



**TIMBER NOTICE OF SALE**

**SALE NAME:** SCATTERED

**AGREEMENT NO:** 30-085082

**AUCTION:** March 24, 2020 starting at 10:00 a.m., **COUNTY:** Pierce  
South Puget Sound Region Office, Enumclaw, WA

**SALE LOCATION:** Sale located approximately 10 miles northeast of Elbe.

**PRODUCTS SOLD  
AND SALE AREA:**

All timber, except trees marked with blue paint or bounded out by yellow leave tree area tags, snags, and down timber existing more than 5 years from the day of sale, bounded by the following: white timber sale boundary tags, and timber type change marked with pink flagging in Unit #1; white timber sale boundary tags, and the 92 Road in Unit #2;

All timber bounded by orange right of way tags in Unit #3;

All forest products above located on part(s) of Sections 8, 16, 17, 20 and 21 all in Township 15 North, Range 6 East, W.M., containing 136 acres, more or less.

**CERTIFICATION:** This sale is certified under the Sustainable Forestry Initiative® program Standard (cert no: PwC-SFIFM-513) and FSC 100% raw materials under the Forest Stewardship Council® Standard (cert no: BV-FM/COC-080501).

**ESTIMATED SALE VOLUMES AND QUALITY:**

Species	Avg DBH	Ring Count	Total MBF	Total \$/MBF	MBF by Grade								
					1P	2P	3P	SM	1S	2S	3S	4S	UT
Douglas fir	16.5	7	3,415	\$351.50				44		1,804	1,231	331	5
Hemlock	11.4	9	1,886	\$155.00						329	947	536	74
Silver fir	16.8		220	\$155.00						79	116	24	1
Red alder	11.3		151	\$180.00						16	25	110	
Cottonwood	24.8		22	\$20.00					17		1	1	3
Red cedar	11.9		20	\$550.00							10	7	3
Maple				\$61.00									
White pine				\$155.00									
Spruce				\$155.00									
Noble fir				\$155.00									
Sale Total			5,714										

**MINIMUM BID:** \$351.5/MBF (est. value \$1,565,000.00) **BID METHOD:** Sealed Bids

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

**EXPIRATION DATE:** October 31, 2022 **ALLOCATION:** Export Restricted

**BIDDABLE SPECIES:** Douglas fir

**BID DEPOSIT:** \$156,500.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

**HARVEST METHOD:** Harvest activities are estimated to be 43 percent uphill cable and 57 percent ground based harvest. Cable and tracked ground based equipment, with cable-tethered equipment



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limited to sustained slopes of 75 percent or less, self-leveling equipment limited to sustained slopes of 65 percent or less, and all other ground based equipment limited to sustained slopes of 45 percent or less. Yarding may be restricted during wet weather if rutting becomes excessive, per clause H-017.

Timber haul will not be permitted from November 1 to April 30, nor on weekends or State recognized holidays, unless authority to do so is granted, in writing, by the Contract Administrator. If permission is granted to operate from November 1 to April 30, preventative measures may be required to protect water, soils, roads and other forest assets.

### **ROADS:**

42.70 stations of optional construction. 259.16 stations of required prehaul maintenance. 0.50 stations of optional prehaul maintenance. 7.28 stations of abandonment, if constructed. Purchaser maintenance on the 8-18, 92, 92-1, 92-1-3, 92-1-4, 92-3, 92-3 ext, 92-9, 92-9-1, 92-9-2, and 92-9 ext roads. Designated maintenance on all other roads used.

Rock for this proposal can be obtained from the State owned Primo Pit or any commercial rock source at the Purchaser's expense. Rock source exploration will be required in the Primo Pit per Section 6. Rock pit development work is required in the Primo Pit per Road Plan clause 6-10 and as specified in the Rock Source Development Plan. Purchaser will be required to provide a stockpile of 8,000 cubic yards of 2 1/2 inch minus crushed rock per Road Plan clause 6-65.

Road construction and rock haul will not be permitted from November 1 to May 15, nor on weekends or State recognized holidays, unless authority to do so is granted, in writing, by the Contract Administrator. If permission is granted to operate from November 1 to May 15, the Purchaser shall comply with a maintenance plan per Road Plan clause 1-26.

### **ACREAGE DETERMINATION**

**CRUISE METHOD:** Unit acreage was determined by traversing boundaries by GPS. Right of way acreage was determined by multiplying length times width. GPS data files are available at DNR's website for Timber Sale Auction Packets. See cruise narrative for cruise method.

**FEES:** \$97,138.00 is due on day of sale. \$9.00 per MBF is due upon removal. These are in addition to the bid price.

**SPECIAL REMARKS:** This sale contains High Quality Douglas-fir and Douglas-fir poles, see Cruise.

Any marked trees within Unit #2 are to be cut. All leave trees are marked with yellow leave tree area tags and pink flashers.

A required 8,000 cubic yard stockpile will need to be created in the Primo Pit. See Road Plan for additional details.

Purchaser will be required to acquire and install 2 steel gates, one on the 92-1 Road and one on the 92-3 Road. See Road Plan for additional details.

Purchaser is required to purchase, install, and maintain active logging ahead sign on the 92-9 Road. See Road Plan for additional details.

Cut all vine maple within the harvest units, leaving a stump no more than 12 inches in height.



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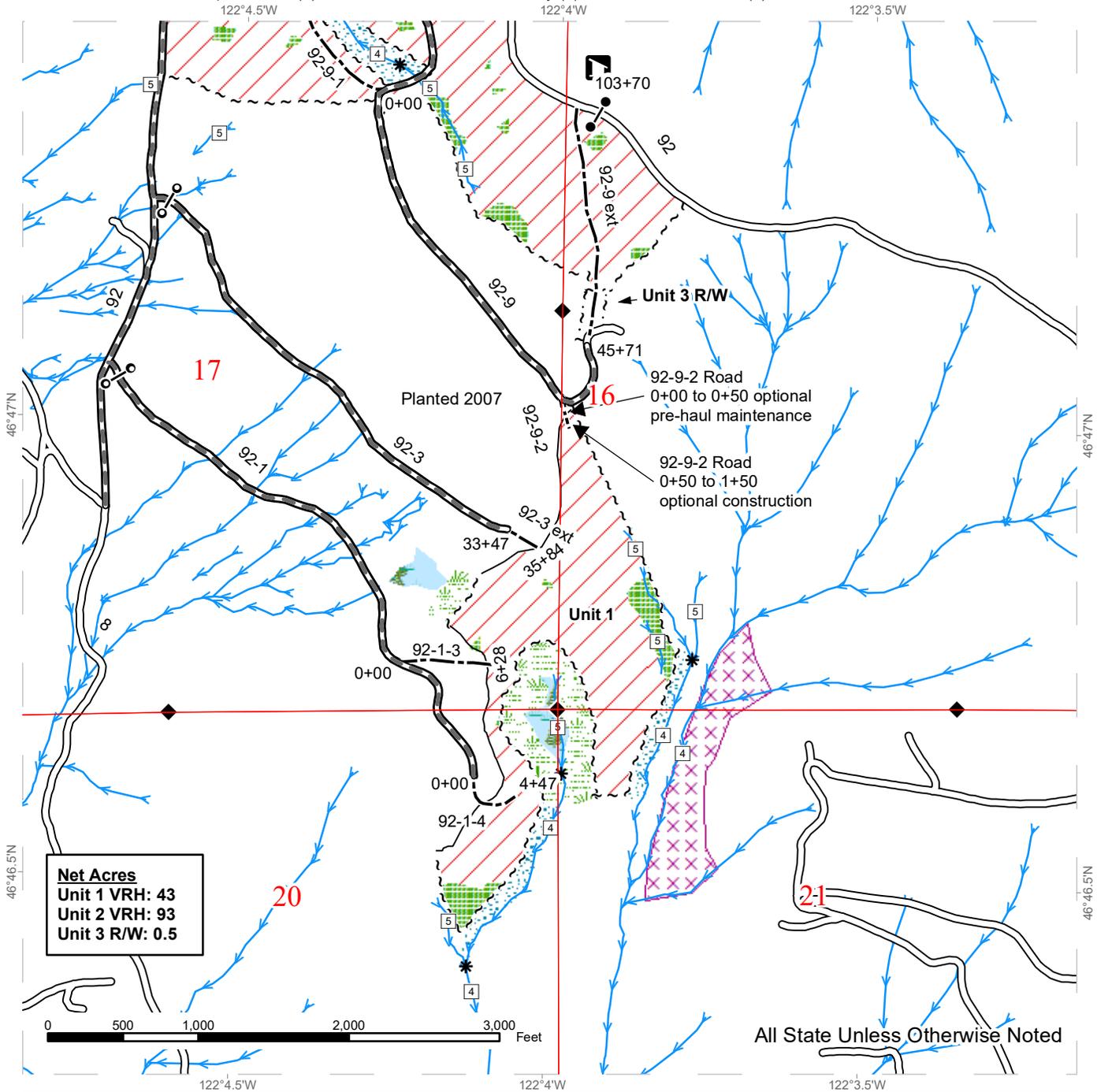
Intermediate supports may be needed for yarding in a portion of Unit #1. A 90 foot tower was used to analyze logging profiles. These are available upon request.

See map for gate locations. Gate keys may be obtained by contacting the South Puget Sound Region Office at 360-825-1631 or by contacting Mike Fowler at 360-819-3406.

# TIMBER SALE MAP

**SALE NAME:** SCATTERED  
**AGREEMENT #:** 30-085082  
**TOWNSHIP(S):** T15R6E  
**TRUST(S):** Capitol Grant (7), Common School and Indemnity (3), State Forest Transfer (1)

**REGION:** South Puget Sound Region  
**COUNTY(S):** Pierce  
**ELEVATION RGE:** 2160-3343



**Net Acres**  
 Unit 1 VRH: 43  
 Unit 2 VRH: 93  
 Unit 3 R/W: 0.5

All State Unless Otherwise Noted

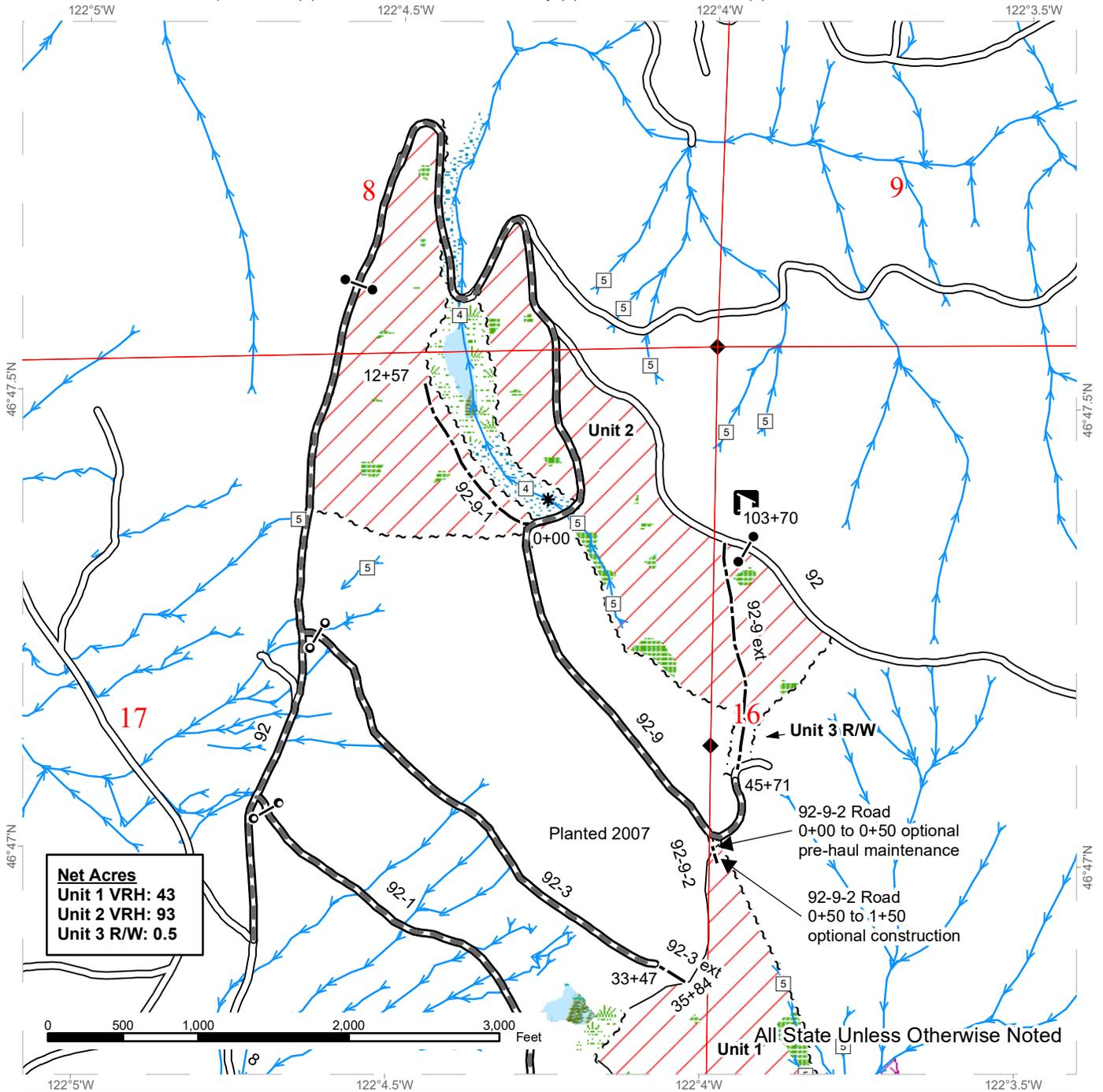
Variable Retention Harvest	Optional Construction	Stream Type
Sale Boundary Tags	Leave Tree Area	Stream Type Break
Right of Way Tags	Riparian Mgt Zone	Survey Monument
Timber Type Change	Forested Wetland	Gate CJ-18
Existing Roads	Wetland Mgt Zone	Gate Installation
Required Pre-Haul Maintenance	Tailhold Restriction Area	Recreation Site
Optional Pre-Haul Maintenance	streams	



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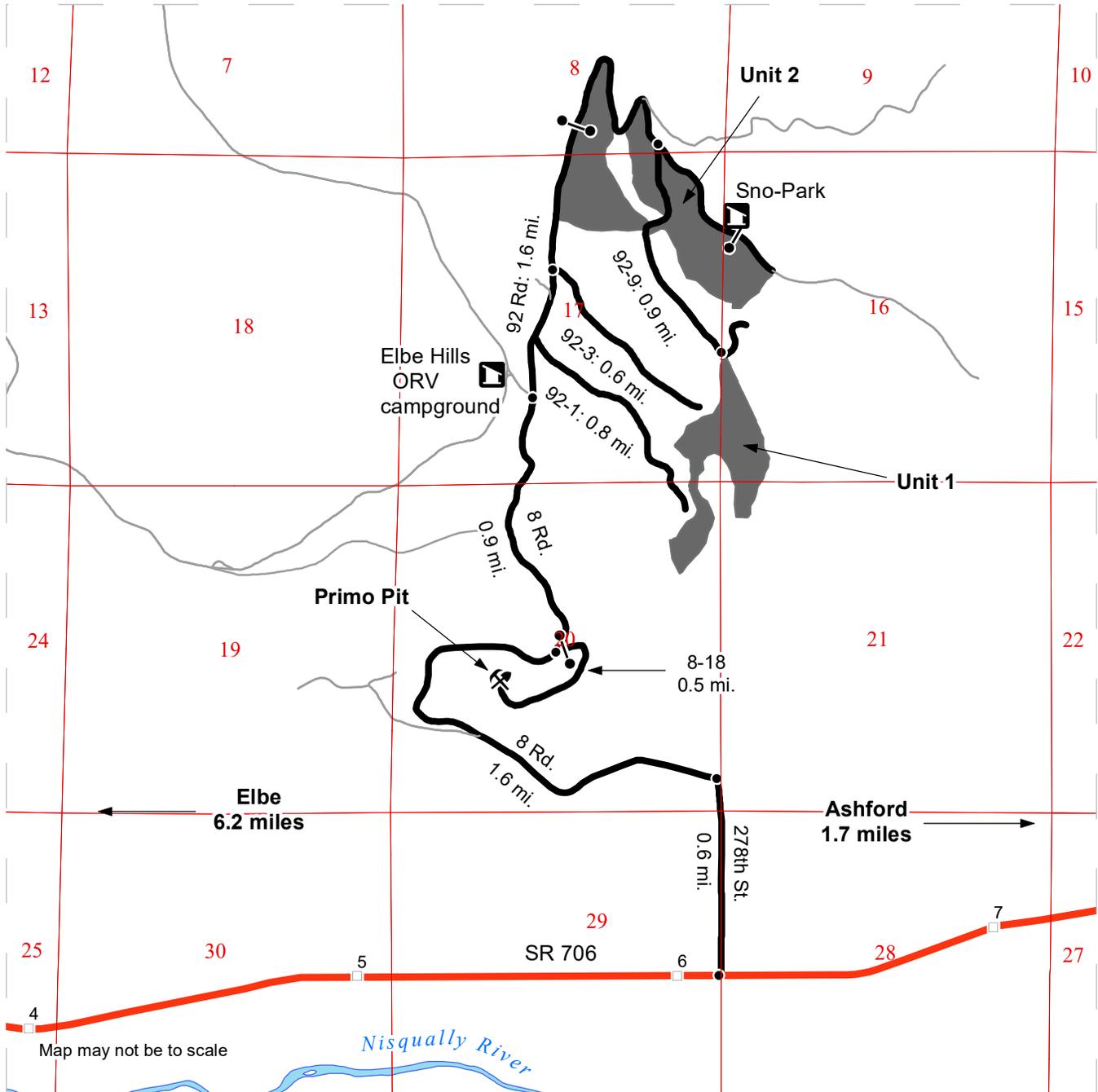


	Variable Retention Harvest		Optional Construction		Stream Type
	Sale Boundary Tags		Leave Tree Area		Stream Type Break
	Right of Way Tags		Riparian Mgt Zone		Survey Monument
	Timber Type Change		Forested Wetland		Gate CJ-18
	Existing Roads		Wetland Mgt Zone		Gate Installation
	Required Pre-Haul Maintenance		Tailhold Restriction Area		Recreation Site
	Optional Pre-Haul Maintenance		streams		

# DRIVING MAP

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REGION: South Puget Sound Region  
 COUNTY(S): Pierce  
 ELEVATION RGE: 2,160 - 3,343 ft.



- Timber Sale Unit
- Haul Route
- Other Roads
- Distance Indicator
- Gate (CJ-18)
- Recreation Site
- Rock Pit
- Milepost Markers
- Highway

**DRIVING DIRECTIONS:**

From Elbe, follow SR-706 east for 6.2 miles. Turn left on 278th St./Stoner Rd. and follow for 0.6 miles. Bear left onto the 8 road and follow for 2.5 miles. Continue straight onto the 92 road and follow for 0.4 miles. Turn right on 92-3 and follow for 0.6 miles to reach Unit 1. Continue on the 92 road for 1 mile to reach Units 2 and 3. Continue on the 92 road for 0.2 miles and turn right onto the 92-9 road. Follow the 92-9 0.9 miles to reach Unit 4.

To reach the Primo Pit, from 278th St. follow the 8 road for 1.6 miles and turn right onto the 8-18 road. Follow for 0.5 miles to the pit.



**STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES**

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

**Export Restricted MBF Scale AGREEMENT NO. 30-085082**

**SALE NAME: SCATTERED**

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

Section G: General Terms

G-001 Definitions

The following definitions apply throughout this contract;

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

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

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

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

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

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

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

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

Purchaser was the successful bidder on March 24, 2020 and the sale was confirmed on \_\_\_\_\_. The State, as owner, agrees to sell to Purchaser, and Purchaser agrees to purchase, cut, and remove the following forest products: All timber, except trees marked with blue paint or bounded out by yellow leave tree area tags, snags, and down timber existing more than 5 years from the day of sale, bounded by the following: white timber sale boundary tags, and timber type change marked with pink flagging in Unit #1; white timber sale boundary tags, and the 92 Road in Unit #2;

All timber bounded by orange right of way tags in Unit #3;

All forest products above located, located on approximately 136 acres on part(s) of Sections 8, 16, 17, 20, and 21 all in Township 15 North, Range 6 East W.M. in Pierce County(s) as shown on the attached timber sale map and as designated on the sale area.

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

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

#### G-020 Inspection By Purchaser

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

## G-030 Contract Term

Purchaser shall remove the forest products conveyed and complete all work required by this contract prior to October 31, 2022.

## G-040 Contract Term Adjustment - No Payment

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

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

## G-050 Contract Term Extension - Payment

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

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

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

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

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

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

- e. Payment of \$16.00 per acre per annum for the acres on which an operating release has not been issued within the harvest area.
- f. In no event will the extension charge be less than \$200.00.
- g. Extension payments are non-refundable.

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

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

**G-060 Exclusion of Warranties**

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

- a. The MERCHANTABILITY of the forest products. The use of the term "merchantable" in any document is not intended to vary the foregoing.
- b. The CONDITION of the forest products. The forest products will be conveyed "AS IS."
- c. The ACREAGE contained within any sale area. Any acreage descriptions appearing in the timber notice of sale, timber sale contract, or other documents are estimates only, provided solely for administrative and identification purposes.
- d. The VOLUME, QUALITY, OR GRADE of the forest products. The State neither warrants nor limits the amount of timber to be harvested. The descriptions of the forest products to be conveyed are estimates only, made solely for administrative and identification purposes.
- e. The CORRECTNESS OF ANY SOIL OR SURFACE CONDITIONS, PRE-SALE CONSTRUCTION APPRAISALS, INVESTIGATIONS, AND ALL OTHER PRE-BID DOCUMENTS PREPARED BY OR FOR THE STATE. These documents have been prepared for the State's appraisal purposes only.

- f. THAT THE SALE AREA IS FREE FROM THREATENED OR ENDANGERED SPECIES or their habitat. The State is not responsible for any interference with forestry operations that result from the presence of any threatened or endangered species, or the presence of their habitat, within the sale area.
- g. THAT THE FORESTRY OPERATIONS to be performed under this contract WILL BE FREE FROM REGULATORY ACTIONS by governmental agencies. The State is not responsible for actions to enforce regulatory laws, such as the Washington Forest Practices Act (chapter 76.09 RCW), taken by the Department of Natural Resources or any other agency that may affect the operability of this timber sale.
- h. Items contained in any other documents prepared for or by the State.

#### G-062 Habitat Conservation Plan

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

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

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

#### G-063 Incidental Take Permit Notification Requirements

- a. Purchaser shall immediately notify the Contract Administrator of new locations of permit species covered by the Incidental Take Permits (ITP) that are discovered within the area covered by the State's Habitat Conservation Plan (HCP), including, but not limited to: locations of occupied murrelet

habitat; spotted owl nest sites; wolves; grizzly bears; nests, communal roosts, or feeding concentrations of bald eagles; peregrine falcon nests; Columbian white-tailed deer; Aleutian Canada geese; Oregon silverspot butterflies; and additional stream reaches found to contain bull trout. Purchaser is required to notify the Contract Administrator upon discovery of any fish species found in streams or bodies of water classified as non-fish bearing. In all circumstances, notification must occur within a 24 hour time period.

- b. Upon locating any live, dead, injured, or sick specimens of any permit species covered by the ITP, Purchaser shall immediately notify the Contract Administrator. Purchaser shall notify the Contract Administrator if there is any doubt as to the identification of a discovered permit species. Purchaser may be required to take certain actions to help the Contract Administrator safeguard the well-being of any live, injured or sick specimens of any permit species discovered, until the proper disposition of such specimens can be determined by the Contract Administrator. Any such requirements will be explained to Purchaser by the Contract Administrator during the Pre-Work Conference. In all circumstances, notification must occur within a 24 hour time period.
- c. Purchaser shall refer to a specific ITP number, ITP TE812521-1 or ITP 1168 (copies which are located in the region office) in all correspondence and reports concerning permit activities.
- d. Provisions and requirements of the ITP shall be clearly presented and explained to Purchaser by Contract Administrator during the Pre-Work Conference as per contract clause G-330. All applicable provisions of the ITP and this schedule must be presented and clearly explained by Purchaser to all authorized officers, employees, contractors, or agents of Purchaser conducting authorized activities in the timber sale area. Any questions Purchaser may have about the ITP should be directed to the Contract Administrator.

#### G-064 Permits

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

#### G-065 Regulatory Disclaimer

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

#### G-066 Governmental Regulatory Actions

- a. Risk

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

b. Sale Area

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

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

c. Adjustment of Price

The State shall adjust the total contract price by subtracting from the total contract price an amount determined in the following manner: The State shall cause the timber sale area subject to governmental regulation or order to be measured. The State shall calculate the percentage of the total sale area subject to the governmental regulation or order. The State shall reduce the total contract price by that calculated percentage. However, variations in species, value, costs, or other items pertaining to the affected sale area will be analyzed and included in the adjustment if deemed appropriate by the State. The State will further reduce the total contract price by the reasonable cost of unamortized roads Purchaser constructed but was unable to fully use for removing timber. A reduction in total contract price terminates all of the Purchaser's rights to purchase and remove the timber and all other interest in the affected sale area.

G-070 Limitation on Damage

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

G-080 Scope of State Advice

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

this contract and State shall not be liable for any injuries resulting from Purchaser's reliance on any State advice regarding the method or manner of performance.

**G-090 Sale Area Adjustment**

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

**G-100 Forest Products Not Designated**

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

**G-110 Title and Risk of Loss**

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

**G-115 Forest Stewardship Council® (FSC®) Certification**

Forest products purchased under this contract are FSC 100% certified as being in conformance with the Forest Stewardship Council Standard under certificate number: BV-FM/COC-080501.

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

Forest products purchased under this contract are certified as being in conformance with the Sustainable Forestry Initiative program Standard under certificate number: BV-SFIS-US09000572.

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

**G-120 Responsibility for Work**

All work, equipment, and materials necessary to perform this contract shall be the responsibility of Purchaser. Any damage to improvements, except as provided in

clause G-121 or unless the State issues an operating release pursuant to clause G-280, shall be repaired promptly to the satisfaction of the State and at Purchaser's expense.

#### G-121 Exceptions

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

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

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

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

The repair work identified by the State shall be promptly completed by Purchaser at an agreed price. The State may elect to accomplish repairs by means of State-provided resources. The State will bear the cost to repair damages caused by a third party. In all other cases, the Purchaser shall bear responsibility for the costs as described below.

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

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

#### G-140 Indemnity

To the fullest extent permitted by law, Purchaser shall indemnify, defend and hold harmless State, agencies of State and all officials, agents and employees of State, from and against all claims arising out of or resulting from the performance of the contract. "Claim" as used in this contract means any financial loss, claim, suit, action, damage, or expense, including but not limited to attorneys' fees, attributable for bodily injury,

sickness, disease or death, or injury to or destruction of tangible property including loss of use resulting therefrom. Purchasers' obligations to indemnify, defend, and hold harmless includes any claim by Purchasers' agents, employees, representatives, or any subcontractor or its employees. Purchaser expressly agrees to indemnify, defend, and hold harmless State for any claim arising out of or incident to Purchasers' or any subcontractors' performance or failure to perform the contract. Purchasers' obligation to indemnify, defend, and hold harmless State shall not be eliminated or reduced by any actual or alleged concurrent negligence of State or its agents, agencies, employees and officials. Purchaser waives its immunity under Title 51 RCW to the extent it is required to indemnify, defend and hold harmless State and its agencies, officials, agents or employees.

#### G-150 Insurance

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

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

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

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

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

Purchaser shall include all subcontractors as insured under all required insurance policies, or shall furnish separate certificates of insurance and endorsements for each

subcontractor. Subcontractor(s) must comply fully with all insurance requirements stated herein. Failure of subcontractor(s) to comply with insurance requirements does not limit Purchaser's liability or responsibility.

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

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

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

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

Commercial General Liability (CGL) Insurance. Purchaser shall maintain general liability (CGL) insurance, and, if necessary, commercial umbrella insurance with a limit of not less than \$1,000,000.00 per each occurrence. If such CGL insurance contains aggregate limits, the General Aggregate limit shall be at least twice the "each occurrence" limit. CGL insurance shall have products-completed operations aggregate limit of at least two times the "each occurrence" limit. CGL coverage shall include a Logging and Lumbering Endorsement (i.e. Logger's Broad-Form) to cover the events that include, but are not limited to, fire suppression expenses, accidental timber trespasses, and wildfire property damage with limits of not less than \$2,000,000.00 each occurrence.

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

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

Workers' Compensation Coverage. Purchaser shall comply with all State of Washington workers' compensation statutes and regulations. Workers' compensation coverage shall be provided for all employees of Purchaser and employees of any

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

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

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

#### G-160 Agents

The State's rights and duties will be exercised by the Region Manager at Enumclaw, 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; on the 8, 8-18, 92, 92-1, 92-1-3, 92-1-4, 92-3, 92-9, 92-9-1, and 92-9-2 roads. The State may authorize in writing the use of other roads subject to fees, restrictions, and prior rights.

G-330 Pre-work Conference

Purchaser shall arrange with the Contract Administrator to review this contract and to examine the sale area before beginning any operations. A plan of operations shall be developed and agreed upon by the Contract Administrator and Purchaser before beginning any operations. To the extent that the plan of operations is inconsistent with

the contract, the terms of the contract shall prevail. State's acceptance and approval of Purchaser's plan of operations shall not be construed as any statement or warranty that the plan of operations is adequate for Purchaser's purposes or complies with applicable laws.

G-340 Preservation of Markers

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

G-360 Road Use Reservation

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

G-370 Blocking Roads

Purchaser shall not block the 8 and 92 roads, unless authority is granted in writing by the Contract Administrator.

G-396 Public Hauling Permit

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

G-430 Open Fires

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

G-450 Encumbrances

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

To be determined approximately one month prior to the day of sale.

Section P: Payments and Securities

P-010 Initial Deposit

Purchaser paid DATA MISSING initial deposit, which will be maintained pursuant to RCW 79.15.100(3). If the operating authority on this contract expires without Purchaser's payment of the full amount specified in the 'Payment for Forest Products' clause, the initial deposit will be immediately forfeited to the State, and will be offset

against Purchaser's remaining balance due. Any excess initial deposit funds not needed to ensure full payment of the contract price, or not needed to complete any remaining obligations of the Purchaser existing after contract expiration, will be refunded to the Purchaser.

P-021 Payment for Forest Products

Purchaser agrees to pay the following rates per MBF Scribner net log scale for forest products conveyed and cut or removed from the sale area plus \$97,138.00 on day of sale and \$9.00 per MBF upon removal in fees. Fees collected shall be retained by the state unless the contract is adjusted via the G-066 clause.

DATA MISSING

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

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

P-027 Payment for Removal of Optional Forest Products

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

P-040 Weighing and Scaling Costs

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

P-045 Guarantee of Payment

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

P-050 Billing Procedure

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

P-052 Payment Procedure

If a third party Log and Load Reporting Service (LLRS) is required by this contract the State will compute and forward to the Purchaser statements of charges provided for in the contract. Purchaser shall deliver payment to the South Puget Sound region office on or before the date shown on the billing statement.

If a third party LLRS is not required by this contract, Purchaser shall pay for forest products removed on a monthly basis. Payments will be submitted to the South Puget Sound region office on or before the fourteenth of the month following the month in which the timber was removed or, according to an alternate payment schedule as approved by the State with at least one payment each month for timber removed. The alternate payment schedule, once approved by the State, shall become part of this contract and may be changed only with written approval of the State.

Payment will be based on the contract rate multiplied by the tons (tonnage contracts) or volume (mbf contracts) removed during the month or payment period. Included with the payment will be a summary report along with all related load tickets and the corresponding certified weight tickets for the payment period. The summary report will be generated using a computer spreadsheet and list the load tickets in ascending numerical order with the corresponding ticket number and weight or volume for each load.

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

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

P-080 Payment Account Refund

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

P-090 Performance Security

Purchaser agrees to furnish, within 30 days of the confirmation date, security acceptable to the State in the amount of \$100,000.00. The Security provided shall guarantee performance of all provisions of this contract and payment of any damages caused by operations under this contract or resulting from Purchaser's noncompliance with any rule or law. Acceptable performance security may be in the form of a performance bond, irrevocable letter of credit, cash, savings or certificate of deposit account assignments, and must name the State as the obligee or beneficiary. A letter of credit must comply with Title 62A RCW, Article 5. Performance security must remain in full force over the duration of the contract length. Surety bonds issued shall conform to the issuance and rating requirements in clause G-150. The State shall retain the performance security pursuant to RCW 79.15.100. Purchaser shall not operate unless the performance security has been accepted by the State. If at any time the State decides that the security document or amount has become unsatisfactory, Purchaser agrees to suspend operations and, within 30 days of notification, to replace the security with one acceptable to the State or to supplement the amount of the existing security.

P-100 Performance Security Reduction

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

Section L: Log Definitions and Accountability

L-010 Forest Products Conveyed

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

L-020 Short Logs - Peeler Blocks

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

L-040 Utility Logs

Utility logs are logs that meet the minimum utility log standards as described by the log scaling rules applicable for this contract.

L-060 Load Tickets

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

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

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

L-071 Log and Load Reporting Service

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

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

## L-080 Scaling Rules

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

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

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

Forest Product measurement and weighing facilities required by this contract must be approved by the State. Forest products sold under the contract which require log scaling shall be scaled, measured, or counted by a State approved third party log scaling organization. Forest products sold under the contract which require weighing shall be weighed at a location that meets Washington State Department of Agriculture approval.

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

## L-120 Long Log Taper Distribution

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

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

## L-130 Conversion Factors

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

Section H: Harvesting Operations

H-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 144 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-017 Preventing Excessive Soil Disturbance

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

H-030 Timber Falling

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

H-035 Fall Trees Into Sale Area

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

H-040 Purchaser Harvest Plan

Purchaser shall, as part of the plan of operations, prepare an acceptable harvest plan for the timber sale. The plan shall address the harvesting within Units #1 and #2 and

tailhold restriction areas, which are part(s) of this contract. The harvest plan shall be approved by the Contract Administrator prior to beginning the harvest operation. Purchaser shall not deviate from the harvest plan without prior written approval by the Contract Administrator.

H-052 Branding and Painting

Forest products shall be branded with a brand furnished by the State prior to removal from the landing. All purchased timber shall be branded in a manner that meets the requirements of WAC 240-15-030(2)(a)(i). All timber purchased under a contract designated as export restricted shall also be painted in a manner that meets the requirements of WAC 240-15-030(2)(a)(ii).

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

H-080 Snags Not to be Felled

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

H-110 Stump Height

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

H-120 Harvesting Equipment

Forest products sold under this contract shall be harvested and removed using yarded by cable and tracked ground based equipment, with cable-tethered equipment limited to sustained slopes of 75 percent or less, self-leveling equipment limited to sustained slopes of 65 percent or less, and all other ground based equipment limited to sustained slopes of 45 percent or less. 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-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

- a. Ground based yarding may be restricted during wet weather conditions if excessive rutting occurs in the opinion of the Contract Administrator.

- b. Existing downed trees or logs dead for more than 5 years yarded to the landing will be returned to their original locations.
- c. Equipment limitation zones are required within 30 feet of Type 5 streams.
- d. During all active operations, signs must be placed along the 92 Road prior to entering the sale area advising traffic of active forest operations in the area.
- e. Crossing of Type 5 streams may be allowed at locations approved in writing by the Contract Administrator. Purchaser shall place a culvert of log puncheon at crossing locations, when water is present, to protect stream bank and prevent sedimentation. All materials placed in and/or over the stream at these crossings shall be removed immediately upon completion of yarding on that skid trail.
- f. Any and all operations associated with this sale may be temporarily suspended when, in the opinion of the Contract Administrator, there is the potential for delivery to typed water.
- g. No equipment shall operate or, trees felled or damaged, outside the timber sale boundary.
- h. Cut all vine maple with the harvest units, leaving a stump no more than 12 inches in height.
- i. Within shovel logging areas, and when yarding and loading operations are occurring simultaneously, an additional shovel will be required for loading to avoid extra trips to the landing. No more than one round trip per shovel road is allowed.
- j. Take measures throughout operations to control soil erosion, water channelization, and prevent sediment delivery to streams or wetlands. Methods may include construction of water bars, "sweeping" with logs, silt traps, or other measures on skid trails, yarding corridors and haul roads.
- k. In the event operations become inactive for long periods of time, skid trails shall be water barred prior to completion of yarding tributary timber to prevent water accumulation and sediment movement, if required by the Contract Administrator.
- l. Once a skid trail is closed, the Purchaser shall not reopen a skid trail unless approved in writing by the Contract Administrator.
- m. Timber haul will not be permitted from November 1 to April 30, nor on weekends or State recognized holidays, unless authority to do so is granted, in writing, by the Contract Administrator. If permission is granted to operate

from November 1 to April 30, preventative measures may be required to protect water, soils, roads and other forest assets.

- n. Notify all employees and contractors working on this sale that any danger tree marked or unmarked may be felled. Any marked danger tree will be replaced with a suitable tree of similar size and species as approved by the Contract Administrator.

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

H-141 Additional Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

- a. Leave two down logs per acre. A log is defined as having a minimum diameter of 12 inches on the small end of the log and a minimum length of 20 feet or at least 100 board feet.
- b. Tailhold locations outside the timber sale boundary are restricted due to the protection of potentially unstable slopes. Locations where trees shall not be used as tailholds due to potentially unstable slopes are identified on the Timber Sale and Logging Plan Maps. Tailhold locations must be identified in a harvest plan by the Purchaser and approved by the Contract Administrator prior to operations.

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

H-150 Required Removal of Forest Products

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

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

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

H-157 Optional Removal of Forest Products Not Designated

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

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

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

#### H-160 Mismatch

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

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

#### H-180 Removal of Specialized Forest Products or Firewood

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

#### H-190 Completion of Settings

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

#### H-220 Protection of Residual or Adjacent Trees

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

#### H-230 Tops and Limbs Outside the Sale Boundary

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

### Section C: Construction and Maintenance

#### C-040 Road Plan

Road construction and associated work provisions of the Road Plan for this sale, dated 9/4/2019 are hereby made a part of this contract.

**C-050 Purchaser Road Maintenance and Repair**

Purchaser shall perform work at their own expense on the 8-18, 92, 92-1, 92-1-3, 92-1-4, 92-3, 92-3 ext, 92-9, 92-9-1, 92-9-2, and 92-9 ext roads. All work shall be completed to the specifications detailed in the Road Plan.

**C-060 Designated Road Maintainer**

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

**C-080 Landing Locations Approved Prior to Construction**

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

**C-140 Water Bars**

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

**Section S: Site Preparation and Protection****S-001 Emergency Response Plan**

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

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

**S-010 Fire Hazardous Conditions**

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

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

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

S-030 Landing Debris Clean Up

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

S-035 Logging Debris Clean Up

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

S-050 Cessation of Operations for Low Humidity

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

S-060 Pump Truck or Pump Trailer

Purchaser shall provide a fully functional pump truck or pump trailer equipped to meet the specifications of WAC 332-24-005 and WAC 332-24-405 during the "closed season" or as extended by the State and shall provide trained personnel to operate this equipment on the sale area during all operating periods.

S-100 Stream Cleanout

Slash or debris which enters Type 5 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-110 Resource Protection

No yarding equipment may operate within the Riparian or Wetland Management Zones unless authority is granted in writing by the Contract Administrator.

S-120 Stream Protection

No timber shall be felled into, across, or yarded through any Type 5 stream crossings as allowed per clause H-140.

S-130 Hazardous Materials

a. Hazardous Materials and Waste - Regulatory Compliance

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

b. Hazardous Materials Spill Prevention

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

c. Hazardous Materials Spill Containment, Control and Cleanup

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

d. Hazardous Material Release Reporting

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

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

DNR Contract Administrator

ECY - Northwest Region:

1-425-649-7000

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

ECY - Southwest Region:

1-360-407-6300

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

ECY - Central Region:

1-509-575-2490

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

ECY - Eastern Region:

1-509-329-3400

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

## S-131 Refuse Disposal

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

## Section D: Damages

## D-010 Liquidated Damages

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

## D-020 Failure to Remove Forest Products

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

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

Where:

LD = Liquidated Damage value.

V = The unremoved value at the date of breach of contract. The value is determined by subtracting the removal volume to date from the State's cruise volume multiplied by the contract bid rates.

ID = Initial Deposit paid at date of contract that has not been applied to timber payments.

P = Advance payments received but not yet applied to specific contract requirements.

C = Charges assessed for contract requirements completed prior to breach of contract but not paid for.

A = Administrative Fee = \$2,500.00.

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

Where:

r = daily equivalent of an annual interest at current interest rate as established by WAC 332-100-030.

LD = Liquidated damage value.

N = Number of days from date of breach to date payment is received.

#### D-030 Inadequate Log Accountability

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

Enforcement actions for unauthorized removal of forest products for each improperly branded load, improperly ticketed load, lost or unaccounted for tickets, or use of a facility not authorized for this sale or improper submission of scaling data are impractical, expensive, time consuming and are not an adequate remedy. Therefore, Purchaser agrees to pay the State, as liquidated damages, a sum of \$100 each time a load of logs does not have branding as required in the contract, \$250 each time a load of logs does not have a load ticket as required by the contract, \$250 each time a load ticket has not been filled out as required by the plan of operations, \$250 each time a load is weighed or scaled at a location not approved as required under this contract, \$250 each time a log ticket summary report is not submitted properly, and if a third party Log and Load Reporting Service is required, \$250 each time scaling or weight data is not properly submitted to the Log and Load Reporting Service per clause L-071, and \$250 each unused ticket that is not returned to the State, for any reason.

#### D-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 all units.

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

STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

\_\_\_\_\_  
Purchaser

\_\_\_\_\_  
Scott Sargent

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

South Puget Sound 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 \_\_\_\_\_



**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)

# PRE-CRUISE NARRATIVE

Sale Name: <b>Scattered</b>	Region: <b>South Puget Sound</b>
Agreement #: <b>30-085082</b>	District: <b>Rainier</b>
Contact Forester: <b>Mike Fowler</b>	Phone Cell: <b>(360) 819-3406</b> Office: <b>(360) 492-5060</b>
Alternate Contact: <b>Andrew Reed</b>	Phone Cell: <b>(360) 481-9597</b> Office: <b>(360) 492-5031</b>

Type of Sale (lump sum, mbf scale, tonnage scale or contract harvest): <b>Lump Sum</b>
Required or Optional removal of utility as pulp: <b>Optional</b>
Evaluated for RFRS Implementation?: <b>Yes</b>
Percentage cable (specify downhill vs uphill): <b>43% uphill</b>
Percentage ground based: <b>57%</b>
Species Onsite: <input checked="" type="checkbox"/> RC, <input checked="" type="checkbox"/> DF, <input checked="" type="checkbox"/> WH, <input checked="" type="checkbox"/> RA, <input checked="" type="checkbox"/> BC, <input type="checkbox"/> BLM, <input type="checkbox"/> NF, <input checked="" type="checkbox"/> SF, <input type="checkbox"/> SS, <input type="checkbox"/> Other:(Please List)

## UNIT ACREAGES\* AND METHOD OF DETERMINATION:

Unit #	Harvest R/W or RMZ WMZ	Legal Description Sec/Twp/Rng	Grant	Gross Traversed Acres	Deductions from Gross Acres (No harvest acres)				Net Harvest Acres	Acreage Determination (List method, dimensions and error of closure if applicable)
					RMZ/WMZ Acres	Leave Tree Acres	Existing Road Acres	Other Acres (describe)		
1		Sec 16,17,20,21/ T 15N/ R 06 E	01-45%; 03-55%	46.5		3.8	0		42.7	Garmin 62s
2		Sec 8,16,17/ T 15N/ R 06 E	01-65%; 03-14%; 07-21%	103.3		3.6	6.5		93.2	Garmin 62s
3 (R/W)		Sec 16/ T 15N/ R 06 E	03-100%	0.5		0	0		0.5	Length x Width (359' x 60')
		Sec / T N/ R E								
		Sec / T N/ R E								
<b>TOTAL ACRES</b>				150.3		7.4	6.5		136.4	

## HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription: (Mark leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
1	Variable Retention Harvest – Boundary marked by white “Timber Sale Boundary” tags with pink flashers except timber type change along the western boundary.		8 leave trees per acre marked with yellow “Leave Tree Area” tags or a single band of blue paint.
2	Variable Retention Harvest – Boundary marked by white “Timber Sale Boundary” tags with pink flashers, the 92 Road along the western and		8 leave trees per acre all marked with yellow “Leave Tree Area” tags, including

	northern boundary lines, and blue "Special Management Unit Boundary" tags with pink flashers along the Type 4 RMZ and WMZ in the center of the unit.		some individual trees.  There are painted trees in the southwestern portion of Unit 2 from a previous sale marked with red, yellow and orange paint. These are all take trees.
3	Right-of-Way Harvest – Boundary marked by orange "Right-of-Way Boundary" tags with orange flashers.		

**OTHER PRE-CRUISE INFORMATION:**

Unit #	Estimated Volume	Access information (Gates, locks, etc.)	Photos, traverse maps required
1	See Cruise	Access via 8 Road to the 92 Road. CJ-18 key on the 92 Road gate #509.	See Cruise Maps
2		Access via 8 Road to the 92 Road. CJ-18 key on the 92 Road gate #509.	
3		Access via 8 Road to the 92 Road. CJ-18 key on the 92 Road gate #509.	

**REMARKS:**

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<b>Prepared By: Mike Fowler</b> <b>Date: 8/21/2019</b>	<b>Title: Forester</b>	<b>CC: Andrew Reed, Nick Chicano</b>
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*Revised 2/23/2007 (PSLD)*

# Cruise Narrative

<b>Sale Name:</b> Scattered	<b>Region:</b> South Puget Sound
<b>App. #:</b> 30-085082	<b>District:</b> Rainier
<b>Lead Cruiser:</b> Aaron Coleman	<b>Completion Date:</b> 10/31/2019 <b>*Revised: 12/13/2019 (AC)</b>
<b>Other Cruisers:</b> n/a	

**Unit acreage specifications:**

Unit #	Cruised acres	Cruised acres agree with sale acres? Yes/No	If acres do not agree explain why.
VRH U1	42.7	Yes	
VRH U2	93.2	Yes	
R/W U3	.5	Yes	
<b>Total</b>	<b>136.4</b>	<b>Yes</b>	

**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
VRH U1	VP	54.44 – Majors 33.61 – Minors	4.5 ft	225' x 225'	1:1	36
VRH U2	VP	46.94 – Majors 33.61 – Minors	4.5 ft	250' x 250'	1:1	65
R/W U3	ITS	DF – 1:10.33 WH – 1:10 RA – 1:2 SF – 1:1	n/a	n/a	n/a	n/a
						<b>101</b>

**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>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;"><b>DF =</b></td> <td style="width: 25%; text-align: center;">7</td> <td style="width: 25%;"><b>WH =</b></td> <td style="width: 25%; text-align: center;">9</td> </tr> </table>	<b>DF =</b>	7	<b>WH =</b>	9
<b>DF =</b>	7	<b>WH =</b>	9		
<b>Leave/take tree description:</b>	VRH units contains leave tree areas bound with yellow "Leave Tree Area" tags and pink flashers/flagging and single bands of blue paint. <b>VRH unit 2 contains residual red, yellow, and orange paint, these are all take trees.</b> RMZ unit 3 take trees are 100% marked with orange paint.				
<b>Sort Description:</b>	<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 1/2" 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 1/2" 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. (High Quality sort. Grades SM, 2S, 3S. Lengths 16ft-40ft, 2ft multiples min TDIB 8".)				

	<p><b>HB</b> - Logs meeting the following criteria: Surface characteristics for an Intermediate B sort will have sound tight knots not to exceed 1 1/2" in diameter. May include logs with not more than two larger knots up to 2 1/2" 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. (Intermediate sort. Grades 2S, 3S. Lengths 16ft-40ft, 2ft multiples min TDIB 8").</p> <p><b>D</b> - Domestic quality logs that do not meet high quality or intermediate definitions. (Domestic sort. Grades 2S, 3S, 4S and utility. Lengths 16ft-40ft, min TDIB 5".)</p> <p><b>R</b> - Logs meeting the following criteria: Surface characteristics for a rough log sort will not meet the requirements for a domestic 2S, but still be in limitations for a domestic 3S. Meaning logs will contain excessive knots in excess of 2 1/2" and not exceeding 3" with a recovery of less than 65% of the net scale and greater than 33% of the gross scale. (Rough oversize sort. Grade 3S. Lengths 16ft-40ft, 2ft multiples TDIB 12"+)</p>
<b>Status Description:</b>	<b>P</b> – Logs classified as pole volume. *

**Field observations:**

This sale consists of 2 variable retention harvest (VRH) units, and 1 right-of-way unit off of the 92 road within the Elbe State Forest. There is residual red, yellow, and orange paint in unit 2 from a previous sale. See Leave/take tree description above pertaining to these paint colors.

**\*Although pole volume is included, a specific pole cruise was not done on this sale. Pole volume was captured on the same VP plots as the saw log volume.**

The primary species breakdown for this sale is as follows:

Douglas-fir (DF): **60%**  
Western Hemlock (WH): **33%**  
Silver Fir (SF): **4%**  
Red Alder (RA): **3%**

The DF throughout this sale averages 16" diameter with 86' bole height, the WH averages 11" diameter with 70' bole height and the SF averages 16" diameter with 82' bole height, and the RA averages 11" diameter with 50' bole height.

Defect observed consisted of spike knots, broken/forked tops, some frost crack, and bear damage.

All roads to this sale are in good condition and there are good access points into all units. A CJ-18 key is needed to access the units through gate #509 on the 92 road.

**Grant(s):01, 03, 07**

**Prepared by: Aaron Coleman**

**Title: Forest Check Cruiser**

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																		
<div style="border: 1px solid black; padding: 5px;"> T15N R06E S16 Ty00U1      42.70  T15N R06E S16 Ty00U2      93.20  T15N R06E S16 Ty00U3      .50 </div>				<b>Project: SCATTERE</b> <b>Acres 136.40</b>										<b>Page 1</b> <b>Date 12/13/2019</b> <b>Time 9:22:27AM</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	7											3	6		0.00	29.6	
DF	HA	SM				158	158	22									40	17	460	2.49	.3	
DF	HA	2S	1		3.6	228	220	30									40	14	294	1.69	.7	
DF	HB	2S	14		2.1	3,206	3,138	428				74	26		4	2	94	38	14	268	1.60	11.7
DF	HB	3S	9		1.1	2,189	2,165	295			100					11	89	38	10	128	0.78	17.0
DF	D	2S	39		5.2	9,648	9,147	1,248				43	57			3	97	39	15	341	1.95	26.8
DF	D	3S	26		2.8	6,447	6,267	855		25	75				1	20	79	37	8	90	0.64	69.8
DF	D	4S	10		.5	2,329	2,316	316		99	1				4	40	29	30	5	35	0.29	66.4
DF	D	UT	1			35	35	5		100							19	5	20	0.20	1.8	
<b>DF Totals</b>					56	3.3	24,247	23,447	3,198	17	29	28	26	1	5	11	84	31	8	105	0.81	224.1
DF	P	CU	CU															5			0.00	.6
DF	P	HA	SM	10		2.2	168	164	22				100				40	17	450	2.36	.4	
DF	P	HB	2S	45		2.1	736	720	98			81	19				40	14	284	1.62	2.5	
DF	P	HB	3S	31			493	493	67		100				4	96	38	10	145	0.84	3.4	
DF	P	D	3S	7		.0	106	106	14	39	61				9	19	36	8	77	0.55	1.4	
DF	P	D	4S	7		.0	110	110	15	100							26	6	31	0.34	3.5	
<b>DF Totals</b>					4	1.2	1,613	1,594	217	10	35	37	19	1	5	3	92	33	9	135	0.95	11.8
WH	CU	CU			100.0	341											7	5		0.00	56.1	
WH	HB	3S				124	124	17			100						40	9	120	0.76	1.0	
WH	D	2S	18		15.5	2,850	2,409	329				69	31				39	15	276	1.88	8.7	
WH	D	3S	49		3.8	7,092	6,822	931		33	67	0			0	15	37	8	90	0.64	76.2	
WH	D	4S	29		1.3	3,976	3,926	536		99	1				12	31	29	5	32	0.28	122.9	
WH	D	UT	4		.0	542	542	74		85		15			15	75	23	5	25	0.24	21.3	
<b>WH Totals</b>					33	7.4	14,925	13,824	1,886	48	34	13	5	4	12	13	71	27	6	48	0.47	286.2
RA	CU	CU			100.0	24											6	7		0.00	6.6	
RA	D	2S	10		24.8	153	115	16				100					40	13	178	1.75	.6	
RA	D	3S	16		11.6	208	184	25			100				83	17	29	10	92	0.91	2.0	
RA	D	4S	74		7.9	881	811	111		67	33				10	44	30	6	38	0.36	21.3	
<b>RA Totals</b>					3	12.3	1,266	1,110	151	49	40	10		7	46	18	30	25	7	36	0.44	30.5
CW	CU	CU																7			0.00	.1
CW	D	1S	73		21.5	149	117	16				54	46		9	21	35	16	265	2.38	.4	
CW	D	3S	6			9	9	1			100						19	10	70	0.73	.1	
CW	D	4S	5			9	9	1		100							40	7	70	0.67	.1	
CW	D	UT	16			24	24	3				100					28	20	490	2.53	.0	
<b>CW Totals</b>					0	16.9	190	158	22	5	5	40	49	12	31	57	28	13	185	1.88	.9	
RC	CU	CU			100.0	17											1	6		0.00	2.3	
RC	D	3S	52		10.7	87	78	11		21	49	30					36	8	87	1.05	.9	
RC	D	4S	33			49	49	7		100							28	5	30	0.32	1.6	
RC	D	UT	15			22	22	3		100							18	5	20	0.20	1.1	
<b>RC Totals</b>					0	14.9	175	149	20	59	26	16		15	33	52	17	6	25	0.52	5.9	
SF	CU	CU			100.0	4											7	5		0.00	3.6	
SF	D	2S	35		20.7	731	580	79				64	36				39	14	220	1.75	2.6	

**Species, Sort Grade - Board Foot Volumes (Project)**

<table border="0" style="width: 100%;"> <tr> <td>T15N R06E S16 Ty00U1</td> <td style="text-align: right;">42.70</td> </tr> <tr> <td>T15N R06E S16 Ty00U2</td> <td style="text-align: right;">93.20</td> </tr> <tr> <td>T15N R06E S16 Ty00U3</td> <td style="text-align: right;">.50</td> </tr> </table>	T15N R06E S16 Ty00U1	42.70	T15N R06E S16 Ty00U2	93.20	T15N R06E S16 Ty00U3	.50	<b>Project: SCATTERE</b> <b>Acres 136.40</b>	<b>Page 2</b> <b>Date 12/13/2019</b> <b>Time 9:22:27AM</b>
T15N R06E S16 Ty00U1	42.70							
T15N R06E S16 Ty00U2	93.20							
T15N R06E S16 Ty00U3	.50							

S Spp	So T	Gr rt ad	% Net BdFt	Bd. Ft. per Acre Def% Gross Net			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre	
								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						
SF	D	3S	53	11.6	961	849	116	13	87							100	40	9	100	0.75	8.5
SF	D	4S	11		178	178	24	100					7	35	37	22	31	5	34	0.31	5.3
SF	D	UT	1		6	6	1		100				100				12	8	20	0.45	.3
<b>SF Totals</b>			4	14.2	1,881	1,613	220	18	46	23	13	1	4	4	91	31	8	79	0.76	20.3	
<b>Totals</b>				5.4	44,297	41,895	5,714	28	32	23	18	2	8	11	79	28	7	72	0.64	579.7	

TC PSTATS		<b>PROJECT STATISTICS</b>							PAGE	<b>1</b>	
		<b>PROJECT</b>			<b>SCATTERE</b>				DATE	12/13/2019	
TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
15N	06E	16	SCATTERED	00U1	136.40	102	581	S	W		
15N	06E	16	SCATTERED	00U2							
15N	06E	16	SCATTERED	00U3							
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES					
TOTAL		102	581	5.7							
CRUISE		65	305	4.7	38,364	.8					
DBH COUNT REFOREST COUNT		37	203	5.5							
BLANKS 100 %											
<b>STAND SUMMARY</b>											
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC	
WHEMLOCK	112	157.0	11.4	70	33.1	112.0	14,925	13,824	3,688	3,604	
DOUG FIR	129	90.8	16.5	86	33.3	135.5	24,247	23,447	5,608	5,606	
DOUG FIR-P	15	3.9	19.4	103	1.8	7.9	1,613	1,594	365	365	
R ALDER	25	17.8	11.3	50	3.7	12.4	1,266	1,110	335	327	
PS FIR	12	8.2	16.8	82	3.1	12.6	1,881	1,613	488	485	
WR CEDAR	8	3.2	11.9	56	0.7	2.5	175	149	57	53	
COTWOOD	4	.4	24.8	68	0.2	1.2	190	158	45	45	
<b>TOTAL</b>	<b>305</b>	<b>281.3</b>	<b>13.6</b>	<b>74</b>	<b>77.0</b>	<b>284.1</b>	<b>44,297</b>	<b>41,895</b>	<b>10,585</b>	<b>10,485</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	7	10		
WHEMLOCK		129.2	12.2	160	182	204					
DOUG FIR		83.3	7.4	430	464	498					
DOUG FIR-P		38.3	10.2	416	463	511					
R ALDER		65.9	13.4	77	88	100					
PS FIR		61.6	18.5	206	253	299					
WR CEDAR		64.6	26.3	63	86	108					
COTWOOD		63.6	36.3	334	525	716					
<b>TOTAL</b>		<b>106.2</b>	<b>6.1</b>	<b>293</b>	<b>312</b>	<b>331</b>	<b>451</b>	<b>230</b>	<b>113</b>		
CL	68.1	COEFF	SAMPLE TREES - CF			# OF TREES REQ.		INF. POP.			
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK		123.1	11.6	42	47	53					
DOUG FIR		75.2	6.6	100	107	114					
DOUG FIR-P		37.4	10.0	95	106	116					
R ALDER		78.6	16.0	24	28	33					
PS FIR		60.9	18.3	63	77	91					
WR CEDAR		59.9	24.4	26	34	43					
COTWOOD		40.3	23.0	107	139	171					
<b>TOTAL</b>		<b>95.3</b>	<b>5.5</b>	<b>72</b>	<b>76</b>	<b>80</b>	<b>363</b>	<b>185</b>	<b>91</b>		
CL	68.1	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.			
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK		112.3	11.1	140	157	174					
DOUG FIR		79.4	7.9	84	91	98					
DOUG FIR-P		296.6	29.3	3	4	5					
R ALDER		246.0	24.3	13	18	22					
PS FIR		387.4	38.3	5	8	11					
WR CEDAR		454.8	45.0	2	3	5					
COTWOOD		527.1	52.1	0	0	1					
<b>TOTAL</b>		<b>57.7</b>	<b>5.7</b>	<b>265</b>	<b>281</b>	<b>297</b>	<b>133</b>	<b>68</b>	<b>33</b>		

**PROJECT STATISTICS**  
PROJECT SCATTERED

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
15N	06E	16	SCATTERED	00U1	136.40	102	581	S	W
15N	06E	16	SCATTERED	00U2					
15N	06E	16	SCATTERED	00U3					

CL	68.1	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
WHEMLOCK		93.8	9.3	102	112	122			
DOUG FIR		75.2	7.4	125	135	146			
DOUG FIR-P		294.6	29.1	6	8	10			
R ALDER		220.6	21.8	10	12	15			
PS FIR		378.3	37.4	8	13	17			
WR CEDAR		385.6	38.1	2	2	3			
COTWOOD		499.3	49.4	1	1	2			
<b>TOTAL</b>		<b>32.0</b>	<b>3.2</b>	<b>275</b>	<b>284</b>	<b>293</b>	<b>41</b>	<b>21</b>	<b>10</b>

CL	68.1	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
WHEMLOCK		90.2	8.9	12,590	13,824	15,058			
DOUG FIR		80.1	7.9	21,589	23,447	25,305			
DOUG FIR-P		300.8	29.8	1,120	1,594	2,068			
R ALDER		221.8	21.9	866	1,110	1,354			
PS FIR		380.2	37.6	1,006	1,613	2,220			
WR CEDAR		377.2	37.3	94	149	205			
COTWOOD		504.4	49.9	79	158	237			
<b>TOTAL</b>		<b>39.7</b>	<b>3.9</b>	<b>40,251</b>	<b>41,895</b>	<b>43,538</b>	<b>63</b>	<b>32</b>	<b>16</b>

CL	68.1	COEFF	NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
WHEMLOCK		88.9	8.8	3,287	3,604	3,921			
DOUG FIR		78.9	7.8	5,169	5,606	6,044			
DOUG FIR-P		301.0	29.8	256	365	473			
R ALDER		222.8	22.0	255	327	399			
PS FIR		377.6	37.4	304	485	666			
WR CEDAR		397.1	39.3	32	53	74			
COTWOOD		501.0	49.6	23	45	67			
<b>TOTAL</b>		<b>36.5</b>	<b>3.6</b>	<b>10,106</b>	<b>10,485</b>	<b>10,863</b>	<b>53</b>	<b>27</b>	<b>13</b>

CL	68.1	COEFF	V BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
WHEMLOCK				112	123	134			
DOUG FIR				159	173	187			
DOUG FIR-P		299.6	29.6	141	201	261			
R ALDER		158.2	15.6	70	90	109			
PS FIR		291.5	28.8	80	128	176			
WR CEDAR		377.2	37.3	38	61	83			
COTWOOD		504.4	49.9	64	128	192			
<b>TOTAL</b>		<b>37.2</b>	<b>3.7</b>	<b>142</b>	<b>147</b>	<b>153</b>	<b>55</b>	<b>28</b>	<b>14</b>

T15N R06E S16 T00U1 T15N R06E S16 T00U1  
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt  
 15N 06E 16 SCATTERED 00U1 42.70 36 118 S W

S Sp	So T	Gr rt 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	21													3	6		0.00	42.5
DF	HB	2S	14	1.4	4,950	4,880	208			68	32					100		40	14	282	1.62	17.3
DF	HB	3S	6		2,326	2,326	99		100							100		40	10	142	0.82	16.4
DF	DM	2S	50	4.6	17,929	17,098	730			36	64					100		40	16	376	2.05	45.5
DF	DM	3S	22	2.3	8,032	7,848	335	22	78				1	15	84			38	8	93	0.65	84.2
DF	DM	4S	8		2,461	2,461	105	100					4	35	36	25		31	5	35	0.28	70.6
<b>DF</b>	<b>Totals</b>		69	3.1	35,720	34,613	1,478	12	24	27	36		0	3	6	91		31	9	125	0.93	276.5
DF	P	CU	CU															7			0.00	.5
DF	P	HB	2S	42	3.1	457	443	19		60	40					100		40	14	308	1.68	1.4
DF	P	HB	3S	42		450	450	19		100				15	85			37	10	133	0.85	3.4
DF	P	DM	3S	6		64	64	3	100						100			32	7	60	0.41	1.1
DF	P	DM	4S	10		97	97	4	100				36	29		35		24	6	33	0.33	2.9
<b>DF</b>	<b>P</b>	<b>Totals</b>		2	1.3	1,069	1,054	45	15	43	25	17	3	3	12	82		31	9	113	0.83	9.3
WH	CU	CU		100.0	63													4	5		0.00	41.8
WH	DM	2S	35	16.7	5,403	4,498	192			56	44					100		40	15	313	2.06	14.4
WH	DM	3S	40	3.4	5,126	4,951	211	41	59					15	85			38	8	91	0.64	54.4
WH	DM	4S	25		3,124	3,124	133	95	5				23	31	19	27		27	5	31	0.29	100.1
<b>WH</b>	<b>Totals</b>		25	8.3	13,715	12,573	537	40	25	20	16		6	8	10	76		26	7	60	0.60	210.6
RA	CU	CU																5	8		0.00	3.8
RA	DM	2S	10	24.1	141	107	5			100						100		40	14	220	2.10	.5
RA	DM	3S	22	6.6	247	230	10		100					57	43			31	9	81	0.67	2.8
RA	DM	4S	68	4.1	736	706	30	43	57				11	73		16		28	6	40	0.39	17.5
<b>RA</b>	<b>Totals</b>		2	7.2	1,124	1,043	45	29	61	10			7	62	9	21		25	7	42	0.47	24.6
RC	CU	CU		100.0	53													2	6		0.00	5.3
RC	DM	3S	49	9.4	193	175	7	30	70							100		36	7	70	0.89	2.5
RC	DM	4S	31		106	106	5	100						100				28	5	30	0.28	3.5
RC	DM	UT	20		70	70	3	100					100					18	5	20	0.20	3.5
<b>RC</b>	<b>Totals</b>		1	17.0	423	351	15	65	35				20	30		50		18	6	24	0.46	14.8
CW	DM	1S	72	24.0	362	275	12			37	63		12	29		60		33	16	271	2.52	1.0
CW	DM	3S	7		27	27	1		100				100					19	10	70	0.73	.4
CW	DM	UT	21		77	77	3							100				28	20	490	2.53	.2
<b>CW</b>	<b>Totals</b>		1	18.6	466	379	16		7	27	66		16	41		43		29	15	243	2.23	1.6
<b>Type Totals</b>				4.8	52,516	50,013	2,136	20	25	25	30		2	6	7	85		28	8	93	0.79	537.4

T15N R06E S16 T00U2 T15N R06E S16 T00U2  
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt  
 15N 06E 16 SCATTERED 00U2 93.20 65 194 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															3	6		0.00	23.8
DF		HA	SM	1		231	231	22										40	17	460	2.49	.5
DF		HA	2S	2	3.6	334	322	30			100							40	14	294	1.69	1.1
DF		HB	2S	12	2.8	2,424	2,357	220			81	19		8	4	88		37	14	256	1.58	9.2
DF		HB	3S	12	1.7	2,138	2,102	196		100					16	84		37	9	121	0.76	17.3
DF		DM	2S	30	6.0	5,906	5,554	518			53	47			8	92		39	15	302	1.84	18.4
DF		DM	3S	30	3.1	5,755	5,577	520	26	74				1	24	76		37	8	88	0.63	63.6
DF		DM	4S	12	.8	2,281	2,262	211	99	1				5	42	25	29	30	5	35	0.30	64.8
DF		DM	UT	1		52	52	5	100					100				19	5	20	0.20	2.6
<b>DF</b>	<b>Totals</b>			48	3.5	19,121	18,457	1,720	20	34	28	18		1	6	15	78	30	8	92	0.74	201.3
DF	P	CU	CU															5			0.00	.7
DF	P	HA	SM	12	2.2	245	240	22				100				100		40	17	450	2.36	.5
DF	P	HB	2S	47	1.8	867	851	79			86	14				100		39	14	279	1.61	3.0
DF	P	HB	3S	27		516	516	48		100						100		39	10	151	0.84	3.4
DF	P	DM	3S	7		126	126	12	25	75				11		89		37	8	83	0.59	1.5
DF	P	DM	4S	7		117	117	11	100				7	69		23		26	6	31	0.35	3.8
<b>DF P</b>	<b>Totals</b>			5	1.1	1,871	1,850	172	8	33	40	19		0	5	94		33	10	142	0.99	13.0
WH		CU	CU		100.0	470												7	5		0.00	62.5
WH		HB	3S	1		182	182	17		100						100		40	9	120	0.76	1.5
WH		DM	2S	10	13.6	1,695	1,465	137			87	13				100		38	14	237	1.67	6.2
WH		DM	3S	53	4.0	7,851	7,540	703	31	69				0	16	84		37	8	88	0.63	85.3
WH		DM	4S	30	1.7	4,357	4,284	399	100					8	31	20	42	30	5	32	0.28	133.2
WH		DM	UT	6	.0	793	793	74	85	15				15	75	10		23	5	25	0.24	31.1
<b>WH</b>	<b>Totals</b>			37	7.1	15,348	14,264	1,329	51	38	10	1		3	14	15	69	27	6	45	0.43	319.9
SF		CU	CU		100.0	6												7	5		0.00	5.2
SF		DM	2S	35	20.7	1,070	849	79			64	36				100		39	14	220	1.75	3.9
SF		DM	3S	53	11.6	1,407	1,243	116	13	87						100		40	9	100	0.75	12.5
SF		DM	4S	11		261	261	24	100					7	35	37	22	31	5	34	0.31	7.8
SF		DM	UT	1		8	8	1		100				100				12	8	20	0.45	.4
<b>SF</b>	<b>Totals</b>			6	14.2	2,752	2,361	220	18	46	23	13		1	4	4	91	31	8	79	0.76	29.7
RA		CU	CU		100.0	36												6	7		0.00	7.9
RA		DM	2S	10	25.0	159	120	11			100					100		40	13	165	1.64	.7
RA		DM	3S	14	14.5	191	163	15		100					100			27	11	100	1.13	1.6
RA		DM	4S	76	9.2	952	864	80	76	24				9	33	28	30	30	6	37	0.35	23.2
<b>RA</b>	<b>Totals</b>			3	14.3	1,338	1,147	107	58	32	10			7	39	21	33	25	6	34	0.42	33.4
RC		CU	CU															6			0.00	1.0
RC		DM	3S	59	13.6	39	34	3			100					100		36	13	190	2.03	.2
RC		DM	4S	41		24	24	2	100					100				30	5	30	0.40	.8

T15N R06E S16 T00U2										T15N R06E S16 T00U2				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
15N	06E	16	SCATTERED	00U2	93.20	65	194	S	W					

Spp	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs Per /Acre					
								Net	Def%	Gross	Net	Net MBF	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
<b>RC</b>	<b>Totals</b>		0	8.5	63	58	5	41		59			41	59			16	6	30	0.75	1.9				
CW	CU	CU															7			0.00	.2				
CW	DM	1S	78	13.8	52	45	4		100					100			40	14	250	2.10	.2				
CW	DM	4S	22		13	13	1	100						100			40	7	70	0.67	.2				
<b>CW</b>	<b>Totals</b>		0	11.1	65	57	5	22	78					100			27	9	107	1.38	.5				
<b>Type</b>	<b>Totals</b>			5.8	40,558	38,193		3,560	32	36	21	11	2	10	14	75	28	7	64	0.57	599.8				



TC TSTATS		STATISTICS							PAGE	1	
		PROJECT			SCATTERE				DATE	12/13/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
15N	06E	16	SCATTERED	00U1	42.70	36	233	S	W		
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES					
TOTAL		36	233	6.5							
CRUISE		22	116	5.3	10,475		1.1				
DBH COUNT											
REFOREST											
COUNT		14	84	6.0							
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	61	102.1	17.9	94	42.2	178.6	35,720	34,613	8,053	8,048	
DOUG FIR-P	4	2.9	18.0	101	1.2	5.2	1,069	1,054	239	239	
WHEMLOCK	34	118.3	12.1	64	27.0	93.9	13,715	12,573	3,289	3,275	
R ALDER	8	13.2	12.0	56	3.0	10.3	1,124	1,043	291	291	
WR CEDAR	6	8.1	11.3	58	1.7	5.6	423	351	133	120	
COTWOOD	3	.8	25.7	60	0.6	2.8	466	379	101	101	
<b>TOTAL</b>	<b>116</b>	<b>245.3</b>	<b>14.9</b>	<b>77</b>	<b>76.8</b>	<b>296.4</b>	<b>52,516</b>	<b>50,013</b>	<b>12,105</b>	<b>12,075</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	7	10		
DOUG FIR		75.0	9.7	536	593	651					
DOUG FIR-P		47.3	27.0	307	420	533					
WHEMLOCK		130.4	22.3	221	284	348					
R ALDER		56.6	21.3	81	103	124					
WR CEDAR		41.2	20.5	60	76	92					
COTWOOD		62.8	43.5	335	593	851					
<b>TOTAL</b>		<b>97.3</b>	<b>9.1</b>	<b>398</b>	<b>438</b>	<b>478</b>	<b>378</b>	<b>193</b>	<b>95</b>		
CL:	68.1 %	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR		68.2	8.8	121	133	145					
DOUG FIR-P		48.3	27.6	69	96	122					
WHEMLOCK		123.8	21.2	58	74	89					
R ALDER		74.9	28.2	22	31	39					
WR CEDAR		36.3	18.0	26	31	37					
COTWOOD		43.6	30.2	103	148	193					
<b>TOTAL</b>		<b>88.5</b>	<b>8.3</b>	<b>94</b>	<b>103</b>	<b>111</b>	<b>313</b>	<b>160</b>	<b>78</b>		
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR		62.1	10.3	92	102	113					
DOUG FIR-P		366.0	60.9	1	3	5					
WHEMLOCK		107.1	17.8	97	118	139					
R ALDER		229.0	38.1	8	13	18					
WR CEDAR		310.0	51.6	4	8	12					
COTWOOD		360.5	60.0	0	1	1					
<b>TOTAL</b>		<b>45.4</b>	<b>7.6</b>	<b>227</b>	<b>245</b>	<b>264</b>	<b>82</b>	<b>42</b>	<b>21</b>		
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR		54.0	9.0	163	179	195					
DOUG FIR-P		358.6	59.7	2	5	8					
WHEMLOCK		77.5	12.9	82	94	106					

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT	SCATTERE			DATE	12/13/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
15N	06E	16	SCATTERED	00U1	42.70	36	233	S	W	
CL:	68.1 %	COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10	
R ALDER		188.7	31.4	7	10	13				
WR CEDAR		268.3	44.7	3	6	8				
COTWOOD		336.4	56.0	1	3	4				
<b>TOTAL</b>		<b>18.8</b>	<b>3.1</b>	<b>287</b>	<b>296</b>	<b>306</b>	<b>14</b>	<b>7</b>	<b>4</b>	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		54.9	9.1	31,450	34,613	37,775				
DOUG FIR-P		368.2	61.3	408	1,054	1,700				
WHEMLOCK		73.2	12.2	11,041	12,573	14,105				
R ALDER		188.8	31.4	715	1,043	1,371				
WR CEDAR		257.3	42.8	201	351	501				
COTWOOD		342.9	57.1	163	379	596				
<b>TOTAL</b>		<b>27.2</b>	<b>4.5</b>	<b>47,746</b>	<b>50,013</b>	<b>52,280</b>	<b>30</b>	<b>15</b>	<b>7</b>	
CL:	68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		55.0	9.2	7,311	8,048	8,786				
DOUG FIR-P		368.4	61.3	92	239	386				
WHEMLOCK		73.6	12.3	2,874	3,275	3,677				
R ALDER		183.8	30.6	202	291	380				
WR CEDAR		278.5	46.4	64	120	176				
COTWOOD		336.4	56.0	44	101	157				
<b>TOTAL</b>		<b>25.2</b>	<b>4.2</b>	<b>11,568</b>	<b>12,075</b>	<b>12,581</b>	<b>25</b>	<b>13</b>	<b>6</b>	
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR				176	194	211				
DOUG FIR-P		368.2	61.3	78	202	326				
WHEMLOCK				118	134	150				
R ALDER		142.7	23.8	70	102	133				
WR CEDAR		257.3	42.8	36	63	89				
COTWOOD		342.9	57.1	58	135	213				
<b>TOTAL</b>		<b>190.8</b>	<b>31.8</b>	<b>161</b>	<b>169</b>	<b>176</b>	<b>1,454</b>	<b>742</b>	<b>364</b>	

TC TSTATS				STATISTICS				PAGE	1	
PROJECT				SCATTERE				DATE	12/13/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
15N	06E	16	SCATTERED	00U2	93.20	65	344	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	65	344	5.3							
CRUISE	42	185	4.4	27,813			.7			
DBH COUNT										
REFOREST										
COUNT	23	119	5.2							
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	68	86.1	15.7	82	29.3	116.4	19,121	18,457	4,517	4,518
DOUG FIR-P	11	4.3	19.7	103	2.1	9.2	1,871	1,850	424	424
WHEMLOCK	74	174.8	11.2	71	35.8	119.8	15,348	14,264	3,841	3,724
PS FIR	12	12.0	16.8	82	4.5	18.4	2,752	2,361	714	710
R ALDER	17	20.1	11.1	48	4.0	13.4	1,338	1,147	357	346
WR CEDAR	2	1.0	14.0	48	0.3	1.0	63	58	22	22
COTWOOD	1	.2	23.0	84	0.1	.5	65	57	20	20
<b>TOTAL</b>	<i>185</i>	<i>298.4</i>	<i>13.1</i>	<i>74</i>	<i>77.1</i>	<i>278.8</i>	<i>40,558</i>	<i>38,193</i>	<i>9,895</i>	<i>9,763</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	7	10	
DOUG FIR	81.0	9.8		315	349	384				
DOUG FIR-P	36.9	11.7		423	479	535				
WHEMLOCK	90.0	10.4		117	131	144				
PS FIR	61.6	18.5		206	253	299				
R ALDER	72.0	18.0		67	82	96				
WR CEDAR	102.9	96.3		4	110	216				
COTWOOD										
<b>TOTAL</b>	<i>97.9</i>	<i>7.2</i>		<i>219</i>	<i>236</i>	<i>253</i>	<i>382</i>	<i>195</i>	<i>96</i>	
CL:	68.1 %	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	74.0	9.0		76	84	91				
DOUG FIR-P	35.3	11.2		97	109	122				
WHEMLOCK	87.8	10.2		31	35	38				
PS FIR	60.9	18.3		63	77	91				
R ALDER	82.8	20.7		21	27	32				
WR CEDAR	101.6	95.2		2	42	83				
COTWOOD										
<b>TOTAL</b>	<i>88.4</i>	<i>6.5</i>		<i>56</i>	<i>60</i>	<i>63</i>	<i>312</i>	<i>159</i>	<i>78</i>	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	86.3	10.7		77	86	95				
DOUG FIR-P	270.2	33.5		3	4	6				
WHEMLOCK	106.1	13.1		152	175	198				
PS FIR	304.1	37.7		7	12	16				
R ALDER	237.3	29.4		14	20	26				
WR CEDAR	670.8	83.1		0	1	2				
COTWOOD	806.2	99.9		0	0	0				
<b>TOTAL</b>	<i>55.6</i>	<i>6.9</i>		<i>278</i>	<i>298</i>	<i>319</i>	<i>124</i>	<i>63</i>	<i>31</i>	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	86.7	10.7		104	116	129				

TC TSTATS				STATISTICS				PAGE	2	
PROJECT				SCATTERE				DATE	12/13/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
15N	06E	16	SCATTERED	00U2	93.20	65	344	S	W	
CL:	68.1 %	COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR-P		267.7	33.2	6	9	12				
WHEMLOCK		93.4	11.6	106	120	134				
PS FIR		296.7	36.8	12	18	25				
R ALDER		220.1	27.3	10	13	17				
WR CEDAR		565.6	70.1	0	1	2				
COTWOOD		806.2	99.9	0	1	1				
<b>TOTAL</b>		<b>34.5</b>	<b>4.3</b>	<b>267</b>	<b>279</b>	<b>291</b>	<b>47</b>	<b>24</b>	<b>12</b>	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		94.5	11.7	16,296	18,457	20,618				
DOUG FIR-P		273.2	33.9	1,224	1,850	2,476				
WHEMLOCK		93.1	11.5	12,618	14,264	15,910				
PS FIR		298.2	37.0	1,488	2,361	3,233				
R ALDER		227.8	28.2	823	1,147	1,470				
WR CEDAR		575.3	71.3	17	58	99				
COTWOOD		806.2	99.9	0	57	115				
<b>TOTAL</b>		<b>45.0</b>	<b>5.6</b>	<b>36,063</b>	<b>38,193</b>	<b>40,323</b>	<b>81</b>	<b>41</b>	<b>20</b>	
CL:	68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		92.4	11.5	4,000	4,518	5,035				
DOUG FIR-P		273.3	33.9	280	424	568				
WHEMLOCK		91.2	11.3	3,303	3,724	4,145				
PS FIR		296.1	36.7	449	710	970				
R ALDER		227.3	28.2	248	346	443				
WR CEDAR		573.6	71.1	6	22	38				
COTWOOD		806.2	99.9	0	20	40				
<b>TOTAL</b>		<b>40.9</b>	<b>5.1</b>	<b>9,268</b>	<b>9,763</b>	<b>10,258</b>	<b>67</b>	<b>34</b>	<b>17</b>	
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR				140	159	177				
DOUG FIR-P		273.2	33.9	133	201	269				
WHEMLOCK				105	119	133				
PS FIR		225.3	27.9	81	128	175				
R ALDER		159.8	19.8	61	85	109				
WR CEDAR		575.3	71.3	16	56	95				
COTWOOD		806.2	99.9	0	111	222				
<b>TOTAL</b>		<b>176.1</b>	<b>21.8</b>	<b>129</b>	<b>137</b>	<b>145</b>	<b>1,239</b>	<b>632</b>	<b>310</b>	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	SCATTERED			DATE	12/13/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
15N	06E	16	SCATTERED	00U3	0.50	1	4	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		1	4	4.0						
CRUISE		1	4	4.0	77		5.2			
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	
WHEMLOCK	4	153.1	16.1	91	54.2	217.8	39,322	38,570	9,288	9,268
<b>TOTAL</b>	<b>4</b>	<b>153.1</b>	<b>16.1</b>	<b>91</b>	<b>54.2</b>	<b>217.8</b>	<b>39,322</b>	<b>38,570</b>	<b>9,288</b>	<b>9,268</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	7	10	
WHEMLOCK		28.8	16.4	217	260	303				
<b>TOTAL</b>		<b>28.8</b>	<b>16.4</b>	<b>217</b>	<b>260</b>	<b>303</b>	<b>43</b>	<b>22</b>	<b>11</b>	
CL:	68.1 %	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK		22.3	12.7	54	62	70				
<b>TOTAL</b>		<b>22.3</b>	<b>12.7</b>	<b>54</b>	<b>62</b>	<b>70</b>	<b>26</b>	<b>13</b>	<b>7</b>	

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

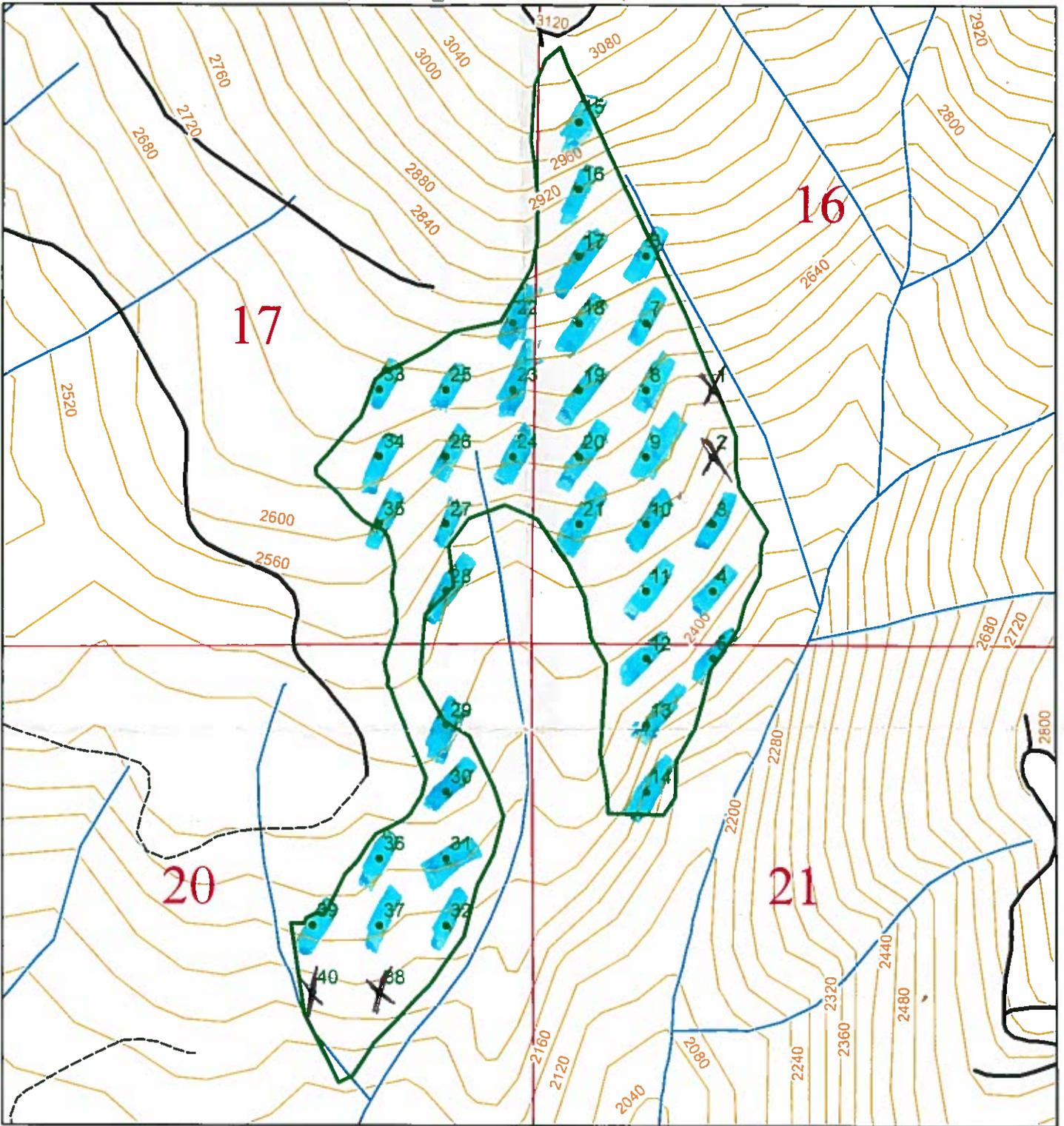
T15N R06E S16 Ty00U1	42.7
T15N R06E S16 Ty00U2	93.2
T15N R06E S16 Ty00U	.5

**Project SCATTERE**  
**Acres 136.40**

**Page No 1**  
**Date: 12/13/2019**  
**Time 9:22:28AM**

Species	s T	Total	Total	Total	Net Cubic Ft/		CF/ LF	Total CCF		Total MBF	
		Trees	Logs	Tons	Tree	Log		Gross	Net	Gross	Net
DOUG FIR		12,386	26,535	21,799	61.74	28.82	0.83	7,649	7,647	3,307	3,198
WHEMLOCK		21,417	31,382	16,098	22.95	15.66	0.50	5,031	4,916	2,036	1,886
PS FIR		1,115	2,284	1,906	59.33	28.95	0.80	665	661	257	220
DOUG FIR	P	529	1,524	1,417	93.93	32.62	0.95	497	497	220	217
R ALDER		2,432	3,266	1,256	18.35	13.66	0.46	457	446	173	151
COTWOOD		50	100	151	122.89	61.45	1.88	62	61	26	22
WR CEDAR		435	496	182	16.59	14.55	0.52	78	72	24	20
<b>Totals</b>		38,364	65,589	42,809	37.28	21.80	0.66	14,438	14,301	6,042	5,714

Wood Type Species	Total	Total	Total	Net Cubic Ft/		CF/ LF	Total CCF		Total MBF	
	Trees	Logs	Tons	Tree	Log		Gross	Net	Gross	Net
C	35,882	62,223	41,402	38.44	22.17	0.67	13,919	13,794	5,844	5,542
H	2,482	3,366	1,407	20.46	15.08	0.51	518	508	199	173
<b>Totals</b>	38,364	65,589	42,809	37.28	21.80	0.66	14,438	14,301	6,042	5,714



**Scattered**

LAYER NAME:	harvest type	Township:	T15R06E
POLY ID:	1	Total Sample Points:	40
Acres:	46	Spacing Between Points: Width: 225 Height: 225	
		Point Rotation Degrees:	0

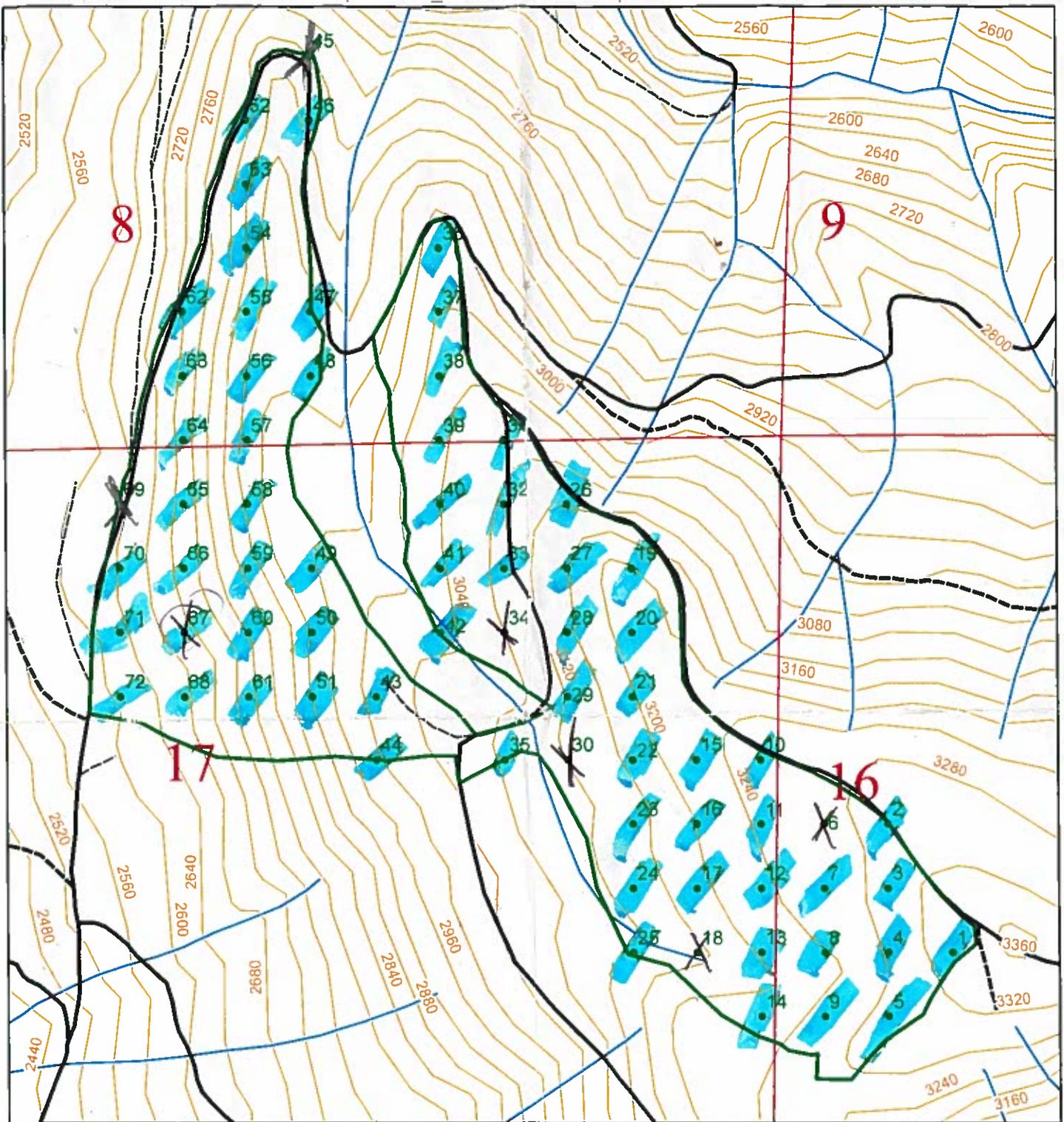
*Unit 1*



Scale 1:5,700

**Legend**

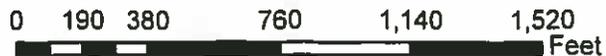
- Sample Points
- Unit
- Public Land Survey Sections
- Contours 40-foot



**Scattered**

LAYER NAME:	harvest type	Township:	T15R06E
POLY ID:	1	Total Sample Points:	72
Acres:	103	Spacing Between Points:	Width: 250 Height: 250
		Point Rotation Degrees:	0

*Unit 2*



Scale 1:6,600

**Legend**

- Sample Points
- Unit
- Public Land Survey Sections
- Contours 40-foot



# Forest Practices Application/Notification Notice of Decision

FPA/N No: 2421332

Effective Date: 12/3/2019

Expiration Date: 12/3/2022

Shut Down Zone: 657 | 659S

EARR Tax Credit:  Eligible  Non-eligible

Reference: Scattered VRH RMZ #30-085082

### 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 approved FPA/N

### FPA/N Classification

### Number of Years Granted on Multi-Year Request

Class II     Class III     Class IVG     Class IVS     4 yrs     5 yrs

### Conditions on Approval / Reasons for Disapproval

Issued By: Bruce Meyer

Region: South Puget Sound

Title: Resource Protection Forester

Date: 12/3/2019

Copies to:     Landowner, Timber Owner and Operator.

Issued in person:     Landowner  Timber Owner  Operator By: *md essens*

**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  
South Puget Sound Region  
950 Farman Ave N  
Enumclaw, WA 98022

**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 <u>12/3/2019</u> , I placed in the United States mail at <u>Enumclaw</u> , WA,	
(date mm/dd/yyyy)	(post office location)
postage paid, a true and accurate copy of this document. Notice of Decision FPA # <u>2421332</u>	
<u>Meredith Dessens</u>	_____
(Printed name)	(Signature)



WASHINGTON STATE DEPARTMENT OF  
**NATURAL RESOURCES**

FPA/N No: 2421332

Date of Service: 12/27/2019

Reference: Scattered #30-085082

**Request to Amend  
Forest Practices Application/Notification  
DNR's Decision**

**Decision**

- Approved**      This Forest Practices Application is subject to the conditions listed below.
- Disapproved**      This Forest Practices Application is disapproved for the reasons listed below.

**Conditions on Approval / Reasons for Disapproval**

**Appeal Information (RCW 76.09.090(3), WAC 222-46-030(4), and WAC 332-08-215(3))**  
The Landowner, Timber Owner, or Operator has 15 calendar days from the Date of Service to request a Brief Adjudicative Proceeding for this amendment which is a Notice to Comply for an authorized deviation. Appeal requests must:

- Be in writing
- Include signature(s)
- Include factual basis for the appeal and the issue to be adjudicated
- Sent to the Region Office at: 950 Farman Ave North Enumclaw, WA 98022
- With a copy sent to the Department of Natural Resources, Forest Practices Division, PO Box 47012, Olympia, WA 98504-7012

**Issued By:** Bruce Meyer      **Region:** South Puget Sound

**Copies Sent to:** *Landowner (via US Mail), Timber Owner (via US Mail), Operator (via US mail), WDFW, DOE, Affected Indian Tribes, LGE, other*

DNR affidavit of mailing:

*hand delivered*

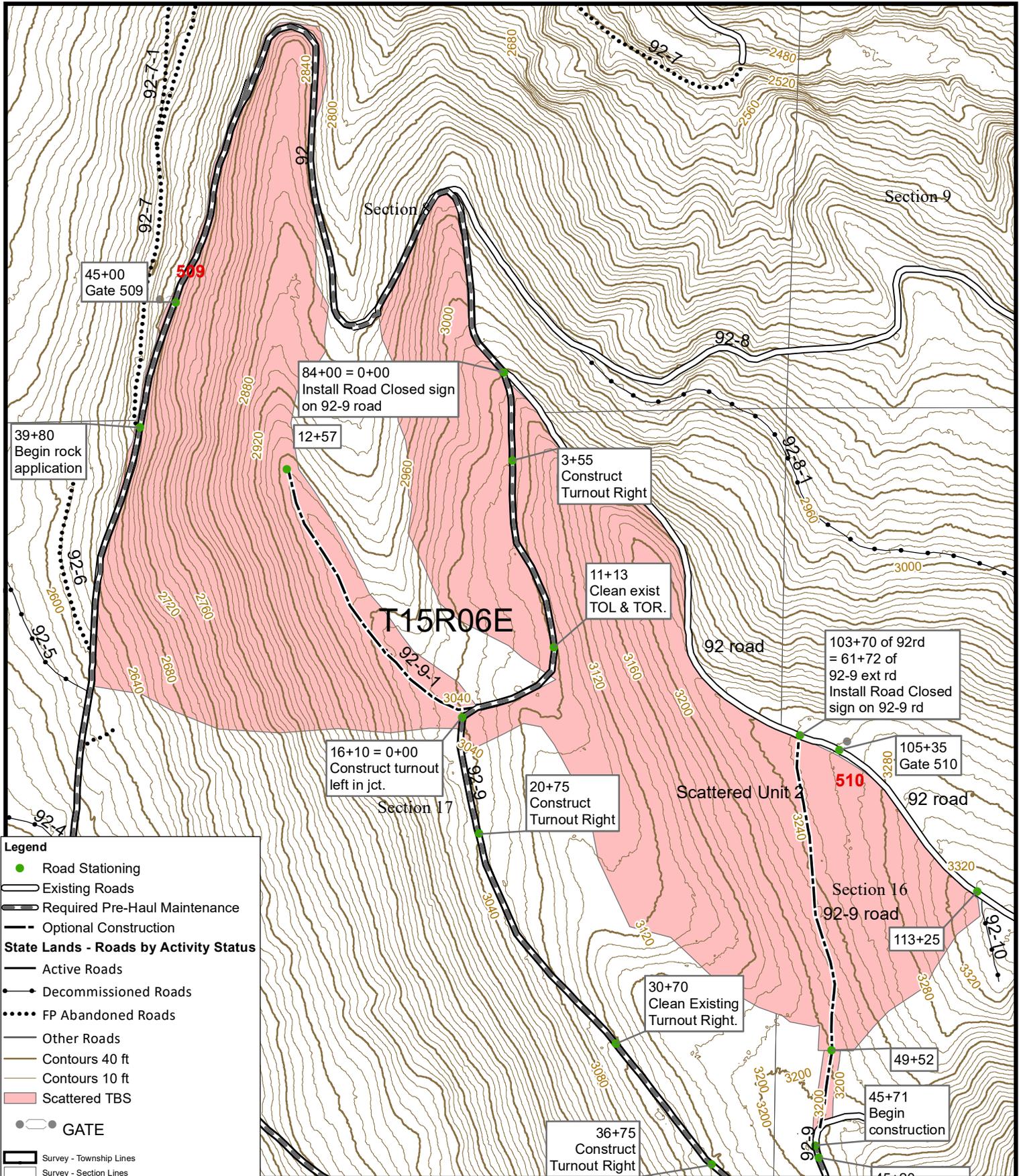
On this day 12/27/2019, I placed in the United States mail at Enumclaw, WA, postage paid, a true and accurate copy of this document. Notice of Decision FPA #2421332

Betty Burton

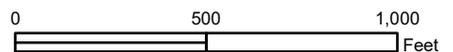
*Betty Burton*



# Scattered TBS - Road Work Map, page 1 of 3

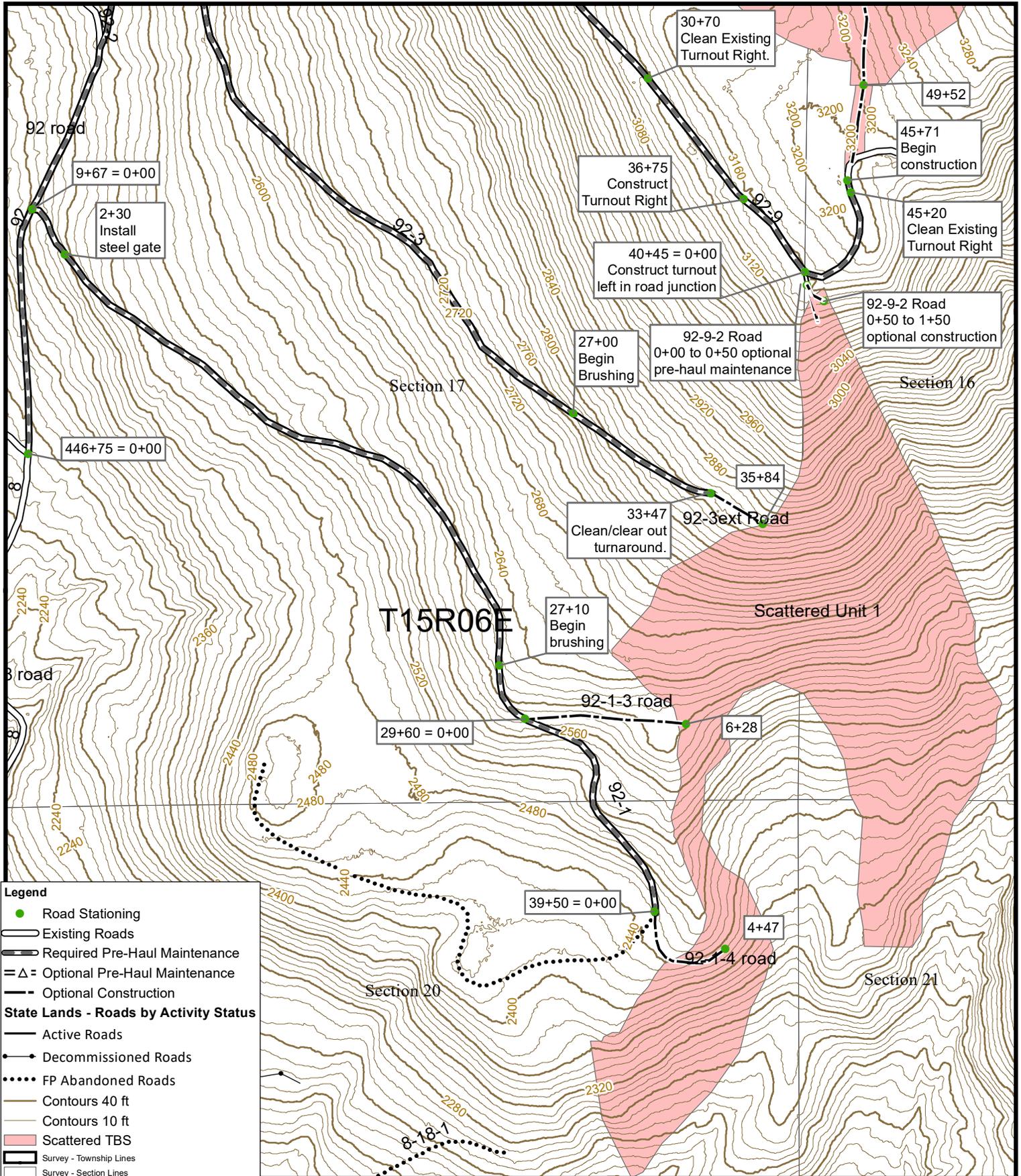


Note: See Scattered Road Plan for additional work and requirements not shown.





# Scattered TBS - Road Work Map, page 2 of 3



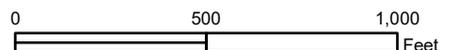
**Legend**

- Road Stationing
- Existing Roads
- Required Pre-Haul Maintenance
- Δ — Optional Pre-Haul Maintenance
- - - - Optional Construction

**State Lands - Roads by Activity Status**

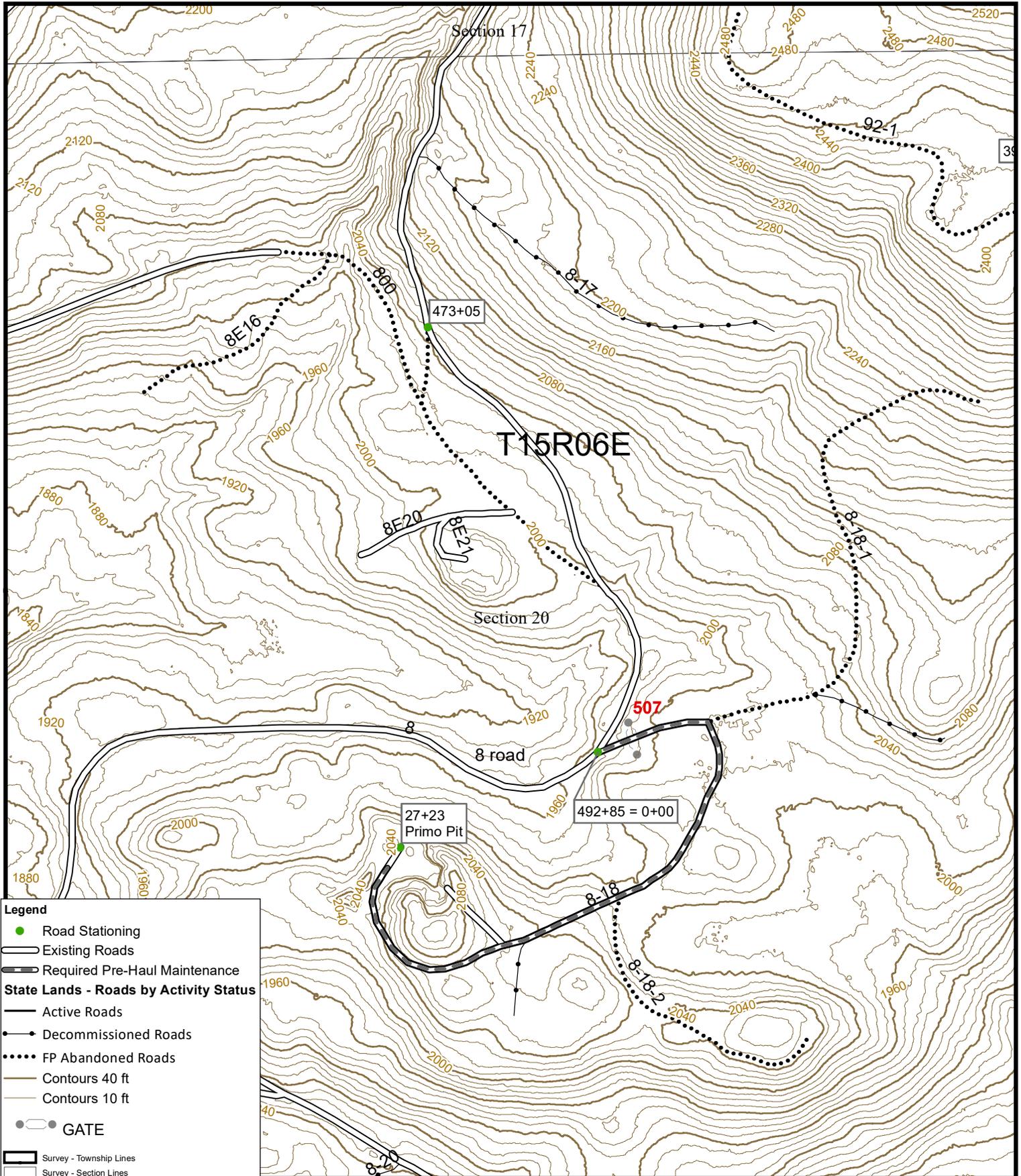
- Active Roads
- Decommissioned Roads
- FP Abandoned Roads
- Contours 40 ft
- Contours 10 ft
- Scattered TBS
- Survey - Township Lines
- Survey - Section Lines

Note: See Scattered Road Plan for additional work and requirements not shown.

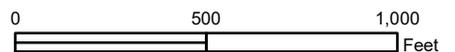




Scattered TBS - Road Work Map, page 3 of 3



Note: See Scattered Road Plan for additional work and requirements not shown.



STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

SCATTERED TIMBER SALE ROAD PLAN  
PIERCE COUNTY  
RAINIER DISTRICT  
SOUTH PUGET SOUND REGION

AGREEMENT NO.: 30-085082

STAFF ENGINEER: MICHELLE BELL

DATE: 9/4/19

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>
8-18	0+00 to 27+23	Pre-haul maintenance
92	0+00 to 113+25	Pre-haul maintenance
92-1	0+00 to 39+50	Pre-haul maintenance
92-3	0+00 to 33+47	Pre-haul maintenance
92-9	0+00 to 45+71	Pre-haul maintenance
92-1-3	0+00 to 6+28	Abandon, if built
92-9-2	0+50 to 1+50	Abandon, if built

**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>
92-1-3	0+00 to 6+28	Construction
92-1-4	0+00 to 4+47	Construction
92-3 ext	33+47 to 35+84	Construction
92-9 ext	45+71 to 61+72	Construction
92-9-1	0+00 to 12+57	Construction
92-9-2	0+00 to 0+50	Pre-haul maintenance
92-9-2	0+50 to 1+50	Construction

#### **0-4 CONSTRUCTION**

Construction includes, but is not limited to:

- Clearing.
- Grubbing.
- Right of way debris disposal.
- Excavation and/or embankment to subgrade.
- Landing construction.
- Acquisition and installation of drainage structures.
- Manufacture or acquisition and application of rock.
- Acquisition and application of grass seed and straw.

#### **0-6 PRE-HAUL MAINTENANCE**

Pre-haul maintenance includes, but is not limited to:

- Brushing.
- Culvert cleaning and headwall reconstruction.
- Ditch cleaning and reconstruction.
- Manufacture or acquisition and application of rock.
- Acquisition and installation of two steel gates.

#### **0-7 POST-HAUL MAINTENANCE**

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

#### **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, Drilling, Blasting, Crushing, and manufacture of 8000 cubic yard crushed rock stockpile in Primo Pit. Work for developing rock sources is listed in Section 6 ROCK AND SURFACING.

#### **0-13 STRUCTURES**

Purchaser shall provide and install two steel gates. Requirements for these structures are listed in Section 7 STRUCTURES.

### **SECTION 1 – GENERAL**

#### **1-1 ROAD PLAN CHANGES**

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

**1-2 UNFORESEEN CONDITIONS**

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

**1-3 ROAD DIMENSIONS**

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

**1-4 ROAD TOLERANCES**

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

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

**1-6 ORDER OF PRECEDENCE**

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

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

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

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

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

**1-9 DAMAGED METALLIC COATING**

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

SUBSECTION ROAD MARKING

**1-15 ROAD MARKING**

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

- Centerline is marked with orange pin flags and orange flagging for new construction.
- 92-9 ext road centerline is referenced using metal tags on trees with horizontal and vertical offsets to designed subgrade elevation at centerline.

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

Purchaser shall perform work in accordance with the designs and reference points set in the field for grade and alignment.

**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.

SUBSECTION TIMING

**1-21 HAUL APPROVAL**

The Purchaser shall not use roads under this road plan for timber hauling, other than timber cut on the right-of-way, without written approval from the Contract Administrator.

**1-22 WORK NOTIFICATIONS**

Purchaser shall notify the Contract Administrator 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 compaction
- Rock compaction

SUBSECTION RESTRICTIONS

**1-25 ACTIVITY TIMING RESTRICTION**

No operation of road construction equipment or rock haul will be allowed on weekends or state recognized holidays, unless authorized in writing by the Contract Administrator.

The specified activities are not permitted during the listed closure periods unless authorized in writing by the Contract Administrator.

<u>Activity</u>	<u>Closure Period</u>
Operation of road construction equipment or rock haul	November 1 to May 15

**1-26 OPERATING DURING CLOSURE PERIOD**

If permission is granted to operate during a seasonal closure period listed in Clause 1-25 ACTIVITY TIMING RESTRICTION, the Purchaser shall comply with a maintenance plan to include further protection of water, soil, roads, and other forest assets at the Purchaser’s expense. Preventative measures shall be in place prior to operating during the closure period. Purchaser is required to maintain all haul roads at their own expense including those listed in Contract Clause C-060 DESIGNATED ROAD MAINTAINER. If other operators are using, or desire to use these roads, a joint operating plan must be developed. All parties shall follow this plan.

**1-29 SEDIMENT RESTRICTION**

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

**1-30 CLOSURE TO PREVENT DAMAGE**

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

- Wheel track rutting exceeds 6 inches on jaw run pit run roads.
- Wheel track rutting exceeds 3 inches on crushed rock roads.
- Wheel track rutting exceeds 4 inches on native surface roads.
- Surface or base stability problems persist.
- Weather is such that satisfactory results cannot be obtained in an area of operations.
- When, in the opinion of the Contract Administrator excessive road damage or rutting may occur.

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

**1-33 SNOW PLOWING RESTRICTION**

Snowplowing will be allowed after the execution of a SNOW PLOWING AGREEMENT, which is available from the Contact Administrator upon request. 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.

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>	<u>Comment</u>
92	0+00 to 113+25	From November 1 to April 30

**2-6 CLEANING CULVERTS**

On the following road(s), Purchaser shall clean the inlets and outlets of all culverts.

<u>Road</u>	<u>Stations</u>
92-9	0+00 to 46+71

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

On the following road(s), Purchaser shall clean and reconstruct ditches, headwalls, and catchbasins. Work must be completed before timber haul and must be done in accordance with the TYPICAL SECTION SHEET. Pulling ditch material across the road or mixing in with the road surface is not allowed. Excavated material must be scattered outside the clearing limits.

<u>Road</u>	<u>Stations</u>
92-1	27+10 to 39+50
92-3	27+00 to 33+47
92-9	0+00 to 46+71

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

**SUBSECTION BRUSHING**

**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 BRUSHING DETAIL. Brushing must be achieved by manual or 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>
92	21+20 to 113+25
92-1	27+10 to 39+50
92-3	27+00 to 33+47
92-9	0+00 to 46+71
8-18	0+00 to 27+23

SUBSECTION CLEARING

**3-5 CLEARING**

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

**3-8 PROHIBITED DECKING AREAS**

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

- Within the grubbing limits.
- Within 50 feet of any stream.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Against standing trees unless approved by the Contract Administrator.

SUBSECTION GRUBBING

**3-10 GRUBBING**

Purchaser shall remove all stumps between the grubbing limits specified on the TYPICAL SECTION SHEET. Purchaser shall also remove stumps with undercut roots outside the grubbing limits. Grubbing must be completed before starting excavation and embankment.

SUBSECTION ORGANIC DEBRIS

**3-20 ORGANIC DEBRIS DEFINITION**

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

### **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 application of rock or timber haul.

### **3-23 PROHIBITED DISPOSAL AREAS**

Purchaser shall not place organic debris in the following areas:

- Within 20 feet of a cross drain culvert.
- Within 100 feet of a live stream, or wetland.
- On road subgrades, or excavation and embankment slopes.
- On slopes greater than 55%.
- 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.
- In location that would impede drainage.

### **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 the clearing limits.

## **SECTION 4 – EXCAVATION**

### **4-2 PIONEERING**

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

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

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

Purchaser shall follow these standards for road grade and alignment except as designed:

- 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 6% 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, unless construction staked or designed:

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

**4-6 EMBANKMENT SLOPE RATIO**

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

<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.

**SUBSECTION INTERSECTIONS, TURNOUTS AND TURNAROUNDS**

**4-21 TURNOUTS**

Purchaser shall construct turnouts as designated on the TURNOUT LIST. Locations may be adjusted to fit the final subgrade alignment and sight distances. Location changes are subject to written approval by the Contract Administrator. Minimum dimensions are shown on the TURNOUT LIST.

**4-22 TURNAROUNDS**

Purchaser shall construct turnouts as designated on the TURNAROUND LIST. Turnarounds shall be minimum 30 feet long and 30 feet wide. Location changes are subject to written approval by the Contract Administrator.

## SUBSECTION DITCH CONSTRUCTION

### **4-25 DITCH CONSTRUCTION AND RECONSTRUCTION**

The Purchaser shall construct and reconstruct ditches into the subgrade as specified on the TYPICAL SECTION SHEET. Excavated slopes shall be consistent with Clause 4-5 CUT SLOPE RATIO. Ditches shall 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. 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.

## SUBSECTION WASTE MATERIAL (DIRT)

### **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 55% if the waste material is compacted and free of organic debris.

### **4-38 PROHIBITED WASTE DISPOSAL AREAS**

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

- Within 50 feet of a cross drain culvert.
- Within 100 feet of a live stream or wetland.
- On side slopes steeper than 55%.
- 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.

## SUBSECTION SHAPING

### **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.

## SUBSECTION COMPACTION

**4-60 FILL COMPACTION**

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

**4-61 SUBGRADE COMPACTION**

Purchaser shall compact constructed 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.

**4-62 DRY WEATHER COMPACTION**

At any time of year, 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

SUBSECTION CULVERTS

**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 AND DRAINAGE LIST. Culvert, downspout, and flume lengths may be adjusted to fit as-built conditions and may not terminate directly on unprotected soil. Culverts must be new and meet the specifications in Clauses 10-15 through 10-23.

**5-12 UNUSED MATERIALS STATE PROPERTY**

On required roads, any materials listed on the CULVERT AND DRAINAGE LIST that are not installed will become the property of the state. Purchaser shall stockpile materials at the Ashford Cooler Compound at the start of the 8 road.

SUBSECTION CULVERT INSTALLATION

**5-15 CULVERT INSTALLATION**

Culvert installation must be in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL and the Corrugated Polyethylene Pipe Association’s “Recommended Installation Practices for Corrugated Polyethylene Pipe and Fittings”. Culverts shall be banded using lengths of no less than 10

feet, and no more than one length less than 16 feet. Shorter section of banded culvert shall be installed at the inlet end.

**5-17 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 12%.

**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. Stream crossing culverts must be installed with a depth of cover recommended by the culvert manufacturer for the type and size of the pipe.

SUBSECTION ENERGY DISSIPATERS

**5-20 ENERGY DISSIPATERS**

Purchaser shall install energy dissipaters in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all cross drain culverts , except for temporary culverts.

The type of energy dissipater and the amount of material must be consistent with the specifications listed on the CULVERT LIST. Energy dissipaters must extend a minimum of 1 foot to each side of the culvert at the outlet and a minimum of 2 feet beyond the outlet. Rock must be set in place by machine. Placement must with a zero-drop-height only. No placement by end dumping or dropping of rock is allowed.

SUBSECTION CATCH BASINS, HEADWALLS, AND ARMORING

**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 culverts. Rock used for headwalls must be QUARRY SPALLS. 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. QUARRY SPALLS shall meet the specifications in CLAUSE 6-43 QUARRY SPALLS.

SUBSECTION SURFACE DRAINAGE

**5-33 NATIVE SURFACE ROADS**

If overwintered, native surface roads must be waterbarred by November 1. Purchaser shall construct waterbars according to the attached DRIVABLE WATERBAR DETAIL at a maximum spacing that will produce a vertical distance of no more than 10 feet between waterbars or between natural drainage paths, and with a maximum spacing of 300 feet.

**SECTION 6 – ROCK AND SURFACING**

**SUBSECTION ROCK SOURCE**

**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>	<u>Rock Type</u>
Primo Pit	NE ¼ SW ¼ NE ¼ SW ¼, Section 20, T15N, R6E, W.M.	4 Inch Jaw Run 2-1/2 Inch Minus Crushed Quarry Spalls

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

Rock used in accordance with the quantities on the ROCK LIST may be obtained from the following existing stockpile(s) on state land at no charge to the Purchaser. Purchaser shall not remove more than 3000 cubic yards of 2-1/2 INCH MINUS rock without prior written approval from the Contract Administrator. Other stockpiles may not be used without prior written approval from the Contract Administrator.

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>	<u>Quantity</u>	<u>Comment</u>
Primo Pit	NE ¼ SW ¼ NE ¼ SW ¼, Section 20, T15N, R6E, W.M.	2-1/2 Inch Minus Crushed	2874	Use existing stockpile in pit first. Remainder of 2-1/2 Inch Minus Crushed rock to be applied to roads will be used from the new stockpile created in Clause 6-65.

**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.

**SUBSECTION ROCK SOURCE DEVELOPMENT**

**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 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>
Primo Pit

**6-12 ROCK SOURCE SPECIFICATIONS**

Rock sources must be in accordance with the following specifications, unless otherwise specified in the ROCK SOURCE DEVELOPMENT PLAN:

- Pit walls may not be undermined or over steepened. The maximum slope of the walls must be consistent with recognized engineering standards for the type of material being excavated in accordance with the following table:

Material	Maximum Slope Ratio (Horiz. :Vert.)	Maximum Slope Percent
Sand	2:1	50
Gravel	1.5:1	67
Common Earth	1:1	100
Fractured Rock	0.5:1	200
Solid Rock	0:1	vertical

- Pit walls must be maintained in a condition to minimize the possibility of the walls sliding or failing.
- The width of pit benches must be a minimum of 25 feet.
- The surface of pit floors and benches must be uniform and free-draining at a minimum 2% outslope gradient except as approved by the Contract Administrator.
- All operations must be carried out in compliance with all regulations of the Regulations and Standards Applicable to Metal and Nonmetal Mining and Milling Operations (30 CFR) U.S. Department of Labor, Mine Safety and Health Administration and Safety Standards for Construction Work (296-155 WAC), Washington Department of Labor and Industries.
- All vehicle access to the top of the pit faces must be blocked.

**6-13 ROCK EXPLORATION**

Purchaser shall provide an excavator with minmum 120 HP with operator for up to 4 hours of exploration of rock at the following site(s). Purchaser shall provide an air track drill with operator for up to 450 vertical feet of exploratory drilling for rock.

<u>Site</u>	<u>Location</u>	<u>Vertical Feet of Drilling</u>
Primo Pit	NE ¼ SW ¼ NE ¼ SW ¼, Section 20, T15N, R6E, W.M.	450

#### 6-14 DRILL AND SHOOT

Rock drilling and shooting must meet the following specifications:

- Additional oversize material remaining in the rock source at the conclusion of the timber sale may not exceed 5% of the total volume mined in that source.
- Oversize material is defined as rock fragments larger than two feet in any dimension.
- Oversized rock that exceeds the maximum allowable amount must be reduced to a smaller size within the rock source.
- Purchaser shall notify the Contract Administrator a minimum of 3 working days before blasting operations.
- Purchaser shall submit an informational drilling and shooting plan to the Contract Administrator 3 working days before any drilling.
- All operations must be carried out in compliance with the Regulations and Standards Applicable to Metal and Nonmetal Mining and Milling Operations (30 CFR) U.S. Department of Labor, Mine Safety and Health Administration and the Safety Standards for Construction Work (296-155 WAC), Washington Department of Labor and Industries.
- Purchaser shall block access roads before blasting operations.

#### SUBSECTION ROCK MANUFACTURE

#### 6-20 ROCK CRUSHING OPERATIONS

Rock crushing operations must conform to the following specifications:

- Operations and placement of oversize material must be conducted in or near the rock source site, as approved in writing by the Contract Administrator.
- If a smooth roll crusher is used, the maximum size of material fed into it shall be equal to the largest size of the material coming out of it plus 8.5 percent of the roll radius.
- Purchaser shall provide an onsite weatherproof field laboratory equipped with all necessary testing equipment (oven, sieves, sieve shaker, and scales) for conducting sieve testing of the required aggregate that is being produced.
- The crushing operation must be concluded within 30 working days from the time it begins.
- Purchaser is required to produce sieve analysis for crushing operations every 1000 yards for each rock gradation type.
- 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 or during manufacture and placement into a stockpile. Purchaser shall provide a sieve analysis upon request from the Contract Administrator.

#### SUBSECTION ROCK GRADATIONS

**6-32 2 ½-INCH MINUS CRUSHED ROCK**

% Passing 2 ½" square sieve	100%
% Passing 2" square sieve	60 - 100%
% Passing 1" square sieve	50 - 70%
% Passing U.S. #4 sieve	30 - 50%
% 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.

**6-37 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.

**6-43 QUARRY SPALLS**

% Passing 8" square sieve	100%
% Passing 3" square sieve	40% maximum
% Passing 3/4" square sieve	10% maximum

Rock may not contain more than 5 percent vegetative debris or trash. All percentages are by weight.

**6-50 LIGHT LOOSE RIP RAP**

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

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

**SUBSECTION ROCK MEASUREMENT**

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

Measurement of 4 INCH JAW RUN 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 compacted 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 2-1/2 INCH MINUS CRUSHED, QUARRY SPALLS and LIGHT LOOSE RIP RAP rock is on a cubic yard truck measure basis. The Contract Administrator will measure each truck box before rock hauling. An average of such volumes for each truck will be used to tally the volume hauled. The Contract Administrator may periodically require that a load be flattened off and its volume calculated. Purchaser shall maintain load tally sheets for each truck as shown in ROCK ACCOUNTABILITY DETAIL and shall give them to the Contract Administrator on a weekly basis during rocking operations.

SUBSECTION ROCK STOCKPILE

**6-65 ROCK STOCKPILE LOCATION**

Purchaser shall stockpile rock as listed below.

<u>Rock Source</u>	<u>Rock Type</u>	<u>Quantity (c.y.)</u>	<u>Stockpile Location</u>
Primo Pit	2-1/2 Inch Minus Crushed	8000	Primo Pit Stockpile Site

**6-67 ROCK STOCKPILE SPECIFICATIONS**

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

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

When completed, the stockpile must be neat and regular in shape. The stockpile height is limited to a maximum of 24 feet. Stockpiles in excess of 500 cubic yards must be built up in layers of not more than 4 feet deep. Stockpile layers must be constructed by trucks, clamshells, or other methods approved in writing by the Contract Administrator. Pushing aggregates into piles with a bulldozer shall not be permitted. Each layer must be completed over the entire area of the pile before depositing aggregates in the next layer. The aggregates may not be dumped so that they run down and over the lower layers in the stockpile. The method of dropping from a bucket or spout in one location to form a cone shaped pile is not allowed.

No equipment other than pneumatic tired equipment may be used on stockpiles. Stockpiles of different types or sizes of aggregate must be spaced far enough apart, or separated by suitable walls or partitions, to prevent the mixing of the aggregates.

SUBSECTION ROCK APPLICATION

**6-70 APPROVAL BEFORE ROCK APPLICATION**

Purchaser shall obtain written approval from the Contract Administrator for subgrade including: ditches, headwalls, catch basins, culverts, energy dissipaters, ditch-outs, subgrade shaping and compacting before rock application.

**6-71 ROCK APPLICATION**

Purchaser shall apply rock in accordance with the specifications and quantities shown on the ROCK LIST. Rock must be spread, shaped, and compacted full width concurrent with rock hauling operations.

Road surfaces must be compacted in accordance with the COMPACTION LIST by routing equipment over the entire width.

**6-73 ROCK FOR WIDENED PORTIONS**

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

**6-76 DRY WEATHER ROCK COMPACTION**

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

SECTION 7 – STRUCTURES

SUBSECTION SIGNS

**7-1 SIGN INSTALLATION**

Purchaser shall purchase, install, and maintain the following road signs.

<u>Road</u>	<u>Station</u>	<u>Sign</u>
92-9	0+00	Road Closed
92-9	61+70	Road Closed

SUBSECTION GATE CLOSURE

**7-70 GATE CLOSURE**

On the following road(s), Purchaser shall keep gates closed and locked except during periods of haul. All gates that remain open during haul must be locked or securely fastened in the open position. All gates must be closed at termination of use.

<u>Road</u>	<u>Station</u>	<u>Gate No.</u>	<u>Comment</u>
8-18	1+50	507	To Primo Pit
92-1	2+30	-	New gates installed per Clause 7-76 Gate Installation
92-3	1+20	-	

**7-71 GATE CLOSURE DURING HAUL**

On the following road(s), Purchaser shall keep gates closed and locked except for passing vehicles. If Purchaser elects to use an alternate plan for gate security, Purchaser shall submit a detailed plan to the Contract Administrator for written approval.

<u>Road</u>	<u>Station</u>	<u>Gate No.</u>	<u>Closure Period</u>
92	46+00	509	May 1 to October 30
92	105+35	510	November 1 to April 30

SUBSECTION GATES AND FENCES

**7-76 GATE INSTALLATION**

Purchaser shall install the listed gate(s).

<u>Road</u>	<u>Station</u>	<u>Type*</u>	<u>Provided by</u>
92-1	2+30	Min. 18 foot Steel Gate	Puchaser
92-3	1+20	Min. 18 foot Steel Gate	Purchaser

\* Steel gate installation(s) must be in accordance with the STEEL GATE DETAIL.

The gate and lock box must be installed plumb and aligned to ensure all mating components match with precision. Each post must be capped and set in a minimum of 2.5 cubic yards of poured-in-place concrete or pre-cast concrete. The gate must be installed with a post and locking device to allow the gate to be locked in an open position. The Contract Administrator will provide Purchaser with padlocks.

If Purchaser wishes to install an alternate design, detailed plans for the construction of the gate must be submitted to the Contract Administrator. Purchaser shall obtain written approval for the plans from the Contract Administrator or their designee, before gate installation begins.

The gate must be primed and painted Rodda Safety yellow.

If needed, rip rap may be used to prevent vehicles from driving around the gate. Gate shall not interfere with the traffic flow.

**7-78 GATE SUPPLIED BY PURCHASER**

Purchaser shall provide all gates specified for installation in Clause 7-76 GATE INSTALLATION. Purchaser shall obtain written approval for the gates from the Contract Administrator before installation.

SECTION 9 – POST-HAUL ROAD WORK

SUBSECTION STRUCTURES

**9-1 EARTHEN BARRICADES**

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

<u>Road</u>	<u>Stations</u>
92-1-1	0+00
92-9-2	0+50

**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.

SUBSECTION POST-HAUL MAINTENANCE

**9-5 POST-HAUL MAINTENANCE**

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

SUBSECTION POST-HAUL LANDING MAINTENANCE

**9-10 LANDING DRAINAGE**

Purchaser shall provide for drainage of the landing surface.

SUBSECTION ABANDONMENT

**9-21 ROAD ABANDONMENT**

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

<u>Road</u>	<u>Stations</u>
92-1-3	0+00 to 6+28
92-9-2	0+50 to 1+50

**9-22 ABANDONMENT**

- Remove road shoulder berms.
- Construct non-drivable waterbars according to the attached NON-DRIVABLE WATERBAR DETAIL at a maximum spacing that will produce a vertical drop of no more than 10 feet between waterbars or between natural drainage paths and with a maximum spacing of 100 feet.
- Skew waterbars at least 30 degrees from perpendicular to the road centerline on roads in excess of 3 percent grade.
- Key waterbars into the cut-slope to intercept the ditch. Waterbars must be outsloped to provide positive drainage. Outlets must be on stable locations.
- Block roads with earthen barricades in accordance with the attached BARRICADE DETAIL.
- Remove culverts.
- Remove ditch cross drain culverts and leave the resulting trench open.
- Slope all trench walls and approach embankments no steeper than 1.5:1.

SECTION 10 MATERIALS

SUBSECTION CULVERTS

**10-17 CORRUGATED PLASTIC CULVERT**

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

**10-22 PLASTIC BAND**

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

SECTION 11 SPECIAL NOTES

**11-1 STOCKPILE ROCK MEASUREMENT**

Measurement of the 2-1/2 INCH MINUS CRUSHED Stockpile is on an in-pile basis. The Contract Administrator, or their designee, will measure the stockpile to determine if it meets the quantity listed in the ROCK LIST.

**11-2 LANDING DEBRIS**

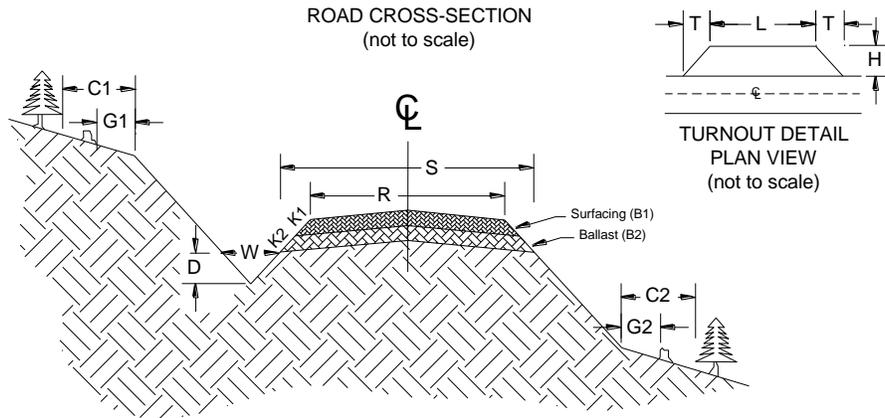
Purchaser shall reduce or relocate debris generated by road and landing construction, in a manner approved, in writing, by the Contract Administrator, to avoid landing failures and potential debris slides.

**11-3 EXISTING ROAD CLEAN-UP**

If Purchaser is allowed to use the following roads as a landing or loading location the road shall be cleaned of all organic debris, all lost or worn away surface material will be replaced, and all ditches and drainage channels at culvert outlet and inlets shall be cleaned and cleared of obstructions.

<u>Road</u>
92
92-9

## TYPICAL SECTION SHEET



Road Number	From Station	To Station	Tolerance Class	Subgrade Width (feet)	Road Width (feet)	Ditch**		Crown in. @ CL	Grubbing Limits (feet)		Clearing Limits* (feet)	
						Width (feet)	Depth (feet)		G1	G2	C1	C2
				S	R	W	D					
8-18	0+00	27+23	A	-	12	2	1	4	-	-	5	5
92	0+00	39+80	A	-	14	2	1	4	-	-	5	5
92	39+80	45+00	A	-	varies with average of 24 ft	2	1	4	-	-	5	5
92	45+00	84+00	A	-	12	2	1	4	-	-	5	5
92-1	0+00	39+50	C	15	12	2	1	4	2	2	5	5
92-1-3	0+00	6+50	C	15	12	2	1	4	0	0	0	0
92-1-4	0+00	4+47	C	15	12	2	1	4	2	2	5	5
92-3	0+00	33+47	C	15	12	2	1	4	2	2	5	5
92-3 ext	33+47	35+84	C	15	12	2	1	4	2	2	5	5
92-9	0+00	45+71	C	15	12	2	1	4	2	2	5	5
92-9 ext	45+71	49+52	C	15	12	2	2	4	2	2	tags	tags
92-9 ext	49+52	61+72	C	15	12	2	1	4	2	2	5	5
92-9-1	0+00	7+30	C	15	12	2	1	4	2	2	5	5
92-9-2	0+00	0+50	C	15	12	2	1	4	2	2	5	5
92-9-2	0+50	1+50	C	15	12	2	1	4	0	0	0	0

\*Tags are Right of Way Tags.

\*\*On pre-haul maintenance roads: Ditch depth will be measured vertically from the bottom of the ditch to the edge of the road surface. Ditch width will be measured horizontally from the closest edge of the road surface to the cut slope.

### TURNOUT LIST

Road Number	Begin Station	End Station	Turnout Width (H)	Full Width Length (L)	Taper Length (T)	Comments
92-9	3+05	4+05	10'	50'	25'	Construct turnout right
92-9	10+63	11+63	10'	50'	25'	Clean turnout left and turnout right. Rock with surfacing rock.
92-9	15+85	16+35	10'	20'	15'	Construct turnout left in road junction.
92-9	20+25	21+25	10'	50'	25'	Construct turnout right
92-9	30+45	30+95	10'	20'	15'	Clean existing turnout right. Rock with surfacing rock.
92-9	36+25	37+25	10'	50'	25'	Construct turnout right.
92-9	40+20	40+70	10'	20'	15'	Construct turnout left in road junction.
92-9	44+70	45+70	10'	50'	25'	Clean existing turnout right.
92-9	47+42	48+42	10'	50'	25'	Construct turnout Right
92-9	53+91	54+91	10'	50'	25'	Construct Turnout Right
92-9	58+59	59+59	10'	50'	25'	Construct Turnout Right

### TURNAROUND LIST

Road Number	Station	Minimum Width (ft)	Minimum Length (ft)	Comments
92-1	39+50	30	30	Clean existing turnaround
92-1-4	4+47	30	30	Construct turnaround at end of constructed road or at station listed.
92-3	33+47	30	30	Clean existing turnaround
92-3 ext	35+84	30	30	Construct turnaround at end of constructed road or at station listed.
92-9-1	12+57	30	30	Construct turnaround at end of constructed road or at station listed.
92-9-2	0+50	30	30	Clean existing turnaround

## COMPACTION LIST

Road	From Station	To Station	Type	Max Depth Per Lift (inches)	Equipment Type	Equipment Weight (lbs)	Minimum Number of Passes	Maximum Operating Speed (mph)
All new construction and reconstruction			Culvert Installations	12	Smooth Drum Vibratory Roller	14,000	4 low freq. with Vibe on	3
			Embankment	12				
			Fill	12				
			Subgrade					
			Rock	12				
			Waste Area	12				
All pre-haul and post haul			After grading existing road surface and prior to rocking		Smooth Drum Vibratory Roller	14,000	4 low freq. with Vibe on	3
			Culvert Installations	12				
			Rock	9				

## ROCK LIST, pg 1 of 2

### BALLAST

Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth	C.Y. Station	# of Stations	C.Y. Sub-total	Rock Source
			K2	B2	4 Inch Jaw Run			
92-1-3*	0+00	6+50	1.5:1	12"	50	6.5	325	Primo Pit
92-1-4	0+00	4+47	1.5:1	12"	50	4.5	224	
92-3 ext	33+47	35+84	1.5:1	12"	50	2.4	119	
92-9 ext	45+71	61+72	1.5:1	12"	50	16	801	
92-9-1	0+00	7+30	1.5:1	12"	50	12.6	365	
92-9-2	0+00	0+50	1.5:1	12"	50	0.5	25	
92-9-2*	0+50	1+50	1.5:1	12"	50	1	50	
Turnouts			1.5:1	12"	36 cyd/ per turnout	3 turnout	108	
Turnarounds			1.5:1	12"	26 cyd/ per turn-around	11	286	
Quarry Spalls for culvert Installations. See Culvert List for locations							4	

Optional BALLAST TOTAL: 375 Cubic yards  
Required BALLAST TOTAL: 1928 Cubic yards

\*Optional Rock: If Purchaser elects to haul on optional rock roads in wet weather, the depth listed above is recommended but not required.

NOTE: Except for rock types listed in Clause 6-56, yardages are estimated on a compacted (In-Place) basis. **Apply appropriate factors to determine loose amounts for estimating purposes.** Roads and rock quantities are designed for dry weather use. If Purchaser elects to haul in wet weather additional rock may be obtained from the rock pits listed in Section 6 at the Purchaser's expense and with prior written approval from the Contract Administrator.

## ROCK LIST, pg 2 of 2

### SURFACE

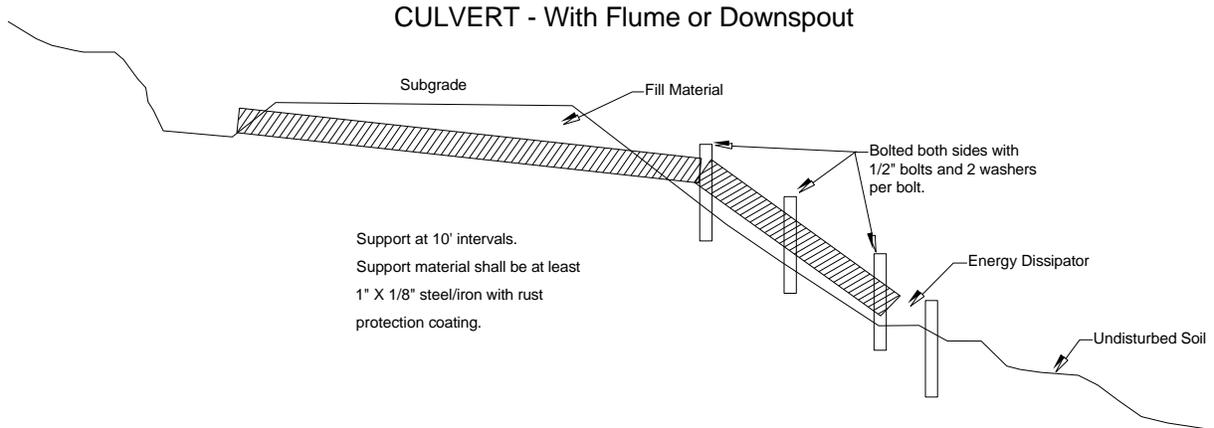
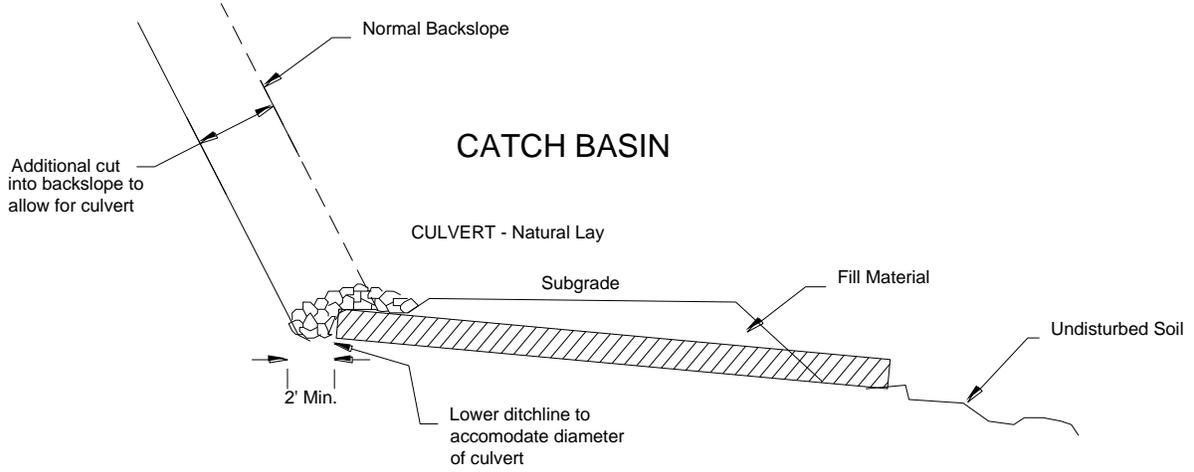
Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth	C.Y. Station	# of Stations	C.Y. Subtotal	Comments Rock Source
			K2	B2	2-1/2" Minus Crushed from Stockpile			Primo Pit Stockpile
8-18	0+00	1+50	1.5:1	4"	29	1.5	44	Rock both north and south approaches. Leave center dirt pile unrocked.
92	39+80	45+00	1.5:1	4"	34	5.2	177	Includes rock for wide pull out.
92	45+00	84+00	1.5:1	4"	19	39	741	Includes rock for curve widening and turnouts.
92-1	0+00	39+50	1.5:1		Spot Rock as approved by Contract Administrator		100	
92-3	0+00	33+47	1.5:1				100	
92-9	0+00	16+10	1.5:1	4"	17	16.1	274	
92-9	16+10	45+71	1.5:1	4"	17	29.6	503	
92-9 ext.	45+71	49+52	1.5:1	4"	17	3.8	65	
92-9 ext.	49+52	61+72	1.5:1	4"	17	12.2	207	
92-9 Turnouts	0+00	61+72	1.5:1	4"	13 cyd per turnout	11	143	
Manufactured 2-1/2 Inch Minus Crushed for Primo Pit							8000	

SURFACE TOTAL: 2354 Cubic yards  
Stockpile TOTAL: 8000 cubic yards



# CULVERT AND DRAINAGE SPECIFICATION DETAIL

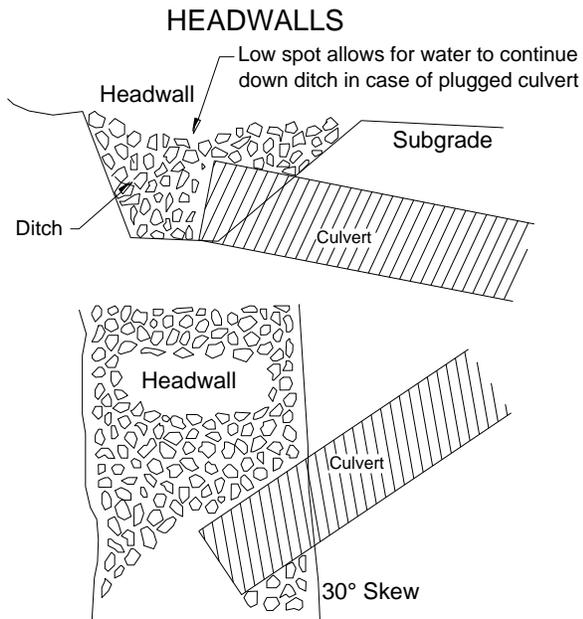
(Page 1 of 3)



## CULVERT AND DRAINAGE SPECIFICATION DETAIL

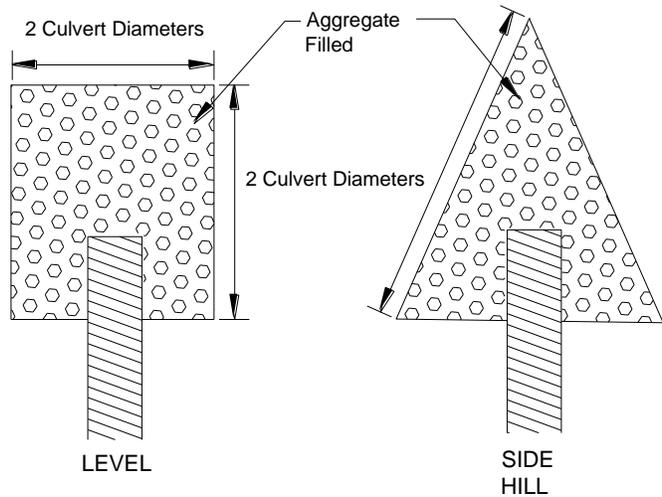
(Page 2 of 3)

Proper preparation of foundation and placement of bedding material shall precede the installation of all culvert pipe. This includes necessary leveling of the native trench bottom and compaction of required bedding material to form a uniform dense unyielding base. The backfill material shall be placed so that the pipe is uniformly supported along the barrel.



Headwalls to be constructed of material that will resist erosion.

## ENERGY DISSIPATORS



Dissipator Specifications:  
Depth: 1 culvert diameter  
Aggregate: as specified in the CULVERT LIST.

## CULVERT AND DRAINAGE SPECIFICATION DETAIL

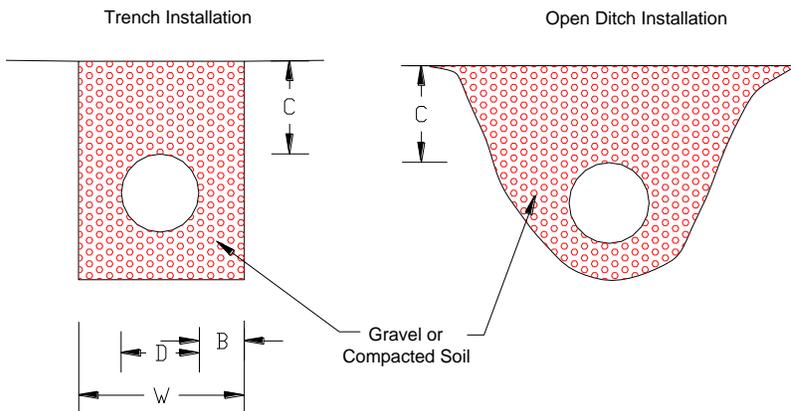
(Page 3 of 3)

### POLYETHYLENE PIPE INSTALLATION

#### INSTALLATION REQUIREMENTS:

1. Crushed stone, gravel, or compacted soil backfill material shall be used as the bedding and envelope material around the culvert. The aggregate size shall not exceed 1/6 pipe diameter or 4" diameter, whichever is smaller.
2. The corrugated pipe shall be laid on grade, on a layer of bedding material as shown for the two types of installations. If native soil is used as the bedding and backfill material, it shall be well compacted in six inch layers under the haunches, around the sides and above the pipe to the recommended minimum height of cover.
3. Either crushed aggregate or flexible (asphalt) pavement may be laid as part of the minimum cover requirements.
4. Site conditions and availability of bedding materials often dictate the type of installation method used.
5. The load bearing capability of flexible conduits is dependent on the type of backfill material used and the degree of compaction achieved. Crushed stone and gravel backfill materials typically reach a compaction level of 90-95% AASHTO standard density without compaction. When native soils are used as backfill material, a compaction level of 85% is required. This minimum compaction can be achieved by either hand or mechanical tamping.

#### **MINIMUM DIMENSIONS** *Trench or Open Ditch Installation*



Nominal Diameter	Minimum Thickness	Minimum Cover	Min. Trench Width
D	B	C	W
18"	6"	12"	36"
24"	6"	12"	42"
30"	6"	12"	48"
36"	6"	12"	54"

## FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS, page 1 of 2

### Cuts and Fills

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

### Surface

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

### Drainage

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

### 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.

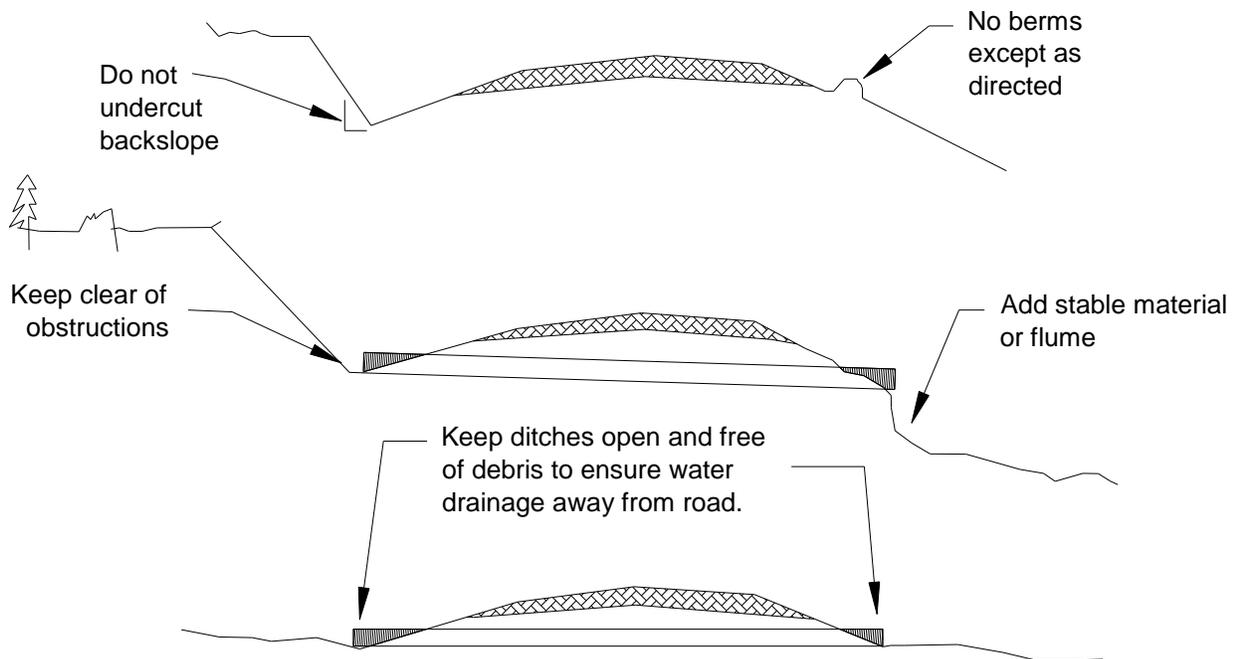
## FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS, page 2 of 2

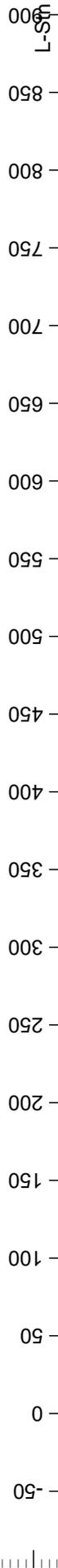
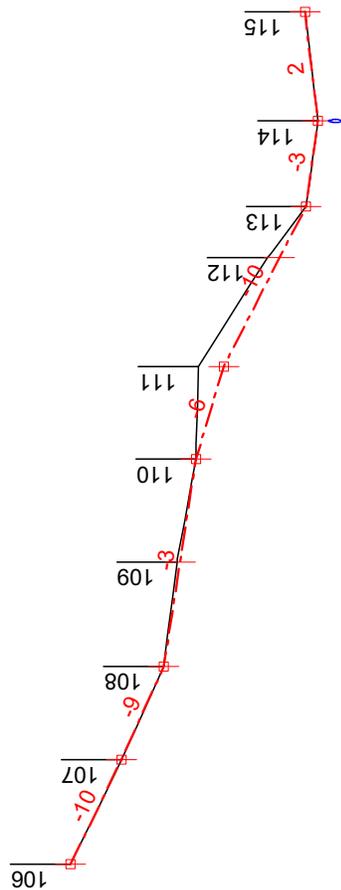
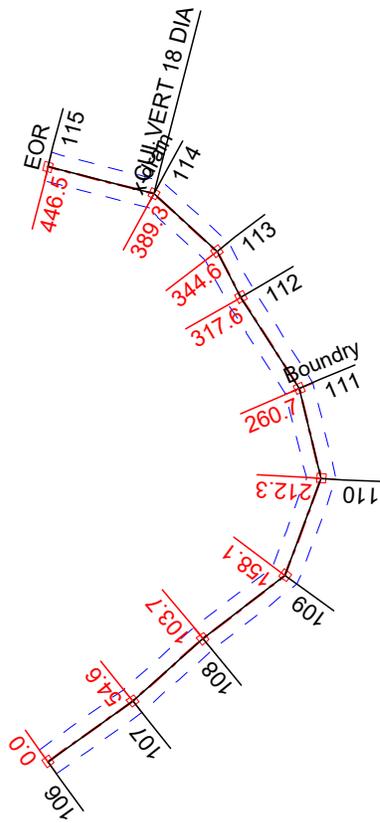
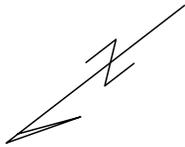
### Termination of Use or End of Season

- 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.





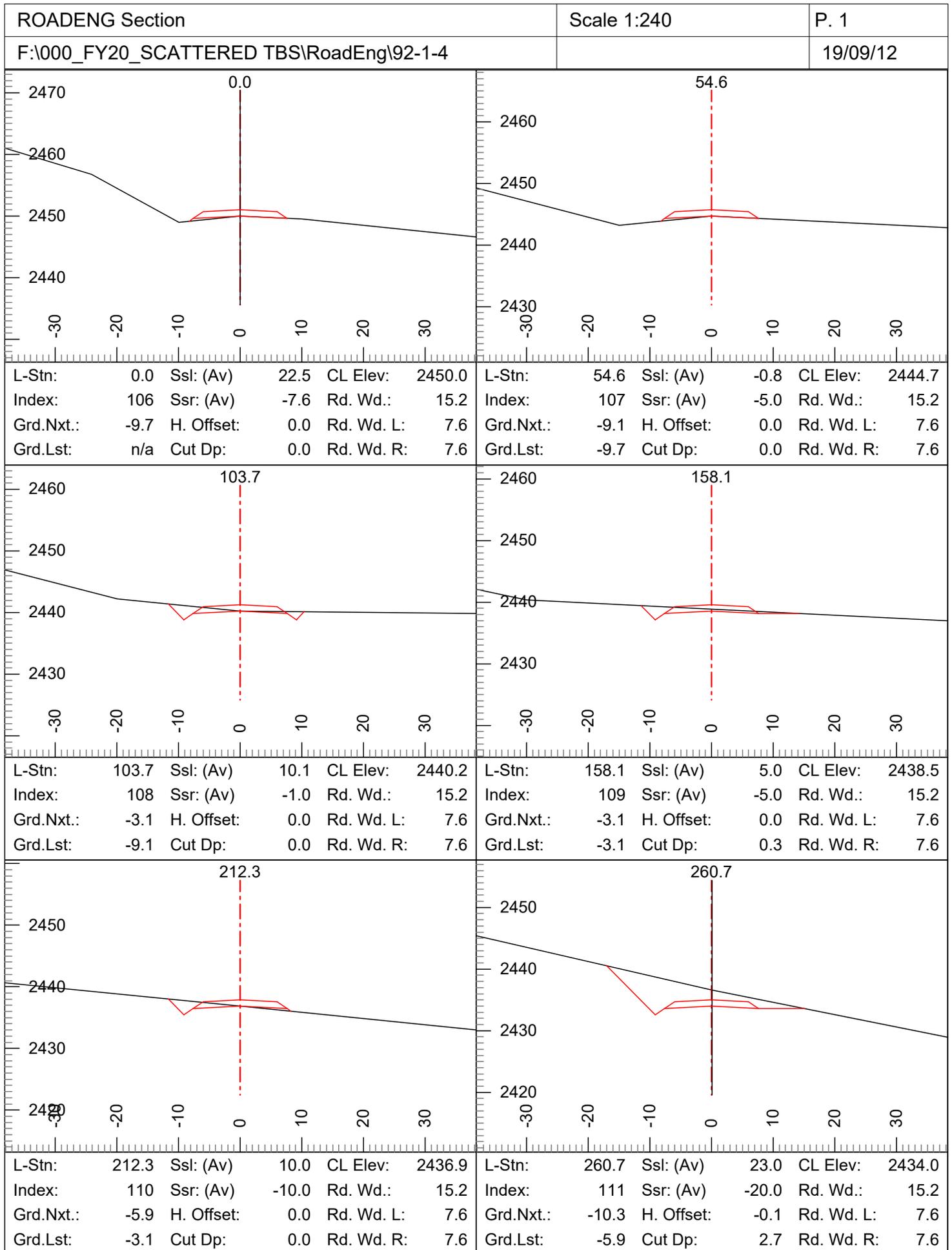
Engineer: M. Bell  
19/09/12  
Page 1 of 1

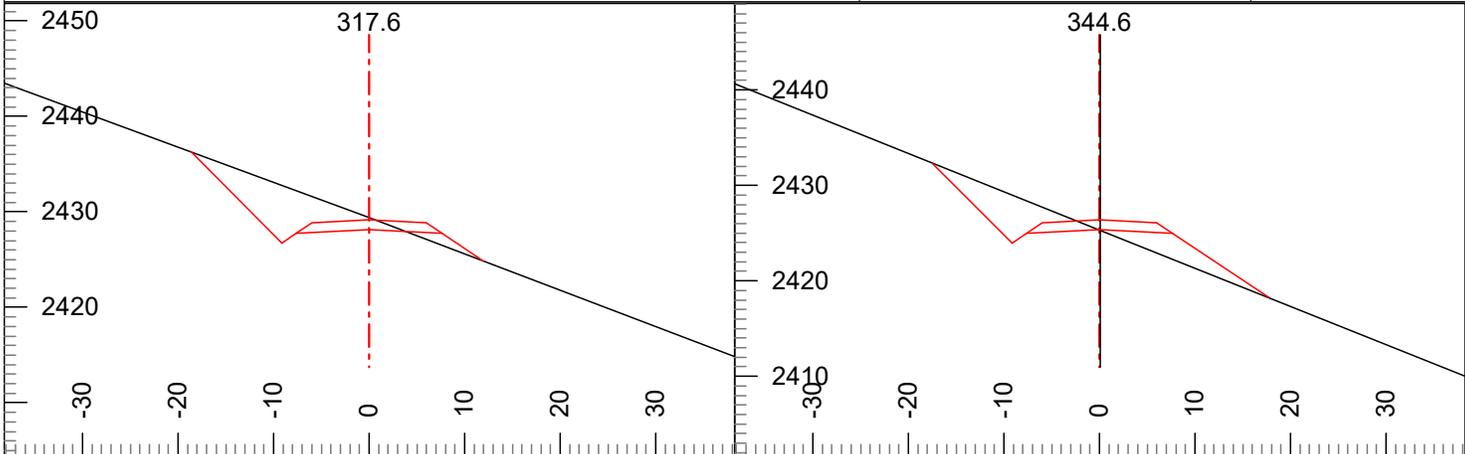
Plan Scale 1:1200  
Profile Vert Scale 1:240  
Profile Horz Scale 1:1200

Washington State Department of  
Natural Resources  
South Puget Sound Region

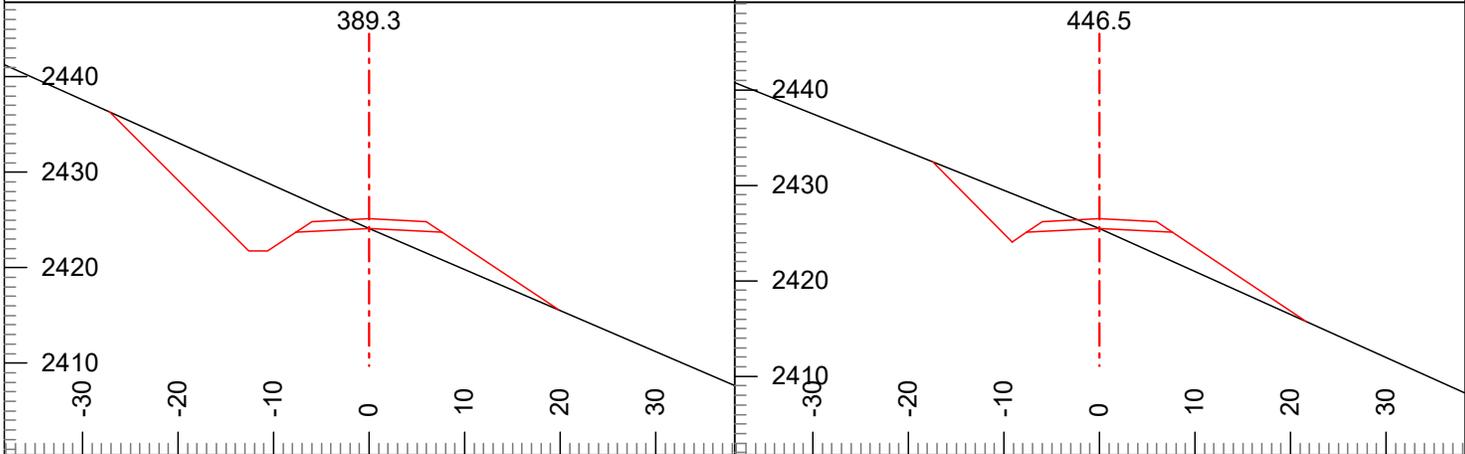


Scattered VRH RMZ Timber Sale  
92-1-4 Road September 4, 2019  
Contract #: 30-085082

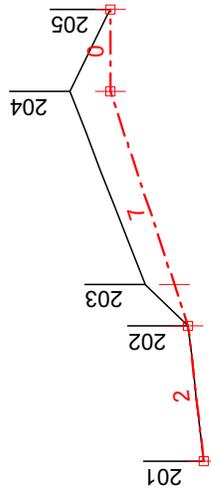
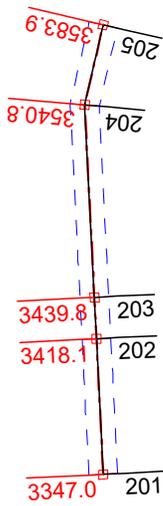




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Grd.Lst:	-10.3	Cut Dp:	1.3	Rd. Wd. R:	7.6	Grd.Lst:	-10.3	Cut Dp:	0.0	Rd. Wd. R:	7.6



L-Stn:	389.3	Ssl: (Av)	45.0	CL Elev:	2424.1	L-Stn:	446.5	Ssl: (Av)	40.0	CL Elev:	2425.5
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2300  
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2280  
2270  
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2250

4200  
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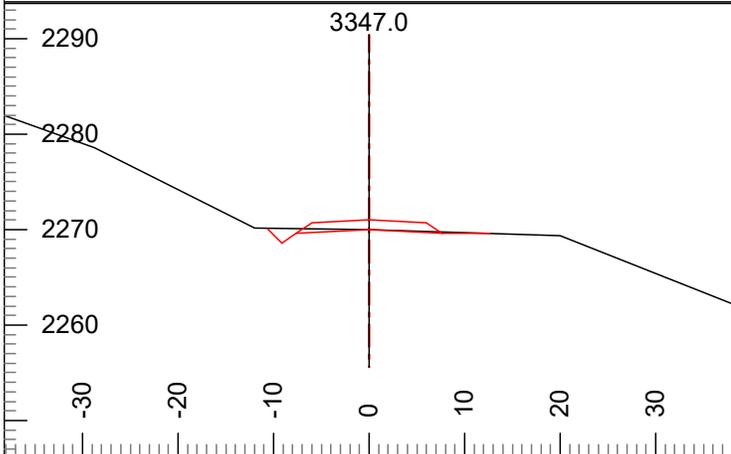
Engineer: M. Bell  
19/09/12  
Page 1 of 1

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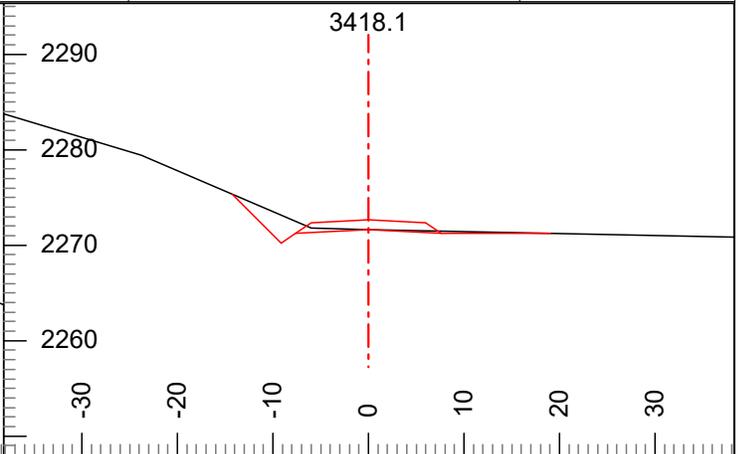
Washington State Department of  
Natural Resources  
South Puget Sound Region



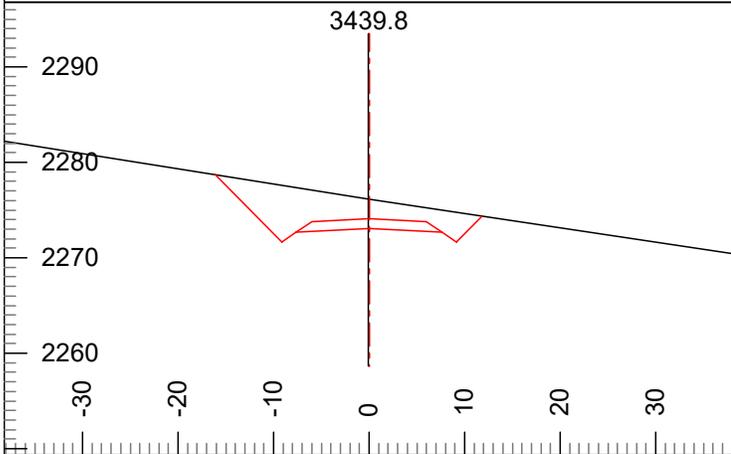
Scattered VRH RMZ Timber Sale  
92-3 ext Road  
September 4, 2019  
Contract #: 30-085082



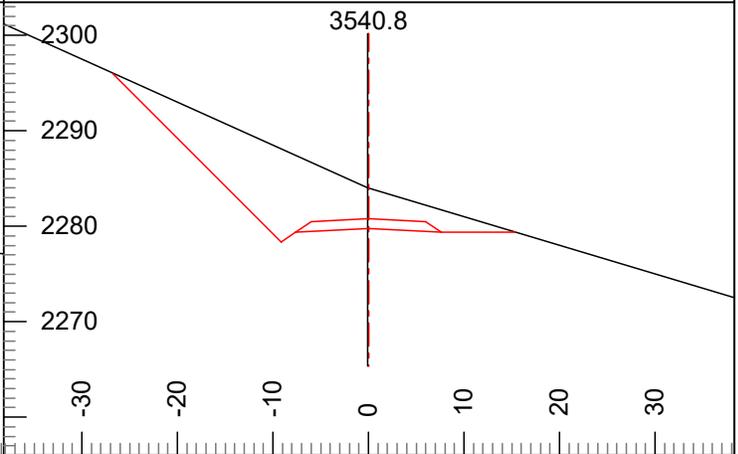
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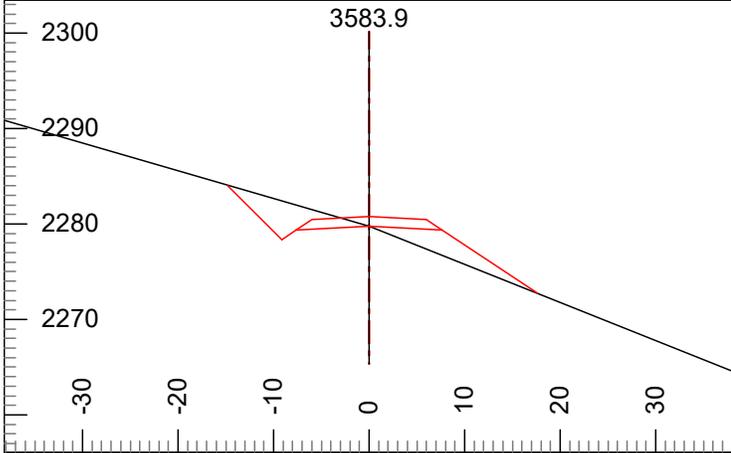
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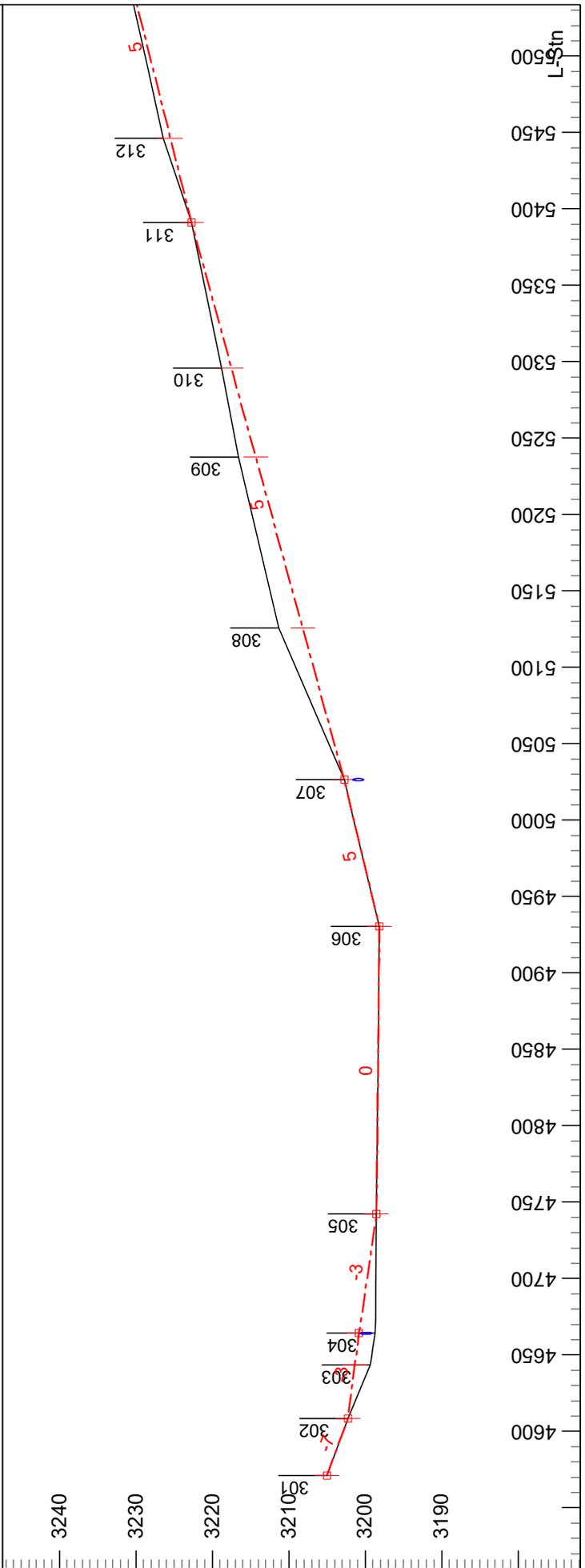
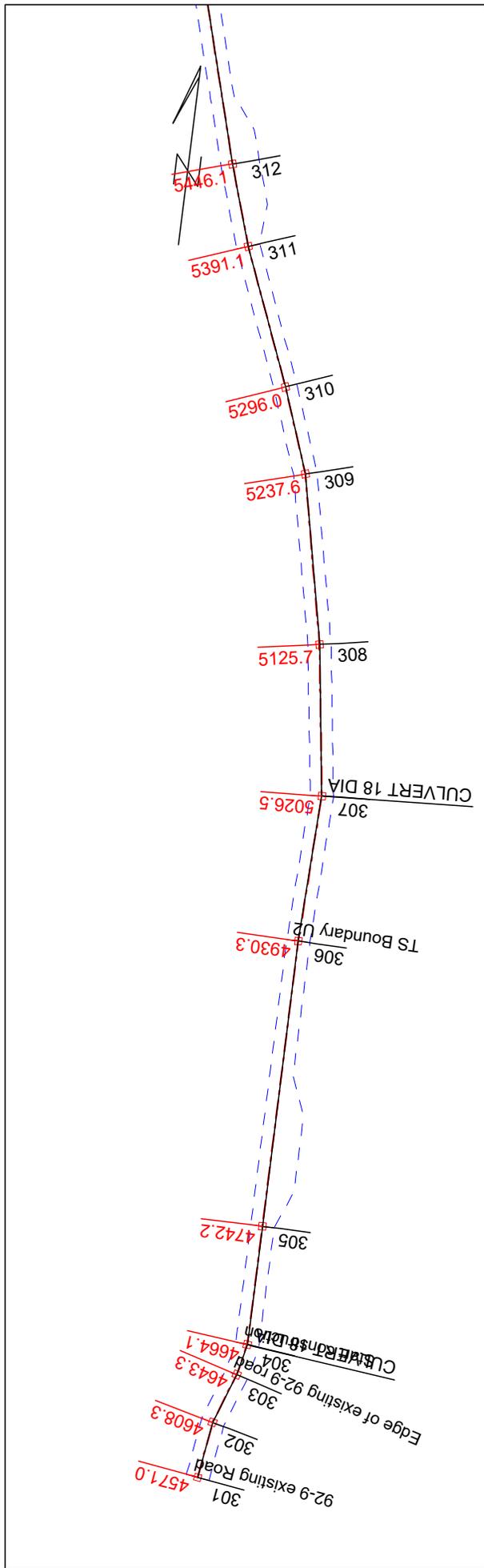
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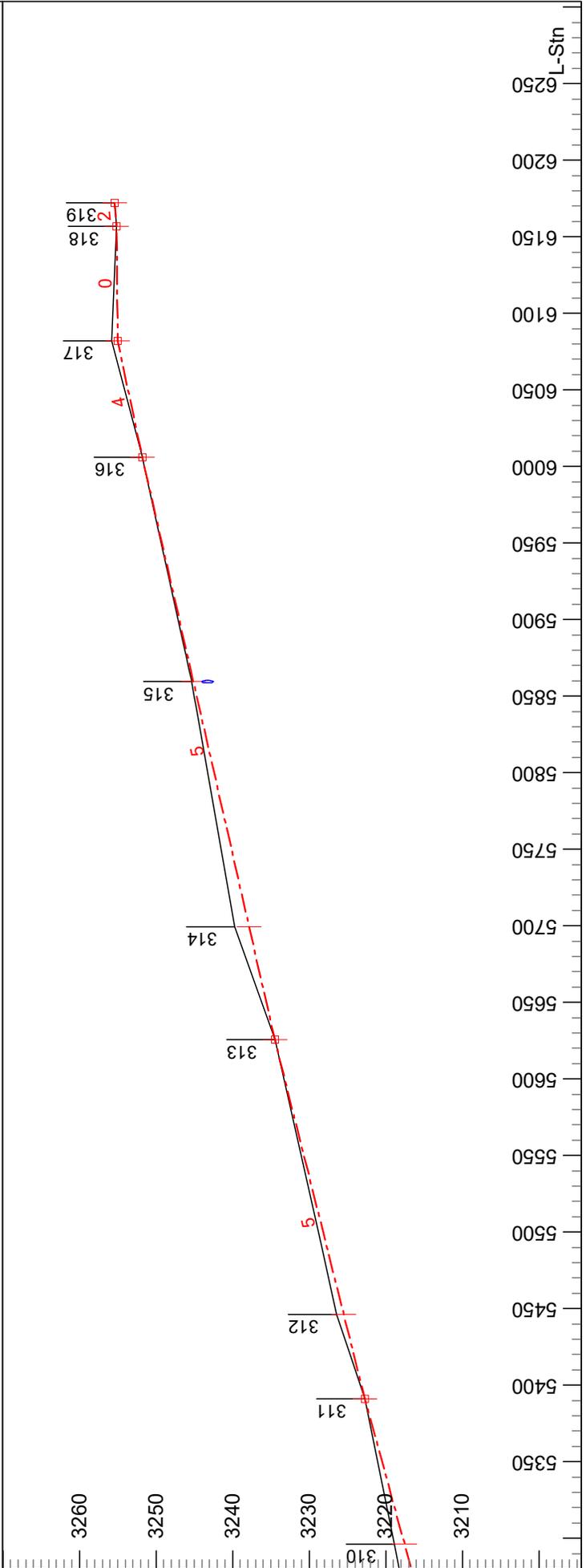
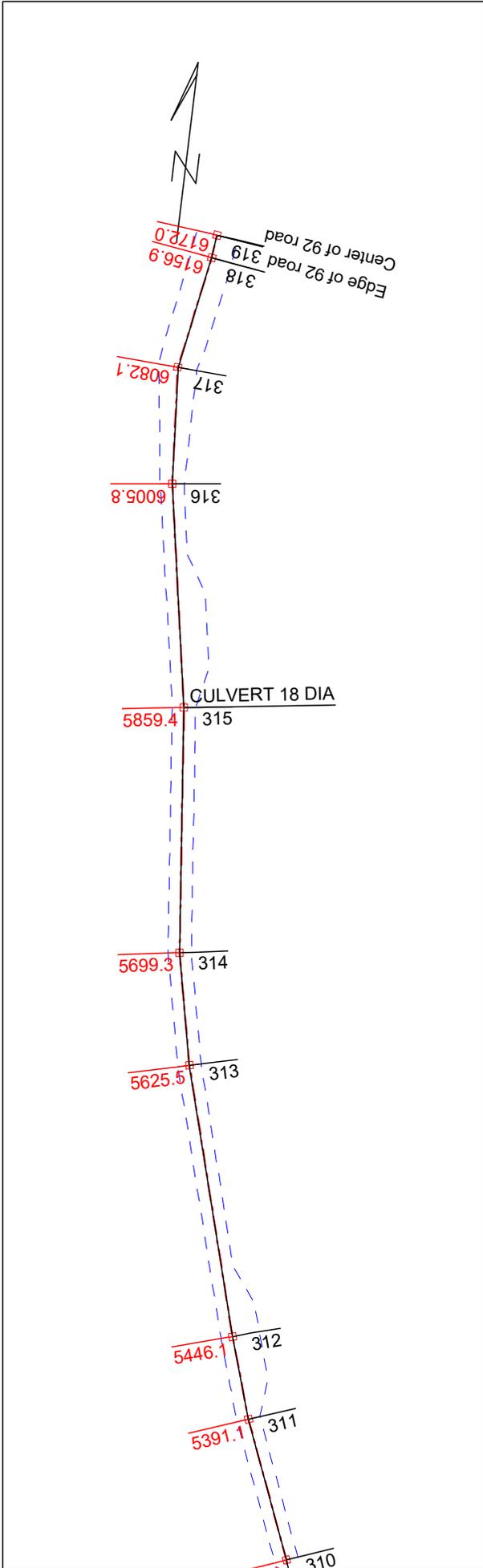
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L-Stn:	3583.9	Ssl: (Av)	29.0	CL Elev:	2279.8
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<p>Scattered VRH RMZ Timber Sale 92-9 ext Road September 4, 2019 Contract #: 30-085082</p>	 <p>Washington State Department of Natural Resources South Puget Sound Region</p>	<p>Plan Scale 1:1200 Profile Vert Scale 1:240 Profile Horz Scale 1:1200</p>	<p>Engineer: M. Bell 19/09/12</p> <p>Page 1 of 2</p>
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Washington State Department of Natural Resources South Puget Sound Region	Engineer: M. Bell 19/09/12
	Plan Scale 1:1200 Profile Vert Scale 1:240 Profile Horz Scale 1:1200
	Scattered VRH RMZ Timber Sale 92-9 ext Road September 4, 2019 Contract #: 30-085082



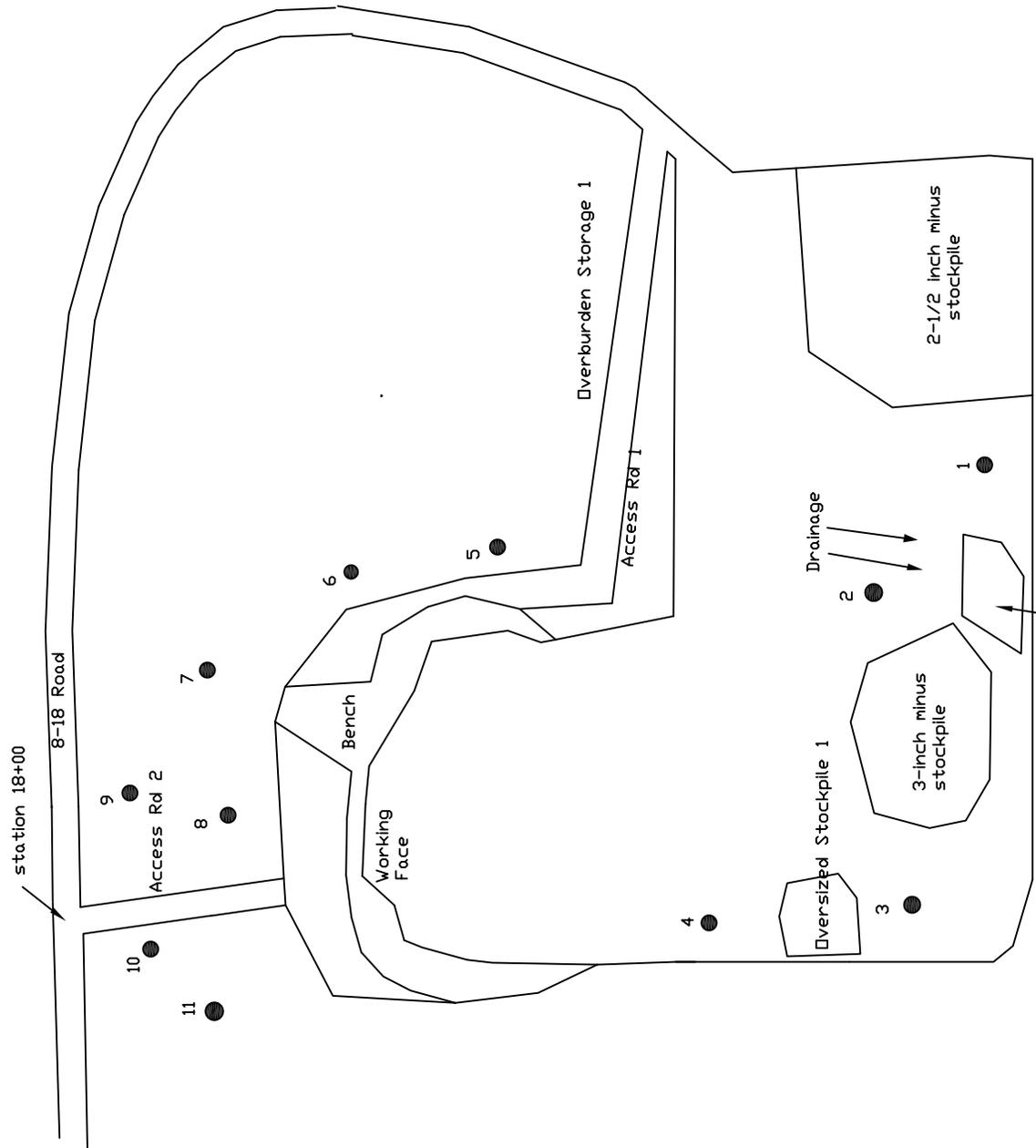
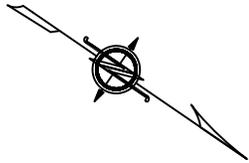
**Legal Description: NE1/4 SW1/4, Section 20, T15N, R6E, W.M.**

**Rock Pit Name: Primo Pit**

**PIT DEVELOPMENT PLAN, pg 1 of 2**

In additional to Clause 6-12 ROCK SOURCE SPECIFICATIONS, the following apply:

- 1) Scatter debris outside of pit area on the north, east, or west sides as approved by the Contract Administrator.
- 2) A minimum stripping width of 20 feet must be maintained from all pit faces and at the termination of operations pit shall be left in said condition.
- 3) Pile all reject rock and overburden away from pit working area in "Overburden Storage 1". Storage area will need to be cleaned prior to use.
- 4) Pile all new oversize in the "Oversized Stockpile 2"
- 5) Pit floor shall be sloped to allow drainage as shown. No ponding will be allowed.
- 6) Maximum face height will be no greater than 30 feet in height.
- 7) Working bench width shall be a minimum of 20 feet.
- 8) At the termination of use, pit faces shall have a maximum backslope of  $\frac{1}{4}$ :1 for hardpan and solid rock and  $\frac{1}{2}$ :1 for fractured or loose rock.
- 9) At the termination of use, all overburden shall have a maximum backslope of 1:1.
- 10) At the termination of use, both access roads shall be blocked to all motorized traffic.
- 11) Rock shall not be used from any stockpile without prior written approval from the Contract Administrator.
- 12) Pit expansion and removal of any timber must be approved by Contract Administrator.
- 13) At the completion of operations, Contractor shall request written approval from the Contract Administrator for final rock source condition and compliance with the terms of this plan.
- 14) Quantity and Quality of ballast pit is not guaranteed by the State.
- 15) See "Primo Pit Plan View, pg 2 of 2" drawing for additional information.



● Rough location of test holes.  
Exact location will be based on  
area drilled for the timber sale.  
Holes 1 to 4 are anticipated to be  
30 feet deep. Holes 5-11 are  
anticipated to be 40 feet deep.

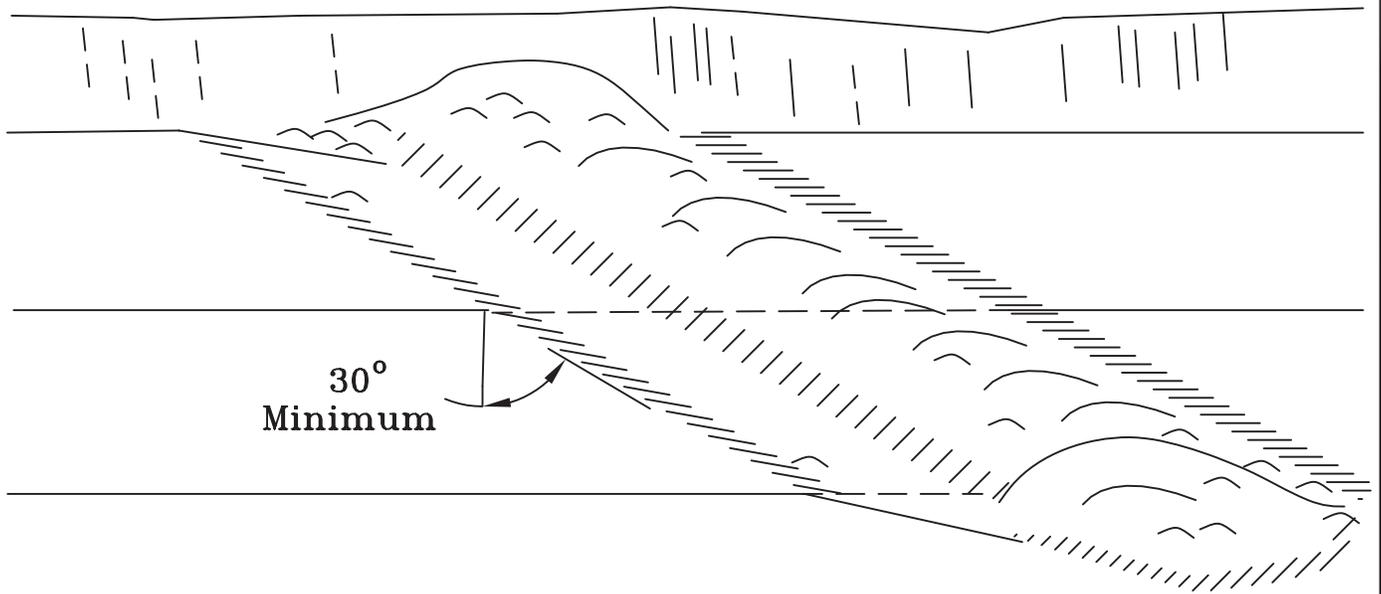
**Primo Pit Plan**

Plan View, pg 2 of 2  
NE1/4 SW 1/4 Section 20 T15N R06E

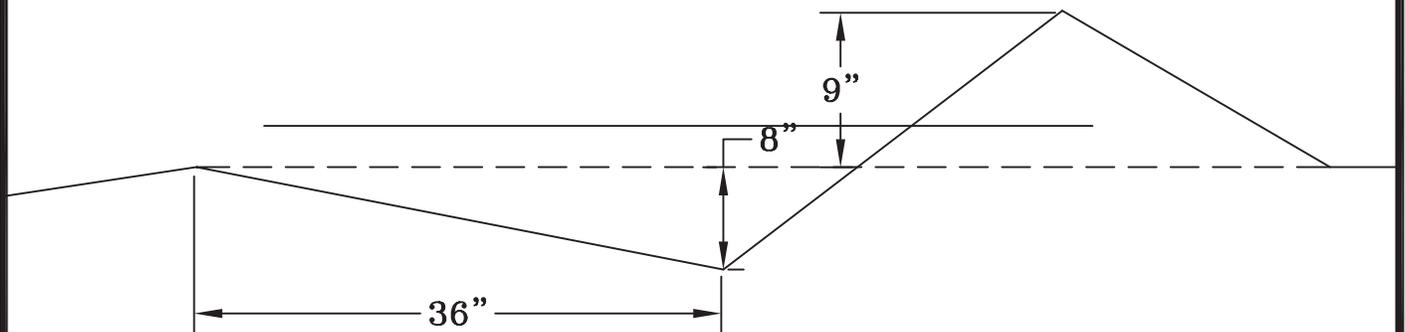
Date: September 4, 2019  
Scale : none  
Drawn by: M.D.B.

# Drivable Water Bar Detail

## Cross Ditch



## Cross Section at Centerline

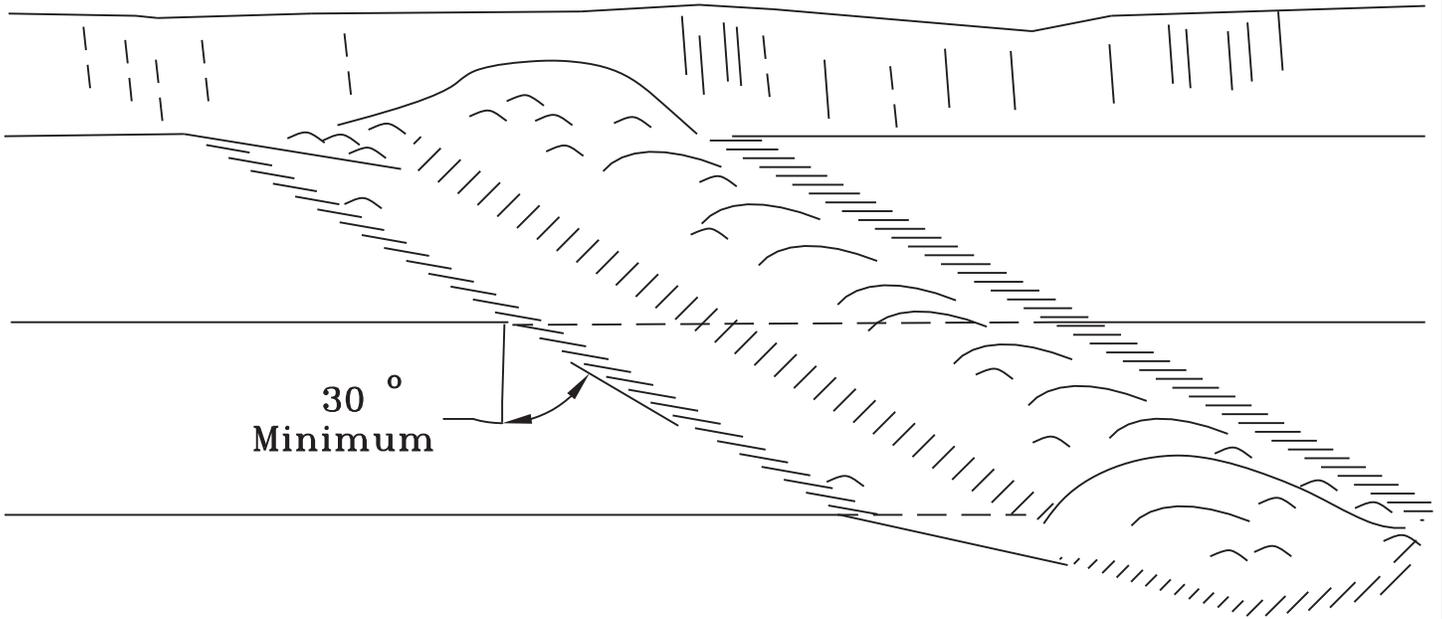


Drivable Water Bar Detail

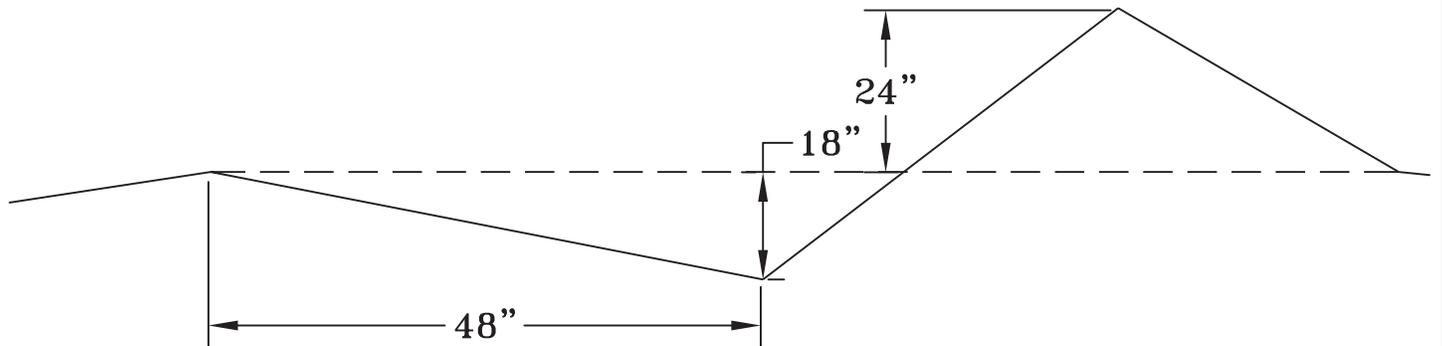
Scale : None  
Drawn by: M.A.D.

# Non-Drivable Water Bar Detail

## Cross Ditch



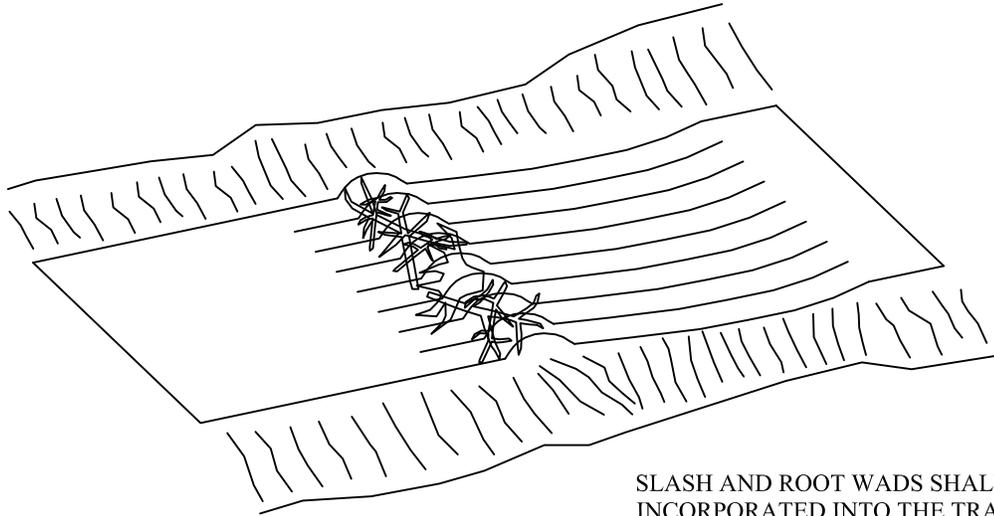
## Cross Section at Centerline



Non-Drivable Water Bar Detail

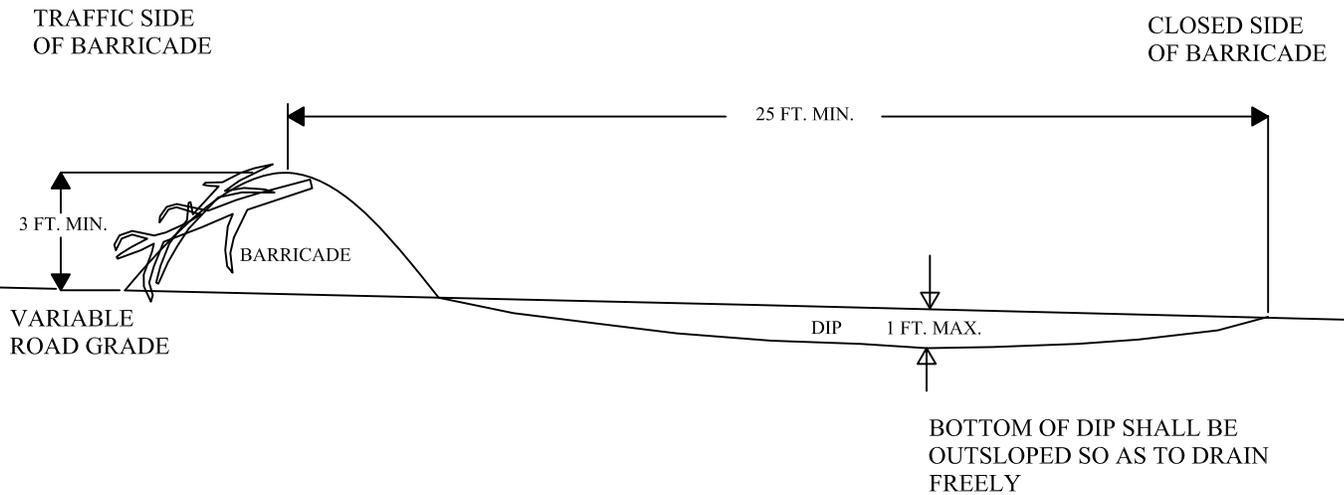
Scale : None  
Drawn by: M.A.D.

# BARRICADE DETAIL



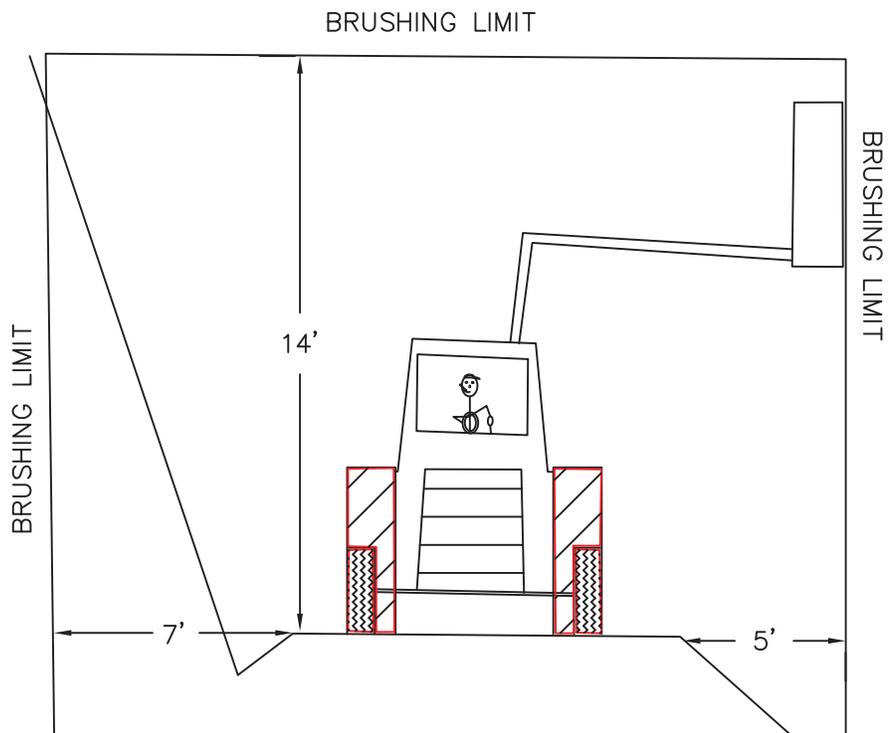
SLASH AND ROOT WADS SHALL BE INCORPORATED INTO THE TRAFFIC SIDE OF THE BARRICADE.

PLAN VIEW



PROFILE VIEW

# Brushing Section Detail



Notes: Stumps shall not be greater than 3 inches tall after brushing.

Scale : None  
Drawn by: M.A.D.

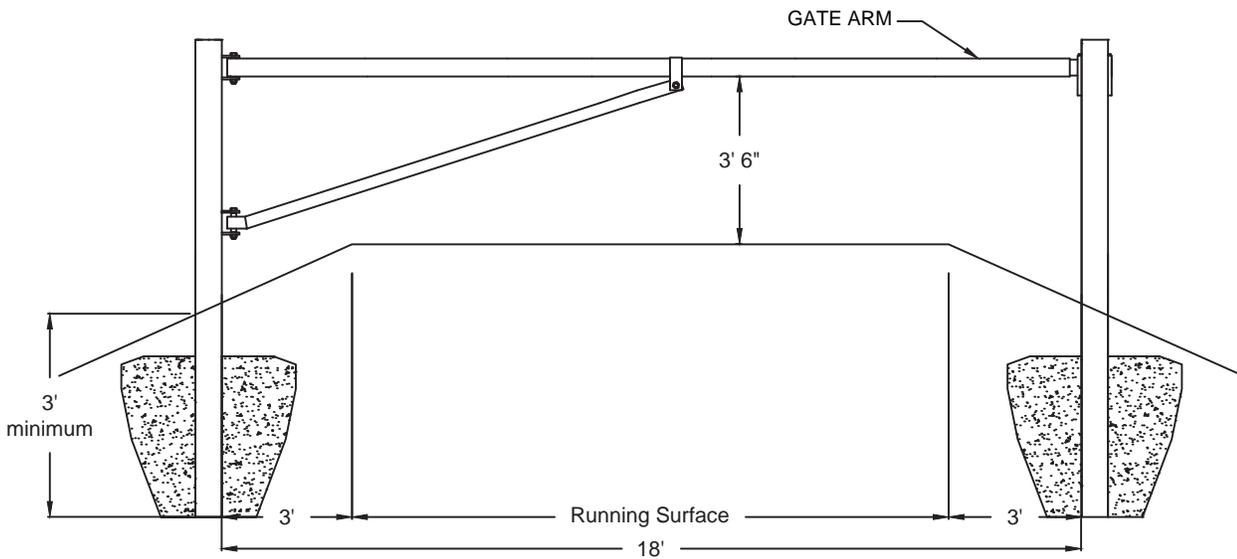
Brushing Section Detail

# GATE INSTALLATION DETAIL, pg 1 of 3

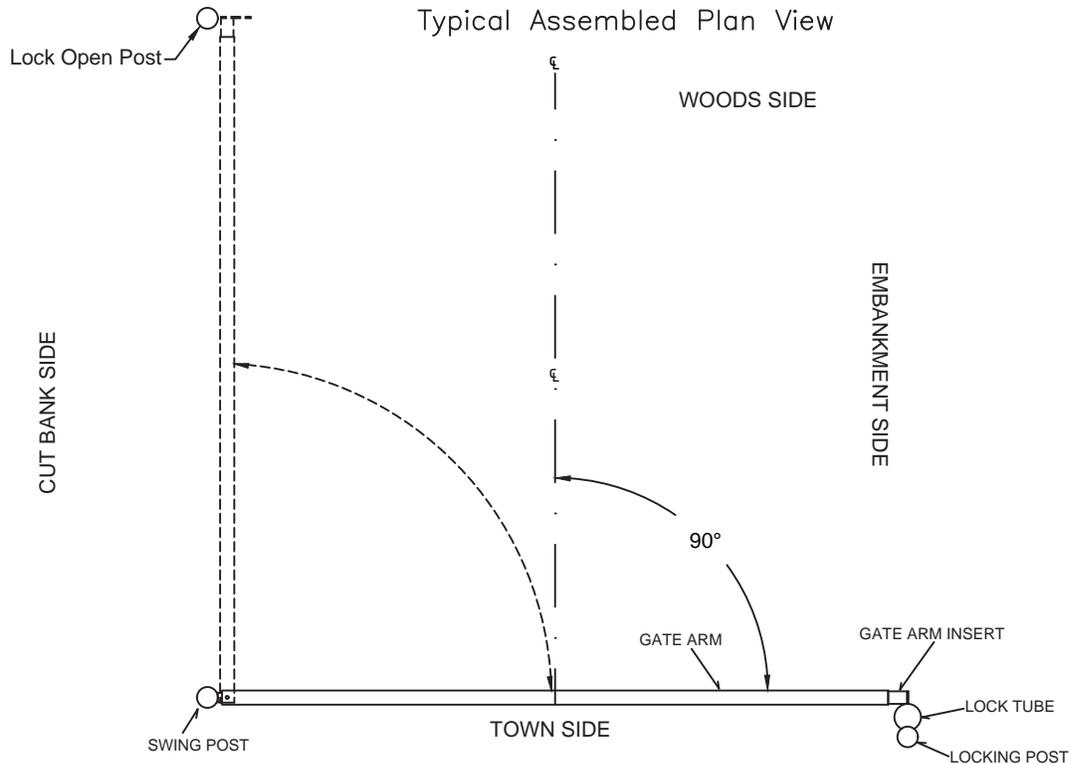
Not to Scale

- 1) Gate shall be installed perpendicular to the road centerline.
- 2) All gate posts, including lock-open post shall be installed plumb and at the same elevation.
- 3) Each gate post including lock-open post, shall be set in at least 2 cubic yards of 3000psi concrete. Pre-cast insta-gate footings may be used as an alternative. Minimum footing size is 2ft x 2ft x 4ft.
- 4) Each gate post, including lock open post, shall be filled with concrete.
- 5) Lock-open post shall be set so that the chain may be locked to the lock plate.
- 6) Site specific gate installation requirements shall be as directed by the Contract Administrator.

Typical Assembled Profile View

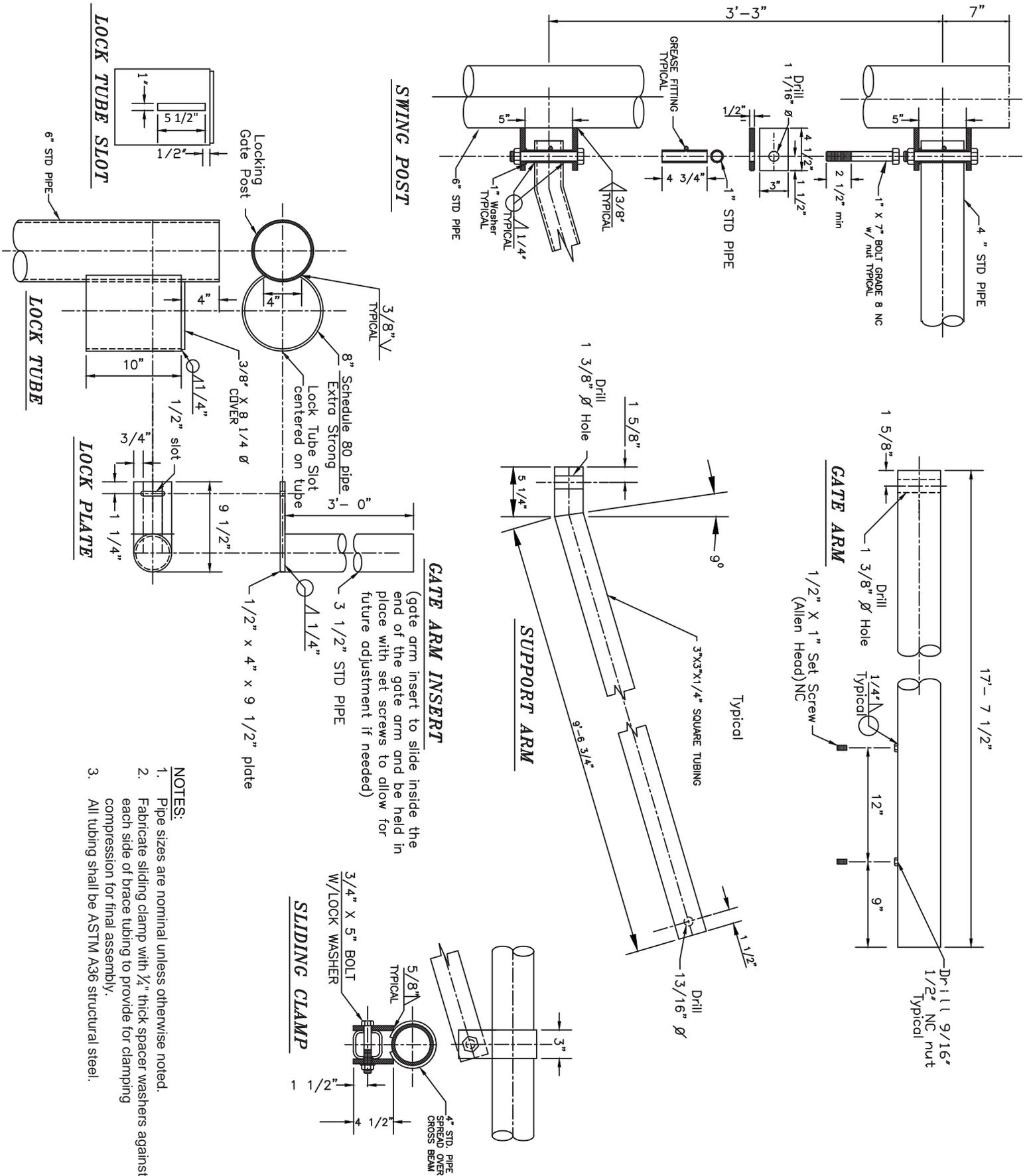


Typical Assembled Plan View



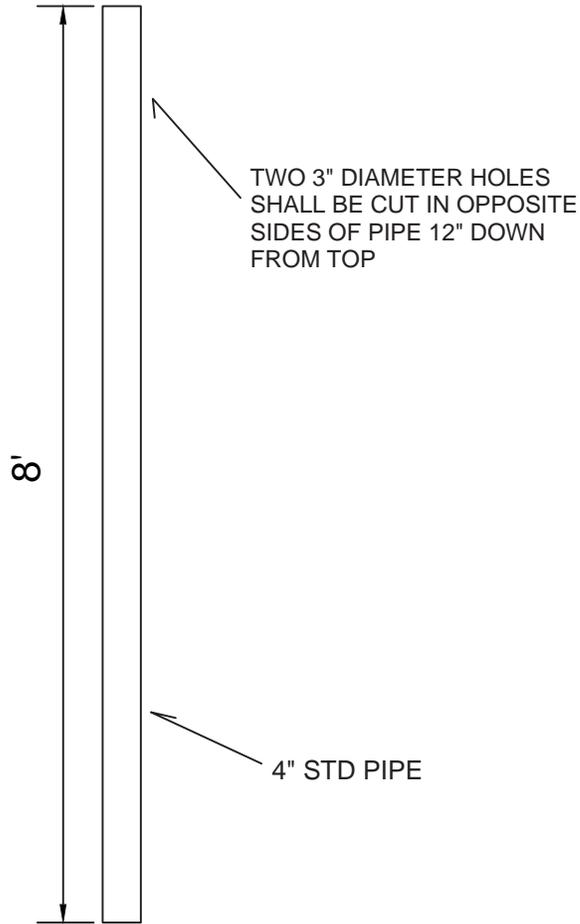
# GATE FABRICATION DETAIL

Page 2 of 3  
Not to Scale



# GATE FABRICATION DETAIL

Page 3 of 3  
Not to Scale



*LOCK OPEN POST*

## NOTES:

1. After fabrication, all gate components including lock open posts shall be sanded to remove all rust, scale and oily substances and painted with a coat of brown primer. Then painted with Rodda Safety yellow paint or an equivalent.
2. Primer shall be Sherwin Williams Pro-cryl Universal Primer or an equivalent approved by the Contract Administrator.

DEPARTMENT OF NATURAL RESOURCES - SOUTH PUGET SOUND REGION

**SUMMARY - ROAD DEVELOPMENT COSTS**

**(COSTS ARE ESTIMATES ONLY & ARE NOT GUARANTEED BY THE STATE OR PART OF THE ROAD PLAN.)**

SALE/PROJECT NAME: **Scattered**

CONTRACT NUMBER: **30-085082**

TYPE:		Construction	Pre-Haul Maintenance
NUMBER OF STATIONS:		42.70	259.66
AVG. SIDESLOPE:		25	
CLEARING AND GRUBBING:		\$5,937	
EXCAVATION AND FILL:		\$8,693	
MISC. MAINTENANCE:			\$8,704
ROCK TOTALS:			
	Ballast:	\$34,969	\$0
	Surfacing:	\$0	\$4,947
	Riprap/Quarry Spalls:	\$27	\$7,247
	Stockpiles:		\$52,000
CULVERTS AND FLUMES:		\$3,454	\$0
STRUCTURES:		\$0	\$4,000
GENERAL EXPENSES:		\$4,777	\$6,921
MOBILIZATION:		\$4,087	\$4,087
<b>TOTAL COSTS:</b>		<b>\$61,944</b>	<b>\$87,906</b>
COST PER STATION:		\$1,451	\$339
<b>POST HAUL COSTS:</b>			<b>\$2,630</b>

NOTE1: This appraisal has no allowance for profit and risk.  
 NOTE2: This appraisal does not account for optional rock.

TOTAL (All Roads) =	\$152,479
SALE VOLUME MBF =	5,714
TOTAL COST PER MBF =	\$26.69

Plans to be furnished by:

Compiled by:

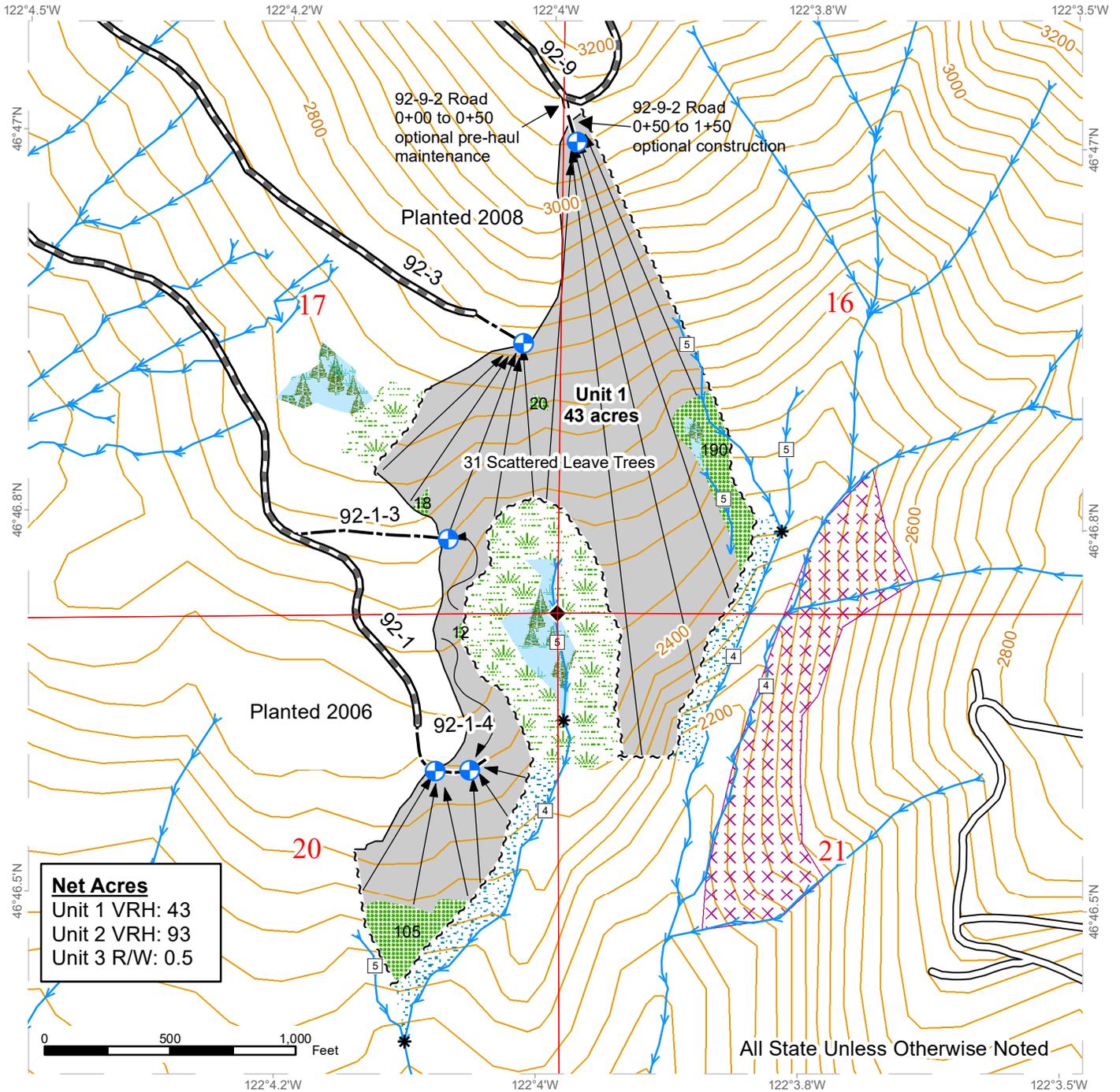
M. Bell

Date: 09/10/19

# LOGGING PLAN MAP

**SALE NAME:** SCATTERED  
**AGREEMENT#:** 30-085082  
**TOWNSHIP(S):** T15R6E  
**TRUST(S):** Capitol Grant (7), Common School and Indemnity (3), State Forest Transfer (1)

**REGION:** South Puget Sound Region  
**COUNTY(S):** Pierce  
**ELEVATION RGE:** 2,160 - 3,343 ft.



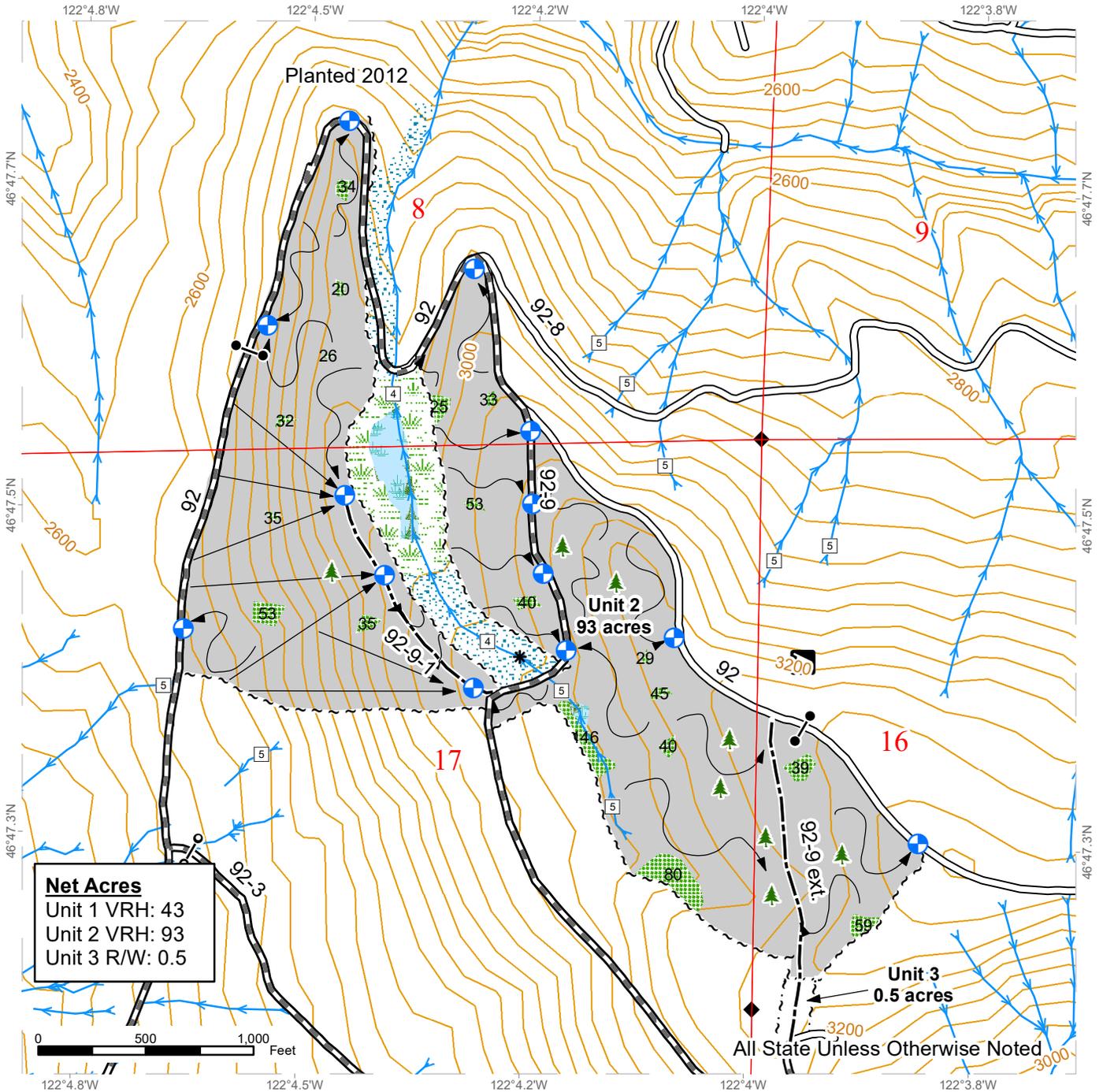
Variable Retention Harvest	Timber Type Change	Streams
Riparian Mgt Zone	Ground Harvest	Landing - Proposed
Forested Wetland	Cable Harvest	Stream Type
Wetland Mgt Zone	Existing Roads	Stream Type Break
Leave Tree Area	Required Pre-Haul Maintenance	Survey Monument
Tailhold Restriction Area	Optional Pre-Haul Maintenance	Public Land Survey Sections
Sale Boundary Tags	Optional Construction	Contours 40-foot



# LOGGING PLAN MAP

SALE NAME: SCATTERED  
 AGREEMENT#: 30-085082  
 TOWNSHIP(S): T15R6E  
 TRUST(S): Capitol Grant (7), Common School and Indemnity (3), State Forest Transfer (1)

REGION: South Puget Sound Region  
 COUNTY(S): Pierce  
 ELEVATION RGE: 2,160 - 3,343 ft.



	Variable Retention Harvest		Cable Harvest		Leave Tree Area <1/4-acre
	Riparian Mgt Zone		Existing Roads		Recreation Site
	Forested Wetland		Required Pre-Haul Maintenance		Stream Type
	Wetland Mgt Zone		Optional Construction		Stream Type Break
	Leave Tree Area		Streams		Survey Monument
	Sale Boundary Tags		Gate (CJ-18)		Public Land Survey Sections
	Right of Way Tags		Gate Installation		Contours 40-foot
	Ground Harvest		Landing - Proposed		