

**TIMBER NOTICE OF SALE**

**SALE NAME:** FERN HOPPER

**AGREEMENT NO:** 30-092563

**AUCTION:** March 29, 2016 starting at 10:00 a.m., **COUNTY:** King  
South Puget Sound Region Office, Enumclaw, WA

**SALE LOCATION:** Sale located approximately 10 miles north of Maple Valley.

**PRODUCTS SOLD AND SALE AREA:** All timber, except those trees marked with blue paint or bounded out by yellow leave tree area tags, downed timber existing more than 5 years from the day of sale and trees greater than 60 inches dbh, bounded by the following: white timber sale boundary tags, timber type change marked with pink flagging and the 1000, 1500, 1510, 1800 and 1900 Roads in Unit #1; on part(s) of Sections 11 all in Township 23 North, Range 6 East, W.M., containing 68 acres, more or less.

**CERTIFICATION:** This sale is certified under the Sustainable Forestry Initiative® program Standard (cert no: BV-SFIS-US09000572) and FSC 100% raw materials under the Forest Stewardship Council® Standard (cert no: BV-FM/COC-080501).

**ESTIMATED SALE VOLUMES AND QUALITY:**

Species	Avg Ring DBH	Ring Count	Total MBF	Total \$/MBF	MBF by Grade								
					1P	2P	3P	SM	1S	2S	3S	4S	UT
Douglas fir	16.7	7	1,786	\$224.00				316		1,068	237	142	23
Red alder	16.3		215	\$282.00						90	43	73	9
Maple	14.9		180	\$76.00						52	21	73	34
Hemlock	9.4	7	106	\$100.00						52	35	6	13
Red cedar	34		10	\$810.00							10		
Sale Total			2,297										

**MINIMUM BID:** \$224/MBF (est. value \$493,000.00) **BID METHOD:** Sealed Bids

**PERFORMANCE SECURITY:** \$160,000.00 **SALE TYPE:** MBF Scale

**EXPIRATION DATE:** October 31, 2017 **ALLOCATION:** Export Restricted

**BIDDABLE SPECIES:** Douglas fir

**BID DEPOSIT:** \$49,300.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

**HARVEST METHOD:** Approximately 65 percent cable and 35 percent ground based. Cable and ground based equipment with ground based equipment limited to sustained slopes of 35 percent or less. Rubber tired skidders will not be allowed. Yarding may be restricted if rutting becomes excessive, per clause H-017.

Falling, yarding and timber haul will not be permitted from November 1st to April 30th, 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 1st to April 30th, the Purchaser shall comply with a Winter Operating Plan to include further protection of water, soil, roads and other forest assets at the Purchaser's expense. Sedimentation preventative measures must be in place prior to commencing any winter operations.

## TIMBER NOTICE OF SALE

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**ROADS:** 61.15 stations of required reconstruction. 23.37 stations of optional reconstruction. 474.55 stations of required post-haul maintenance. 454.21 stations of required pre-haul maintenance. 4.20 stations of decommissioning, if reconstructed. Purchaser maintenance on the 1400, 1410, 1430, 1500, 1510 and 1800 Roads. Designated maintenance on all other roads used. Rock for this proposal can be obtained from the state owned Columnar or BB Rock Pits or any commercial rock source. Rock source development required in listed rock pits and 5,000 cubic yards of 1 1/2 foot Minus and 2,000 cubic yards of 1 1/4 inch aggregate to be manufactured and stockpiled in the Columnar or BB Rock Pits.

Operation of road construction equipment will not be permitted from November 1st to April 30th, 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 1st to April 30th, the Purchaser shall comply with a Winter Operating Plan to include further protection of water, soil, roads and other forest assets at the Purchaser's expense. Sedimentation preventative measures must be in place prior to commencing any winter operations.

### **ACREAGE DETERMINATION**

**CRUISE METHOD:** Unit acreage was determined by traversing boundaries by GPS. Traverse GPS files are available upon request by emailing [audrey.mainwaring@dnr.wa.gov](mailto:audrey.mainwaring@dnr.wa.gov). See cruise narrative for cruise method.

**FEES:** \$40,772.00 is due on day of sale. \$9.00 per MBF is due upon removal. These are in addition to the bid price.

**SPECIAL REMARKS:** In addition to the above restrictions, wildlife timing restrictions will be in effect for the northern portion of Unit #1, as shown as the wildlife timing restriction area on the timber sale map. Falling, yarding, operation of heavy equipment and road construction activities within the restricted area will not be permitted from 1 hour before sunrise to 2 hours after sunrise and 1 hour before sunset to 1 hour after sunset from April 1 through August 31. This restriction does not apply to the hauling of timber, rock or equipment.

Downhill cable yarding may be necessary in places. See the logging plan map for details.

There is heavy recreation traffic along the 1000 and 1500 Roads. Please use caution when viewing.

Temporary closure of the 1000 Road will be permitted for logging activities, with closure limited to no more than 45 days per the Road Plan. The Purchaser is required to notify the Contract Administrator a minimum of 14 days prior to any road closure.

Purchaser shall cut vine maple and sever from the stump throughout the timber sale unit. Stumps will be 12 inches or less in height.

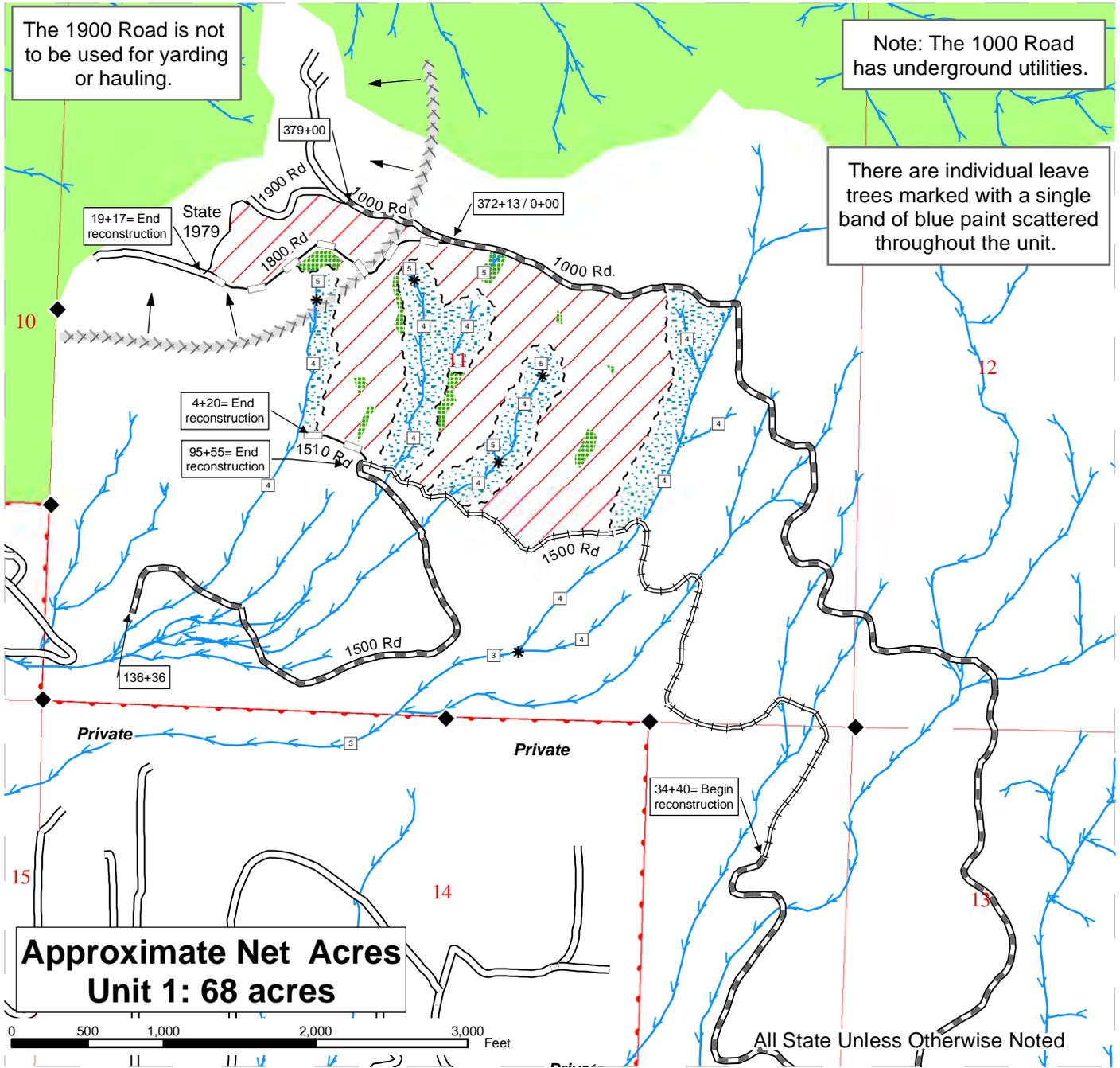
Cable profiles for potential cable corridors were assessed in the field. The cable profile information is available upon request by contacting Eric Oien at (425) 736-6237.

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 Eric Oien at (425) 736-6237.

# TIMBER SALE MAP

**SALE NAME:** FERN HOPPER  
**AGREEMENT#:** 30-092563  
**TOWNSHIP(S):** T23R06E  
**TRUST(S):** State Forest Transfer(1)

**REGION:** South Puget Sound Region  
**COUNTY(S):** KING  
**ELEVATION RGE:** 884-1756 ft

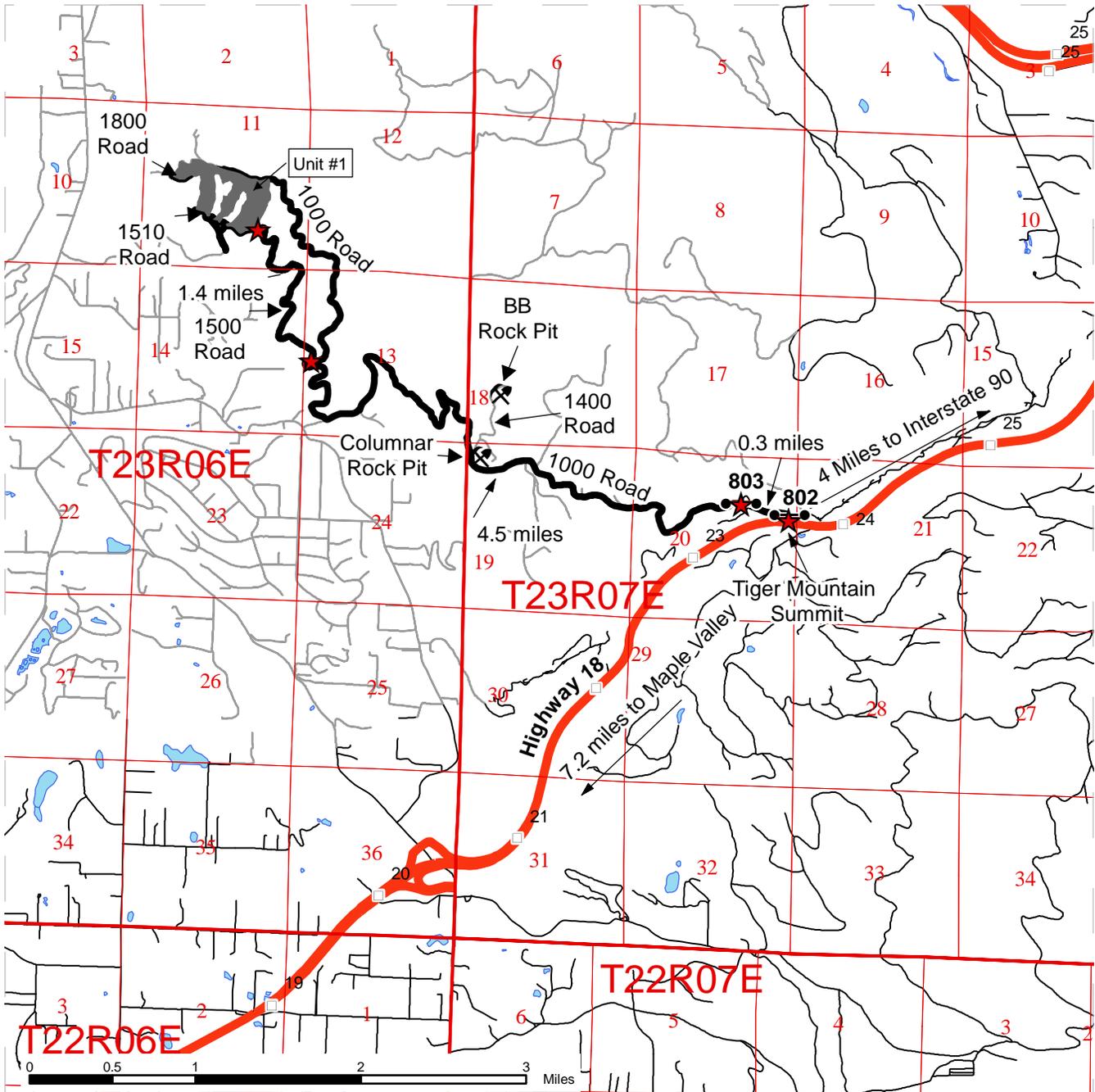


Timber Sale Unit	Leave Tree Area Bounded by Yellow "Leave Tree Area" Tags	Stream Type
Existing Roads	Type Change (Pink Flagging)	Stream Type Break
Required Reconstruction	Sale Boundary Tags	Streams
Required Pre-Haul Maintenance	RMZ Area	Monumented Corners
Optional Reconstruction	Wildlife Timing Restriction	DNR Managed Lands

# DRIVING MAP

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- Timber Sale Unit
- Highways
- Other Route
- Gates (Master 786)
- Milepost Markers
- Existing Rock Pit
- ★ Distance Indicator

**DRIVING DIRECTIONS:**

From Highway 18 at the Tiger Mountain Summit parking area head through DNR Gate 802 (Master 786) onto the 1000 Road. Travel 0.3 miles to DNR Gate 803 (Master 786) and continue on the 1000 Road for 4.5 miles to the 1500 Road junction. Take a left onto the 1500 Road for 1.4 miles to the beginning of Unit #1.



**STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES**

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

**Export Restricted MBF Scale AGREEMENT NO. 30-092563**

**SALE NAME: FERN HOPPER**

**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 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 29, 2016 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 those trees marked with blue paint or bounded out by yellow leave tree area tags, downed timber existing more than 5 years from the day of sale and trees greater than 60 inches dbh, bounded by the following: white timber sale boundary tags, timber type change marked with pink flagging and the 1000, 1500, 1510, 1800 and 1900 Roads in Unit #1,; located on approximately 68 acres on part(s) of Section 11 in Township 23 North, Range 6 East W.M. in King 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, 2017.

## G-040 Contract Term Adjustment - No Payment

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

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

## G-050 Contract Term Extension - Payment

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

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

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

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

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

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

- e. Payment of \$30.00 per acre per annum for the acres on which an operating release has not been issued in 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. 812521 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, PRT-812521 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-105 Adding Naturally Damaged Forest Products

Any forest products not designated for removal that are seriously damaged by disease, insects or wind, or that may contribute seriously to the spread of insect or disease damage may be added to this sale by the Contract Administrator. Additions must be in unlogged areas of the sale and added volume shall not exceed an amount equal to 10 percent of the original advertised volume. 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 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 post office address:

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 1000, 1400, 1410, 1430, 1500, 1510 and 1800 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 1500 Road, unless authority is granted in writing by the Contract Administrator.

**G-396 County Hauling Permit**

The hauling of forest products, rock or equipment may require a county road hauling permit. Purchaser is responsible for obtaining a permit and any costs associated with extra maintenance or repair levied by a county. 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:

Easement, including the terms and provisions thereof,  
For: Trail  
In Favor of: DNR  
Disclosed by Application No.: 50-052808  
Granted: 12/17/1992  
Expires: 12/31/2047

LSE, including the terms and provisions thereof,  
For: Special Use  
In Favor of: WA Dept. of Fish & Wildlife  
Disclosed by Application No.: 60-WS0622  
Granted: 12/10/2012  
Expires: 12/31/2016

LSE, including the terms and provisions thereof,  
For: Special Use  
In Favor of: Fraternity Snoqualmie  
Disclosed by Application No.: 60-WS0653  
Granted: 1/1/2012  
Expires: 12/31/2018

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 \$40,772.00 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 pay the rate of \$2.00 per ton for forest products approved for removal from the sale area under clause H-157.

**P-040 Weighing and Scaling Costs**

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

**P-045 Guarantee of Payment**

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

**P-050 Billing Procedure**

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

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

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

**P-080 Payment Account Refund**

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

**P-090 Performance Security**

Purchaser agrees to furnish, within 30 days of the confirmation date, security acceptable to the State in the amount of \$160,000.00. 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. The State may treat load tickets not accounted for as lost forest products. All costs associated with computing the billings for lost loads 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 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-001 Operations Outside the Sale Boundaries

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

**H-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 area, as approved by the Contract Administrator. Purchaser may be required to pay liquidated damages for Excessive Reserve Tree Damage as detailed in clause D-041.

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

**H-015 Skid Trail Requirements**

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

Purchaser shall comply with the following during the yarding operation:

- a. Skid trails will not exceed 12 feet in width, including rub trees.
- b. Skid trails shall not cover more than 10 percent of the total acreage on one unit.
- c. Skid trail location will be pre-approved by the Contract Administrator.
- d. Except for rub trees, skid trails shall be felled and yarded prior to the felling of adjacent timber.
- e. Rub trees shall be left standing until all timber tributary to the skid trail has been removed.

- f. Excessive soil damage is not permitted. Excessive soil damage is described in clause H-017.
- g. Skid trails will be water barred at the time of completion of yarding, if required by the Contract Administrator.

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

H-017 Preventing Excessive Soil Disturbance

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

H-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 area. The plan shall address the cable setting locations, safety and recreation special concerns, 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 yarded by cable and ground based equipment with ground based equipment limited to sustained slopes of 35 percent or less. Rubber tired skidders will not be allowed unless authority to use other equipment is granted in writing by the State.

## H-125 Log Suspension Requirements

Lead-end suspension is required for all yarding activities.

## H-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

- A) Caution signage must be included in the operations plan presented to the Contract Administrator and shall be installed in the field prior to commencement of work.
- B) Crossings of Type 5 streams may be allowed at locations approved in writing by the Contract Administrator. Purchaser shall place a culvert or 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.
- C) 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.
- D) Purchaser shall cut vine maple and sever from the stump throughout the timber sale unit. Stumps will be 12 inches or less in height.
- E) Falling, yarding and timber haul will not be permitted from November 1st to April 30th, 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 1st to April 30th, the Purchaser shall comply with a Winter Operating Plan to include further protection of water, soil, roads and other forest assets at the Purchaser's expense. Sedimentation preventative measures must be in place prior to commencing any winter operations.
- F) 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 shovel road is allowed.

- G) Purchaser shall 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) Purchaser shall leave 2 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) No equipment may operate within, nor logs yarded through or over, leave tree clumps marked with yellow leave tree area tags.
- C) Wildlife timing restrictions will be in effect for the northern portion of Unit #1, as shown as the wildlife timing restriction area on the timber sale map. Falling, yarding, operation of heavy equipment and road construction activities within the restricted area will not be permitted from 1 hour before sunrise to 2 hours after sunrise and 1 hour before sunset to 1 hour after sunset from April 1 through August 31. This restriction does not apply to the hauling of timber, rock or equipment.
- D) The 1900 Road shall not be used for hauling or yarding.

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-170 Utility Log Removal**

All utility logs shall be yarded concurrently with the yarding of other logs and shall be removed from the sale area.

**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 6/15/2015 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 1400, 1410, 1430, 1500, 1510 and 1800 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 included 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 State current Equipment Rate Schedule on file at the region and Olympia offices. 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.

**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

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

S-110 Resource Protection

No equipment may operate within the 30 foot equipment limitation zones on Type 5 streams 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 stream.

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 4 to 6 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 within 24 hours of log removal, and \$250 each time a ticket is either lost or otherwise unaccounted for.

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 the harvest area.

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

STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

\_\_\_\_\_  
Purchaser

\_\_\_\_\_  
Art Tasker  
South Puget Sound Region Manager

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

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

CORPORATE ACKNOWLEDGEMENT

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 (specifically required by the contract) prior to haul*

#### EXCISE TAX EXEMPT ACTIVITIES

**Temporary Optional Construction:** **linear feet**  
*Optional roads to be constructed and then abandoned*

**Temporary Optional Reconstruction:** **linear feet**  
*Optional roads to be reconstructed and then abandoned*

**New Abandonment:** **linear feet**  
*Abandonment of roads constructed or reconstructed under the contract*

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 6/13)

## PRE-CRUISE NARRATIVE

Sale Name: <b>Fern Hopper</b>	Region: <b>South Puget Sound</b>
Agreement #: <b>30-092563</b>	District: <b>Rainier</b>
Contact Forester: <b>Eric Oien</b>	Phone/ Location: <b>(425)-736-6237</b> Ext: /
Alternate Contact: <b>Paul Footen</b>	Phone/ Location: <b>(425)-736-1708</b> Ext: /

Type of Sale (lump sum, mbf scale, tonnage scale or contract harvest): <b>MBF Scale</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>65% (60 uphill, 40 downhill)</b>
Percentage ground based: <b>35%</b>
Species Onsite: <input checked="" type="checkbox"/> RC, <input checked="" type="checkbox"/> DF, <input checked="" type="checkbox"/> WH, <input checked="" type="checkbox"/> RA, <input type="checkbox"/> BC, <input checked="" type="checkbox"/> BLM, <input type="checkbox"/> NF, <input 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 and error of closure if applicable)
					RMZ/WMZ Acres	Leave Tree Acres	Existing Road Acres	Other Acres (describe)		
Unit 1		Sec 11/ T 23N/ R 06 E	01	72.1	0	3.6	0.14	0	68.4	Garmin 64
<b>TOTAL ACRES</b>				72.1	0	3.6	0.14	0	68.4	

### HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription: (Mark leave, take, etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
1	VRH, Individual leave trees painted with blue, leave tree groups tagged with yellow leave tree area tags and pink flashers	N/A	120 individual leave trees, and 457 trees in groups

### OTHER PRE-CRUISE INFORMATION:

Unit #	Estimated Volume	Access information (Gates, locks, etc.)	Photos, traverse maps required
1	See Cruise	SE Tiger Mountain Road (Gate # 905) Master 786	

### REMARKS:

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Prepared By: <b>Eric Oien</b> Date: <b>6/1/15</b>	Title: <b>NRS-1</b>	CC:
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# Cruise Narrative

<b>Sale Name:</b> Fern Hopper	<b>Region:</b> South Puget Sound
<b>Agree. #:</b> 30-092563	<b>District:</b> Rainier
<b>Lead cruiser:</b> John Piety	<b>Completion date:</b> 6-17-2015 revised 11-30-2015
<b>Other cruisers on sale:</b> none	

**Unit acreage specifications:**

Unit #	Cruised acres	Cruised acres agree with sale acres? Yes/No	If acres do not agree explain why.
1	68.4	Yes	
Total	68.4		

**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 (cruise:count)	Total number of plots
1	VP	54.4 BAF	4.5	231' X 231'	1:1	50

**Sale/Cruise Description:**

<b>Minor species cruise intensity:</b>	<b>100% up to 5 trees per species</b>
<b>Minimum cruise spec:</b>	<p>HA - 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". Max butt 27")</p> <p>HB - 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". Max butt 27").</p> <p>D - 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 2in.)</p> <p>O- Logs exceeding 27" on the large end. (Oversize sort. Grade 2S. Lengths 16ft-40ft, 2ft multiples butt diameter min dia. 27 in. +)</p> <p>R - Logs meeting the following criteria: Surface characteristics for a rough</p>

	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"+)					
<b>Avg ring count by sp:</b>	<b>DF =</b>	7	<b>WH =</b>	7		
<b>Leave/take tree description:</b>	Leave trees are banded with blue paint and tagged out with yellow leave tree tags.					
<b>Other conditions</b>						

**Field observations:**

This is a mixed species stand. There are areas with mixed species and there are patches that are hardwood dominant or conifer dominant. Lots of variability between species mix. The DF is dominated by large and oversized logs. First log are mostly clear with branching on the second and third logs. The BM has a lot of sweep and short logs, there are some nice 30 + footers in some of the trees, maybe some tone wood, I did not check. A lot of the alder is getting to its life's end stage. This is a tower show so I expect a lot of breakage in the hardwood during yarding. Did not see very much rock, fairly soft lays.

**Grants: 01-100%**

**Prepared by:**

**John Piety**

**Title:**

**Cruiser**

**CC:**

TC PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																					
T23N R06E S11 Ty0001		68.40		Project: <b>FERNHOPP</b>										Page <b>1</b>									
				Acres <b>68.40</b>										Date <b>11/30/2015</b>		Time <b>9:34:11AM</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			
									2-4	5-7	8-11	12+	12-20	21-30	31-35	36-99							
DF	HA	2S	4		1,244	1,244	85											40	15	376	1.81	3.3	
DF	HA	3S	1		311	311	21											40	11	180	0.94	1.7	
DF	HB	2S	7	1.4	1,711	1,688	115											40	16	413	2.12	4.1	
DF	HB	3S	1		282	282	19											40	11	180	1.03	1.6	
DF	D	2S	24	3.2	6,567	6,357	435											40	15	358	1.95	17.7	
DF	D	3S	11	2.0	2,935	2,877	197											37	9	113	0.86	25.5	
DF	D	4S	8	.8	2,087	2,070	142			94	4	1		1	2	18	79	31	5	38	0.38	55.0	
DF	D	UT	2		341	341	23	43										28	2	9	0.16	38.5	
DF	OS	SM	17	.5	4,648	4,626	316								7	93		39	23	928	4.15	5.0	
DF	OS	2S	24	10.3	6,904	6,192	424											40	22	793	4.17	7.8	
DF	RO	2S	1	15.2	141	120	8											32	14	220	2.09	.5	
<b>DF Totals</b>				78	3.9	27,172	26,108	1,786	1	7	14	78	1	2	5	92		34	8	162	1.09	160.8	
BM	D	2S	19	1.9	522	512	35											28	13	157	1.32	3.3	
BM	D	3S	11	13.6	349	302	21											28	10	88	0.92	3.4	
BM	D	4S	41	2.0	1,097	1,075	74			65	27	8		18	31	44	7	27	7	47	0.55	23.0	
BM	D	UT	19		491	491	34			6		94		54	46			28	6	45	0.60	10.8	
BM	OS	2S	10		248	248	17											40	18	530	3.68	.5	
<b>BM Totals</b>				8	2.9	2,707	2,628	180		28	23	50		23	32	33	12	28	7	64	0.70	41.0	
RA	D	2S	42	.6	1,329	1,322	90											26	14	186	1.59	7.1	
RA	D	3S	19		623	623	43											33	11	143	1.00	4.4	
RA	D	4S	34	3.7	1,101	1,061	73			61	39			19	14	39	28	29	6	44	0.49	24.3	
RA	D	UT	5		134	134	9			8		92		92		8		23	6	37	0.60	3.7	
<b>RA Totals</b>				9	1.5	3,188	3,140	215		0	20	33	46	15	37	24	24	28	8	80	0.75	39.4	
WH	D	2S	48		751	751	51											40	15	379	2.03	2.0	
WH	D	3S	33	3.7	532	512	35											36	10	130	0.91	4.0	
WH	D	4S	6		89	89	6											22	5	22	0.35	4.0	
WH	D	UT	13		197	197	13			38	62			23	77			27	2	5	0.20	41.0	
<b>WH Totals</b>				5	1.3	1,569	1,549	106		5	14	33	49	1	4	14	80	28	4	30	0.38	50.9	
RC	D	3S	20		31	31	2											40	11	180	1.42	.2	
RC	OS	3S	80		121	121	8											40	20	700	4.82	.2	
<b>RC Totals</b>				0		152	152	10			20	80						40	16	440	3.12	.3	
<b>Totals</b>					3.5	34,787	33,576	2,297		1	11	17	72	4	8	10	79		31	7	115	0.89	292.5

TC PSTATS		PROJECT STATISTICS							PAGE	1	
		PROJECT FERNHOPP							DATE	11/30/2015	
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt	
23N	06E	11	FERN HOPPER	0001		68.40	50	230	S	W	
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL			50	230	4.6						
CRUISE DBH COUNT			25	108	4.3	13,682	.8				
REFOREST COUNT			24	118	4.9						
BLANKS			1								
100 %											
STAND SUMMARY											
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC	
DOUG FIR	63	97.1	16.7	58	36.0	146.9	27,172	26,108	5,877	5,876	
BL MAPLE	20	36.0	14.9	40	11.3	43.5	2,707	2,628	807	807	
R ALDER	16	21.8	16.3	57	7.8	31.6	3,188	3,140	841	841	
WHEMLOCK	8	45.0	9.4	36	7.0	21.5	1,569	1,549	540	540	
WR CEDAR	1	.2	34.0	88	0.2	1.1	152	152	43	43	
<b>TOTAL</b>	<i>108</i>	<i>200.0</i>	<i>15.0</i>	<i>50</i>	<i>63.2</i>	<i>244.5</i>	<i>34,787</i>	<i>33,576</i>	<i>8,108</i>	<i>8,108</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	88.1	11.1		737	829	920					
BL MAPLE	115.5	26.5		87	119	151					
R ALDER	50.0	12.9		151	174	196					
WHEMLOCK	154.2	58.1		68	161	255					
WR CEDAR											
<b>TOTAL</b>	<i>119.1</i>	<i>11.5</i>		<i>488</i>	<i>551</i>	<i>614</i>	<i>567</i>	<i>289</i>	<i>142</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	104.1	14.7		83	97	111					
BL MAPLE	169.1	23.9		27	36	45					
R ALDER	203.6	28.8		15	22	28					
WHEMLOCK	222.4	31.4		31	45	59					
WR CEDAR	707.1	99.9		0	0	0					
<b>TOTAL</b>	<i>61.5</i>	<i>8.7</i>		<i>183</i>	<i>200</i>	<i>217</i>	<i>151</i>	<i>77</i>	<i>38</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	83.0	11.7		130	147	164					
BL MAPLE	155.6	22.0		34	43	53					
R ALDER	187.9	26.5		23	32	40					
WHEMLOCK	183.7	26.0		16	21	27					
WR CEDAR	707.1	99.9		0	1	2					
<b>TOTAL</b>	<i>43.1</i>	<i>6.1</i>		<i>230</i>	<i>244</i>	<i>259</i>	<i>74</i>	<i>38</i>	<i>19</i>		
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	93.0	13.1		22,675	26,108	29,540					
BL MAPLE	150.2	21.2		2,070	2,628	3,186					
R ALDER	199.2	28.1		2,257	3,140	4,024					
WHEMLOCK	245.7	34.7		1,011	1,549	2,087					
WR CEDAR	707.1	99.9		0	152	304					
<b>TOTAL</b>	<i>64.2</i>	<i>9.1</i>		<i>30,530</i>	<i>33,576</i>	<i>36,623</i>	<i>165</i>	<i>84</i>	<i>41</i>		

**PROJECT STATISTICS**  
**PROJECT FERNHOPP**

<b>TWP</b>	<b>RGE</b>	<b>SC</b>	<b>TRACT</b>	<b>TYPE</b>	<b>ACRES</b>	<b>PLOTS</b>	<b>TREES</b>	<b>CuFt</b>	<b>BdFt</b>
23N	06E	11	FERN HOPPER	0001	68.40	50	230	S	W

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

T23N R06E S11 Ty0001 68.4

Project **FERNHOPP**  
Acres **68.40**Page No **1**  
Date: **11/30/2015**  
Time **9:34:13AM**

Species	Total	Total	Total	Net Cubic Ft/		CF/ LF	Total CCF		Total MBF	
	Trees	Logs	Tons	Tree	Log		Gross	Net	Gross	Net
DOUG FIR	6,643	10,997	11,456	60.51	36.55	1.14	4,020	4,019	1,859	1,786
R ALDER	1,488	2,695	1,581	38.65	21.34	0.74	575	575	218	215
BL MAPLE	2,462	2,805	1,464	22.44	19.69	0.70	552	552	185	180
WHEMLOCK	3,077	3,483	1,183	12.01	10.61	0.38	370	370	107	106
WR CEDAR	12	24	69	249.80	124.90	3.12	29	29	10	10
<b>Totals</b>	<b>13,682</b>	<b>20,004</b>	<b>15,753</b>	<b>40.54</b>	<b>27.72</b>	<b>0.91</b>	<b>5,546</b>	<b>5,546</b>	<b>2,379</b>	<b>2,297</b>

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	9,732	14,504	12,708	45.40	30.46	0.98	4,419	4,418	1,976	1,902
H	3,950	5,500	3,045	28.54	20.50	0.72	1,127	1,127	403	395
<b>Totals</b>	<b>13,682</b>	<b>20,004</b>	<b>15,753</b>	<b>40.54</b>	<b>27.72</b>	<b>0.91</b>	<b>5,546</b>	<b>5,546</b>	<b>2,379</b>	<b>2,297</b>



WASHINGTON STATE DEPARTMENT OF  
**Natural Resources**  
 Peter Goldmark - Commissioner of Public Lands

FPA/N No: 2418172

Effective Date: 10/06/2015

Expiration Date: 10/06/2018

Shut Down Zone: 657

EARR Tax Credit:  Eligible [ ] Non-eligible

Reference: Fern Hopper

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

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: Eric Dasso

Region: South Puget Sound

Title: Resource Protection Forester

Date: 10/06/2015

Copies to:  Landowner, Timber Owner and Operator.

Issued in person: [ ] Landowner [ ] Timber Owner [ ] Operator By: \_\_\_\_\_

EM  
10-10-15

**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.eho.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 North  
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.

**Hydraulic Project Approval (HPA) (Chapter 77.55RCW and WAC 222-50-020(2))**

The Department of Fish and Wildlife (WDFW), as the jurisdictional agency issuing HPAs, has final authority for approving water crossing structures in Type S and F waters. WDFW continues to have authority on Type N waters and may exercise that authority on some Type N waters.

Notice: The HPA water crossing requirements supersede what is indicated on the FPA. Landowners are required by law to follow the provisions as directed on the HPA.

**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)**

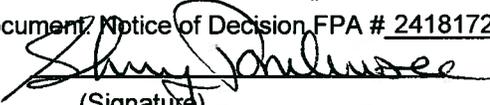
Obligations include reforestation, road maintenance and abandonment plans, conversions of forest land to non-forestry use and/or harvest strategies on perennial non-fish habitat (Type Np) waters in Eastern Washington.

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.

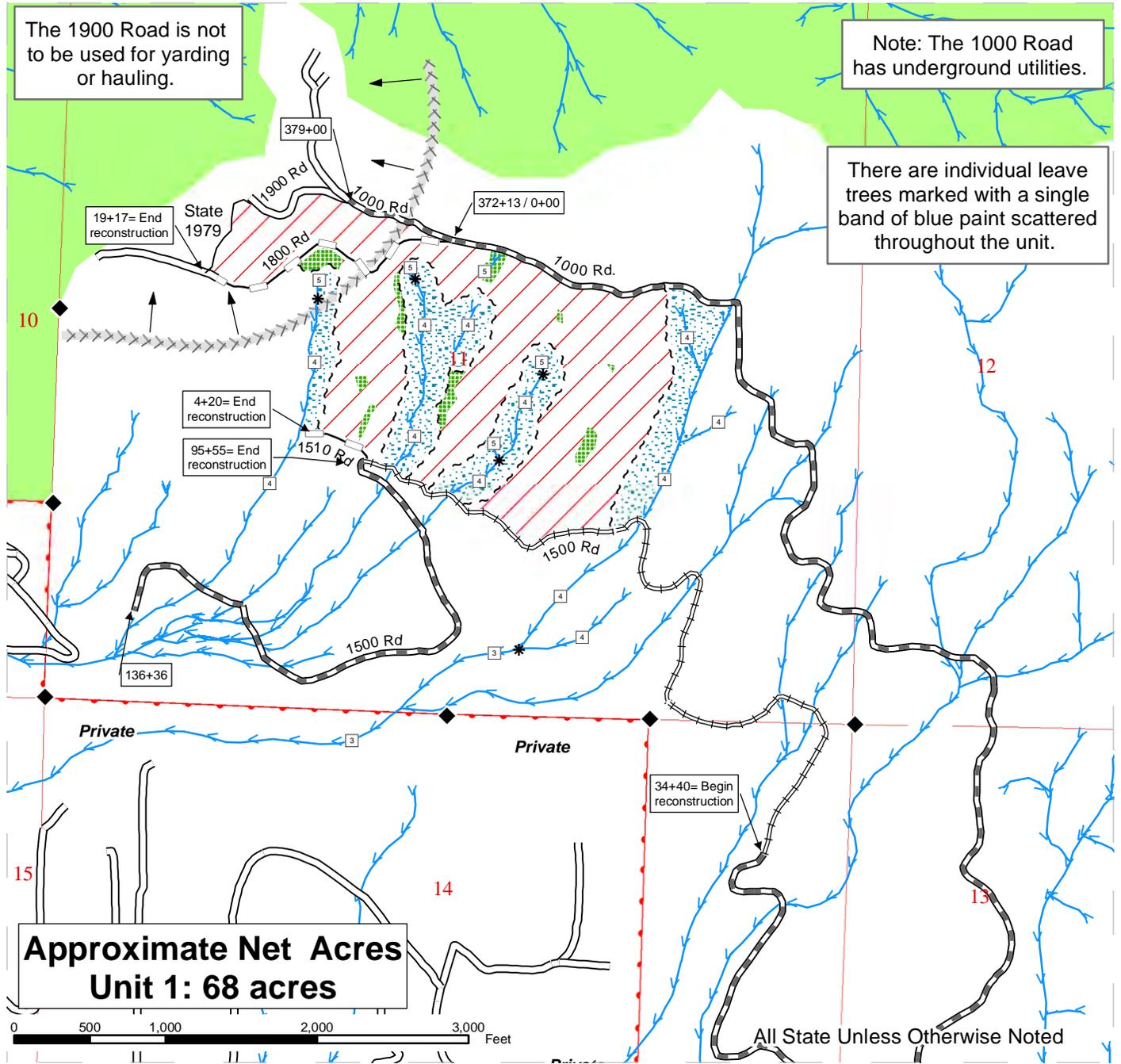
**DNR affidavit of mailing:**

On this day <u>10/06/2015</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>2418172</u>		
<u>Sherry Tomlinson</u>		
(Printed name)	(Signature)	

# ROAD PLAN MAP

SALE NAME: FERN HOPPER  
 AGREEMENT#: 30-092563  
 TOWNSHIP(S): T23R06E  
 TRUST(S): State Forest Transfer(1)

REGION: South Puget Sound Region  
 COUNTY(S): KING  
 ELEVATION RGE: 884-1756 ft

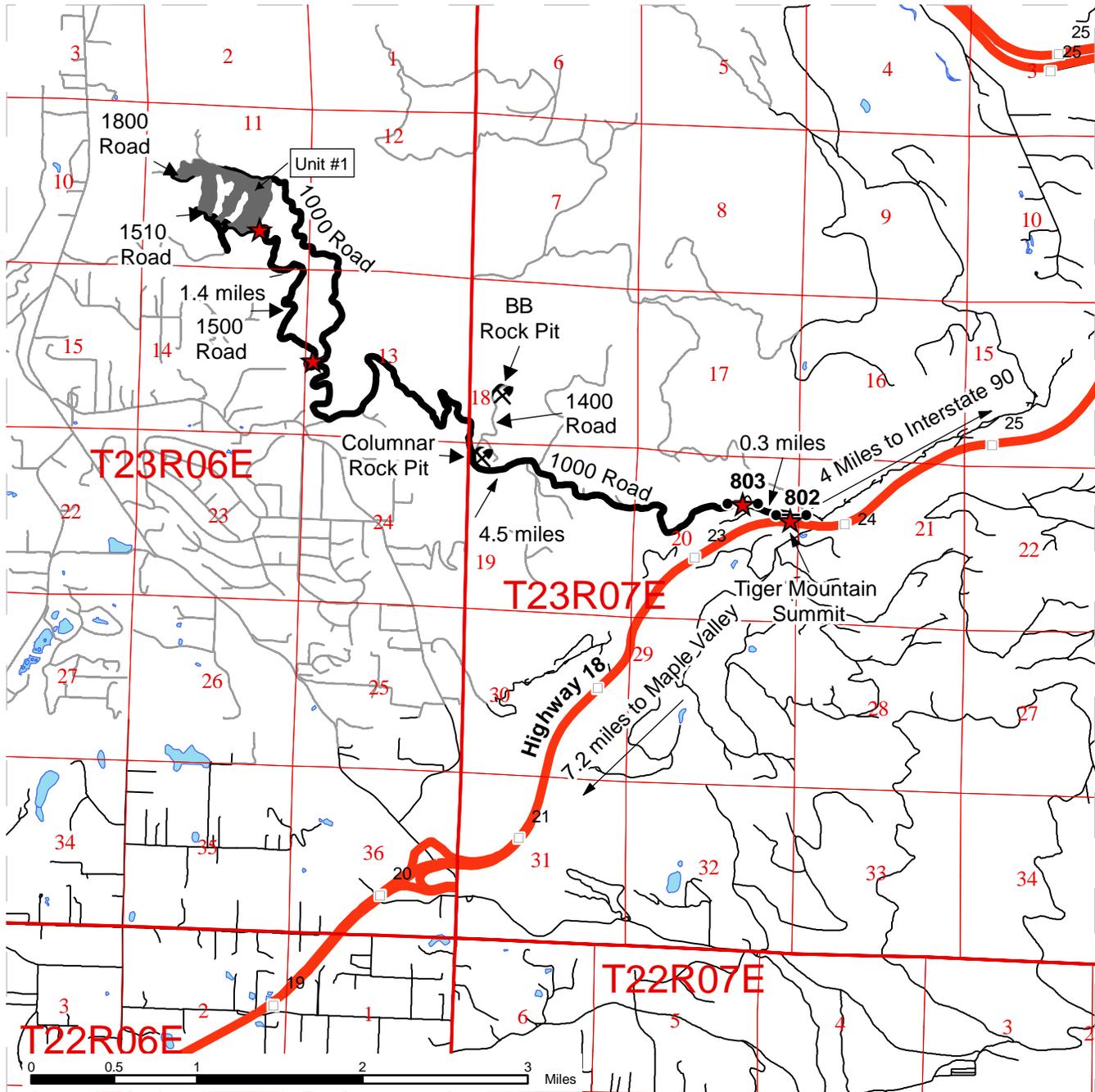


Timber Sale Unit	Leave Tree Area Bounded by Yellow "Leave Tree Area" Tags	Stream Type
Existing Roads	Type Change (Pink Flagging)	Stream Type Break
Required Reconstruction	Sale Boundary Tags	Streams
Required Pre-Haul Maintenance	RMZ Area	Monumented Corners
Optional Reconstruction	Wildlife Timing Restriction	DNR Managed Lands

# DRIVING MAP

**SALE NAME:** FERN HOPPER  
**AGREEMENT#:** 30-092563  
**TOWNSHIP(S):** T23R06E  
**TRUST(S):** State Forest Transfer(1)

**REGION:** South Puget Sound Region  
**COUNTY(S):** KING  
**ELEVATION RGE:** 884-1756 ft.



	Timber Sale Unit
	Highways
	Other Route
	Gates (Master 786)
	Milepost Markers
	Existing Rock Pit
	Distance Indicator

**DRIVING DIRECTIONS:**

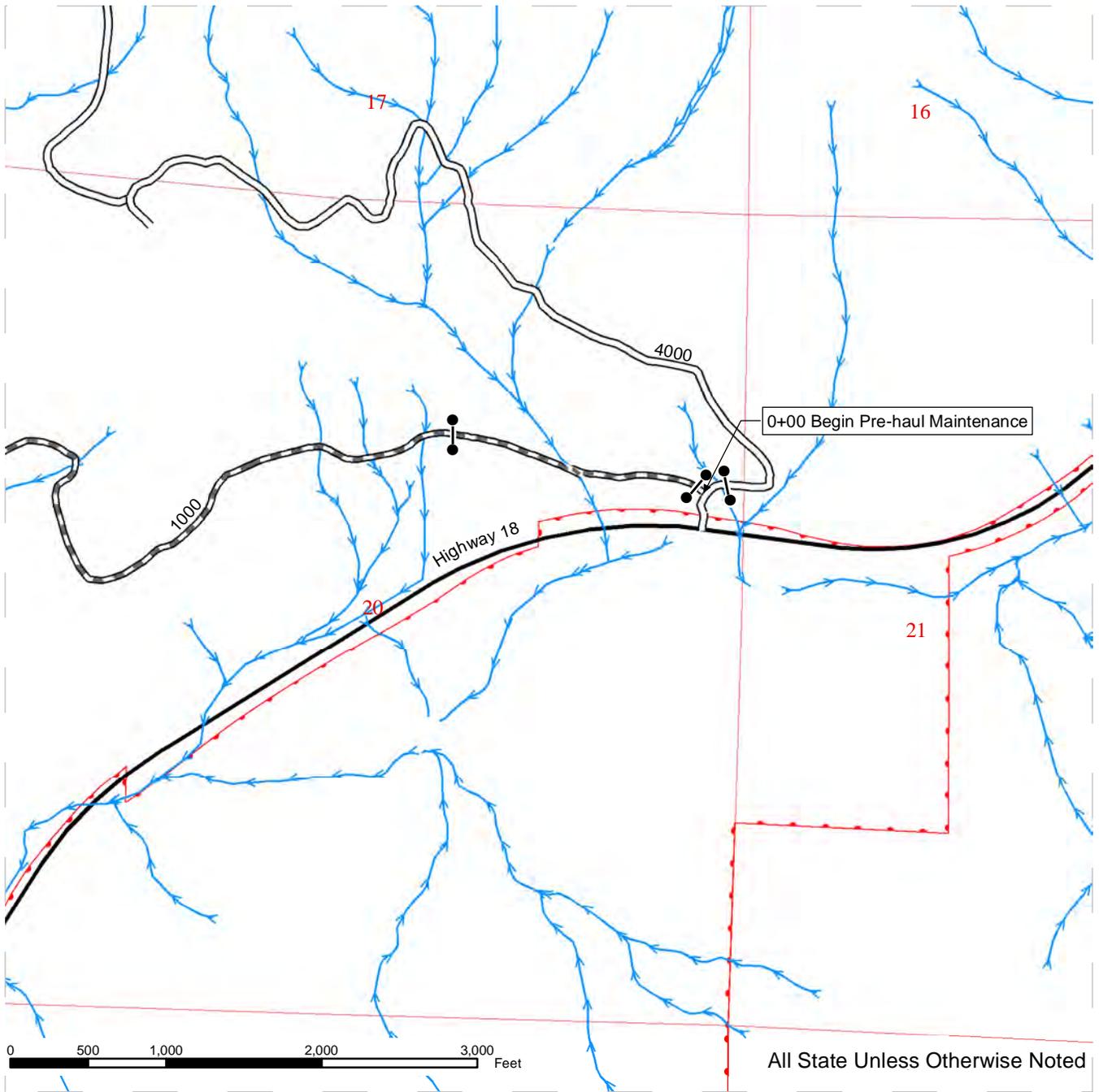
From Highway 18 at the Tiger Mountain Summit parking area head through DNR Gate 802 (Master 786) onto the 1000 Road. Travel 0.3 miles to DNR Gate 803 (Master 786) and continue on the 1000 Road for 4.5 miles to the 1500 Road junction. Take a left onto the 1500 Road for 1.4 miles to the beginning of Unit #1.



# ROAD VIEW MAP

**SALE NAME:** FERN HOPPER  
**AGREEMENT#:** 92563  
**TOWNSHIP(S):** T23R06E  
**TRUST(S):** State Forest Transfer(1)

**REGION:** South Puget Sound Region  
**COUNTY(S):** KING  
**ELEVATION RGE:** 845-1777



## Legend

- |                         |                       |                             |
|-------------------------|-----------------------|-----------------------------|
| Existing Roads          | Existing Rock Pit     | Monumented Corners          |
| Pre-haul Maintenance    | Culvert Installations | Streams                     |
| Required Reconstruction | Sale Boundary         | Public Land Survey Sections |
| Optional Reconstruction | DNR Managed Lands     | Gates (Master 786)          |

Prepared By: bbal490

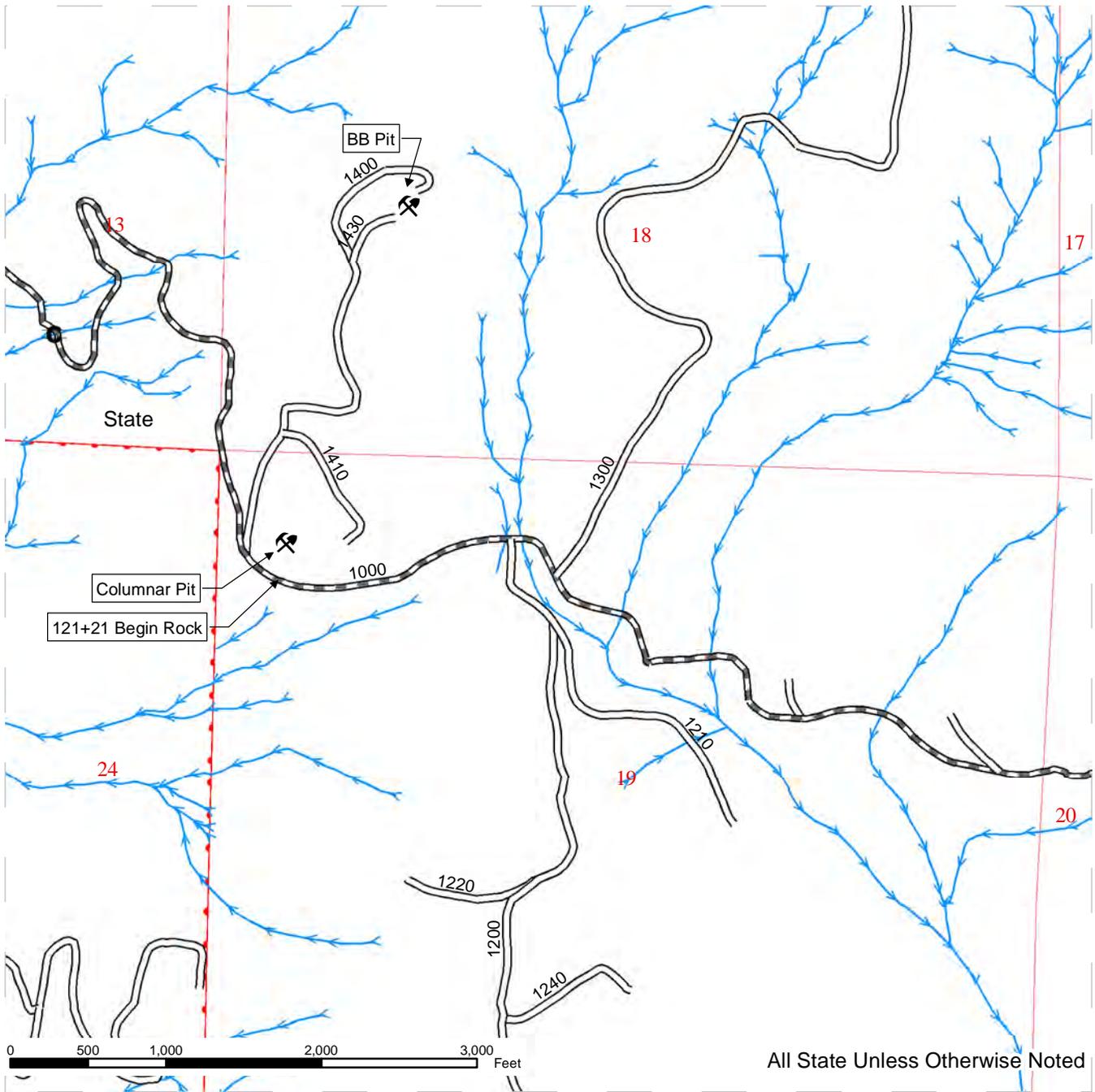
Creation Date: 3/27/2015

Modification Date: 12/21/2015  
kfy490 - 01/15/2016

# ROAD VIEW MAP

**SALE NAME:** FERN HOPPER  
**AGREEMENT#:** 92563  
**TOWNSHIP(S):** T23R06E  
**TRUST(S):** State Forest Transfer(1)

**REGION:** South Puget Sound Region  
**COUNTY(S):** KING  
**ELEVATION RGE:** 845-1777



### Legend

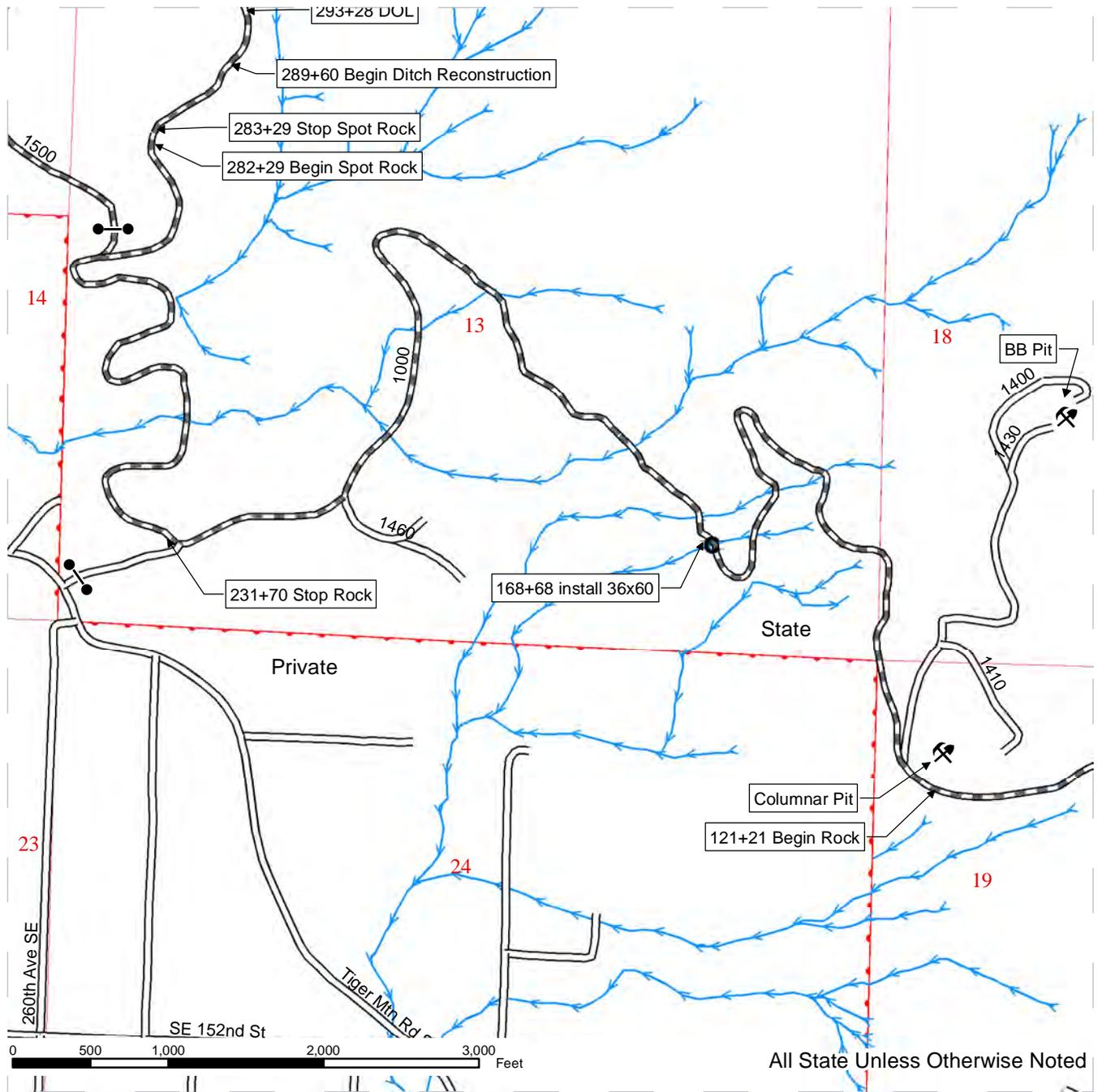
<ul style="list-style-type: none"> <li> Existing Roads</li> <li> Pre-haul Maintenance</li> <li> Required Reconstruction</li> <li> Optional Reconstruction</li> </ul>	<ul style="list-style-type: none"> <li> Existing Rock Pit</li> <li> Culvert Installations</li> <li> Sale Boundary</li> <li> DNR Managed Lands</li> </ul>	<ul style="list-style-type: none"> <li> Monumented Corners</li> <li> Streams</li> <li> Public Land Survey Sections</li> <li> Gates (Master 786)</li> </ul>
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# ROAD VIEW MAP

**SALE NAME:** FERN HOPPER  
**AGREEMENT#:** 92563  
**TOWNSHIP(S):** T23R06E  
**TRUST(S):** State Forest Transfer(1)

**REGION:** South Puget Sound Region  
**COUNTY(S):** KING  
**ELEVATION RGE:** 845-1777



### Legend

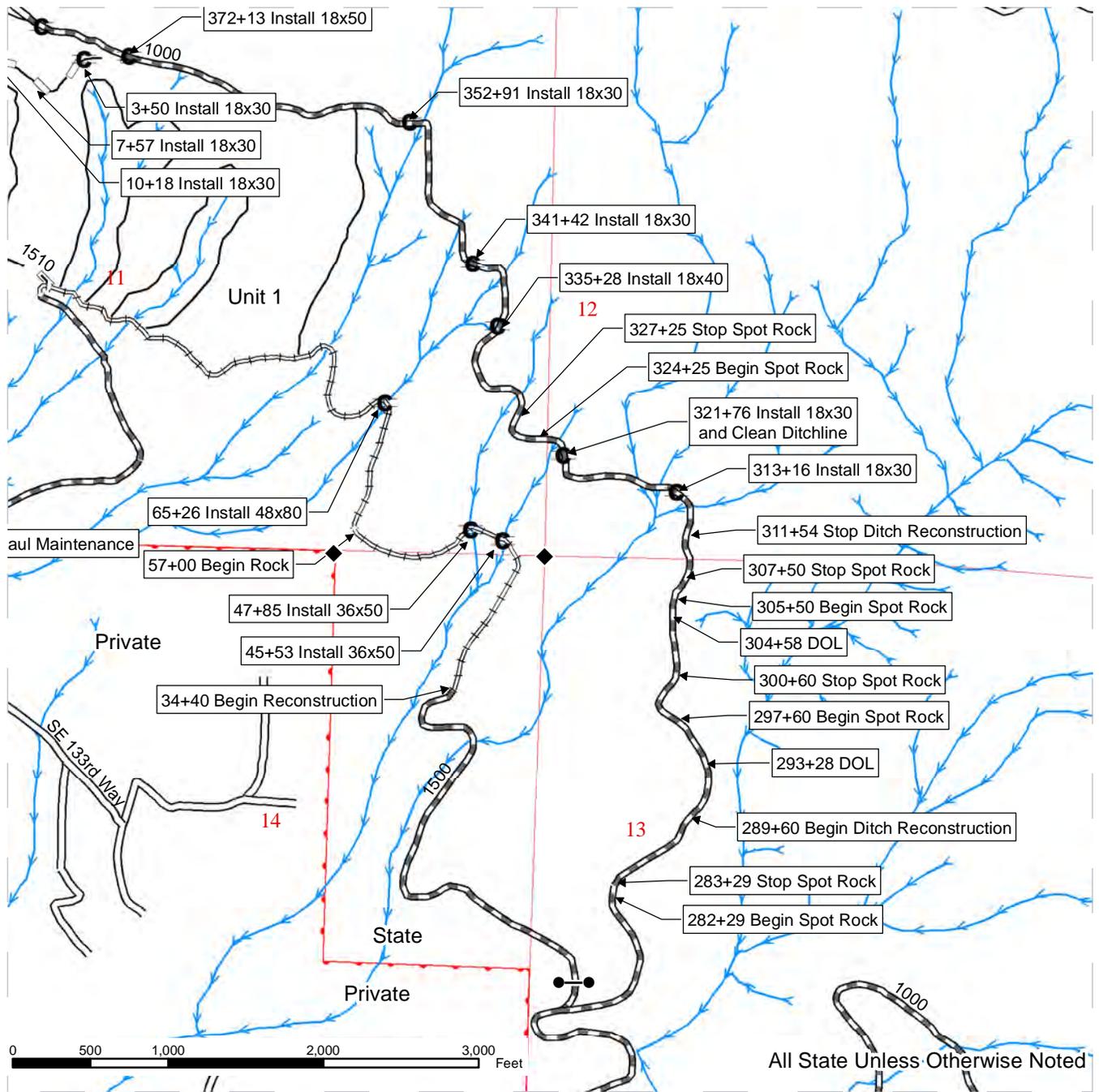
Existing Roads	Existing Rock Pit	Monumented Corners
Pre-haul Maintenance	Culvert Installations	Streams
Required Reconstruction	Sale Boundary	Public Land Survey Sections
Optional Reconstruction	DNR Managed Lands	Gates (Master 786)



# ROAD VIEW MAP

SALE NAME: FERN HOPPER  
 AGREEMENT#: 92563  
 TOWNSHIP(S): T23R06E  
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REGION: South Puget Sound Region  
 COUNTY(S): KING  
 ELEVATION RGE: 845-1777



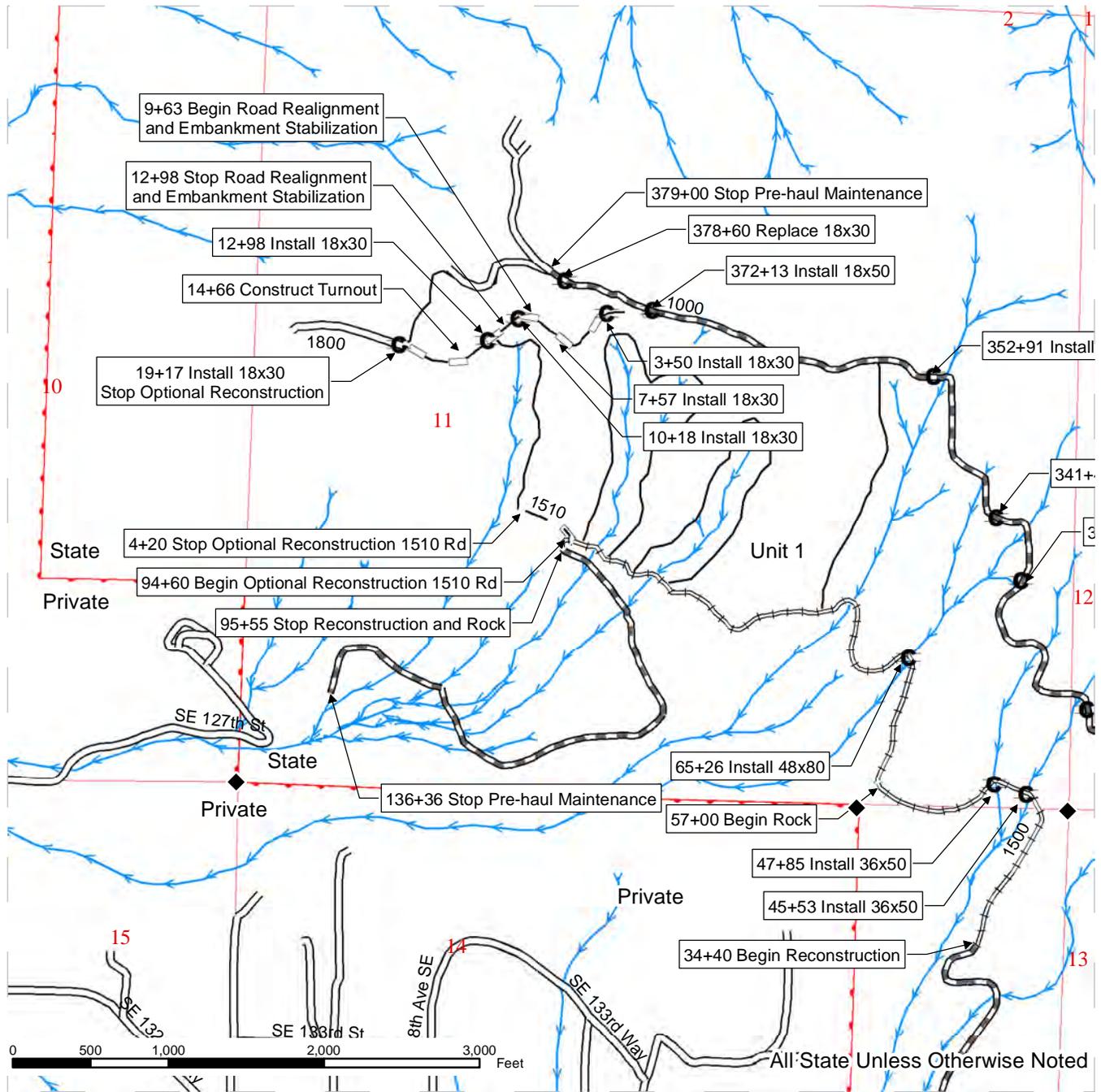
### Legend

<ul style="list-style-type: none"> <li> Existing Roads</li> <li> Pre-haul Maintenance</li> <li> Required Reconstruction</li> <li> Optional Reconstruction</li> </ul>	<ul style="list-style-type: none"> <li> Existing Rock Pit</li> <li> Culvert Installations</li> <li> Sale Boundary</li> <li> DNR Managed Lands</li> </ul>	<ul style="list-style-type: none"> <li> Monumented Corners</li> <li> Streams</li> <li> Public Land Survey Sections</li> <li> Gates (Master 786)</li> </ul>
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# ROAD VIEW MAP

**SALE NAME:** FERN HOPPER  
**AGREEMENT#:** 92563  
**TOWNSHIP(S):** T23R06E  
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**REGION:** South Puget Sound Region  
**COUNTY(S):** KING  
**ELEVATION RGE:** 845-1777



### Legend

Existing Roads	Existing Rock Pit	Monumented Corners
Pre-haul Maintenance	Culvert Installations	Streams
Required Reconstruction	Sale Boundary	Public Land Survey Sections
Optional Reconstruction	DNR Managed Lands	Gates (Master 786)



STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

FERN HOPPER TIMBER SALE ROAD PLAN  
KING COUNTY  
SNOQUALMIE UNIT RAINIER DISTRICT

AGREEMENT NO.: 30-092563

STAFF ENGINEER: B. BALLARD

DATE: 6/15/2015

DRAWN & COMPILED BY: B. BALLARD

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>
1000	0+00 to 379+00	Pre/Post-haul Maintenance
1500	0+00 to 34+40	Pre/Post-haul Maintenance
1500	34+40 to 95+55	Required Reconstruction Post-haul Maintenance
1500	95+55 to 136+36	Pre-haul Maintenance
1510	0+00 to 4+20	Decommissioning, if reconstructed

**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>
1510	0+00 to 4+20	Reconstruction
1800	0+00 to 19+17	Reconstruction

**0-5 RECONSTRUCTION**

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

- brushing right-of-way;
- clearing existing excavation and embankment slopes;
- grubbing existing excavation and embankment slopes;
- pulling ditches;

constructing ditches;  
acquisition and installation of additional drainage structures;  
realigning road segments;  
widening road segments;  
constructing additional turnouts;  
compaction of road surface;  
acquisition, manufacture, and application of rock; including existing turnouts;  
embankment stabilization;  
road decommissioning;

**0-6 PRE-HAUL MAINTENANCE**

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

brushing right-of-way;  
removing fallen right-of-way debris;  
ditch reconstruction;  
cleaning ditches;  
constructing catch basin and headwall;  
cleaning culvert inlets and outlets;  
cross drain culvert replacement;  
acquisition and placement of riprap;  
removing cutslope slumps;  
grading and shaping existing road surface and turnouts;  
compaction of road surface;  
removing berms from road shoulders;  
acquisition, manufacture, and application of rock; including existing turnouts;

**0-7 POST-HAUL MAINTENANCE**

This project includes post-haul road maintenance listed in Clause 9-5 POST-HAUL MAINTENANCE9-5 .

**0-9 DECOMMISSIONING**

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

**0-12 DEVELOP ROCK SOURCE**

Purchaser may develop an existing rock source. Work for developing rock sources is listed in Section 6 ROCK AND SURFACING. Purchaser shall create two stockpiles of rock. Work for developing rock stockpiles is listed in Section 6 ROCK AND SURFACING and quantities are listed in the ROCK LIST.

**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, 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

**1-5 DESIGN DATA**

Plan, profile, and cross-section design data is available upon request at the Department of Natural Resources South Puget Sound Region Office in Enumclaw, WA.

**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.

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

**1-7 TEMPORARY ROAD CLOSURE**

On the following road, purchaser shall notify the Contract Administrator a minimum of 14 calendar days before closure.

<u>Road</u>	<u>Number of Allowable Closed Days</u>
1000	45

**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.

**1-10 WSDOT STANDARD SPECIFICATION REFERENCE**

References in this road plan to “WSDOT Standard Specifications” mean the Washington State Department of Transportation’s Standard Specifications for Road, Bridge, and Municipal Construction 2012 (M41-10).

**1-15 ROAD MARKING**

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

- Lathe stakes for pre-haul maintenance.
- Orange flagging for road centerline on 1800 road.

**1-20 COMPLETE BY DATE**

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

**1-21 HAUL APPROVAL**

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

**1-22 WORK NOTIFICATIONS**

Purchaser shall notify the Contract Administrator a minimum of 14 calendar days before work begins, according to clause 6-14 DRILL AND SHOOT.

<u>Pit</u>	<u>Work</u>
Columnar or BB	Drilling and Blasting

**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:

- Drainage installation & Subgrade approval

- Rock compaction

**1-25 ACTIVITY TIMING RESTRICTION**

No operation of road construction equipment 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 period unless authorized in writing by the Contract Administrator.

<u>Road</u>	<u>Stations</u>	<u>Activity</u>	<u>Closure Period</u>
All Roads	All Stations	Operation of road construction equipment	November 1 to April 30
1000	375+00 to 379+00	Operation of road construction equipment	1 hour before sunrise to 2 hours after sunrise and 1 hour before sunset to 1 hour after sunset from April 1 through August 31.
1800	6+00 to 19+17	Operation of road construction equipment	1 hour before sunrise to 2 hours after sunrise and 1 hour before sunset to 1 hour after sunset from April 1 through August 31.

**1-26 OPERATING DURING CLOSURE PERIOD**

If permission is granted to operate during a closure period listed in Clause 1-25

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

**1-29 SEDIMENT RESTRICTION**

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

**1-30 CLOSURE TO PREVENT DAMAGE**

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

- Surface or base stability problems persist.
- Weather is such that satisfactory results cannot be obtained in an area of operations.
- When, in the opinion of the Contract Administrator excessive road damage or rutting may occur.

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

**1-32 BRIDGE SURFACE RESTRICTION**

The use of metal tracked equipment is not allowed on bridge surfaces at any time. If Purchaser must run equipment on bridge surfaces, then rubber tired equipment or other methods, approved in writing by Contract Administrator, must be used.

**1-43 ROAD WORK AROUND UTILITIES**

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

<u>Road</u>	<u>Stations</u>	<u>Utility</u>	<u>Utility Contact</u>
1000	0+00 to 231+16	PSE	<a href="mailto:John.campion@pse.com">John.campion@pse.com</a>

SECTION 2 – MAINTENANCE

**2-1 GENERAL ROAD MAINTENANCE**

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

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

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

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

Purchaser may be required to perform maintenance on roads listed in Contract Clause C-060 DESIGNATED ROAD MAINTAINER as directed by the Contract Administrator.

Purchaser shall maintain roads in accordance with FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS.

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

On the following roads, Purchaser shall use a grader to shape the existing surface before rock application and/or timber haul.

<u>Road</u>	<u>Stations</u>
1000	0+00 to 379+00
1500	0+00 to 95+55

**2-6 CLEANING CULVERTS**

Purchaser shall clean the inlets and outlets of all culverts.

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

Purchaser shall clean 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.

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

**3-1 BRUSHING**

On the following roads, Purchaser shall cut vegetative material up to 3 inches in diameter, including limbs, as shown on the BRUSHING DETAIL. Brushing must be achieved by mechanical cutting of brush, trees, and branches. Root systems and stumps of cut vegetation may not be disturbed unless directed by the Contract Administrator. Purchaser shall remove brushing debris from the road surface, ditchlines, and culvert inlets and outlets.

<u>Road</u>	<u>Stations</u>
1000	0+00 to 379+00
1500	0+00 to 136+36

**3-2 BRUSHING RESTRICTION**

Pulling, digging, pushing over, and other non-cutting methods used for vegetation removal may not be used for brushing.

**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 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.

### **3-10 GRUBBING**

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

### **3-20 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, except by burning, before the application of rock and/or timber haul.

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

Purchaser shall not place organic debris in the following areas:

- Within 50 feet of a cross drain culvert.
- Within 100 feet of a live stream, or wetland, or riparian management zone.
- On road subgrades, or excavation and embankment slopes.
- On slopes greater than 40%.
- On locations where brush can fall into the ditch or onto the road surface.
- Against standing timber.

### **3-24 BURYING ORGANIC DEBRIS RESTRICTED**

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

### **3-25 SCATTERING ORGANIC DEBRIS**

Purchaser shall scatter organic debris outside of the clearing limits in natural openings unless otherwise detailed in this road plan. Where natural openings are unavailable or restrictive, alternate debris disposal methods are subject to the written approval of the Contract Administrator.

## **SECTION 4 – EXCAVATION**

**4-2 PIONEERING**

Pioneering may not extend past construction that will be completed during the current construction season. In addition, the following actions must be taken as pioneering progresses:

- Drainage must be provided on all uncompleted construction.
- Road pioneering operations may not undercut the final cut slope or restrict drainage.

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

Purchaser shall follow these standards for road grade and alignment:

- Grade and alignment must have smooth continuity, without abrupt changes in direction.
- Maximum grades may not exceed 18 percent favorable and 12 percent adverse.
- Minimum curve radius is 60 feet at centerline.
- Maximum grade change for sag vertical curves is 5% in 100 feet.
- Maximum grade change for crest vertical curves is 4% in 100 feet.

**4-5 CUT SLOPE RATIO**

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

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

**4-6 EMBANKMENT SLOPE RATIO**

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

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

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

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

**4-8 CURVE WIDENING**

The minimum widening placed on the inside of curves is:

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

**4-9 EMBANKMENT WIDENING**

The minimum embankment widening is:

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

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

**4-10 WIDEN THE EXISTING SUBGRADE**

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

<u>Road</u>	<u>Stations</u>
1510	0+00 to 4+20
1800	0+00 to 19+17

**4-11 KEYED EMBANKMENT**

On the following roads, Purchaser shall key embankments into the native slope in accordance with the EMBANKMENT KEY DETAIL. Source for Embankment Material is the Columnar Pit.

<u>Road</u>	<u>Stations</u>
1800	7+57 to 12+98

**4-21 TURNOUTS**

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

**4-22 TURNAROUNDS**

Purchaser shall construct turnarounds as designated on the TURNOUTS LIST. Optional turnarounds must be no larger than 30 feet long and 30 feet wide with locations being subject to written approval by the Contract Administrator.

**4-25 DITCH CONSTRUCTION AND RECONSTRUCTION**

On the following road, Purchaser shall reconstruct ditches into the subgrade as specified on the TYPICAL SECTION SHEET.

<u>Road</u>	<u>Stations</u>
1000	289+60 to 311+54
1500	34+40 to 95+55

**4-27 DITCH WORK – MATERIAL USE PROHIBITED**

Purchaser shall not pull ditch material across the road or mix in with the road surface. Excavated material must be scattered outside the grubbing limits.

**4-28 DITCH DRAINAGE**

Ditches must drain to cross-drain culverts or ditchouts.

**4-29 DITCHOUTS**

Purchaser shall construct ditchouts as identified. Purchaser shall construct ditchouts at locations shown on the CULVERT LIST and as needed as directed by the Contract Administrator. Ditchouts must be constructed in a manner that diverts ditch water onto the forest floor and must have excavation backslopes no steeper than a 1:1 ratio. L or R denotes ditchout left or ditchout right.

<u>Road</u>	<u>Stations</u>	<u>L or R</u>
1000	293+28	L
1000	304+58	L

**4-35 WASTE MATERIAL DEFINITION**

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

**4-38 PROHIBITED WASTE DISPOSAL AREAS**

Purchaser shall not deposit waste material in the following areas:

- Within 50 feet of a cross drain culvert.
- Within 100 feet of a live stream or wetland.
- Within a riparian management zone.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Against standing timber.

**4-47 NATIVE MATERIAL**

Native material consists of naturally occurring material that is free of organic debris, trash, and rocks greater than 6 inches in any dimension.

**4-55 ROAD SHAPING**

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

**4-56 DRY WEATHER SHAPING**

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

**4-61 SUBGRADE COMPACTION**

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

**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

**5-1 REMOVAL OF SHOULDER BERMS**

Purchaser shall remove berms from road shoulders to permit the escape of runoff.

**5-5 CULVERTS**

Purchaser shall install culverts as part of this contract. Culverts must be installed concurrently with subgrade work and must be installed before subgrade compaction and rock application. Culvert locations and the minimum requirements for culvert length and diameter are designated on the CULVERT LIST. Culvert, downspout, and flume lengths may be adjusted to fit as-built conditions and may not terminate directly on unprotected soil. Culverts must be new material and meet the specifications in Clauses 10-15 through 10-23.

**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". Corrugated Polyethylene pipe must be installed in a manner consistent with the manufacturer's recommendations.

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

Purchaser shall obtain written approval from the Contract Administrator for the installation of culverts 30 inches in diameter and over before backfilling.

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

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

**5-18 CULVERT DEPTH OF COVER**

Cross drain 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.

**5-20 ENERGY DISSIPATERS**

Purchaser shall install energy dissipaters in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all culverts installed. Energy dissipater installation is subject to approval by the Contract Administrator.

The type of energy dissipater and the amount of material must be consistent with the specifications listed on the CULVERT LIST. Rock must be set in place by machine. Placement must be by zero-drop-height method only.

**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 with backslopes consistent with Clause 4-5 CUT SLOPE RATIO.

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

Purchaser shall construct headwalls in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all cross drain culverts. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets. Minimum specifications require that rock be placed at a width of one culvert diameter on each side of the culvert opening, and to a height of one culvert diameter above the top of the culvert. Rock may not restrict the

flow of water into culvert inlets or catch basins. Rock must be set in place by machine. Placement must be by zero-drop-height method only.

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

Purchaser shall place Light Loose Riprap in conjunction with or immediately following construction of the embankment. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets as designated on the CULVERT LIST. Rock may not restrict the flow of water into culvert inlets or catch basins. Rock must be set in place by machine. Placement must be by zero-drop-height method only

**SECTION 6 – ROCK AND SURFACING**

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

Rock used in accordance with the quantities on the ROCK LIST may be obtained from the following sources 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 sources, a joint operating plan must be developed. All parties shall follow this plan.

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
Columnar	NW ¼ Sec 19 T23R07E W.M.	1 ¼ inch minus 4 inch Minus Quarry Spalls Light Loose Riprap
BB	SW ¼ Sec 18 T23R07E W.M	1 ¼ inch minus 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 on state land at no charge to the Purchaser. Purchaser shall not remove more than 1000 cubic yards of 4 inch Minus rock. Purchaser shall not remove additional yardage without prior written approval from the Contract Administrator.

<u>Source</u>	<u>Location</u>
Columnar Pit	NW ¼ Sec 19 T23R07E W.M.

**6-5 ROCK FROM COMMERCIAL SOURCE**

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

approval by the Contract Administrator before their use. Rock source must be a WSDOT certified source.

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

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

<u>Source</u>	<u>Location</u>
Columnar	NW ¼ Sec 19 T23R07E W.M.
BB	SW ¼ Sec 18 T23R07E W.M.

**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 1.5 times the maximum length of the largest machine used.
- The surface of pit floors and benches must be uniform and free-draining at a minimum 2% outslope gradient.
- 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.

**6-14 DRILL AND SHOOT**

Rock drilling and shooting must meet the following specifications:

- Purchaser shall submit an informational drilling and shooting plan to the Contract Administrator 14 working days before any drilling (Form #M-126PAC).
- Purchaser shall notify the Contract Administrator a minimum of 14 working days before blasting operations.
- In the BB pit, 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. In the Columnar Pit, all oversize material generated and a minimum of 50% of the existing oversize shall be broken with a hydraulic hammer and incorporated into the crushing operations.
- Oversize material is defined as rock fragments larger than two feet in any dimension.
- Oversized rock that exceeds the maximum allowable amount must be broken with a hydraulic hammer and incorporated into the crushing operations.
- 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 and trails before blasting operations.

**6-20 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. Purchaser shall provide a sieve analysis upon request from the Contract Administrator.

**6-22 FRACTURE REQUIREMENT FOR ROCK**

A minimum of 75% by visual inspection of coarse aggregate must have at least one fractured face. Coarse aggregate is the material greater than 1/4-inch in size.

**6-23 ROCK 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.
- The crushing operation must be concluded within 30 working days from the time it begins.

**6-28 1 ¼-INCH MINUS CRUSHED ROCK**

% Passing 1 ¼" square sieve	100%
% Passing 5/8" square sieve	50 - 80%
% Passing U.S. #4 sieve	30 - 50%
% Passing U.S. #40 sieve	3 - 18%

% Passing U.S. #200 sieve                      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.

**6-36 4-INCH MINUS CRUSHED ROCK**

% Passing 4" square sieve                      100%  
% Passing 2" square sieve                      55 - 75%  
% Passing U.S. #4 sieve                         15 - 45%

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.

**6-46 1 ½-FOOT MINUS**

% Passing 18" square sieve                    80 - 100%  
% Passing 7" square sieve                     70 - 90%  
% Passing 3" square sieve                     40 - 60%  
% Passing 1" square sieve                     15 - 35%  
% Passing U.S. #4 sieve                       5 - 20%  
% 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/or trash. All percentages are by weight.

**6-50 LIGHT LOOSE RIP RAP**

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

<u>At Least/Not More Than</u>	<u>Size Range</u>
20% / 90%	20" - 24"
80% / --	12" - 20"
10% / 20%	3" - 8"

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

Measurement of specified rock depths, are defined as the compacted depths using the compaction methods required in this road plan. Estimated quantities specified in the ROCK LIST are 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.

**6-64 ROCK STOCKPILE GENERATION**

Purchaser shall create an in place stockpile of rock as listed below. Purchaser shall submit a shooting plan, for approval by the Contract Administrator, which will generate the required yardage.

<u>Rock Source</u>	<u>Rock Type</u>	<u>Quantity (c.y.)</u>	<u>Stockpile Location</u>
Columnar or BB Pit	1 ½ foot Minus	5000	Columnar or BB pit

**6-65 ROCK STOCKPILE LOCATION**

Purchaser shall stockpile rock as listed below, as directed by the Contract Administrator. Rock stockpiles must be in accordance with clause 6-67 ROCK STOCKPILE SPECIFICATIONS.

<u>Rock Source</u>	<u>Rock Type</u>	<u>Quantity (c.y.)</u>	<u>Stockpile Location</u>
Columnar or BB Pit	1 ¼ inch Minus	2,000	Columnar or BB Pit

**6-67 ROCK STOCKPILE SPECIFICATIONS**

Rock stockpiles listed in Clause 6-64 ROCK STOCKPILE 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 200 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. Each layer must be completed over the entire area of the pile before depositing aggregates in the next layer. The aggregates may not be dumped so that they run down and over the lower layers in the stockpile. The method of dropping from a bucket or spout in one location to form a cone shaped pile is not allowed.

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

**6-70 APPROVAL BEFORE ROCK APPLICATION**

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

**6-71 ROCK APPLICATION**

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

**6-72 ROCK APPLICATION AFTER HAULING**

On the following road, upon completion of all hauling operations, Purchaser shall apply 1 ¼ inch Minus rock in accordance with the quantities shown on the ROCK LIST.

<u>Road</u>	<u>Location</u>
1000	At tower yarding locations

**6-73 ROCK FOR WIDENED PORTIONS**

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

**SECTION 7 – STRUCTURES**

**7-1 SIGN INSTALLATION**

Purchaser shall purchase, install, and maintain the following road signs. Signs must comply with the Federal Highway Administration’s Manual on Uniform Traffic Control Devices.

<u>Road</u>	<u>Station</u>	<u>Sign</u>
1000	15+50	Caution Truck Traffic

**7-5 STRUCTURE DEBRIS**

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

**7-6 STREAM CROSSING INSTALLATION**

Purchaser shall install stream crossing structures in accordance with the manufacturer's requirements, and according to Forest Practice Permit.

**7-7 BANK PROTECTION FOR STREAM CROSSING STRUCTURES**

Bank protection must be constructed to prevent the undermining of the structure.

**7-71 GATE CLOSURE DURING HAUL**

On the following road, Purchaser shall keep gates closed 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>
1000	15+50

**SECTION 8 – EROSION CONTROL**

**8-2 PROTECTION FOR EXPOSED SOIL**

Purchaser shall provide and evenly spread a layer of straw to all exposed soils at stream culvert installations. Soils must be covered before the first anticipated storm event. Soils may not sit exposed during any rain event.

**8-10 STABILIZE SLOPES – ROCK APPLICATION**

On the following road, Purchaser shall stabilize embankment slopes by applying rock as specified below. Rock must be set in place in conjunction with reconstruction of the embankment. Rock must be applied in quantities specified in the ROCK LIST to exposed soil on the entire embankment. Rock must be set in place by machine.

<u>Road</u>	<u>Stations</u>	<u>Rock Type</u>
1800	9+63 to 12+63	Quarry Spalls

**8-15 REVEGETATION**

Purchaser shall spread grass seed on all exposed soils at stream culvert installations. Cover all exposed soils using manual application techniques. Other methods of covering must be approved in writing by the Contract Administrator.

**8-16 REVEGETATION SUPPLY**

The Purchaser shall provide the grass seed.

**8-17 REVEGETATION TIMING**

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

**8-18 PROTECTION FOR SEED**

Purchaser shall provide a protective cover for seed. The protective cover may consist of a layer of straw. Seed must be covered before the first anticipated storm event. Seed

may not be allowed to sit exposed during any rain event. The protective cover requirement may be waived in writing by the Contract Administrator if Purchaser is able to demonstrate a revegetation plan that will result in the establishment of a uniform dense crop (at least 50% coverage) of 3-inch tall grass by October 31 of the current construction year.

**8-25 GRASS SEED**

Purchaser shall evenly spread the seed mixture listed below on all exposed soil at a rate of 50 pounds per acre of exposed soil. Grass seed must meet the following specifications:

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

<u>Kind and Variety of Seed in Mixture</u>	<u>% by Weight</u>
Perennial Rye	35-45
Red Fescue	30-40
Highland Bent	5-15
White Clover	10-20
Inert and Other Crop	0.5

**SECTION 9 – POST-HAUL ROAD WORK**

**9-5 POST-HAUL MAINTENANCE**

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

**9-10 LANDING DRAINAGE**

Purchaser shall provide for drainage of the landing surface.

**9-20 ROAD DECOMMISSIONING**

If reconstructed, purchaser shall decommission the following roads before the termination of this contract.

<u>Road</u>	<u>Stations</u>
1510	0+00 to 4+20

**9-24 DECOMMISSIONING**

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

SECTION 10 MATERIALS

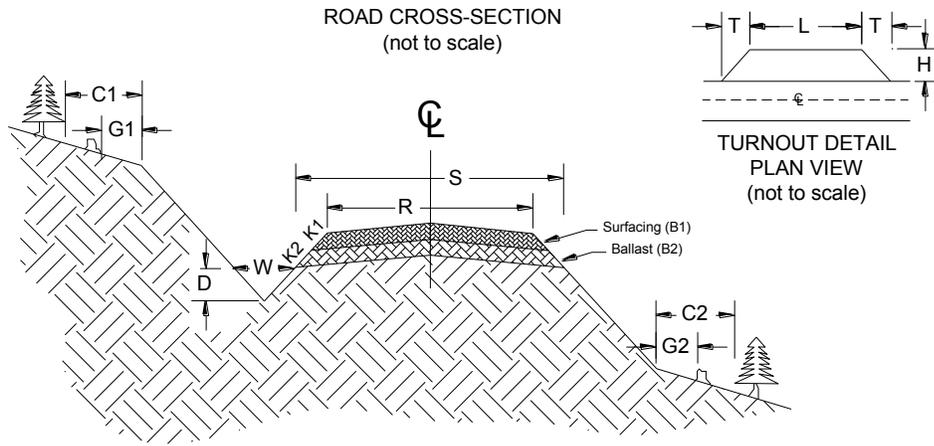
**10-17 CORRUGATED PLASTIC CULVERT**

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

**10-22 PLASTIC BAND**

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

# TYPICAL SECTION SHEET



Road Number	From Station	To Station	Tolerance Class	Subgrade Width (feet)	Road Width (feet)	Ditch		Crown in. @ CL	Grubbing Limits (feet)		Clearing Limits (feet)		Cut Slope Ratio %	Fill Slope Ratio %
						Width (feet)	Depth (feet)		G1	G2	C1	C2		
1000	0+00	379+00	C	17	14	3	2	4 in.	N/A	N/A	N/A	N/A	100	67
1500	0+00	136+36	C	15	12	3	2	4 in.	N/A	N/A	N/A	N/A	100	67
1510	0+00	4+20	C	15	12	3	1	4 in.	2	2	5	5	100	67
1800	0+00	19+17	C	15	12	3	1	4 in.	2	2	5	5	100	67

## TURNOUT LIST

Road Number	Begin L- Station	End L- Station	Turnout Width (H)	Full Width Length (L)	Taper Length (T)	Comments
1800	14+16	15+16	12'	50'	25'	Turnout Right

## 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)
1000	0+00	379+00	Subgrade	12	Vibratory Smooth Drum	14,000	4	3
1500	0+00	108+95	Fill	12				
1510	0+00	4+20	Waste Area	--				
1800	0+00	19+17	Pre-haul surface	--				
			Rock	6				
			Embankment	12				

## ROCK LIST

### BALLAST

Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth	C.Y. Station	# of Stations	C.Y. Subtotal	Rock Source
			K2	B2	4 inch Minus			
1510	0+00	4+00	67%	8 inches	30	4.20	126	Columnar Pit Stockpile
1800	0+00	19+17	67%	8 inches	30	19.17	575	
					Quarry Spalls			
Culvert Headwalls and Dissapators					20	1	20	
1800	9+63	12+98			15	3.35	50	
					Light Loose Riprap			
Stream Culvert Installations					30	1	30	
Embankment					30	1	30	
					1 ½ Foot Minus			
Stockpile Generation					5000	1	5000	Columnar or BB or Commercial

BALLAST TOTAL: 5831 Cubic Yards

### SURFACE

Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth	C.Y. Station	# of Stations	C.Y. Total	Rock Source
			K1	B1	1 ¼ Inch Minus			
1000	121+21	231.70	67%	4 inches	17	110.49	1878	Columnar or BB or Commercial
	282+29	283+29	67%	4 inches	17	1.0	17	
	297+60	300+60	67%	4 inches	17	3.0	51	
	305+50	307+50	67%	4 inches	17	2.0	34	
	324+25	327+25	67%	4 inches	17	3.0	51	
1000 Post-haul	At yarding locations		67%	4 inches	17	3.0	51	
1500	57+00	95+55	67%	4 inches	17	38.55	655	
Culvert installations	10 cy at installs						110	
Stockpile					2000	1	2000	

SURFACE TOTAL: 4817 Compacted Cubic Yards

## CULVERT LIST

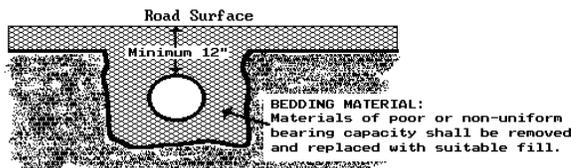
Road Number	Location	Culvert		Length (ft)			Riprap (C.Y.)			Backfill Material	Placement Method	Const. Staked	Remarks
		Dia.	Type	Culvert	Downspt	Flume	Inlet	Outlet	Type				
1000	168+68	36	PD	60			1	1	QS	NT		T4 Stream	
	293+28											DOL	
	304+58											DOL	
	313+16	18	PD	30			0.5	0.5	QS	NT			
	321+76	18	PD	30			0.5	0.5	QS	NT			
	335+28	18	PD	40			0.5	0.5	QS	NT			
	341+42	18	PD	30			0.5	0.5	QS	NT			
	352+91	18	PD	30			0.5	0.5	QS	NT			
	372+13	18	PD	50			0.5	0.5	QS	NT			
	378+60	18	PD	50			0.5	0.5	QS	NT		Replace	
1500	45+53	36	PD	50			1	1	QS	NT		T4 Stream	
	47+85	36	PD	50			1	1	QS	NT		T4 Stream	
	65+26	48	PD	80			1	1	QS	NT		T4 Stream	
1800	3+50	18	PD	30			0.5	0.5	QS	NT			
	7+57	18	PD	30			0.5	0.5	QS	NT			
	10+18	18	PD	30			0.5	0.5	QS	NT			
	12+98	18	PD	30			0.5	0.5	QS	NT			
	19+17	18	PD	30			0.5	0.5	QS	NT			

PD = Polyethylene Pipe Dual Wall AASHTO No. M294 Type S or ASTM F2648

AS10 = Aluminized Steel AASHTO No. M274, 10 Gauge

TEMP = Temporary Culvert

**CULVERT BACKFILL AND BASE PREPARATION**  
(For culverts less than 36")



**Key:**

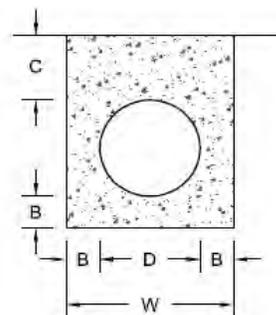
- QS - Quarry Spalls
- SR - Shot Rock
- NT - Native (bank run)
- SL - Select Fill
- HL - Heavy Loose Riprap
- LL - Light Loose Riprap
- Flume - Half round pipe
- Downsput - Full round pipe

## CROSS DRAIN CULVERT INSTALLATION DETAIL INSTALLATION REQUIREMENTS

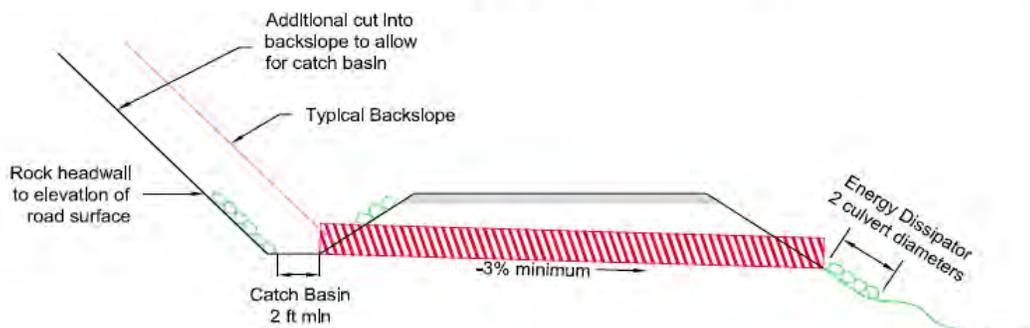
(Page 1 of 2)

1. Preparation of foundation and placement of bedding material shall precede the installation of all culvert pipes. 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.
2. A 3 Inch minus Crushed Rock may be used as the bedding and envelope material around the culvert. The aggregate size shall not exceed  $\frac{1}{6}$  the pipe diameter or 4", whichever is smaller.
3. The corrugated pipe shall be installed at a minimum grade of 3%, on a layer of bedding material as shown. Backfill material 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. Acceptable compaction methods include mechanical hand tamping, vibratory plate compactor, and vibratory roller.
4. A catch basin, headwall, and energy dissipater shall be constructed at each cross drain culvert as shown below. Catch basin, headwall, and energy dissipater shall be constructed of rock ranging from 6 inches to 10 inches.

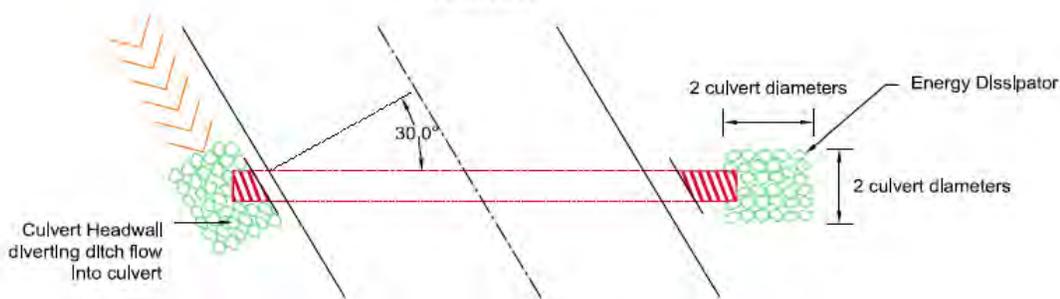
MINIMUM TRENCH DIMENSIONS			
Nominal Diameter	Minimum Thickness	Minimum Cover	Min. Trench Width
D	B	C	W
18"	6"	12"	36"
24"	6"	12"	42"
30"	6"	12"	48"
36"	6"	12"	54"



PROFILE VIEW

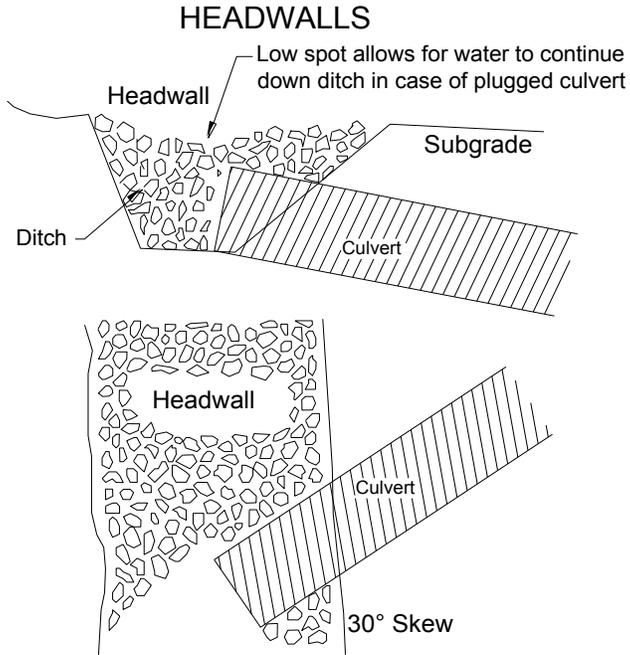


PLAN VIEW



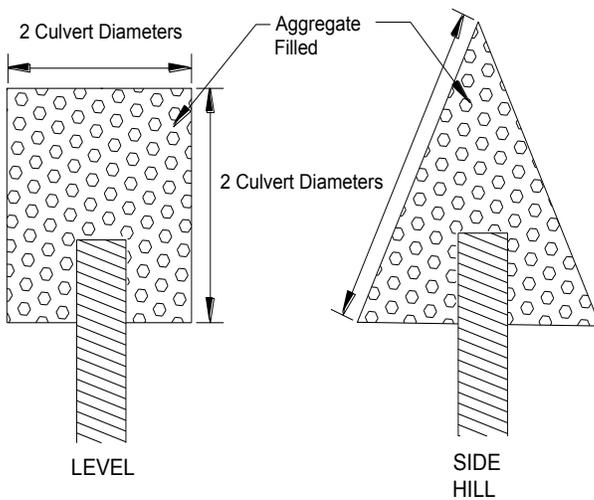
## CULVERT AND DRAINAGE SPECIFICATION DETAIL

(Page 2 of 2)



Headwalls to be constructed of material that will resist erosion.

## ENERGY DISSIPATORS



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

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

### Cuts and Fills

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

### Surface

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

### Drainage

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

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

### Preventative Maintenance

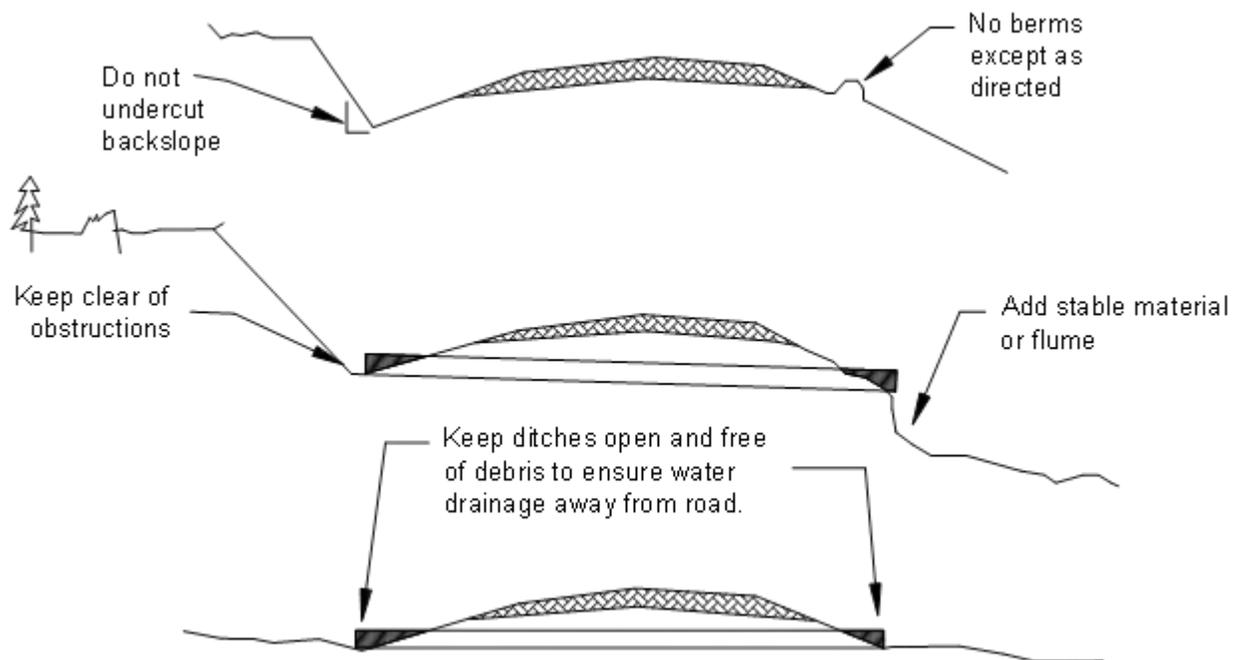
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

### Termination of Use or End of Season

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

### Debris

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



## COLUMNAR PIT DEVELOPMENT PLAN

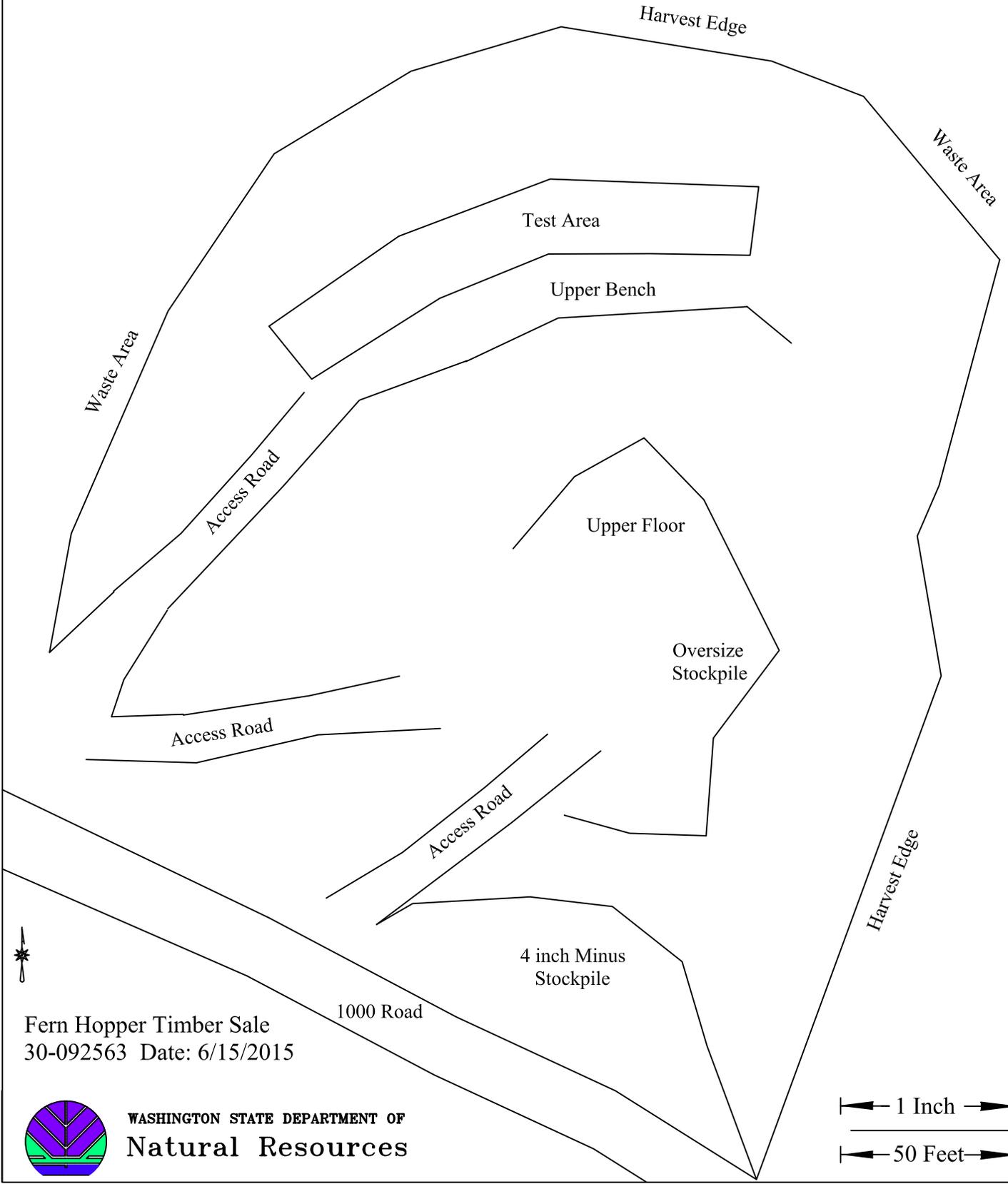
Legal Description: NW ¼ NW ¼ Section 19, T23NR07E

Rock Pit Name: Columnar Pit

1. If Development is to begin in the Upper Bench, test holes must be drilled in Area 1 to ensure location of rock. Development can then proceed North if rock is available.
2. If no rock is found in the Test Area, the Upper Pit Floor may be developed. This Upper Pit Floor will become the 1 ½ foot Minus rock stockpile location.
3. 50% of the Oversized Rock Stockpile must be broken with a hydraulic hammer and incorporated into the crushing operations.
4. All overburden and vegetation, including stumps, shall be cleared a minimum of 20 feet beyond the top of all working faces.
5. Root wads and organic debris larger than one cubic foot in volume shall be separated from overburden and piled in the designated waste area.
6. Overburden shall be pushed or end hauled to the designated waste area and compacted. Minimal acceptable compaction is achieved by placing material in 2 foot or shallower lifts and routing excavation equipment over entire width of the lifts. A minimum stripping width of 10 feet must be maintained from all pit faces.
7. Pit faces and walls shall be sloped no steeper than 1 1/2H: 1V.
8. The pit floor shall have smooth continuity of slope, providing drainage. No ponding will be allowed.
9. At the end of operations, faces shall be scaled and cleared of loose and overhanging material, including overburden pushed over the face.
10. Additionally, any oversize material generated with blasting shall be broken with a hydraulic hammer and incorporated into the crushing operations. Oversize material is defined as rock or rock fragments larger than two feet in any direction.
11. Quantity and Quality of ballast pit is not guaranteed by the State.

# Columnar Pit

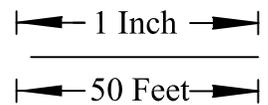
NW¼ NW¼ Section 19, T23R07E



Fern Hopper Timber Sale  
30-092563 Date: 6/15/2015



WASHINGTON STATE DEPARTMENT OF  
**Natural Resources**



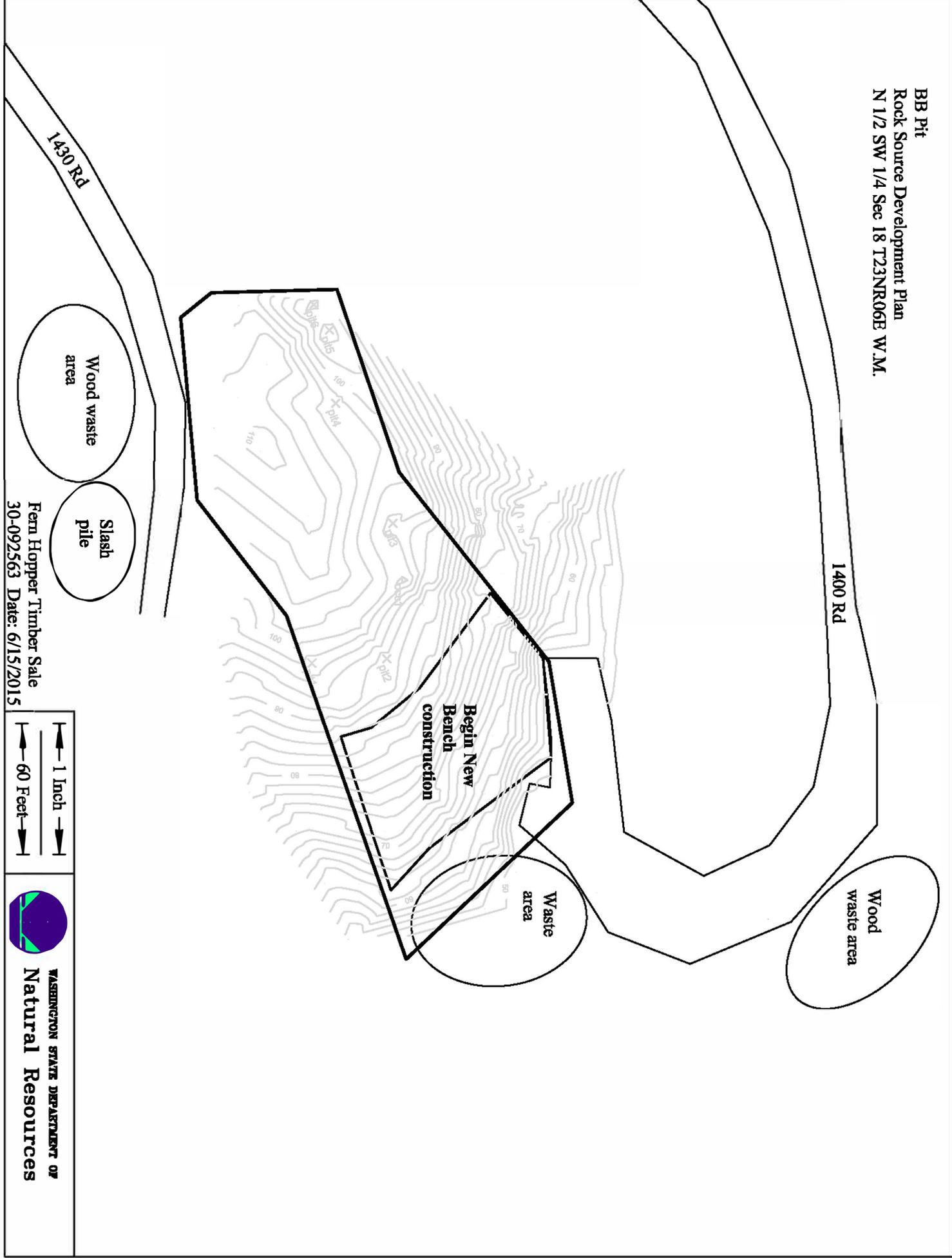
## BB PIT DEVELOPMENT PLAN

Legal Description: N1/2 SW 1/4 Section 18, T23NR06E W.M.

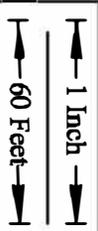
Rock Pit Name: BB Pit

1. Development shall begin as marked on the plan.
2. All overburden and vegetation, including stumps, shall be cleared a minimum of 20 feet beyond the top of all working faces. Trees shall be cleared to a minimum of 3/4 of the height of the tallest tree adjacent to the pit face.
3. Root wads and organic debris larger than one cubic foot in volume shall be separated from overburden and piled in the designated waste area.
4. Overburden shall be pushed or end hauled to the designated waste area and compacted. Minimal acceptable compaction is achieved by placing material in 2 foot or shallower lifts and routing excavation equipment over entire width of the lifts. A minimum stripping width of 20 feet must be maintained from all pit faces.
5. Pit faces and walls shall not exceed 20 feet in height and shall be sloped no steeper than 1/4H: 1V.
6. Working bench width shall be a minimum of 20 feet.
7. The pit floor shall have smooth continuity of slope, providing drainage. No ponding will be allowed.
8. At the end of operations, faces shall be scaled and cleared of loose and overhanging material, including overburden pushed over the face.
9. Oversize material remaining in the pit at the conclusion of operations shall not exceed 5 percent of the total volume mined during the operation. Oversize material is defined as rock or rock fragments larger than two feet in any direction. Oversize shall be piled in designated area.
10. Quantity and Quality of ballast pit is not guaranteed by the State.

**BB Pit  
 Rock Source Development Plan  
 N 1/2 SW 1/4 Sec 18 T23NR06E W.M.**

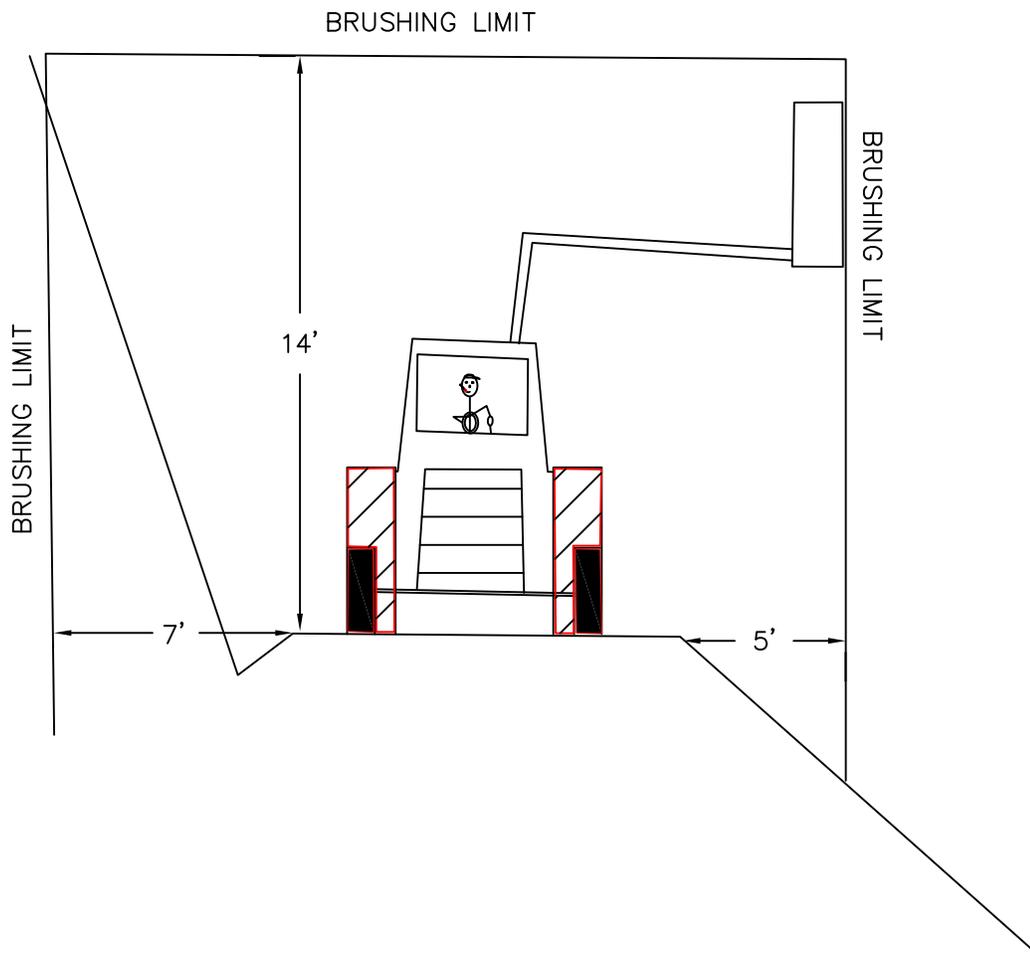


Fern Hopper Timber Sale  
 30-092563 Date: 6/15/2015



**WASHINGTON STATE DEPARTMENT OF  
 Natural Resources**

# Brushing Section Detail



## Brushing Section Detail

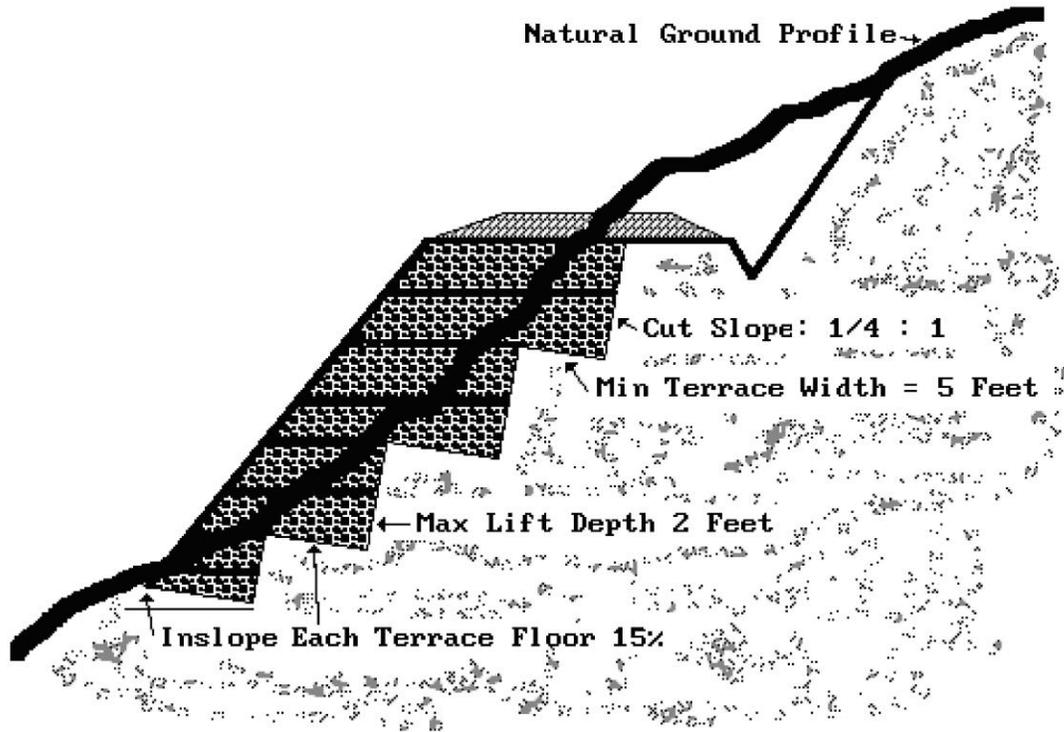
Date: 12/15/10  
Scale : None  
Drawn by: M.A.D.



WASHINGTON STATE DEPARTMENT OF  
**Natural Resources**

SPS Region

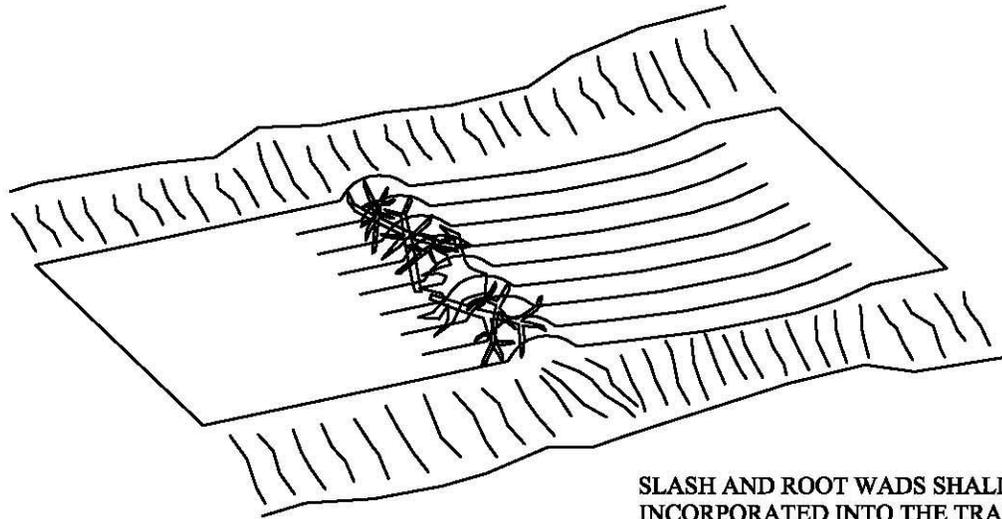
## Embankment Key Detail



Break natural ground with terrace floors.

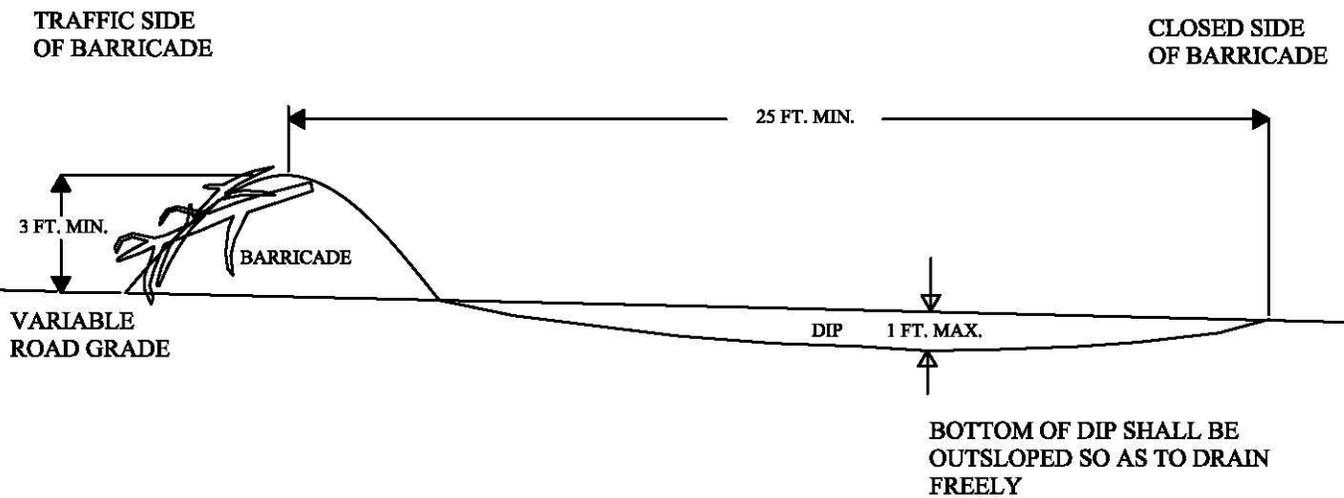
Embankment slope not to exceed 3/4 : 1

# BARRICADE DETAIL



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

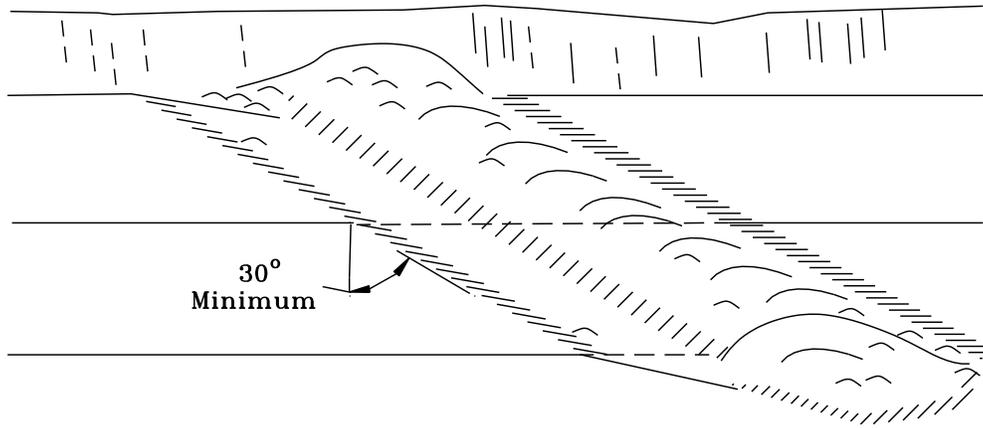
PLAN VIEW



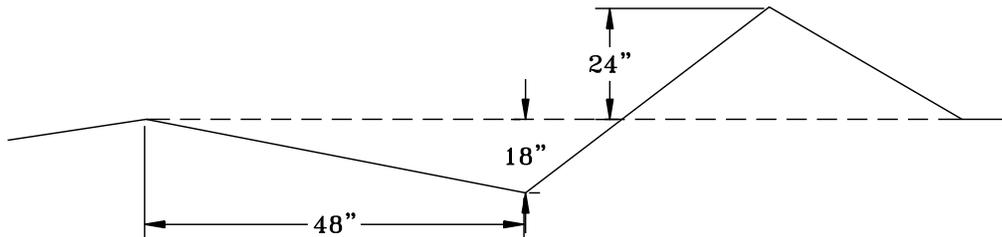
PROFILE VIEW

# Non-Drivable Water Bar Detail

## Cross Ditch



## Cross Section at Centerline



Date:  
Scale : None  
App#  
Drawn by: M.A.D.

Water Bar Detail	
	WASHINGTON STATE DEPARTMENT OF Natural Resources
	<small>SPS Region</small>

DEPARTMENT OF NATURAL RESOURCES

FORM 9-87(Rev. 01-08)

SUMMARY - Road Development Costs  
 REGION: SOUTH PUGET SOUND  
 DISTRICT: Rainier

SALE/PROJECT NAME: Fern Hopper T.S.

CONTRACT NUMBER: 30-092563

LEGAL DESCRIPTION: T23NR06ES11 W.M.

	Construction	Reconstruction	Pre-Haul
ROAD NUMBER:	N/A	1500, 1510, 1800	1000
ROAD STANDARD:	N/A	12 foot R.S.	>12 foot R.S.
NUMBER OF STATIONS:	1.00	97.92	440.81
SIDESLOPE:	0%	30%	20%
CLEARING AND GRUBBING:	\$0	\$4,855	
EXCAVATION AND FILL:	\$0	\$18,278	
MISC. MAINTENANCE:			\$8,465
ROCK TOTALS (Cu. Yds.):			
Ballast: 1011	\$0	\$7,698	\$1,547
Surface: 3543	\$0	\$13,116	\$41,680
QS: 140	\$0	\$603	\$1,237
CULVERTS AND FLUMES:	\$0	\$7,825	\$7,670
STOCKPILES:	\$0	\$0	\$24,800
GENERAL EXPENSES:	\$0	\$4,714	\$6,832
MOBILIZATION:	\$2,447	\$2,447	\$2,447
TOTAL COSTS:	\$2,447	\$59,535	\$94,678
COST PER STATION:	\$ 2,447	\$608	\$215
ROAD DEACTIVATION AND ABANDONMENT COSTS:		\$3,484	

NOTE: This appraisal has no allowance for profit and risk.

TOTAL (All Roads) = \$160,145

SALE VOLUME MBF = 2,297

TOTAL COST PER MBF = \$69.72

Plans to be furnished by:

Compiled by: Washington St. DNR

Date: 06/19/15

SOUTH PUGET SOUND REGION - ROAD COST ESTIMATE - CONSTRUCTION

SALE NAME: Fern Hopper T.S.

CONTRACT NUMBER: 30-092563

I. CLEARING AND GRUBBING:

Flat Rate -	% Side Slope	MBF/ac	Disposal Factor	Production Factor	Cost/Station	Width Factor	Total Stations	Sub Total
			1.00	1.00	\$45	1.00		\$0
			1.00	1.00	\$45	1.00		\$0
			1.00	1.00	\$45	1.00		\$0
			1.00	1.00	\$45	1.00		\$0
			1.00	1.00	\$45	1.00		\$0
							0.00	
Clear and Grub TOTAL =								\$0

II. EXCAVATION:

Flat Rate -	% Side Slope	Exc. Type Fact.	Production Factor	Cost/Station	Width Factor	Total Stations	Sub Total	
		1.0	1.00	\$90	1.00		\$0	
		1.0	1.00	\$90	1.00		\$0	
		1.0	1.00	\$90	1.00		\$0	
		1.0	1.00	\$90	1.00		\$0	
		1.0	1.00	\$90	1.00		\$0	
						0.00		
*End Haul, Over Haul, Large Fills/Cuts								
				Estimated Vol. (cy)	No. of Equip. Days	Cost/day	Sub Total	
				End Haul/ Over Haul Large Fills/ Cuts			\$0	
							\$0	
Excavation TOTAL =								\$0

III. BALLAST AND SURFACING :

Ballast source:    
 Surface source:    
 Riprap source:  

Description	cu.yds/sta x stations =	cubic yards
Ballast (4"-)	<span style="background-color: #d9ead3; padding: 2px;"> </span>	0
Surfacing (2 1/2"-)	<span style="background-color: #d9ead3; padding: 2px;"> </span>	0
Riprap	<span style="background-color: #d9ead3; padding: 2px;"> </span>	0

\* Haul Formula: (R.T.Miles/MPH+Delay)/(\$/hr / Cy/load)

R.T. Miles = 8.0  
 Ave. Speed = 20  
 Delay (Hrs.)= 0.2  
 Cost / Hour = \$90.00  
 CY / Load = 10

Ballast (4"-) 0 Cu. yds @ \$5.40 /cu. yd = \$0  
 Surfacing (2 1/2"-) 0 Cu. yds @ \$5.40 /cu. yd = \$0  
 Riprap 0 Cu. yds @ \$5.40 /cu. yd = \$0

Rock total = \$0

UNIT COSTS	Ballast	Surfacing	Riprap
Drill & Shoot			
Dig and load			
Crushing			
Purchase			
Haul *	\$5.40	\$5.40	\$5.40
Spread			
Compact			
Strip			
Reclamation			
Use tax	\$0.00	\$0.00	\$0.00
<b>TOTAL (\$/cy)</b>	<b>\$5.40</b>	<b>\$5.40</b>	<b>\$5.40</b>

IV. CULVERTS AND FLUMES:

Description	Qty.	Gauge	Diameter	No/Length	Installed Cost/ft	Sub-total
CPP			18		\$17.50	\$0
			24		\$30.00	\$0
			36		\$52.00	\$0
			48		\$94.00	\$0
Bands & Gaskets						\$0

Culvert total = \$0

V. STRUCTURES

Description	Type	Width	Length	Cost/ft.	Sub-total
geotextile				\$1.5	\$0
					\$0
					\$0

Structure total = \$0

Sub-TOTAL = \$0

VI. GENERAL EXPENSES:

Overhead & General Exp. Add 12% \$0

VII. MOBILIZATION:

Total Mobilization = \$7,342 Mobilization sub-total = \$2,447

Road No. N/A  
 Standard: N/A  
 Stations: 0.00

SHEET TOTAL = \$2,447

Note: Used a factor of 1.3 x final CY needed after compaction. Example: 12" of rock on 12 ft wide road need 50 CY/sta. 50CY x 1.3 = 65CY before compaction.

By: Washington St. DNR

Sheet 2 of 5

Date: 06/19/15

SOUTH PUGET SOUND REGION - ROAD COST ESTIMATE - RECONSTRUCTION

SALE NAME: Fern Hopper T.S.

CONTRACT NUMBER: 30-092563

I. CLEARING AND GRUBBING:

Flat Rate -	% Side Slope	MBF/ac	Disposal Factor	Production Factor	Cost/ Station	Width Factor	Total Stations	Sub Total
1500 Rd	0	0	1.00	1.00	\$45	1.0	61.15	\$2,752
1510 Rd	45	0	1.00	2.00	\$45	1.0	4.20	\$378
1800 Rd	45	0	1.00	2.00	\$45	1.0	19.17	\$1,725
			1.00	1.00	\$45	1.0		\$0
			1.00	1.00	\$45	1.0		\$0

Clear and Grub TOTAL = \$4,855

II. EXCAVATION:

Flat Rate -	% Side Slope	Exc. Type Fact.	Production Factor	Cost/ Station	Width Factor	Total Stations	Sub Total
1500 Rd	0	1.0	1.00	\$90	1.00	74.55	\$6,710
1510 Rd	45	1.0	5.50	\$90	1.00	4.20	\$2,079
1800 Rd	45	1.0	5.50	\$90	1.00	19.17	\$9,489
		1.0	1.00	\$90	1.00		\$0
		1.0	1.00	\$90	1.00		\$0

*End Haul, Over Haul, Large Fills/Cuts	Estimated Vol. (cy)	No. of Equip. Days	Cost/day	Sub Total
End Haul/ Over Haul				\$0
Large Fills/ Cuts				\$0

Excavation TOTAL = \$18,278

III. BALLAST AND SURFACING :

Ballast source:

Commercial source :

Description	cu.yds/sta x stations =	cubic yards
Ballast (4"-)	39	23.37
Surfacing (1 1/4"-)	22	38.55
Riprap	60	1.00

UNIT COSTS	Ballast	Surfacing	Riprap
Drill & Shoot		\$2.00	
Dig and load	\$0.90	\$0.90	\$0.90
Crushing		\$4.50	
Purchase			
Haul *	\$5.40	\$5.40	\$5.40
Spread	\$1.00	\$1.00	\$3.00
Compact	\$0.52	\$0.52	
Strip			
Reclamation			
Use tax	\$0.08	\$0.08	\$0.08
<b>TOTAL (\$/cy)</b>	<b>\$8.45</b>	<b>\$15.47</b>	<b>\$10.04</b>

\* Haul Formula: (R.T.Miles/MPH+Delay)/(\$/hr / Cy/load)

R.T. Miles =	8.0
Ave. Speed =	20
Delay (Hrs.)=	0.2
Cost / Hour =	\$90.00
CY / Load =	10

Ballast (4"-)	911 Cu. yds @	\$8.45 /cu. yd =	\$7,698
Surfacing (1 1/4"-)	848 Cu. yds @	\$15.47 /cu. yd =	\$13,116
Quarry Spalls	60 Cu. yds @	\$10.04 /cu. yd =	\$603

Rock total = \$21,417

IV. CULVERTS AND FLUMES:

Description	Qty.	Gauge	Diameter (in.)	No/Length (ft)	Installed Cost/ft	Sub-total
Culverts	1		18	150	\$17.50	\$2,625
			24		\$30.00	\$0
	1		36	100	\$52.00	\$5,200
			48	80	\$94.00	\$0
Bands & Gaskets						\$0

Culvert total = \$7,825

V. STRUCTURES

Description	Type	Width	Length	Cost/ft.	Sub-total
					\$0

Structure total = \$0

Sub-TOTAL = \$52,374

VI. GENERAL EXPENSES:

Overhead & General Exp. Add 9% \$4,714

VII. MOBILIZATION:

Total Mobilization = \$7,342 Mobilization sub-total = \$2,447

Road No. 1500, 1510, 1800  
Standard: 12 foot R.S.  
Stations: 97.92

SHEET TOTAL = \$59,535

Note: Used a factor of 1.3 x final CY needed after compaction. Example: 12" of rock on 12 ft wide road need 50 CY/sta. 50CY x 1.3 = 65CY before compaction.

By: Washington St. DNR

Sheet 3 of 5

Date: 06/19/15

SOUTH PUGET SOUND REGION - ROAD COST ESTIMATE - PRE-HAUL MAINTENANCE

SALE NAME: Fern Hopper T.S.

CONTRACT NUMBER: 30-092563

Total stations Pre-Haul Maintenance = 440.81

I. MISC. MAINTENANCE ITEMS:

	Cost/ Station	Total Stations	Sub Total
mechanical brushing =	9.50	515.36	\$4,896
hand brushing =			\$0
ditch cleaning =	39.00	74.55	\$2,907
grading =	5.50	38.55	\$212
culvert cleanout =	2.00		\$0
compacting =	4.50		\$0
grass seeding =	200.00	2.00	\$400
straw =	25.00	2.00	\$50
			\$0
			\$0

Misc TOTAL = \$8,465

III. BALLAST AND SURFACING :

Ballast source: Columnar or BB pit  
 Surface source: Columnar Pit  
 Riprap source: Columnar Pit

Description	cu.yds/sta	x stations	= cubic yards
culvert	100	1.00	100
Surfacing (1 1/4")	22	122.50	2,695
Quarry Spalls	80	1.00	80

UNIT COSTS	culvert	Surfacing	Quarry Spalls
Drill & Shoot	\$2.00	\$2.00	
Dig and load	\$0.90	\$0.90	\$0.90
Crushing	\$4.50	\$4.50	
Purchase			
Haul *	\$5.40	\$5.40	\$5.40
Spread	\$1.00	\$1.00	\$3.00
Compact	\$0.52	\$0.52	
Strip			
Reclamation			
Use tax	\$0.08	\$0.08	\$0.08
<b>TOTAL (\$/cy)</b>	<b>\$15.47</b>	<b>\$15.47</b>	<b>\$10.04</b>

\* Haul Formula: (R.T.Miles/MPH+Delay)/(\$/hr / Cy/load)

R.T. Miles = 8.0  
 Ave. Speed = 20  
 Delay (Hrs.) = 0.2  
 Cost / Hour = \$90.00  
 CY / Load = 10

culvert	100 Cu. yds @	\$15.47 /cu. yd =	\$1,547
Surfacing (1 1/4")	2695 Cu. yds @	\$15.47 /cu. yd =	\$41,680
Quarry Spalls	80 Cu. yds @	\$15.47 /cu. yd =	\$1,237

Rock total = \$44,464

IV. CULVERTS AND FLUMES:

Description	Qty.	Gauge	Diameter (in.)	No/Length (ft)	Installed Cost/ft	Sub-total
Culverts	1		18	260	\$17.50	\$4,550
			24		\$30.00	\$0
	1		36	60	\$52.00	\$3,120
			48		\$94.00	\$0
Bands & Gaskets						\$0

Culvert total = \$7,670

V. ADDITIONAL ROCK CRUSHING AND STOCKPILES

Description	Amount	Sub-total
Drilling and Blasting	7,000 cy.	\$14,000
Crushing Stockpile	2,000 cy	\$10,800
		\$0

Structure total = \$24,800

Sub-TOTAL = \$85,399

VI. GENERAL EXPENSES:

Overhead & General Exp. Add 8% \$6,832

VII. MOBILIZATION:

Total Mobilization = \$7,342 Mobilization sub-total = \$2,447

Road No. 1,000  
 Standard: >12 foot R.S.  
 Stations: 440.81

SHEET TOTAL = \$94,678

Note: Used a factor of 1.3 x final CY needed after compaction. Example: 12" of rock on 12 ft wide road need 50 CY/sta. 50CY x 1.3 = 65CY before compaction.

By: Washington St. DNR

Sheet 4 of 5

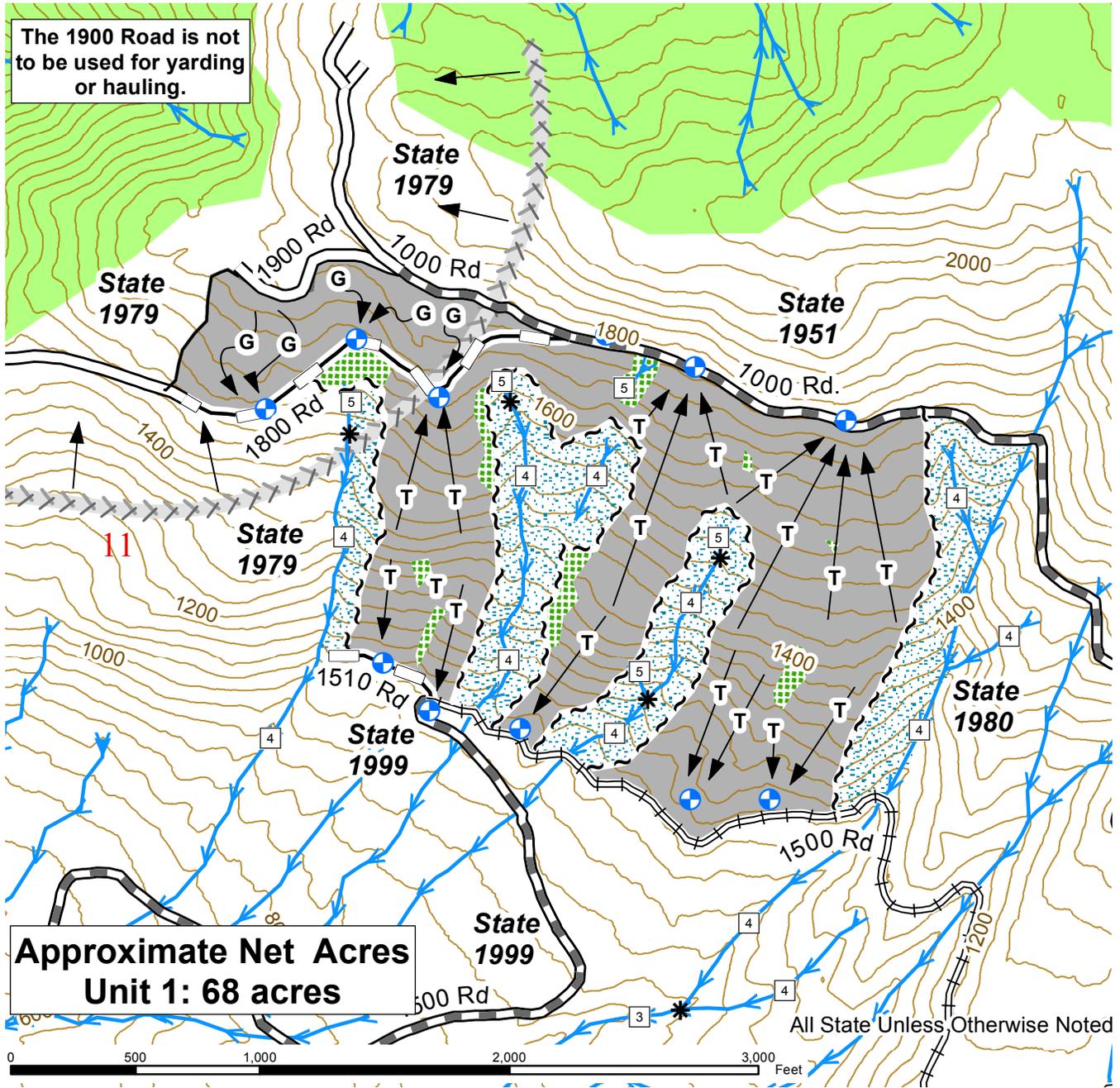
Date: 06/19/15



# Logging Plan Map

**SALE NAME:** FERN HOPPER  
**AGREEMENT#:** 30-092563  
**TOWNSHIP(S):** T23R06E  
**TRUST(S):** State Forest Transfer(1)

**REGION:** South Puget Sound Region  
**COUNTY(S):** KING  
**ELEVATION RGE:** 884-1756 ft.



The 1900 Road is not to be used for yarding or hauling.

**Approximate Net Acres  
Unit 1: 68 acres**

All State Unless Otherwise Noted

Timber Sale Unit	Wildlife Timing Restriction	Stream Type
Timber Type Change	Existing Road	Stream Type Break
Sale Boundary Tags	Required Reconstruction	RMZ Area
Typed Stream	Required Pre-Haul Maintenance	Contours 40 ft
Leave Tree Area Bounded by Yellow "Leave Tree Area" Tags	Optional Reconstruction	DNR Managed Lands
Ground Based Harvest	Natural Resource Conservation Area	Proposed Landings
Tower/Cable Harvest		