60+82	122+33	10.29	\$7.27	0	2,858	0	40	\$56,285.16
--	--	127+83	128+83	11.68	\$8.10	0	46	0		\$931.50
--	--	142+57	144+57	12.26	\$8.44	0	92	0		\$1,894.28
PH-1120	--	0+00	4+68	3.95	\$3.50	0	215	0	1	\$3,380.55
PH-1123	--	18+54	25+67	5.01	\$4.13	0	0	315		\$5,033.70
PH-1123A	--	0+00	2+36	4.40	\$3.77	0	0	124		\$1,936.88
PH-1150	--	0+00	7+50	11.33	\$7.89	119	0	396	6	\$10,560.94
PH-1150A	--	0+00	3+60	11.47	\$7.97	0	0	227		\$4,499.14
PH-1152	--	0+00	6+95	11.59	\$8.04	0	0	355		\$7,060.95
PH-1175	--	0+00	20+00	4.71	\$3.96	0	940	0		\$15,143.40
PH-1176	--	0+00	8+51	5.25	\$4.28	0	255	0		\$4,189.65
--	--	9+36	11+67	5.49	\$4.42	0	0	146		\$2,375.42
--	--	14+07	16+27	5.66	\$4.52	0	0	139		\$2,275.43
PH-1177	--	0+00	10+51	5.61	\$4.49	0	328	0		\$5,457.92
--	--	10+51	35+93	6.29	\$4.90	0	0	1,034		\$17,319.50
<b>ROCK TOTAL =</b>										<b>\$224,594.80</b>

**GENERAL EXPENSES:**

	<b>SUB-TOTAL =</b>	<b>\$268,444.38</b>
Overhead & General Exp. Add	9%	<b>\$24,159.99</b>
	<b>MOBILIZATION SUB-TOTAL =</b>	<b>\$3,600.00</b>
	<b>SHEET TOTAL =</b>	<b>\$296,204.37</b>

# ROAD CLOSURE COSTS

Page 8 of 8

SALE NAME: SALTY VRH RMZ

CONTRACT NUMBER: 30-097966

Total Stations Road Closure = 82.35

**MISC. ROAD CLOSURE COSTS:**

<u>Description</u>	<u>Cost/Station</u>	<u>Total Stations</u>	<u>Sub-Total</u>
water barring =	\$32.36	72.21	\$2,336.72
culvert removal =	\$6.17	72.21	\$445.54
wood placement =	\$30.00	82.35	\$2,470.50
spoils berm =	\$85.00	7	\$595.00
stream culvert removal =	\$942.85	7	\$6,599.95
ripping =	\$17.25	10.14	\$174.92

**Soil Erosion Control**

<u>Total Stations</u>	<u>Application Cost</u> <u>(\$/station)</u>	<u>Seed (lbs)</u>	<u>Cost (\$/lb)</u>	<u>Straw Bales</u>	<u>Cost (\$/Bale)</u>	<u>Sub-Total</u>
72.21	\$5.00	48	\$2.20	39	\$9.19	\$825.06

**Misc TOTAL = \$13,447.68**

**GENERAL EXPENSES:**

Overhead & General Exp. Add 9% **\$1,210.29**

**MOBILIZATION:**

Description	\$ per Move	# of Moves	Sub-total
Dump Trucks	200	1	\$200
Excavator	1,000	1	\$1,000

**Total Mobilization = \$1,200**

**CLOSURE TOTAL = \$15,857.97**



## 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*

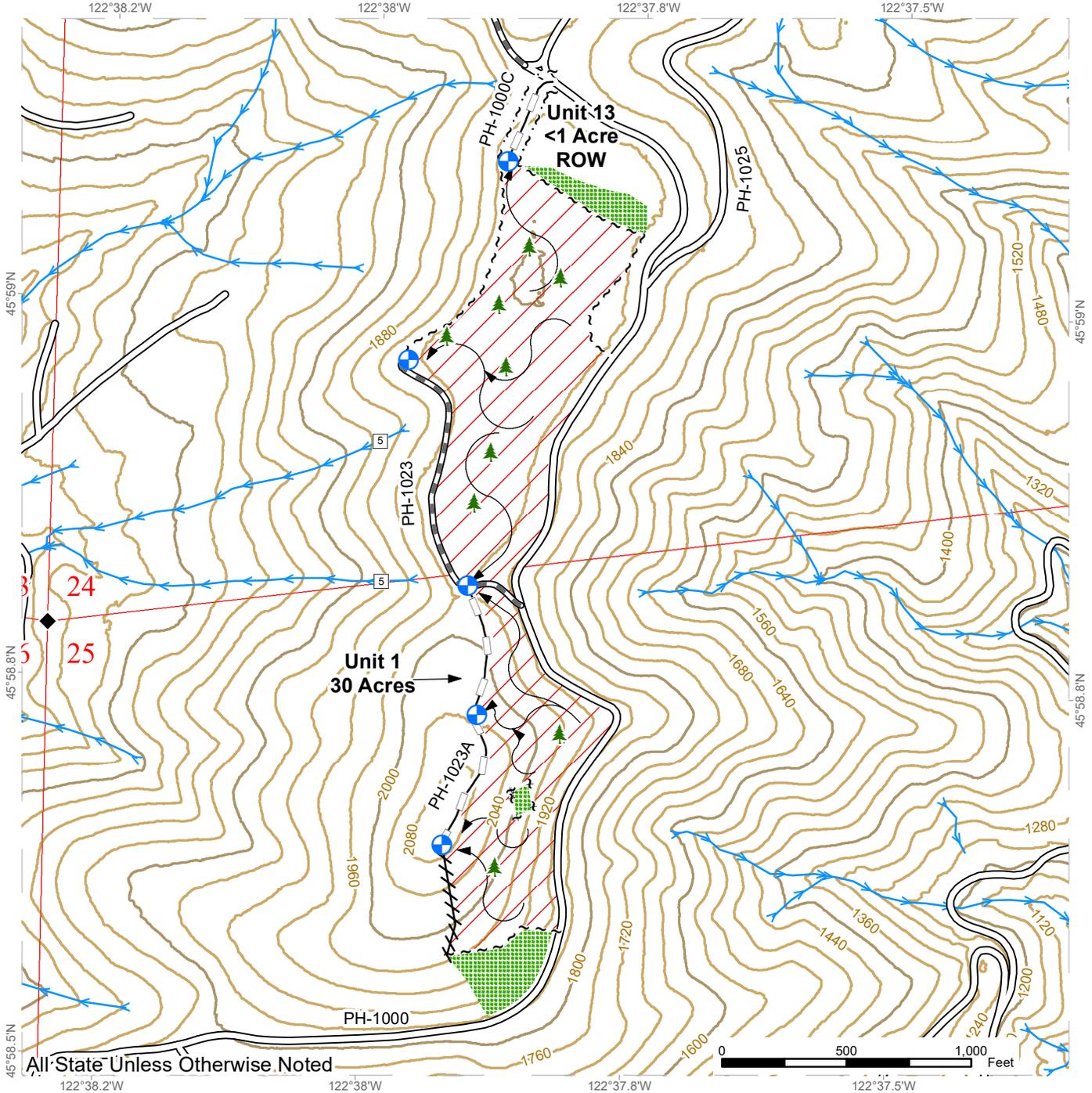
All parties must make their own assessment of the taxable or non-taxable status of any work performed under the timber sale contract. The Department of Revenue bears responsibility for determining forest road excise taxes. The Department of Natural Resources developed this form to help estimate the impact 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: SALTY VRH RMZ  
 AGREEMENT#: 30-097966  
 TOWNSHIP(S): T6R1E, T6R2E  
 TRUST(S): Capitol Grant (7), Charitable/Educational/Peal & Reformatory Instit. (6), Common School and Indemnity (3), Scientific School (10)

REGION: Pacific Cascade Region  
 COUNTY(S): Cowlitz  
 ELEVATION RGE: 1457-2433



All State Unless Otherwise Noted

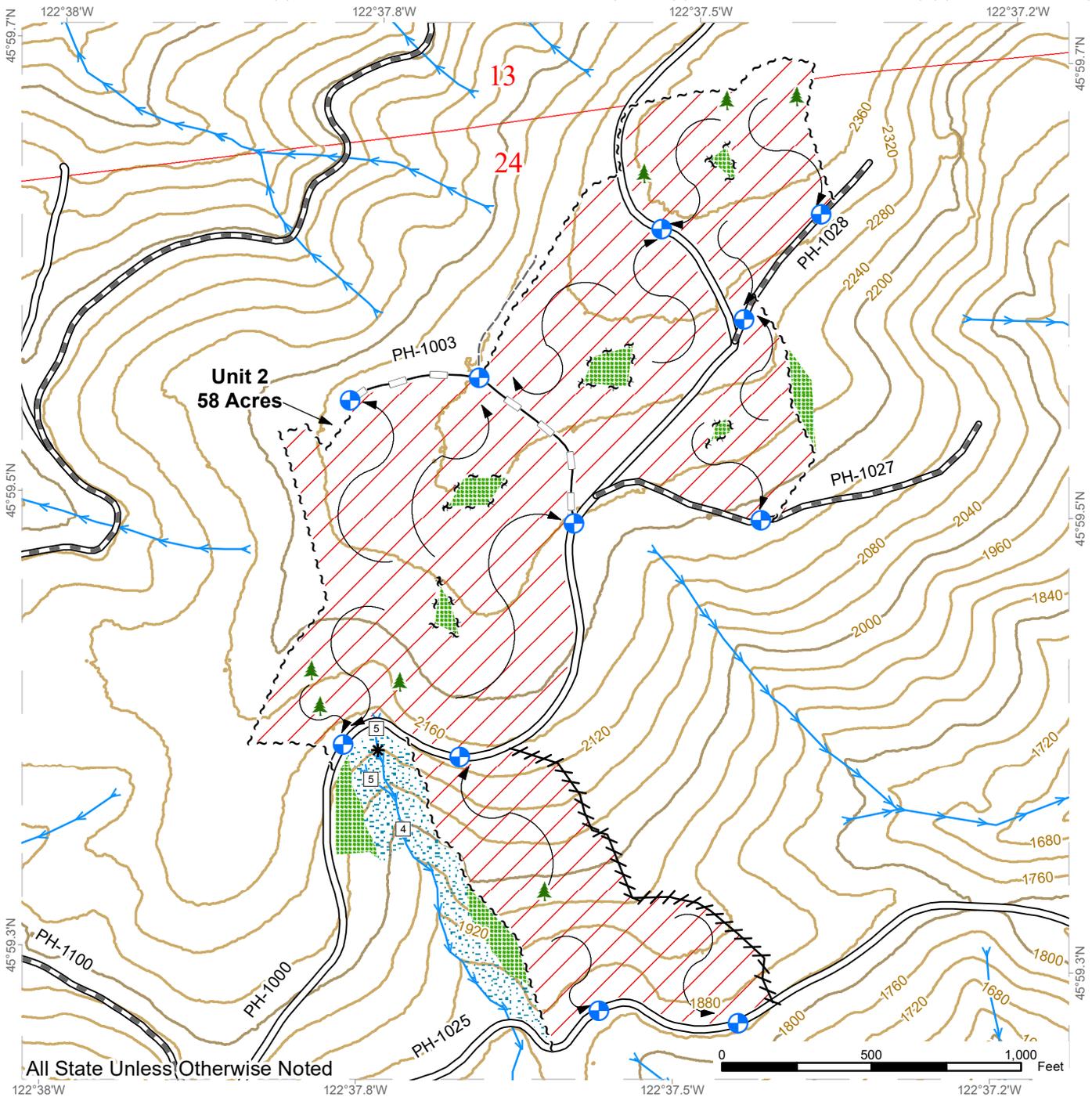
Variable Retention Harvest	Ground Harvest	Existing Roads	Streams
Leave Tree Area	Sale Boundary Tags	Required Pre-Haul Maintenance	Landing - Proposed
	Leave Tree Tags	Optional Reconstruction	Leave Tree Area <1/4-acre
	Right of Way Tags		Survey Monument
	Flag Line		



# LOGGING PLAN MAP

**SALE NAME:** SALTY VRH RMZ  
**AGREEMENT#:** 30-097966  
**TOWNSHIP(S):** T6R1E, T6R2E  
**TRUST(S):** Capitol Grant (7), Charitable/Educational/Penal & Reformatory Instit. (6), Common School and Indemnity (3), Scientific School (10)

**REGION:** Pacific Cascade Region  
**COUNTY(S):** Cowlitz  
**ELEVATION RGE:** 1457-2433



All State Unless Otherwise Noted

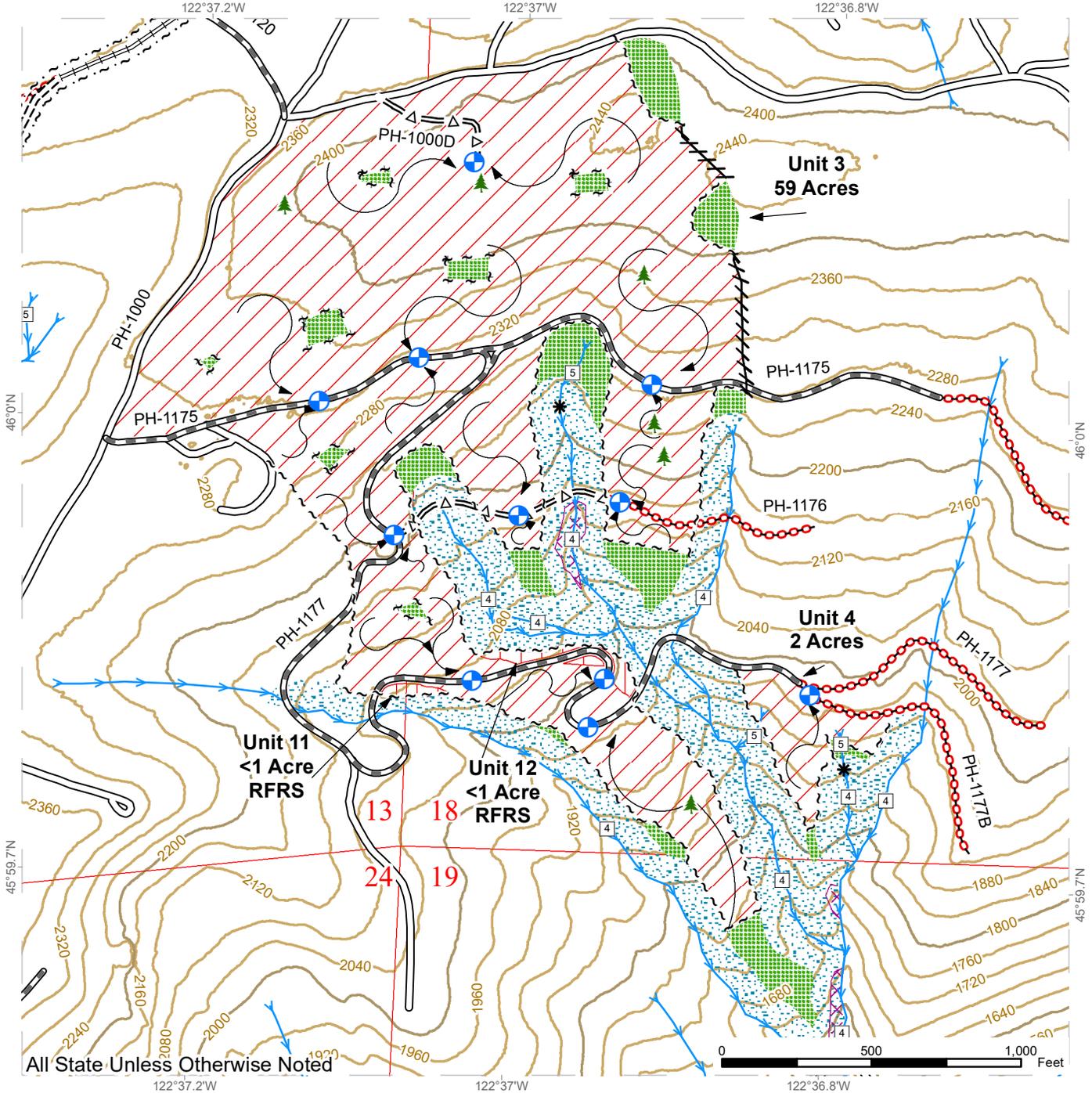
Variable Retention Harvest	Ground Harvest	Existing Roads	Streams
Leave Tree Area	Sale Boundary Tags	Required Pre-Haul Maintenance	Landing - Proposed
Riparian Mgt Zone	Leave Tree Tags	Optional Reconstruction	Leave Tree Area <1/4-acre
Flag Line	Old Grades/Trails		



# LOGGING PLAN MAP

**SALE NAME:** SALTY VRH RMZ  
**AGREEMENT#:** 30-097966  
**TOWNSHIP(S):** T6R1E, T6R2E  
**TRUST(S):** Capitol Grant (7), Charitable/Educational/Peal & Reformatory Instit. (6), Common School and Indemnity (3), Scientific School (10)

**REGION:** Pacific Cascade Region  
**COUNTY(S):** Cowlitz  
**ELEVATION RGE:** 1457-2433



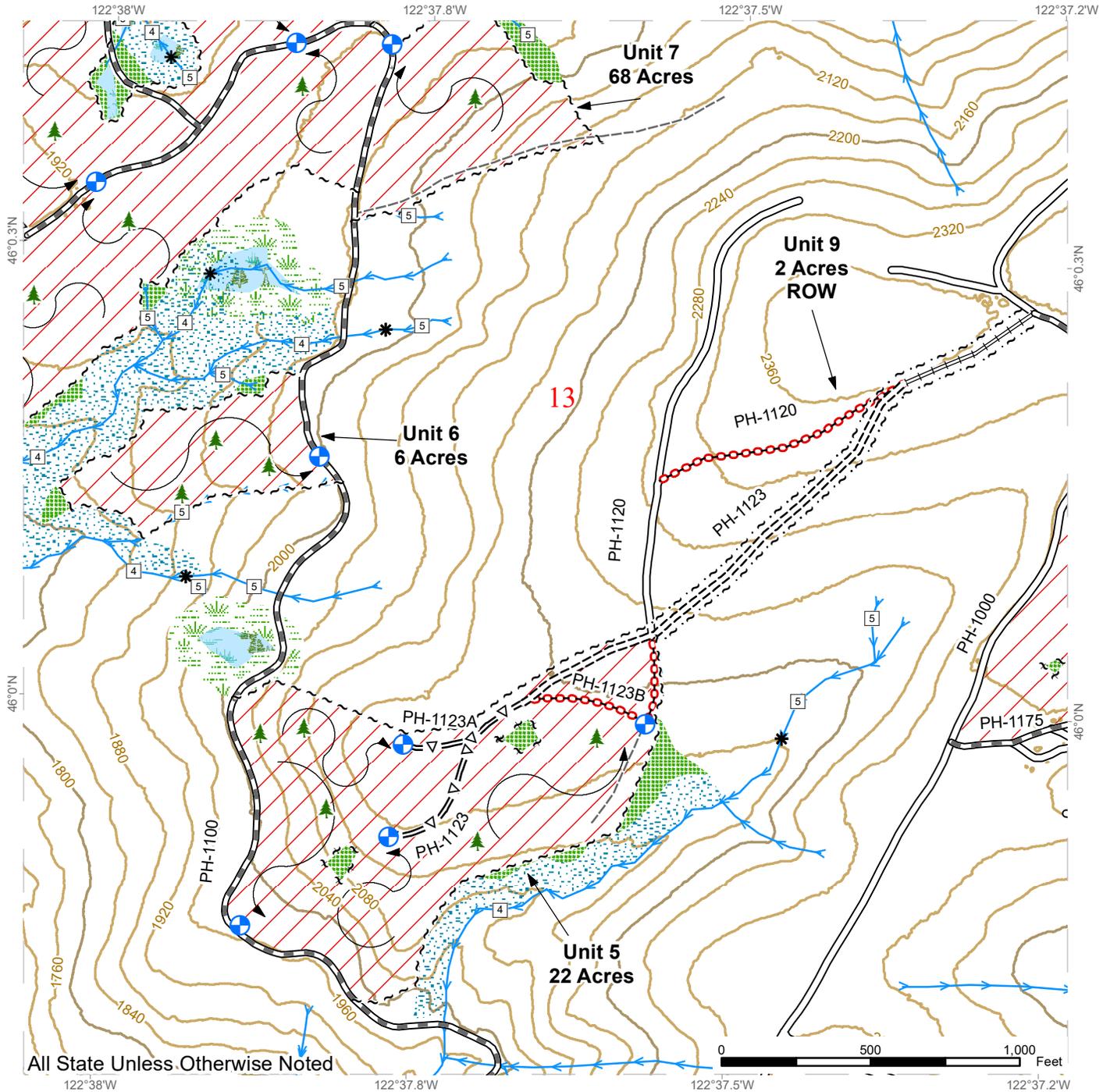
Variable Retention Harvest	Ground Harvest	Existing Roads	Streams
Riparian Restoration	Sale Boundary Tags	Required Pre-Haul Maintenance	Landing - Proposed
Leave Tree Area	Leave Tree Tags	Required Construction	Leave Tree Area <1/4-acre
Riparian Mgt Zone	Right of Way Tags	Required Reconstruction	
Potentially Unstable Slopes	Flag Line	Optional Pre-Haul Maintenance	
		Required Abandonment	



# LOGGING PLAN MAP

**SALE NAME:** SALTY VRH RMZ  
**AGREEMENT#:** 30-097966  
**TOWNSHIP(S):** T6R1E, T6R2E  
**TRUST(S):** Capitol Grant (7), Charitable/Educational/Penal & Reformatory Instit. (6), Common School and Indemnity (3), Scientific School (10)

**REGION:** Pacific Cascade Region  
**COUNTY(S):** Cowlitz  
**ELEVATION RGE:** 1457-2433



All State Unless Otherwise Noted

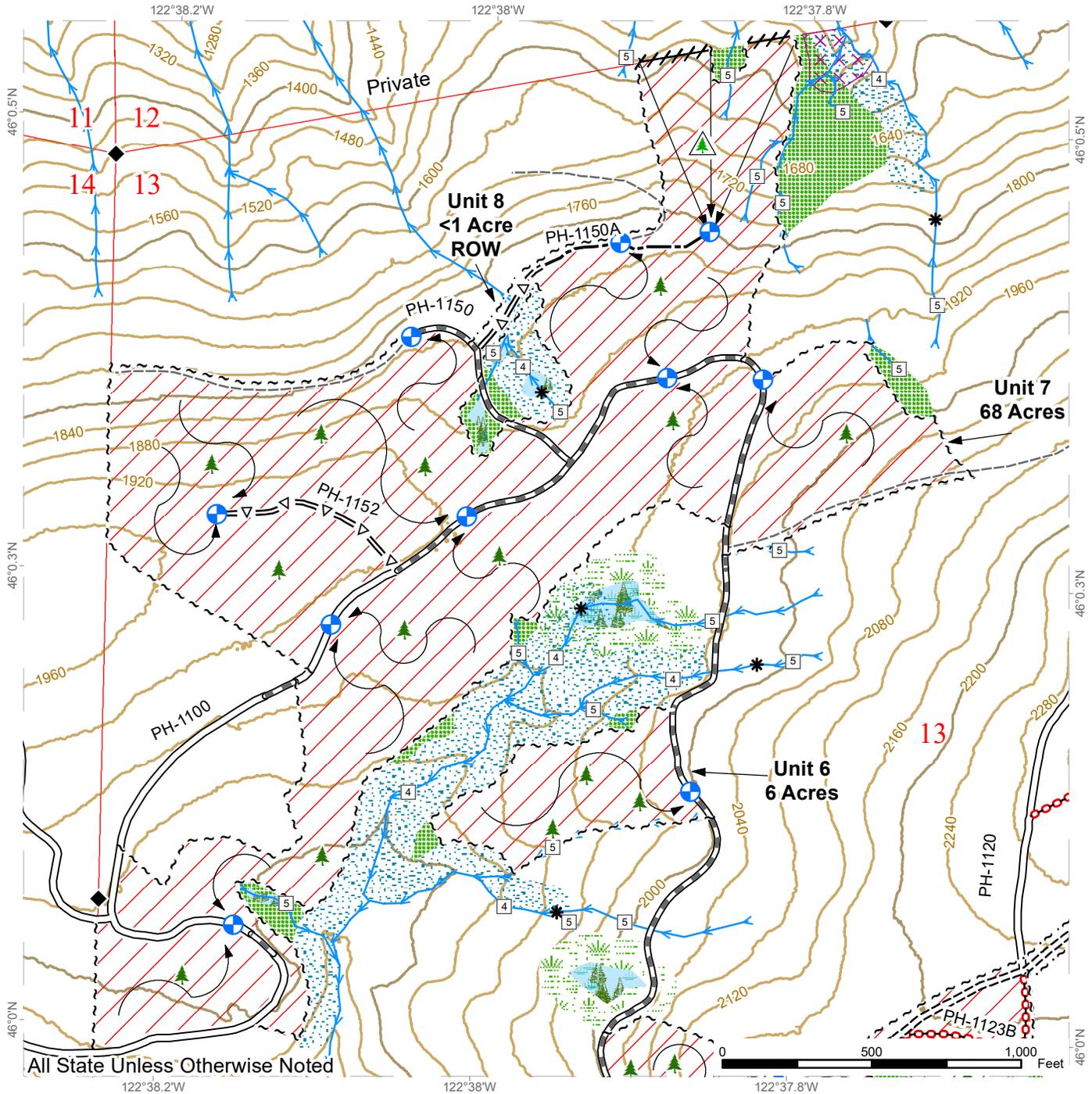
Variable Retention Harvest	Ground Harvest	Existing Roads	Streams
Leave Tree Area	Sale Boundary Tags	Required Pre-Haul Maintenance	Landing - Proposed
Riparian Mgt Zone	Leave Tree Tags	Required Construction	Leave Tree Area <1/4-acre
Forested Wetland	Right of Way Tags	Required Reconstruction	
Wetland Mgt Zone		Optional Pre-Haul Maintenance	
		Required Abandonment	
		Old Grades/Trails	



# LOGGING PLAN MAP

**SALE NAME:** SALTY VRH RMZ  
**AGREEMENT#:** 30-097966  
**TOWNSHIP(S):** T6R1E, T6R2E  
**TRUST(S):** Capitol Grant (7), Charitable/Educational/Penal & Reformatory Instit. (6), Common School and Indemnity (3), Scientific School (10)

**REGION:** Pacific Cascade Region  
**COUNTY(S):** Cowlitz  
**ELEVATION RGE:** 1457-2433



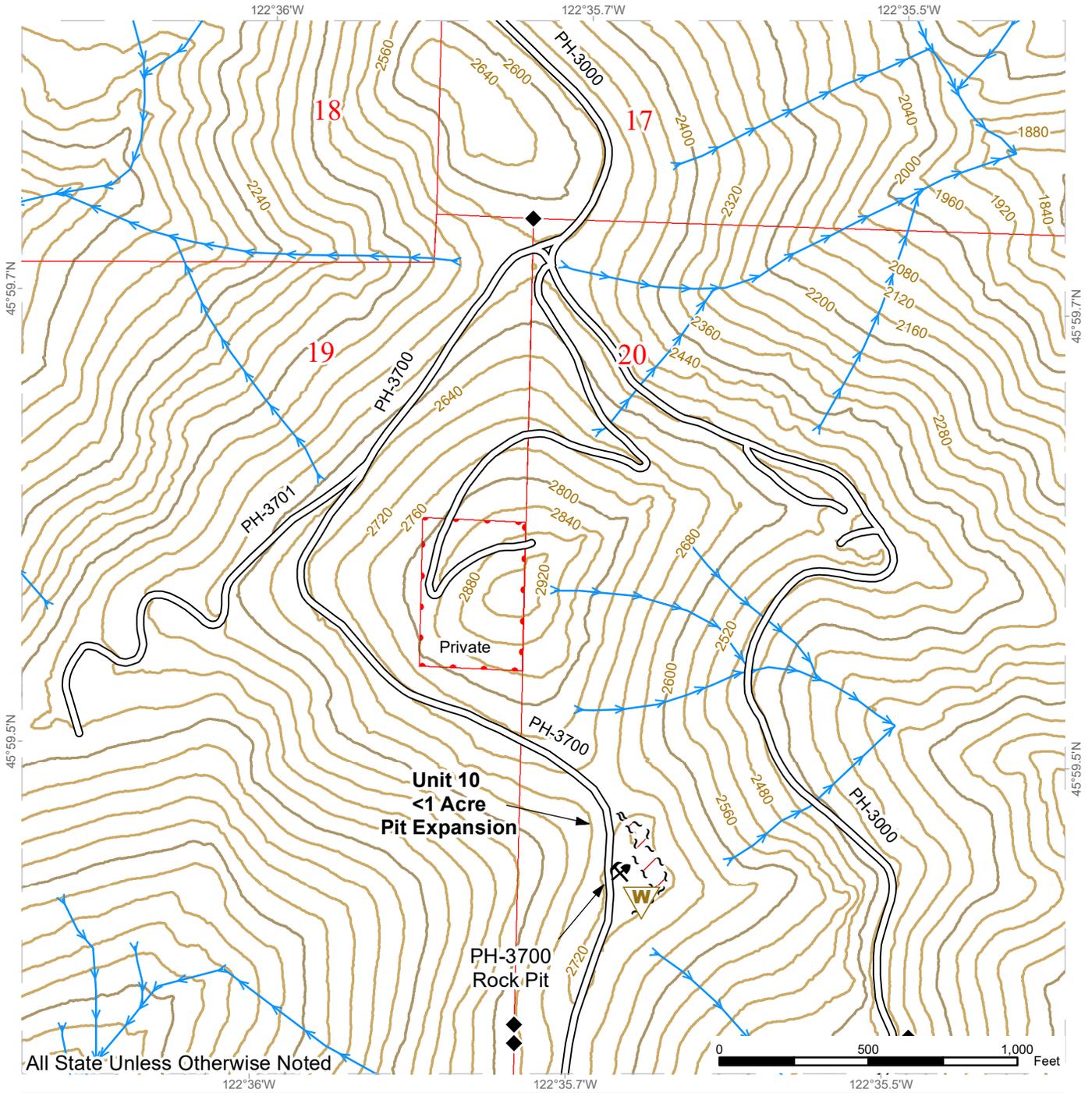
All State Unless Otherwise Noted

Variable Retention Harvest	Ground Harvest	Existing Roads	Streams
Leave Tree Area	Cable Harvest	Required Pre-Haul Maintenance	Landing - Proposed
Riparian Mgt Zone	Sale Boundary Tags	Required Construction	Leave Tree Area <1/4-acre
Forested Wetland	Leave Tree Tags	Optional Pre-Haul Maintenance	Non-Tradeable Leave Trees
Wetland Mgt Zone	Right of Way Tags	Optional Construction	Survey Monument
Potentially Unstable Slopes	Flag Line	Required Abandonment	
		Old Grades/Trails	

# LOGGING PLAN MAP

**SALE NAME:** SALTY VRH RMZ  
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	Variable Retention Harvest		Existing Roads		Streams
	Sale Boundary Tags		Rock Pit		Waste Area
			Survey Monument		

