



**TIMBER NOTICE OF SALE**

**SALE NAME:** *LARGE FARVA*

**AGREEMENT NO:** *30-093916*

**AUCTION:** December 15, 2016 starting at 10:00 a.m., **COUNTY:** Cowlitz  
Pacific Cascade Region Office, Castle Rock, WA

**SALE LOCATION:** Sale located approximately 23 miles southeast of Toutle

**PRODUCTS SOLD AND SALE AREA:** All timber, except leave trees marked with blue paint, leave tree areas internal to the timber sale boundary, bound out with yellow "Leave Tree Area" tags and pink flagging, Leave tree areas adjacent to the boundary bound out with white "Timber Sale Boundary" tags and pink flagging, snags and all down timber existing 5 years prior to the day of sale bounded by the following: White "Timber Sale Boundary" tags with pink flagging in Unit 1 and Unit 2; Orange "Right-of-Way Boundary" tags and orange flagging in Unit 3 and Unit 4. on part(s) of Sections 22, 27 and 28 all in Township 9 North, Range 3 East, W.M., containing 124 acres, more or less.

**CERTIFICATION:** This sale is certified under the Sustainable Forestry Initiative® program Standard (cert no: BV-SFIS-US09000572)

**ESTIMATED SALE VOLUMES AND QUALITY:**

Species	Avg DBH	Ring Count	Total MBF	MBF by Grade								
				1P	2P	3P	SM	1S	2S	3S	4S	UT
Douglas fir	15.9	7	2,535						876	1,224	370	65
Hemlock	15.3	7	634						165	339	107	24
Noble fir	16.5		141						102	21	17	2
Red alder	10.4		120								59	61
Cottonwood	21		5									5
Sale Total			3,435									

**MINIMUM BID:** \$774,000.00 **BID METHOD:** Sealed Bids

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

**EXPIRATION DATE:** October 31, 2018 **ALLOCATION:** Export Restricted

**BID DEPOSIT:** \$77,400.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

**HARVEST METHOD:** Cable, Shovel, Forwarder and Track skidder. This sale is estimated to be 59% ground based yarding and 41% cable yarding. A detailed felling and yarding plan shall be required prior to any harvest activities. Shovel, forwarder, and tracked skidder yarding are restricted to slopes of 40% or less and shall only operate during dry soil conditions. Intermediate supports may be required to prevent soil rutting in Unit 2 off of the 5625D, 5625Ext, 5625E and 5625F roads. For additional harvest requirements, refer to the H-140 clause in the contract.



## TIMBER NOTICE OF SALE

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**ROADS:** 26.99 stations of required construction. 101.00 stations of required reconstruction. 21.05 stations of optional reconstruction. 302.25 stations of required pre-haul maintenance. Rock for construction and pre-haul maintenance under this contract may be obtained from the Flair Pit located in Section 21, Township 09 North, Range 03 East, W.M., the 4250 Pit located in Section 11, Township 09 North, Range 02 East, W.M., at no charge to the Purchaser. Rock used in accordance with quantities on the ROCK LIST may also be obtained from any commercial source at the Purchaser's expense and subject to approval in writing by the Contract Administrator before their use. Construction, reconstruction and road construction will not be permitted from September 30 to June 1 unless authorized in writing by the Contract Administrator.

### ACREAGE DETERMINATION

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

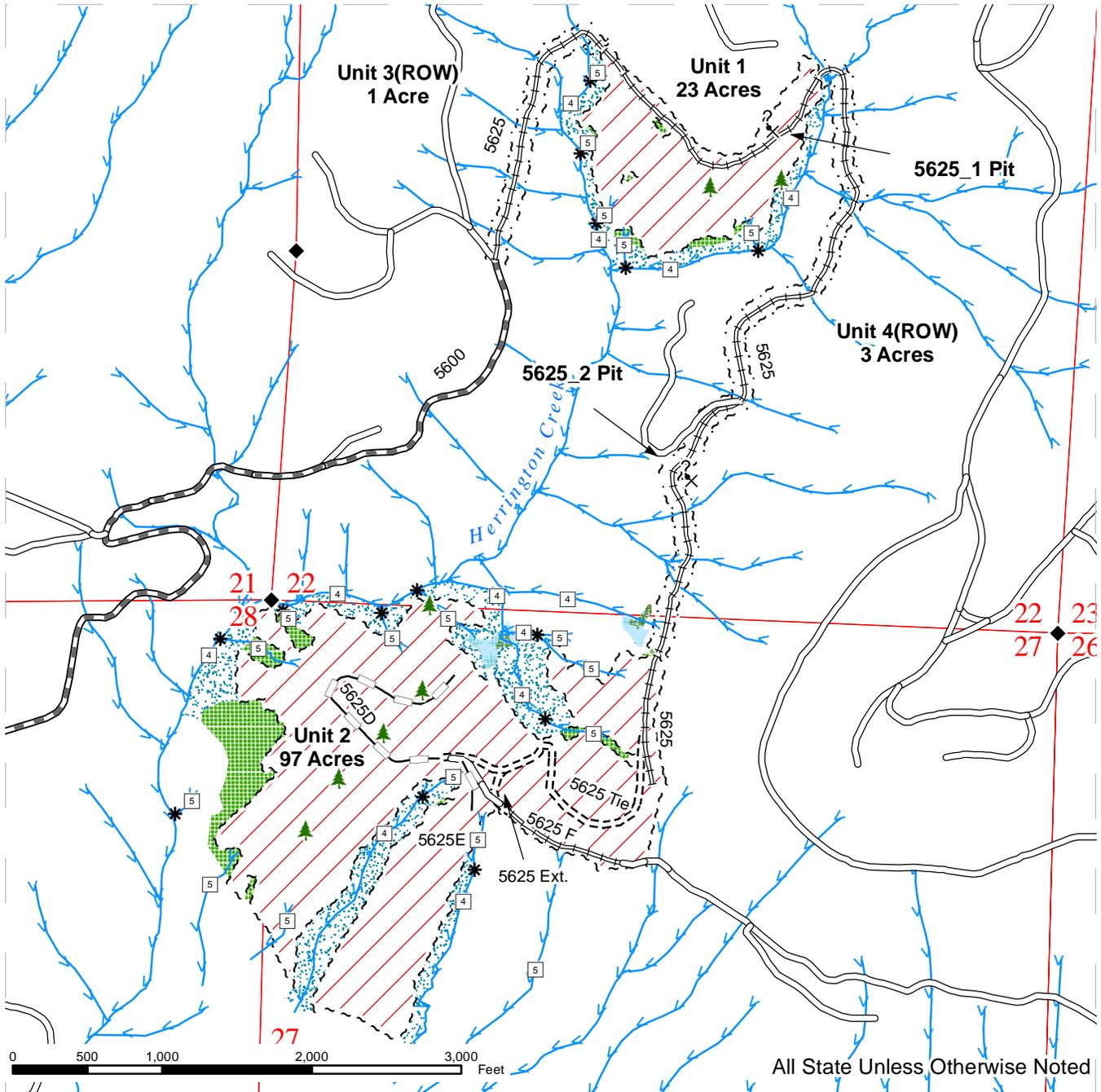
**FEES:** \$60,800.00 is due on day of sale. \$9.00 per MBF is due upon removal. These are in addition to the bid price.

**SPECIAL REMARKS:** This sale contains an estimated 647 MBF of higher quality DF 2 saw logs, 944 MBF of higher quality DF 3 saw logs, 112 MBF of higher quality WH 2 saw logs, 231 MBF of higher quality WH 3 saw logs, 93 MBF of higher quality NF 2 saw logs, and 1 MBF of higher quality NF 3 saw logs derived from the cruise. The gates on the 4100 and 5100 remain open. See driving map for gate locations. If closing the gates becomes necessary the PCP1-1 gate keys may be obtained from the Pacific Cascade Region office.

# TIMBER SALE MAP

**SALE NAME:** Large Farva  
**AGREEMENT#:** 30-093916  
**TOWNSHIP(S):** T09R03E  
**TRUST(S):** Common School (03), Normal School (08), Scientific School (10)

**REGION:** Pacific Cascade  
**COUNTY(S):** Cowlitz  
**ELEVATION RGE:** 1400ft-2700ft



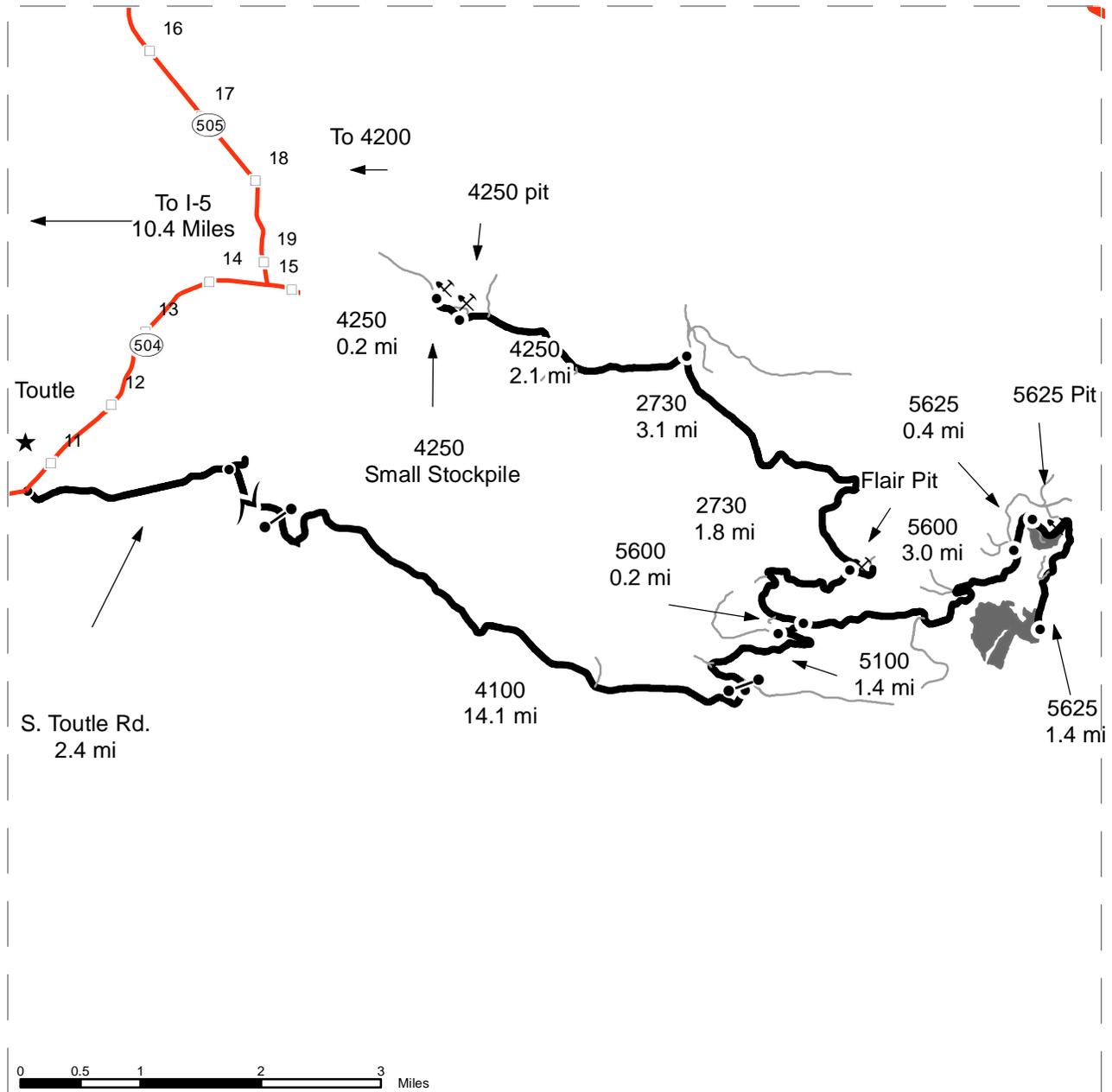
Variable Retention Harvest	Existing Road	Streams
Leave Tree Area	Required Pre-Haul Maintenance	Stream Type
Riparian Mgt Zone	Required Construction	Stream Type Break
Wetland Mgt Zone	Required Reconstruction	Monumented Corners
Forested Wetland	Optional Reconstruction	Rock Pit
Sale Boundary Tags		Potential Rock Source
Right of Way Tags		Leave Trees
Leave Tree Tags		



# DRIVING MAP

**SALE NAME:** Large Farva  
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- Timber Sale Unit
- Highways
- Haul Route
- Other Route
- Milepost Markers
- Distance Indicator
- Existing Rock Pit
- Gate (ABA)

**DRIVING DIRECTIONS:**

From exit 49 off I-5, follow SR 504 east for 10.4 miles. Turn right onto South Toutle Rd and follow 2.4 miles to the 4100. Continue on the 4100 for 14.1 miles to the 5100. Turn left onto the 5100 and go through gate (ABA).

Continue on the 5100 for 1.4 miles. Turn right on to the 5600 for 0.2 miles, stay right and continue on the 5600 for 3.0 miles. Turn right onto the 5625. Units 1 & 2 are located along the 5625, as well as, Right-of-Way Units 3 & 4.

Flair Pit- at the 5600 junction with the 2730 turn up the hill for 1.8 miles before coming to the 2710 Tie.

4250 Pit & Stockpile- From the 2730/5610 junction, continue on 2730 for 3.1 miles. The 4250 pit is on the right. Continue another 0.3 miles and the 4250 Stockpile is on the right.



**STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES**

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

**Export Restricted Lump Sum AGREEMENT NO. 30-093916**

**SALE NAME: LARGE FARVA**

**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-011 Right to Remove Forest Products and Contract Area

Purchaser was the successful bidder on December 15, 2016 and the sale was confirmed on \_\_\_\_\_. The State, as owner, agrees to sell to Purchaser, and Purchaser agrees to purchase as much of the following forest products as can be cut and removed during the term of this contract: All timber, except leave trees marked with blue paint, leave tree areas internal to the timber sale boundary, bound out with yellow "Leave Tree Area" tags and pink flagging, Leave tree areas adjacent to the boundary bound out with white "Timber Sale Boundary" tags and pink flagging, snags and all down timber existing 5 years prior to the day of sale bounded by the following: White "Timber Sale Boundary" tags with pink flagging in Unit 1 and Unit 2; Orange "Right-of-Way Boundary" tags and orange flagging in Unit 3 and Unit 4., located on approximately 124 acres on part(s) of Sections 22, 27, and 28 all in Township 9 North, Range 3 East W.M. in Cowlitz County(s) as designated on the sale area and as shown on the attached timber sale map.

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

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

G-020 Inspection By Purchaser

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

G-031 Contract Term

Purchaser shall complete all work required by this contract prior to October 31, 2018.

G-040 Contract Term Adjustment - No Payment

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

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

G-051 Contract Term Extension - Payment

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

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

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

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

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

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

- e. Payment of \$664.00 per acre per annum for the acres on which an operating release has not been issued within the sale 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-091 Sale Area Adjustment**

The Parties may agree to adjustments in the sale area boundary. The cumulative changes to the sale area during the term of the contract shall not exceed more than four percent of the original sale area. If the sale area is increased, the added forest products become a part of this contract. The State shall determine the volume added and shall calculate the increase to the total contract price using the rates set forth in clause G-101, G-102, or G-103. If the sale area is reduced, the State shall determine the volume to be reduced. The State shall calculate the reduction to the total contract price using the rates set forth in clause G-101, G-102, or G-103.

**G-101 Forest Products Not Designated**

Any forest products not designated for removal, which must be removed in the course of operations authorized by the State, shall be approved and designated by the Contract Administrator. Added forest products become a part of this contract and the Scribner log scale volume, as defined by the Northwest Log Rules Advisory Group, shall be determined by the Contract Administrator. Added forest products shall be paid for at the following contract payment rates per Mbf Scribner log scale.

The pricing schedule has not been set for the sale.

**G-106 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 State's 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 rate set forth in clause G-101, G-102 or G-103.

**G-111 Title and Risk of Loss**

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

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

Forest products purchased under this contract are certified as being in conformance with the Sustainable Forestry Initiative program Standard under certificate number: 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 Castle Rock, Washington. The Region Manager will notify Purchaser in writing who is responsible for administering the contract. The Region Manager has sole authority to waive, modify, or amend the terms of this contract in the manner prescribed in clause G-180. No agent, employee, or representative of the State has any authority to bind the State to any affirmation, representation, or warranty concerning the forest products conveyed beyond the terms of this contract.

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

G-170 Assignment and Delegation

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

G-180 Modifications

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

G-190 Contract Complete

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

G-200 Notice

Notices required to be given under the following clauses shall be in writing and shall be delivered to Purchaser's authorized agent or sent by certified mail to Purchaser's 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; 2730, 4100, 4200, 4250, 5100, 5600, 5610, 5625, 5625 Ext, 5625 Tie, 5625D, 5625E, 5625F. 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 2730, 4100, 5100, 5600, 4250, unless authority is granted in writing by the Contract Administrator.

G-380 Road Easement and Road Use Permit Requirements

Purchaser agrees to comply with the terms and conditions of the attached:

Easement between the State and Weyerhaeuser Company, dated 01/31/1967

Expires: Indefinitely.

Supplemental easement between the State and Weyerhaeuser Company, dated 03/01/1984.

Expires: Indefinitely

G-430 Open Fires

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

G-450 Encumbrances

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

Easement, including the terms and provisions thereof,  
For: Road  
In Favor of: WA State Dept. of Natural Resources  
Disclosed by Application No.: 50-031212\*  
Granted: 5/19/1966  
Expires: Indefinite

Easement, including the terms and provisions thereof,  
For: Road  
In Favor of: Weyerhaeuser Company  
Disclosed by Application No.: 50-034209  
Granted: 1/31/1967

Easement, including the terms and provisions thereof,  
For: Road  
In Favor of: Weyerhaeuser Company  
Disclosed by Application No.: 50-035156  
Granted: 1/31/1967

Section P: Payments and Securities

P-011 Initial Deposit

Purchaser paid DATA MISSING initial deposit, which will be maintained pursuant to RCW 79.15.100(3). If the operating authority on this contract expires without Purchaser's payment of the full amount specified in Clause P-020, the initial deposit will be immediately forfeited to the State, and will be offset against Purchaser's remaining balance due. Any excess initial deposit funds not needed to ensure full payment of the contract price, or not needed to complete any remaining obligations of the Purchaser existing after contract expiration, will be refunded to the Purchaser.

P-020 Payment for Forest Products

Purchaser agrees to pay the total, lump sum contract price of \$91,715.00. The total contract price consists of a \$0.00 contract bid price plus \$91,715.00 in fees. Fees collected shall be retained by the state unless the contract is adjusted via the G-066 clause. Purchaser shall be liable for the entire purchase price, and will not be entitled to any refunds or offsets unless expressly stated in this contract.

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

P-045 Guarantee of Payment

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

P-050 Billing Procedure

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

P-080 Payment Account Refund

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

P-090 Performance Security

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

P-100 Performance Security Reduction

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

Section H: Harvesting Operations

H-013 Reserve Tree Damage Definition

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

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

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

If the Contract Administrator determines that a reserve tree has been cut or damaged, the Purchaser shall provide a replacement reserve tree of like condition, size, and species within the sale 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-017 Preventing Excessive Soil Disturbance

Operations may be suspended when soil rutting exceeds 6 inches as measured from the natural ground line. To reduce soil damage, the Contract Administrator may require water bars to be constructed, grass seed to be placed on exposed soils, or other mitigation measures. Suspended operations shall not resume unless approval to do so has been given, in writing, by the Contract Administrator.

H-035 Fall Trees Into Sale Area

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

H-040 Purchaser Harvest Plan

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

H-051 Branding and Painting

Purchaser shall provide a State of Washington registered log brand, acceptable to the State, unless the State agrees to furnish the brand. All purchased timber shall be branded in a manner that meets the requirements of WAC 240-15-030(2)(a)(i). All timber purchased under a contract designated as export restricted shall also be painted in a manner that meets the requirements of WAC 240-15-030(2)(a)(ii).

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

H-120 Harvesting Equipment

Forest products sold under this contract shall be harvested using cable systems and ground based systems: shovel, forwarder, and tracked skidder 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-126 Tailholds on State Land

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

H-127 Tailholds on Private Land

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

H-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

A detailed felling and yarding plan shall be required prior to any harvest activities and approved in writing by the Contract Administrator.

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

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

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

Intermediate supports may be required to prevent soil rutting in Unit 2 off the 5625D, 5625Ext, 5625E, and 5625F roads.

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

H-190 Completion of Settings

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

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

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

**H-250 Additional Falling Requirements**

Within all units, all live stems of all species greater than 2 inches DBH or over 10 feet tall excluding western red cedar, shall be felled concurrently with felling operations. Areas of young or immature timber may be excluded from this requirement by the Contract Administrator.

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

Road construction and associated work provisions of the Road Plan for this sale, dated 5/11/2016 are hereby made a part of this contract.

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

Purchaser shall perform work at their own expense on 5625, 5625D, 5625E, 5625F, 5625EXT, 5625 Tie. 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 4100, 4200, 4250, 5100, 5600, 2730, 5610. 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.

**C-140 Water Bars**

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

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

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

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

S-010 Fire Hazardous Conditions

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

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

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

S-030 Landing Debris Clean Up

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

S-035 Logging Debris Clean Up

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

S-050 Cessation of Operations for Low Humidity

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

S-130 Hazardous Materials

a. Hazardous Materials and Waste - Regulatory Compliance

Purchaser is responsible for understanding and complying with all applicable local, state, and federal hazardous material/waste laws and regulations for operations conducted under this contract. Such regulations pertain to, but may

not be limited to, hazardous material storage, handling and transport, personnel protection, release notification and emergency response, cleanup and waste disposal. Purchaser shall be responsible for restoring the site in the event of a spill.

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-013 Liquidated Damages or Failure to Perform

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

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

D-041 Reserve Tree Excessive Damage

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

**DRAFT**

**DRAFT**

**DRAFT**

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

STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

\_\_\_\_\_  
Purchaser

\_\_\_\_\_  
Eric Wisch  
Pacific Cascade Region Manager

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

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

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

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

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

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

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

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

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

\_\_\_\_\_

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



## WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

### FOREST EXCISE TAX ROAD SUMMARY SHEET

**Region:**

**Timber Sale Name:**

**Application Number:**

#### EXCISE TAX APPLICABLE ACTIVITIES

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

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

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

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

**Pre-Haul Maintenance:** **linear feet**  
*Existing road to receive maintenance work (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>Large Farva</b>	Region: <b>Pacific Cascade</b>
Agreement #: <b>30-093916</b>	District: St. Helens
Contact Forester: Becky VonDracek Phone / Location: 360-749-6825	County(s): Choose a county, Cowlitz
Alternate Contact: Chris Wills Phone / Location: <b>360-577-2025</b>	Other information:

Type of Sale: Lump Sum	
Harvest System: Ground based	59
Harvest System: Uphill Cable	41
Harvest System: <i>Select harvest system</i>	

### UNIT ACREAGES AND METHOD OF DETERMINATION:

Unit # Harvest R/W or RMZ WMZ	Legal Description <small>(Enter only one legal for each unit)</small> Sec/Twp/Rng	Grant or Trust	Gross Proposal Acres	Deductions from Gross Acres (No harvest acres)				Net Harvest Acres	Acreage Determination <small>(List method and error of closure if applicable)</small>
				RMZ/ WMZ Acres	Leave Tree Acres	Existing Road Acres	Other Acres (describe)		
1	Sec. 22/T9N/R3E	08	35	10	1	1	0	23	GPS (Garmin)
2	Sec 22, 27, 28/T09N/R03E	03/10 /08	140	31	10	2	0	97	GPS (Garmin)
3 (R/W)	Sec 22/T09N/R03E	08	1	0	0	0	0	1	GPS (Garmin)
4 (R/W)	Sec 22, 27/ T09N/R03E	08/03	3	0	0	0	0	3	GPS (Garmin)
<b>TOTAL ACRES</b>			179	41	11	3	0	124	

### HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription: (Leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
1	Bound by white "Timber Sale Boundary" tags with pink flagging, Retention Trees marked with blue paint or yellow "Leave Tree Area" tags with pink flagging.	Variable Retention Harvest	205
2	Bound by white "Timber Sale Boundary" tags with pink flagging. Retention Trees marked with blue paint.	Variable Retention Harvest	1,326
3 (R/W)	Bound by orange "Right-of-Way Boundary" tags with orange flagging along the 5625 Road.	Right-of-Way Harvest	None
4 (R/W)	Bound by orange "Right-of-Way Boundary" tags with orange flagging along the 5625 Road.	Right-of-Way Harvest	None

#### OTHER PRE-CRUISE INFORMATION:

Unit #	Primary, secondary Species / Estimated Volume (MBF)	Access information (Gates, locks, etc.)	Photos, traverse maps required
1	DF, WH/477 mbf	Access is from the Weyerhaeuser 4100 road, to the 5100 road, then the 5600 to the 5625 road.	See Logging Plan maps and driving maps.
2	DF, WH/2.777 mmbf	Access is from the Weyerhaeuser 4100 road, to the 5100 road, then the 5600 to the 5625 road.	See Logging Plan maps and driving maps.
3 (R/W)	DF, WH/ 61 mbf	Access is from the Weyerhaeuser 4100 road, to the 5100 road, then the 5600 to the 5625 road.	See Logging Plan maps and driving maps.
4 (R/W)	DF, WH/ 121 mbf	Access is from the Weyerhaeuser 4100 road, to the 5100 road, then the 5600 to the 5625 road.	See Logging Plan maps and driving maps.
TOTAL MBF	3,436mbf		

#### REMARKS:

This sale is a Variable Retention Harvest with a considerable amount of Right-of-Way harvest. Unit 1 is located at the beginning of the 5625 Road network. Large Leave Tree Areas are located behind the white "Timber Sale Boundary" tags to alleviate confusion of tags behind tags. The sale is predominately a homogenous mixture of Douglas fir and western hemlock. There is little amounts of brush. Previous activities in the vicinity include **Flair VRH and Thin** and **Latigo VRH and Thin**. The 5625 Road is drivable in dry weather and contains a makeshift turn around near the 5625 pit and at the end of the 5625 reconstruction. If Herrington Creek is passable, Unit 2 can be accessed by *walking* the abandoned road

across from the 5625 D, formally known as the 5620 Road.

Prepared By: B. VonDracek Date: 03/15/2016	Title: Forester 1	CC:
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# Cruise Narrative

<b>Sale Name:</b> Large Farva	<b>Region:</b> Pacific Cascade
<b>App. #:</b> 30-093916	<b>District:</b> St. Helens
<b>Lead Cruiser:</b> Bryce Frank	<b>Completion date:</b> 4-19-2016
<b>Other Cruisers:</b> Calvin Bailey	

**Unit acreage specifications:**

Unit	Acreage	Cruised acres agree with sale acres?	If acres do not agree then explain why.
1	23	Yes	
2	97	Yes	
3 ROW	1	Yes	
4 ROW	3	Yes	
Total	124		

**Unit cruise specifications:**

Unit #	Sample type (VP, FP, ITS, 100%)	Expansion factor (BAF, full/half)	Sighting height (4.5 ft, 16 ft.)	Grid size (Plot spacing or % of area)	Plot ratio (Cru./Tally)	Total number of plots
1	VP	40	4.5 ft.	245' x 245'	1:1	16
2	VP	46.94	4.5 ft.	245' x 245'	1:1	72
3	ITS	DF: 16.86 WH: 4.63 RA: 8.82 NF: 2.285	4.5 ft.	n/a	n/a	n/a
4	ITS	DF: 22.31 WH: 6.7 RA: 12 NF: 4.8	4.5 ft.	n/a	n/a	n/a

**Sale/Cruise Description:**

<b>Minor species cruise intensity:</b>	Cruised on appropriate plots.						
<b>Minimum cruise spec:</b>	40% Of Form- Factor at 16 feet D.O.B or 5 inch Top, and merchantable top.						
<b>Avg. ring count by sp:</b>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: 1px solid black;"><b>DF =</b></td> <td style="border: 1px solid black; width: 100px; text-align: center;">7</td> <td style="border: 1px solid black;"><b>WH =</b></td> <td style="border: 1px solid black; width: 100px; text-align: center;">7</td> <td style="border: 1px solid black;"><b>SS =</b></td> <td style="border: 1px solid black; width: 100px; text-align: center;">n/a</td> </tr> </table>	<b>DF =</b>	7	<b>WH =</b>	7	<b>SS =</b>	n/a
<b>DF =</b>	7	<b>WH =</b>	7	<b>SS =</b>	n/a		
<b>Leave/take tree description:</b>	Leave tree clumps are bounded with yellow "Leave Tree Area" tags and pink flagging, individual leave trees are marked with a single band of blue paint.						

<b>Sort Description:</b>	<p><b>HA</b>– Logs meeting the following criteria: Surface characteristics for a high quality A sort will have sound tight knots not to exceed 1 ½” in diameter, numbering not more than an average of one per foot of log length. May include logs with not more than two larger knots. Knots and knot indicators ½” in diameter and smaller shall not be a determining factor. Logs will have a growth ring count of 6 or more rings per inch in the outer third top end of the log. (min dia 8”.)</p> <p><b>HB</b> – Logs meeting the following criteria: Surface characteristics for a B sort will have sound tight knots not to exceed 1 ½” in diameter. May include logs with not more than two larger knots up to 2 ½” in diameter. Logs will have a growth ring count of 6 or more rings per inch in the outer third to end of the log. (min dia 8”.)</p> <p><b>R</b> – Logs meeting the following criteria: Gross diameter of 12 inches or greater, excessive knots greater than 2 ½ inches with recovery less than 65% of the net scale.</p>
<b>Status Description:</b>	<b>D</b> – Logs classified as merchantable dead timber.

**Field observations:**

**Large Farva** consists of 2 VRH units and 2 ROW units. In total, Large Farva consists of 124 net harvest acres and **3,435 mbf**.

Units 1 and 2 are very similar units with regards to timber. These stands consist of very uniform Douglas-fir (DF) and minor amounts of Western Hemlock (WH) in the understory. Red Alder (RA) shows up on the edges of the units near openings. Due to the fairly tight distribution of trees, B sort is common in the first log of each tree in DF and WH. The average diameter and height for WH *and* DF are 15.5 inches and 68 merchantable feet respectively. Defect was very minor at 1.8%, likely due to the young age of the stands, and consisted mostly of hooked butts and split tops. Noble fir (NF) was present but sparse in these units, most of which are merchantable as saw logs, but some were graded as utility due to frost crack. Both of these units make up the majority of the volume at 3,254 mbf.

Units 3 and 4 are two small ROW units that provide access to the VRH units from the 5600. These units will open up the existing 5625 road. Both of these ROWs are very similar in species composition to units 1 and 2, with DF dominating the present volume, but diameters and heights are slightly smaller due to the younger age. RA is also more significant in these units. There is 181 mbf in these units.

These units can be accessed using either the 4100 or the 4200. Using the 4100 requires an ABA-1 key, using the 4200 requires no key, but expect a longer drive. See the driving map for further details.

All units can be accessed with a full-sized pickup truck, but nothing larger due to the narrow passage through the ROW units (the 5625). A couple of turn around spots are located at the end of the 5625 road. Units can be accessed by foot if necessary: unit 1 via the 5625 and unit 2, if Harrington Creek is passable, by walking the abandoned road across from the 5625 D (formally known as the 5620).

**Grant: 03,08,10**

**Prepared by: Bryce Frank**

**Title: Timber Cruiser**

TC PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																						
T09N R03E S22 Ty00U1 THRU T09N R03E S22 TyROW4			Project: <b>LARGEFAR</b>		Page <b>1</b>																			
			Acres <b>124.00</b>		Date <b>4/19/2016</b>																			
						Time <b>12:57:55PM</b>																		
Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre			
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf				
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99								
DF	HA	3S		1		250	250	31	100				100				40	10	144	0.90	1.7			
DF	HB	2S		25	1.5	5,302	5,220	647	100				2	17	82	37	13	213	1.48	24.5				
DF	HB	3S		36	1.1	7,444	7,363	913	100				34	66	36	10	123	0.89	59.6					
DF	D	2S		9	4.2	1,930	1,849	229	79				21	5	27	69	36	13	225	1.69	8.2			
DF	D	3S		11	2.8	2,322	2,258	280	64	36					41	59	36	7	71	0.60	31.9			
DF	D	4S		15	.8	3,008	2,985	370	100	0					10	38	22	31	29	5	31	0.33	95.4	
DF	D	UT		3		523	523	65	67	31	2					22	9	30	38	27	6	37	0.41	14.1
<b>DF Totals</b>				74	1.6	20,780	20,448	2,536	23	42	33	2	2	7	27	64	33	8	87	0.72	235.5			
WH	HB	2S		17	3.2	937	907	112	100				49	51	35	12	186	1.43	4.9					
WH	HB	3S		37	1.1	1,881	1,860	231	100				24	76	36	9	113	0.81	16.4					
WH	D	2S		8	4.4	447	428	53	55				45	23	1	22	54	33	16	280	1.93	1.5		
WH	D	3S		17	9.7	961	868	108	46	54					2	38	60	37	7	72	0.68	12.1		
WH	D	4S		17	.0	860	860	107	100	0					9	42	17	32	30	5	32	0.33	27.0	
WH	D	UT		4		193	193	24	27	73				16	12	73	25	7	68	0.66	2.8			
<b>WH Totals</b>				18	3.1	5,278	5,116	634	26	46	25	4	4	8	29	59	33	7	79	0.67	64.8			
RA	D	UT		50		491	491	61	100				4	36	17	43	30	5	32	0.31	15.5			
RA	D	4S		30		289	289	36	100				32	20	47	33	8	69	0.62	4.2				
RA	D	4S		20		187	187	23	100				1	33	58	8	31	5	33	0.36	5.7			
<b>RA Totals</b>				3		967	967	120	70	30					2	34	26	38	31	6	38	0.38	25.3	
NF	HB	2S		66	.2	753	752	93	82				18	4				96	38	13	233	1.48	3.2	
NF	HB	3S				5	5	1	100				100				32	11	140	1.03	.0			
NF	D	2S		6		70	70	9	61				39	15	10	75	37	13	243	1.58	.3			
NF	D	3S		14		162	162	20	98	2					9	24	67	36	6	58	0.58	2.8		
NF	D	4S		12		133	133	17	97	3					14	82	3	33	5	39	0.29	3.4		
NF	D	UT		2		15	15	2	19	19	63				63	4	34	29	11	132	0.95	.1		
<b>NF Totals</b>				4	.1	1,138	1,137	141	26	1	58	15	1	4	17	78	35	8	115	0.84	9.9			
CW	D	UT		100	9.5	40	37	5	11	89				11	89				23	10	95	1.32	.4	
<b>CW Totals</b>				0	9.5	40	37	5	11	89				11	89				23	10	95	1.32	.4	
<b>Totals</b>					1.8	28,205	27,705	3,435	25	41	31	3	2	8	27	63	33	8	82	0.69	335.9			

TC PSTATS		PROJECT STATISTICS							PAGE	1	
		PROJECT LARGE FAR							DATE	4/19/2016	
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt	
09N	03E	22	LARGEFAR	00U1	THR	124.00	90	574	S	W	
09N	03E	22	LARGEFAR	ROW4							
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES					
TOTAL		90	574	6.4							
CRUISE		49	331	6.8	24,072	1.4					
DBH COUNT											
REFOREST											
COUNT		39	221	5.7							
BLANKS		2									
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	208	132.1	15.9	68	45.5	181.5	20,780	20,448	5,606	5,606	
WHEMLOCK	61	35.3	15.3	67	11.5	45.1	5,278	5,116	1,434	1,433	
R ALDER	40	20.3	10.4	56	3.7	11.9	967	967	292	292	
NOBLE F	21	6.3	16.5	63	2.3	9.3	1,138	1,137	292	292	
COTWOOD	1	.2	21.0	50	0.1	.5	40	37	11	11	
<b>TOTAL</b>	<b>331</b>	<b>194.1</b>	<b>15.3</b>	<b>66</b>	<b>63.4</b>	<b>248.2</b>	<b>28,205</b>	<b>27,705</b>	<b>7,637</b>	<b>7,636</b>	
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL	68.1	COEFF	SAMPLE TREES - BF				# OF TREES REQ.	INF. POP.			
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR		57.7	4.0	177	185	192					
WHEMLOCK		75.1	9.6	137	151	166					
R ALDER		58.4	9.2	43	48	52					
NOBLE F		38.6	8.9	292	320	348					
COTWOOD											
<b>TOTAL</b>		<b>69.2</b>	<b>3.8</b>	<b>164</b>	<b>170</b>	<b>177</b>	<b>191</b>	<b>48</b>	<b>21</b>		
CL	68.1	COEFF	SAMPLE TREES - CF				# OF TREES REQ.	INF. POP.			
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR		54.4	3.8	49	51	53					
WHEMLOCK		58.6	7.5	39	42	46					
R ALDER		61.8	9.8	14	16	17					
NOBLE F		30.6	7.0	75	81	86					
COTWOOD											
<b>TOTAL</b>		<b>61.8</b>	<b>3.4</b>	<b>45</b>	<b>47</b>	<b>49</b>	<b>153</b>	<b>38</b>	<b>17</b>		
CL	68.1	COEFF	TREES/ACRE				# OF PLOTS REQ.	INF. POP.			
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR		68.6	7.2	123	132	142					
WHEMLOCK		161.1	17.0	29	35	41					
R ALDER		263.3	27.7	15	20	26					
NOBLE F		336.4	35.4	4	6	8					
COTWOOD		948.7	99.9	0	0	0					
<b>TOTAL</b>		<b>52.4</b>	<b>5.5</b>	<b>183</b>	<b>194</b>	<b>205</b>	<b>110</b>	<b>27</b>	<b>12</b>		
CL	68.1	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.	INF. POP.			
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR		63.6	6.7	169	181	194					
WHEMLOCK		158.8	16.7	38	45	53					
R ALDER		264.7	27.9	9	12	15					
NOBLE F		300.6	31.7	6	9	12					
COTWOOD		948.7	99.9	0	0	1					
<b>TOTAL</b>		<b>43.7</b>	<b>4.6</b>	<b>237</b>	<b>248</b>	<b>260</b>	<b>76</b>	<b>19</b>	<b>8</b>		

**PROJECT STATISTICS**  
**PROJECT LARGE FAR**

TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
09N	03E	22	LARGEFAR	00U1	THR	124.00	90	574	S	W
09N	03E	22	LARGEFAR	ROW4						
CL	68.1		COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0		VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR			66.7	7.0	19,011	20,448	21,886			
WHEMLOCK			163.7	17.2	4,234	5,116	5,997			
R ALDER			284.5	30.0	677	967	1,257			
NOBLE F			298.2	31.4	780	1,137	1,494			
COTWOOD			948.7	99.9	0	37	73			
<b>TOTAL</b>			<b>46.4</b>	<b>4.9</b>	<b>26,352</b>	<b>27,705</b>	<b>29,058</b>	<b>86</b>	<b>21</b>	<b>10</b>
CL	68.1		COEFF	NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0		VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR			65.8	6.9	5,217	5,606	5,995			
WHEMLOCK			162.6	17.1	1,188	1,433	1,679			
R ALDER			273.7	28.8	208	292	377			
NOBLE F			298.4	31.4	201	292	384			
COTWOOD			948.7	99.9	0	11	23			
<b>TOTAL</b>			<b>45.4</b>	<b>4.8</b>	<b>7,271</b>	<b>7,636</b>	<b>8,000</b>	<b>82</b>	<b>21</b>	<b>9</b>
CL	68.1		COEFF	V_BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0		VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR					105	113	121			
WHEMLOCK			83.6	8.8	94	113	133			
R ALDER			300.6	31.7	57	81	106			
NOBLE F			268.3	28.3	84	123	161			
COTWOOD			948.7	99.9	0	79	158			
<b>TOTAL</b>			<b>79.2</b>	<b>8.3</b>	<b>106</b>	<b>112</b>	<b>117</b>	<b>251</b>	<b>63</b>	<b>28</b>

T09N R03E S22 T00U1										T09N R03E S22 T00U1				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
09N	03E	22	LARGEFAR	00U1	23.00	16	46	S	W					

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre			
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf				
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99								
DF		HB	2S	29	1.5	4,983	4,906	113	100				31 69				38	13	210	1.51	23.3			
DF		HB	3S	19		3,231	3,231	74	100				28 72				37	10	145	1.04	22.3			
DF		DM	2S	15	4.7	2,680	2,553	59	100				14 34 53				34	12	163	1.46	15.7			
DF		DM	3S	14	4.7	2,403	2,291	53	46	54					47 53				35	7	75	0.68	30.5	
DF		DM	4S	14	1.1	2,395	2,368	54	100				17 35 23 26				28	5	31	0.39	77.6			
DF		DM	UT	9		1,509	1,509	35	43	57					21 7 72				28	7	53	0.54	28.6	
<b>DF</b>	<b>Totals</b>			81	2.0	17,201	16,859	388	24	32	44					4	8	29	59	32	8	85	0.79	198.0
WH		HB	2S	10	6.3	244	229	5	100				100				32	12	150	1.38	1.5			
WH		HB	3S	20		454	454	10	100				100				32	9	92	0.82	5.0			
WH		DM	3S	41	10.1	1,038	933	21	18	82					82 18				34	9	83	0.87	11.2	
WH		DM	4S	26		587	587	14	100				29 18 53				27	5	30	0.41	19.9			
WH		DM	UT	3		56	56	1	100				100				18	5	20	0.24	2.8			
<b>WH</b>	<b>Totals</b>			11	5.1	2,380	2,259	52	36	54	10					10	5	64	21	29	7	56	0.65	40.3
RA		DM	4S	100		493	493	11	100				100				32	5	30	0.32	16.4			
<b>RA</b>	<b>Totals</b>			2		493	493	11	100				100				32	5	30	0.32	16.4			
NF		HB	2S	61		573	573	13	100				100				40	15	360	2.06	1.6			
NF		DM	2S	24		229	229	5	100				100				40	12	200	1.38	1.1			
NF		DM	3S	15		137	137	3	100				58 42				30	7	50	0.63	2.7			
<b>NF</b>	<b>Totals</b>			5		939	939	22	15	85					8	6	85	35	10	172	1.28	5.5		
CW		DM	UT	100	9.5	218	197	5	11	89					11 89				23	10	95	1.32	2.1	
<b>CW</b>	<b>Totals</b>			1	9.5	218	197	5	11	89					11 89				23	10	95	1.32	2.1	
<b>Type Totals</b>					2.3	21,231	20,747	477	27	32	42					5	7	34	54	31	8	79	0.76	262.3

T	TSPCSTGR	Species, Sort Grade - Board Foot Volumes (Type)										Page	1									
												Date		4/19/2016								
												Time		12:57:56PM								
T09N R03E S22 T00U2										T09N R03E S22 T00U2												
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt													
09N	03E	22	LARGEFAR	00U2	97.00	72	178	S	W													
Spp	S	So	Gr	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre	
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/Lf		
								5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99	Ft	In	Ft				
DF	HA	3S		1		320	320								100			40	10	144	0.90	2.2
DF	HB	2S		26	1.5	5,341	5,261							2	11	87		37	13	215	1.47	24.5
DF	HB	3S		39	1.0	8,109	8,026								33	67		36	10	123	0.88	65.2
DF	DM	2S		7	4.2	1,655	1,585				69	31			24	76		37	14	264	1.83	6.0
DF	DM	3S		11	2.3	2,284	2,233		69	31					37	63		37	7	70	0.58	32.0
DF	DM	4S		14	.7	2,944	2,922		100	0				9	39	21	31	29	5	31	0.32	93.8
DF	DM	UT		2		264	264		100					21	13	66		26	5	27	0.31	9.9
<b>DF</b>	<b>Totals</b>			72	1.5	20,918	20,611		1,999	23	44	31	2	2	6	25	67	33	8	88	0.71	233.7
WH	HB	2S		18	3.0	1,139	1,105								46	54		35	13	188	1.43	5.9
WH	HB	3S		38	1.2	2,243	2,217								19	81		37	9	116	0.81	19.2
WH	DM	2S		9	4.4	564	539				54	46		23	22	54		33	16	283	1.94	1.9
WH	DM	3S		15	9.5	973	880		54	46					3	26	71	37	7	69	0.65	12.7
WH	DM	4S		16		931	931		100					6	45	20	29	30	5	32	0.31	28.9
WH	DM	UT		4		232	232		23		77			11		77		27	7	81	0.74	2.9
<b>WH</b>	<b>Totals</b>			21	2.9	6,082	5,904		573	25	44	27	4	3	7	25	64	34	8	83	0.68	71.4
RA	DM	UT		59		603	603		100					3	35	18	44	30	5	32	0.31	18.9
RA	DM	4S		34		345	345		33		100				31	22	47	33	8	69	0.60	5.0
RA	DM	4S		7		61	61		6		100				100			30	6	40	0.37	1.5
<b>RA</b>	<b>Totals</b>			4		1,010	1,010		98	66	34			2	37	18	43	31	6	40	0.38	25.4
NF	HB	2S		70		776	776		75		78	22				100		38	13	222	1.42	3.5
NF	DM	3S		15		164	164		16	100					18	82		37	6	60	0.56	2.7
NF	DM	4S		15		161	161		16	100					14	86		33	5	38	0.28	4.2
<b>NF</b>	<b>Totals</b>			4		1,100	1,100		107	29	55	16		2	15	83		36	8	105	0.76	10.4
<b>Type Totals</b>					1.7	29,110	28,625		2,777	25	42	30	3	2	7	25	66	33	8	84	0.68	341.0

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)										Page 1												
		Project: LARGE FAR										Date 4/19/2016												
												Time 12:57:56PM												
T09N R03E S22 TROW3											T09N R03E S22 TROW3													
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees				CuFt	BdFt												
09N	03E	22	LARGE FAR	ROW3	1.00	1	47				S	W												
Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre			
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/ Lf				
DF	HB	2S		5		2,698	2,698	3	100				100				32	12	160	1.28	16.9			
DF	HB	3S		34	4.2	16,186	15,511	16	100				38	62	36	10	115	0.93	134.9					
DF	DM	2S		23	3.1	10,959	10,622	11	100				100				40	15	315	2.02	33.7			
DF	DM	3S		15	4.7	7,250	6,913	7	44	56					78	22	34	8	68	0.66	101.2			
DF	DM	4S		19	1.9	9,104	8,936	9	100				6	28	43	23	30	5	33	0.32	269.8			
DF	DM	UT		4		1,686	1,686	2	100				20	80			23	5	25	0.38	67.4			
<b>DF</b>	<b>Totals</b>			76	3.2	47,882	46,365	46	29	42	29	2	5	41	51	32	7	74	0.67	623.8				
RA	DM	UT		35		1,852	1,852	2	100				19	52	29			24	5	30	0.33	61.7		
RA	DM	4S		30		1,588	1,588	2	100				33				67	35	9	90	0.93	17.6		
RA	DM	4S		35		1,852	1,852	2	100				24	29	48				34	6	42	0.50	44.1	
<b>RA</b>	<b>Totals</b>			9		5,292	5,292	5	70	30				7	37	10	47	29	6	43	0.51	123.5		
NF	HB	2S		36		1,942	1,942	2	100				100				32	14	213	1.54	9.1			
NF	DM	2S		39		2,057	2,057	2	100				41	59				36	18	450	2.64	4.6		
NF	DM	3S		9		503	503	1	27	73					100				33	8	73	0.93	6.9	
NF	DM	4S		3		137	137	0	100				100				36	6	60	0.56	2.3			
NF	DM	UT		13		686	686	1	50	50					10	90				36	7	75	0.65	9.1
<b>NF</b>	<b>Totals</b>			9		5,324	5,324	5	12	13	36	39	1	62	37	34	10	166	1.24	32.0				
WH	HB	3S		32		1,296	1,296	1	100				100				32	9	93	0.79	13.9			
WH	DM	2S		19		741	741	1	100				100				26	13	160	1.34	4.6			
WH	DM	3S		21	14.3	972	833	1	100				100				32	10	90	0.90	9.3			
WH	DM	4S		24	4.5	1,019	972	1	76	24					10	52	38	28	6	35	0.39	27.8		
WH	DM	UT		4		139	139	0	100				100				16	5	15	0.27	9.3			
<b>WH</b>	<b>Totals</b>			7	4.4	4,167	3,982	4	22	59	19				6	31	63	27	7	61	0.63	64.8		
<b>Type Totals</b>					2.7	62,665	60,963	61	31	39	26	3	2	9	42	46	31	7	72	0.67	844.1			

<b>T09N R03E S22 TROW4</b>	<b>T09N R03E S22 TROW4</b>
<b>Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt</b>	<b>BdFt</b>
<b>09N 03E 22 LARGEFAR ROW4 3.00 1 60 S</b>	<b>W</b>

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre		
									Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf			
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99							
DF	HB	2S		20	3.0	7,362	7,139	21	100				55	45	35	13	192	1.52	37.2				
DF	HB	3S		44	2.9	15,320	14,873	45	100				73	27	33	9	105	0.89	141.3				
DF	DM	2S		6		2,082	2,082	6	100				43	57	28	12	140	1.24	14.9				
DF	DM	3S		4		1,264	1,264	4	29	71	100						32	8	85	0.64	14.9		
DF	DM	4S		23		7,734	7,734	23	100					3	37	19	40	30	5	35	0.35	223.1	
DF	DM	UT		3		967	967	3	54	46					46	54	26	7	43	0.50	22.3		
<b>DF</b>	<b>Totals</b>			85	1.9	34,729	34,060	102	25	46	28	2	11	57	30	31	7	75	0.67	453.6			
RA	DM	UT		11		200	200	1	100					40	60	22	5	25	0.27	8.0			
RA	DM	4S		13		240	240	1	100						100	30	8	60	0.87	4.0			
RA	DM	4S		76		1,360	1,360	4	100					6	29	41	24	30	5	31	0.41	44.0	
<b>RA</b>	<b>Totals</b>			4		1,800	1,800	5	87	13					9	42	31	18	29	5	32	0.43	56.0
WH	HB	3S		68		1,295	1,295	4	100					100				32	9	83	0.72	15.6	
WH	DM	4S		32		603	603	2	100					7	63	30		26	5	27	0.30	22.3	
<b>WH</b>	<b>Totals</b>			5		1,898	1,898	6	32	68					2	20	68	9	29	6	50	0.50	38.0
NF	HB	2S		38	4.8	992	944	3	100				66	34	35	13	197	1.30	4.8				
NF	HB	3S		9		224	224	1	100				100				32	11	140	1.03	1.6		
NF	DM	2S		19		448	448	1	100				100				24	17	280	1.88	1.6		
NF	DM	3S		7		192	192	1	100					42		58	37	7	60	0.62	3.2		
NF	DM	4S		11		256	256	1	44	56					13	31	56	32	6	53	0.63	4.8	
NF	DM	UT		16		384	384	1	100				100				14	20	240	2.41	1.6		
<b>NF</b>	<b>Totals</b>			6	1.9	2,496	2,448	7	12	15	39	34	16	20	41	24	31	11	139	1.03	17.6		
<b>Type Totals</b>					1.8	40,924	40,206	121	28	44	26	2	3	13	55	28	31	7	71	0.65	565.2		

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	LARGEFAR			DATE	4/19/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
09N	03E	22	LARGEFAR	00U1	23.00	16	88	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		16	88	5.5						
CRUISE		10	46	4.6	3,718		1.2			
DBH COUNT										
REFOREST										
COUNT		6	30	5.0						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	30	116.0	16.5	59	42.5	172.5	17,201	16,859	4,987	4,988
WHEMLOCK	10	25.5	14.7	51	7.8	30.0	2,380	2,259	761	762
R ALDER	2	16.4	9.1	56	2.5	7.5	493	493	165	165
NOBLE F	3	2.7	22.4	72	1.6	7.5	939	939	247	247
COTWOOD	1	1.0	21.0	50	0.5	2.5	218	197	62	62
<b>TOTAL</b>	<b>46</b>	<b>161.7</b>	<b>15.8</b>	<b>58</b>	<b>55.4</b>	<b>220.0</b>	<b>21,231</b>	<b>20,747</b>	<b>6,222</b>	<b>6,223</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		44.1	8.2	163	177	192				
WHEMLOCK		49.5	16.5	86	103	120				
R ALDER				30	30	30				
NOBLE F				535	535	535				
COTWOOD										
<b>TOTAL</b>		<b>54.5</b>	<b>8.1</b>	<b>157</b>	<b>170</b>	<b>184</b>	<b>119</b>	<b>30</b>	<b>13</b>	
CL:	68.1 %	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		44.3	8.2	49	53	57				
WHEMLOCK		38.7	12.9	29	34	38				
R ALDER		41.8	39.2	7	11	15				
NOBLE F				139	139	139				
COTWOOD										
<b>TOTAL</b>		<b>49.0</b>	<b>7.3</b>	<b>47</b>	<b>51</b>	<b>55</b>	<b>96</b>	<b>24</b>	<b>11</b>	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		47.6	12.3	102	116	130				
WHEMLOCK		157.2	40.6	15	25	36				
R ALDER		223.2	57.6	7	16	26				
NOBLE F		400.0	103.2		3	6				
COTWOOD		400.0	103.2		1	2				
<b>TOTAL</b>		<b>23.8</b>	<b>6.1</b>	<b>152</b>	<b>162</b>	<b>172</b>	<b>24</b>	<b>6</b>	<b>3</b>	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		39.5	10.2	155	173	190				
WHEMLOCK		157.8	40.7	18	30	42				
R ALDER		215.0	55.5	3	8	12				
NOBLE F		400.0	103.2		8	15				
COTWOOD		400.0	103.2		3	5				
<b>TOTAL</b>				<b>220</b>	<b>220</b>	<b>220</b>				

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT	LARGEFAR			DATE	4/19/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
09N	03E	22	LARGEFAR	00U1	23.00	16	88	S	W	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		46.8	12.1	14,824	16,859	18,893				
WHEMLOCK		170.1	43.9	1,268	2,259	3,250				
R ALDER		223.2	57.6	209	493	776				
NOBLE F		400.0	103.2		939	1,908				
COTWOOD		400.0	103.2		197	401				
<b>TOTAL</b>		<b>11.4</b>	<b>2.9</b>	<b>20,136</b>	<b>20,747</b>	<b>21,358</b>	<b>6</b>	<b>1</b>	<b>1</b>	
CL:	68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		45.5	11.7	4,402	4,988	5,573				
WHEMLOCK		160.4	41.4	447	762	1,078				
R ALDER		215.0	55.5	73	165	256				
NOBLE F		400.0	103.2		247	501				
COTWOOD		400.0	103.2		62	125				
<b>TOTAL</b>				<b>6,223</b>	<b>6,223</b>	<b>6,223</b>				
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR				86	98	110				
WHEMLOCK		155.5	40.1	42	75	108				
R ALDER		175.7	45.3	28	66	104				
NOBLE F		400.0	103.2		125	254				
COTWOOD		400.0	103.2		79	161				
<b>TOTAL</b>		<b>173.5</b>	<b>44.8</b>	<b>92</b>	<b>94</b>	<b>97</b>	<b>1,282</b>	<b>320</b>	<b>142</b>	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	LARGEFAR			DATE	4/19/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
09N	03E	22	LARGEFAR	00U2	97.00	72	379	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		72	379	5.3						
CRUISE		37	178	4.8	18,888	.9				
DBH COUNT REFOREST COUNT		33	191	5.8						
BLANKS		2								
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	125	130.3	15.8	69	44.5	176.7	20,918	20,611	5,550	5,550
WHEMLOCK	33	38.1	15.5	70	12.6	49.5	6,082	5,904	1,625	1,623
R ALDER	14	19.4	10.5	57	3.6	11.7	1,010	1,010	295	295
NOBLE F	6	6.9	15.5	62	2.3	9.1	1,100	1,100	284	284
<b>TOTAL</b>	<i>178</i>	<i>194.7</i>	<i>15.3</i>	<i>68</i>	<i>63.3</i>	<i>247.1</i>	<i>29,110</i>	<i>28,625</i>	<i>7,754</i>	<i>7,752</i>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	56.1	5.0		196	206	216				
WHEMLOCK	67.3	11.7		174	197	220				
R ALDER	45.8	12.7		50	57	64				
NOBLE F	50.2	22.3		190	245	300				
<b>TOTAL</b>	<i>62.5</i>	<i>4.7</i>		<i>185</i>	<i>194</i>	<i>203</i>	<i>156</i>	<i>39</i>	<i>17</i>	
CL:	68.1 %	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	52.2	4.7		53	56	58				
WHEMLOCK	51.0	8.9		49	53	58				
R ALDER	40.0	11.1		15	17	19				
NOBLE F	49.1	21.9		50	64	78				
<b>TOTAL</b>	<i>56.2</i>	<i>4.2</i>		<i>50</i>	<i>53</i>	<i>55</i>	<i>126</i>	<i>31</i>	<i>14</i>	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	66.7	7.9		120	130	141				
WHEMLOCK	162.8	19.2		31	38	45				
R ALDER	293.4	34.5		13	19	26				
NOBLE F	337.1	39.7		4	7	10				
<b>TOTAL</b>	<i>48.5</i>	<i>5.7</i>		<i>184</i>	<i>195</i>	<i>206</i>	<i>94</i>	<i>23</i>	<i>10</i>	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	62.3	7.3		164	177	190				
WHEMLOCK	158.1	18.6		40	50	59				
R ALDER	290.7	34.2		8	12	16				
NOBLE F	306.9	36.1		6	9	12				
<b>TOTAL</b>	<i>40.5</i>	<i>4.8</i>		<i>235</i>	<i>247</i>	<i>259</i>	<i>65</i>	<i>16</i>	<i>7</i>	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	65.5	7.7		19,022	20,611	22,201				
WHEMLOCK	157.1	18.5		4,812	5,904	6,996				
R ALDER	302.8	35.7		650	1,010	1,369				
NOBLE F	305.5	36.0		705	1,100	1,496				
<b>TOTAL</b>	<i>42.7</i>	<i>5.0</i>		<i>27,186</i>	<i>28,625</i>	<i>30,065</i>	<i>73</i>	<i>18</i>	<i>8</i>	

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT	LARGEFAR			DATE	4/19/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
09N	03E	22	LARGEFAR	00U2	97.00	72	379	S	W	
CL:	68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
CL:	68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		64.6	7.6	5,128	5,550	5,972				
WHEMLOCK		158.6	18.7	1,320	1,623	1,927				
R ALDER		297.6	35.0	191	295	398				
NOBLE F		303.8	35.8	182	284	386				
<b>TOTAL</b>		<b>42.2</b>	<b>5.0</b>	<b>7,366</b>	<b>7,752</b>	<b>8,137</b>	<b>71</b>	<b>18</b>	<b>8</b>	
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR				108	117	126				
WHEMLOCK		50.6	6.0	97	119	141				
R ALDER		262.9	31.0	55	86	117				
NOBLE F		137.2	16.2	77	121	164				
<b>TOTAL</b>		<b>212.3</b>	<b>25.0</b>	<b>110</b>	<b>116</b>	<b>122</b>	<b>1,799</b>	<b>450</b>	<b>200</b>	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	LARGEFAR			DATE	4/19/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
09N	03E	22	LARGEFAR	ROW3	1.00	1	47	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		1	47	47.0						
CRUISE		1	47	47.0	504		9.3			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
<b>STAND SUMMARY</b>										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	21	354.1	15.1	63	113.4	440.7	47,882	46,365	13,263	13,269
R ALDER	11	97.0	11.5	50	20.6	69.8	5,292	5,292	1,820	1,820
NOBLE F	7	16.0	22.0	71	9.0	42.2	5,324	5,324	1,359	1,359
WHEMLOCK	8	37.0	14.3	52	11.0	41.6	4,167	3,982	1,121	1,121
<b>TOTAL</b>	<b>47</b>	<b>504.1</b>	<b>14.7</b>	<b>60</b>	<b>155.0</b>	<b>594.4</b>	<b>62,665</b>	<b>60,963</b>	<b>17,562</b>	<b>17,568</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	<b>SAMPLE TREES - BF</b>				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	80.2	17.9		107	131	154				
R ALDER	68.3	21.6		43	55	66				
NOBLE F	45.6	18.5		271	333	395				
WHEMLOCK	53.5	20.2		86	108	129				
<b>TOTAL</b>	<b>91.6</b>	<b>13.3</b>		<b>121</b>	<b>139</b>	<b>158</b>	<b>335</b>	<b>84</b>	<b>37</b>	
CL:	68.1 %	COEFF	<b>SAMPLE TREES - CF</b>				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	75.6	16.9		31	37	44				
R ALDER	80.0	25.3		14	19	23				
NOBLE F	39.8	16.2		71	85	99				
WHEMLOCK	44.3	16.7		25	30	35				
<b>TOTAL</b>	<b>81.5</b>	<b>11.9</b>		<b>34</b>	<b>39</b>	<b>44</b>	<b>266</b>	<b>66</b>	<b>30</b>	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	LARGEFAR			DATE	4/19/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
09N	03E	22	LARGEFAR	ROW4	3.00	1	60	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		1	60	60.0						
CRUISE		1	60	60.0	961		6.2			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
<b>STAND SUMMARY</b>										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	32	238.0	15.7	66	80.4	318.1	34,729	34,060	9,603	9,607
R ALDER	13	52.0	10.6	43	9.7	31.7	1,800	1,800	687	687
WHEMLOCK	10	22.3	12.9	56	5.6	20.2	1,898	1,898	536	536
NOBLE F	5	8.0	19.6	72	3.8	16.7	2,496	2,448	565	565
<b>TOTAL</b>	<i>60</i>	<i>320.3</i>	<i>14.9</i>	<i>62</i>	<i>100.3</i>	<i>386.7</i>	<i>40,924</i>	<i>40,206</i>	<i>11,392</i>	<i>11,395</i>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	<b>SAMPLE TREES - BF</b>				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	44.0	7.8		132	143	154				
R ALDER	45.1	13.0		30	35	39				
WHEMLOCK	49.1	16.3		71	85	99				
NOBLE F	57.2	28.4		219	306	393				
<b>TOTAL</b>	<i>78.9</i>	<i>10.2</i>		<i>111</i>	<i>124</i>	<i>136</i>	<i>249</i>	<i>62</i>	<i>28</i>	
CL:	68.1 %	COEFF	<b>SAMPLE TREES - CF</b>				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	49.6	8.8		37	40	44				
R ALDER	56.3	16.2		11	13	15				
WHEMLOCK	44.9	14.9		20	24	28				
NOBLE F	37.5	18.6		57	71	84				
<b>TOTAL</b>	<i>67.5</i>	<i>8.7</i>		<i>31</i>	<i>34</i>	<i>37</i>	<i>182</i>	<i>45</i>	<i>20</i>	

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

T09N R03E S22 Ty00U1	23.0
T09N R03E S22 Ty00U2	97.0
T09N R03E S22 TyROW	3.0

Project **LARFAR**  
Acres **124.00**

Page No **1**  
Date: **4/19/2016**  
Time **12:57:56PM**

Species	Total	Total	Total	Net Cubic Ft/		CF/ LF	Total CCF		Total MBF	
	Trees	Logs	Tons	Tree	Log		Gross	Net	Gross	Net
DOUG FIR	16,374	29,205	19,812	42.45	23.80	0.73	6,952	6,951	2,577	2,536
WHEMLOCK	4,381	8,034	5,691	40.57	22.12	0.68	1,778	1,777	655	634
NOBLE F	776	1,224		46.71	29.64	0.83	363	363	141	141
R ALDER	2,516	3,137	997	14.41	11.56	0.37	363	363	120	120
COTWOOD	24	48	35	59.38	29.69	1.29	14	14	5	5
<b>Totals</b>	<b>24,072</b>	<b>41,647</b>	<b>26,534</b>	<b>39.33</b>	<b>22.73</b>	<b>0.70</b>	<b>9,469</b>	<b>9,468</b>	<b>3,497</b>	<b>3,435</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	21,532	38,462	25,503	42.22	23.64	0.72	9,093	9,091	3,372	3,311
H	2,540	3,185	1,032	14.83	11.83	0.38	377	377	125	124
<b>Totals</b>	<b>24,072</b>	<b>41,647</b>	<b>26,534</b>	<b>39.33</b>	<b>22.73</b>	<b>0.70</b>	<b>9,469</b>	<b>9,468</b>	<b>3,497</b>	<b>3,435</b>



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

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

FPA/N No: 2932121  
 Effective Date: 08/12/2016  
 Expiration Date: 08/12/2019  
 Shut Down Zone: 660  
 EARR Tax Credit:  Eligible     Non-eligible  
 Reference: Large Farva  
 30-093916

**Decision**

- Notification      Operations shall not begin before the effective date.
- Approved            This Forest Practices Application is subject to the conditions listed below.
- Disapproved        This Forest Practices Application is disapproved for the reasons listed below.
- Closed                Applicant has withdrawn FPA/N.

**FPA/N Classification**

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

Class II     Class III     Class IVG     Class IVS     4 years     5 years

**Conditions on Approval / Reasons for Disapproval**

Notify the Department of Natural Resources at least 48 hours before beginning operations. Call 360-577-2025 and provide the application number and legal description for your operation.

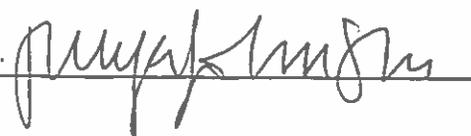
Issued By: Brian Wesemann

Region: Pacific Cascade

Title: Forest Practices Forester

Date: 08/12/2016

Copies to:     Landowner, Timber Owner and Operator.

Issued in person:     Landowner  Timber Owner  Operator By: 

**Appeal Information**

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

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

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

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

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

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

And

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

**Other Applicable Laws**

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

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

Use the "Notice of Transfer of Approved Forest Practices Application/Notification" form. This form is available at region offices and on the Forest Practices website: <http://www.dnr.wa.gov/businesspermits/forestpractices>. Notify DNR of new Operators within 48 hours.

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

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

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

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

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

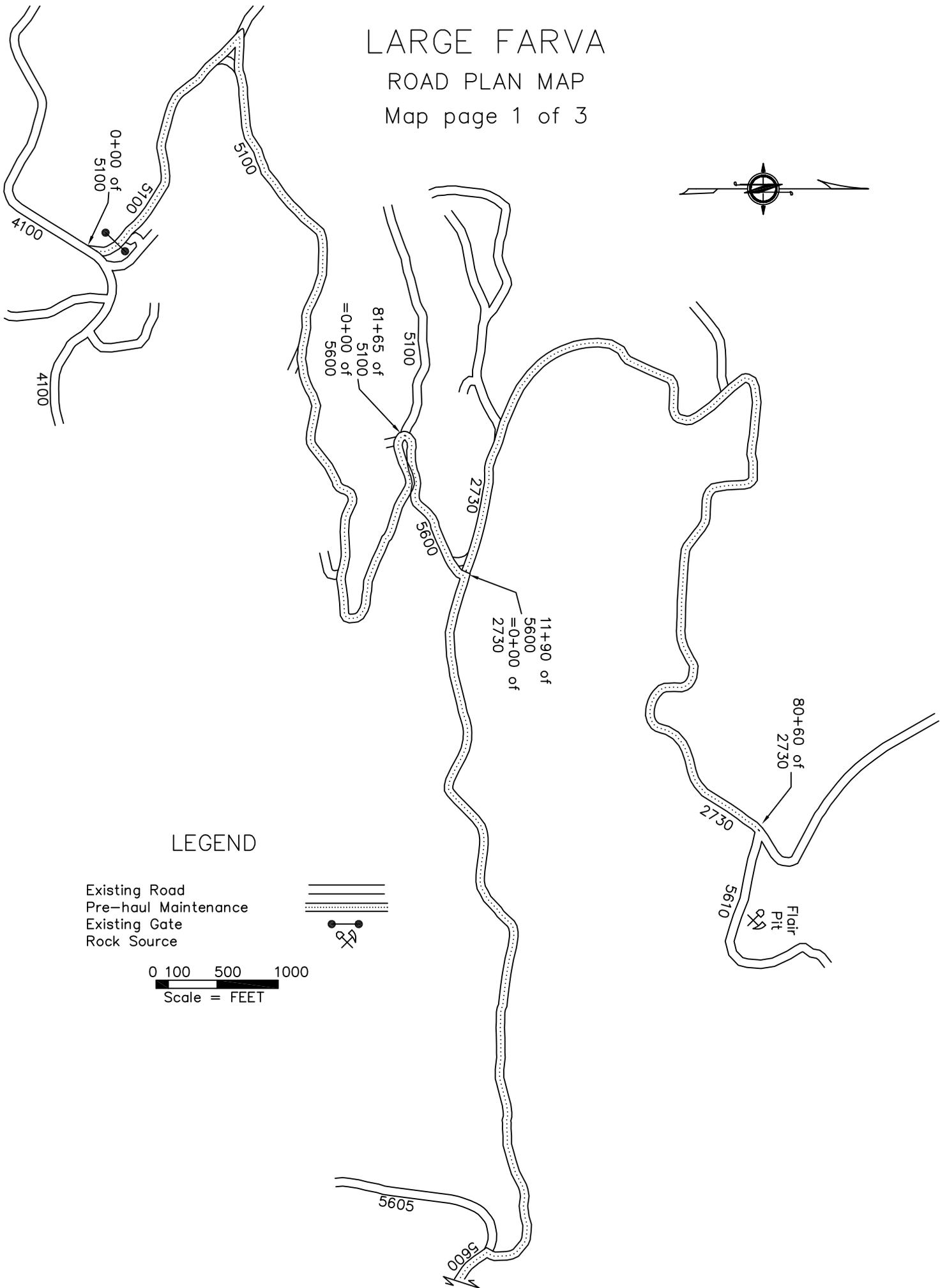
**DNR affidavit of mailing:**

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

# LARGE FARVA

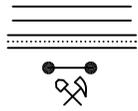
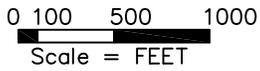
## ROAD PLAN MAP

Map page 1 of 3



### LEGEND

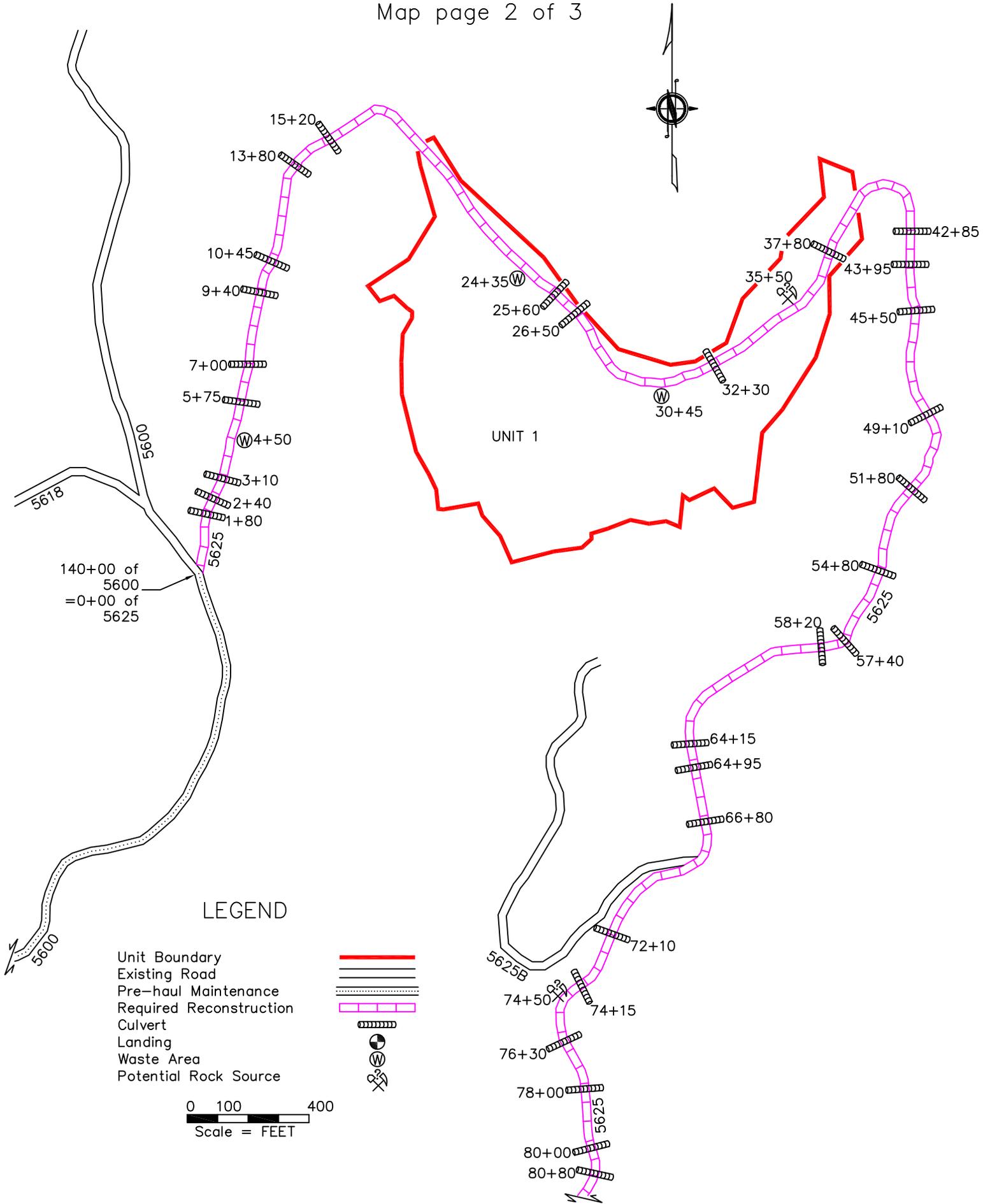
- Existing Road
- Pre-haul Maintenance
- Existing Gate
- Rock Source



# LARGE FARVA

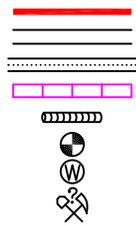
## ROAD PLAN MAP

Map page 2 of 3



### LEGEND

- Unit Boundary
- Existing Road
- Pre-haul Maintenance
- Required Reconstruction
- Culvert
- Landing
- Waste Area
- Potential Rock Source

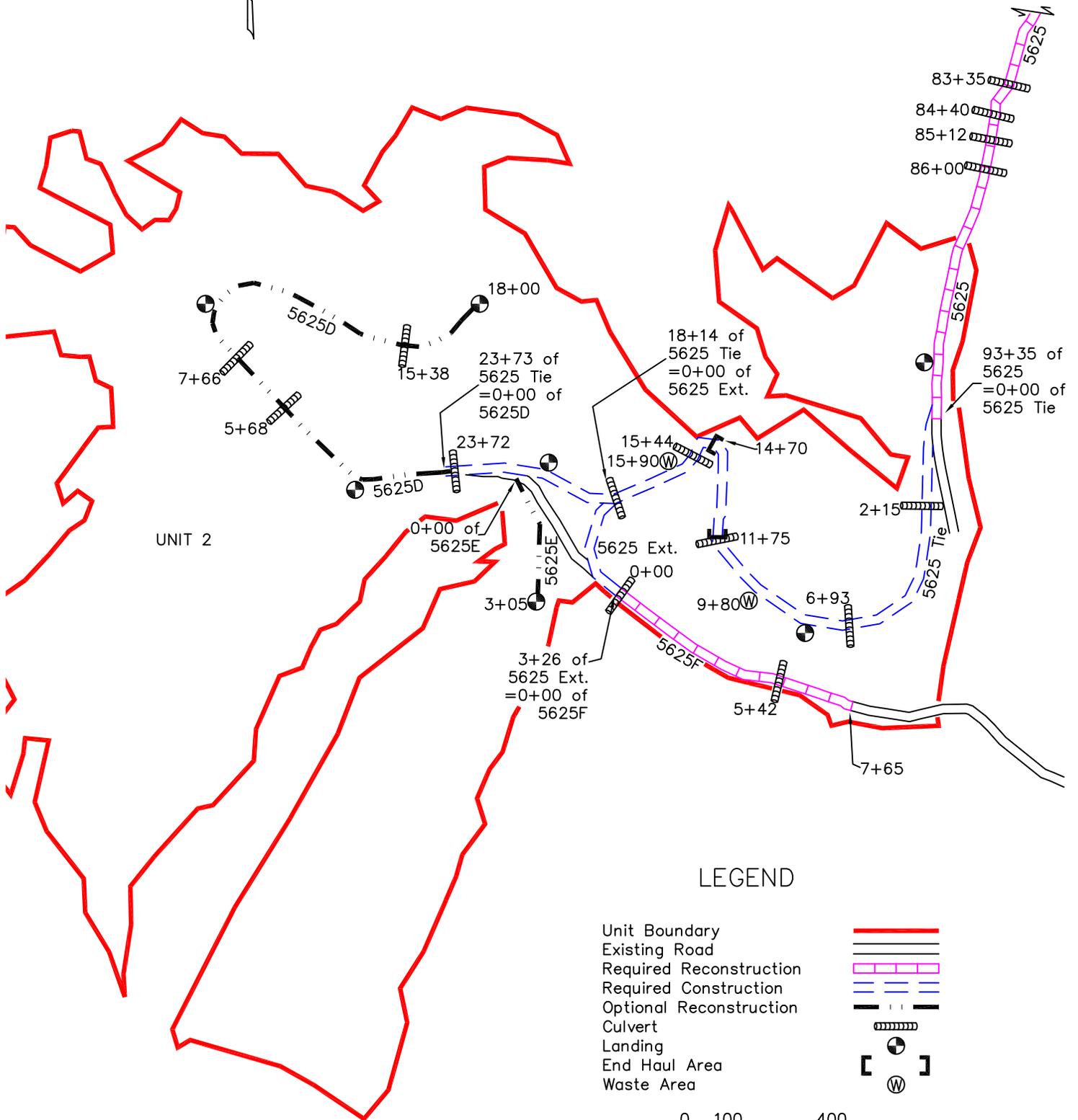


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# LARGE FARVA

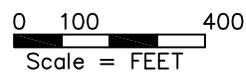
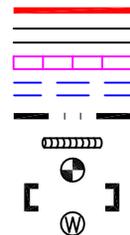
## ROAD PLAN MAP

Map page 3 of 3



### LEGEND

- Unit Boundary
- Existing Road
- Required Reconstruction
- Required Construction
- Optional Reconstruction
- Culvert
- Landing
- End Haul Area
- Waste Area



STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

LARGE FARVA TIMBER SALE ROAD PLAN  
COWLITZ COUNTY  
ST HELENS DISTRICT

AGREEMENT NO.: 30-093916

STAFF ENGINEER: RICH WALLMOW

DATE: 05/11/2016

DRAWN & COMPILED BY: ALICIA COMPTON

MODIFIED DATE: 06/29/2016

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>
5100	0+00 to 81+65	Pre-haul Maintenance
5600	0+00 to 140+00	Pre-haul Maintenance
2730	0+00 to 80+60	Pre-haul Maintenance
5625	0+00 to 93+35	Reconstruct
5625 Tie	0+00 to 23+73	Construct
5625 Ext.	0+00 to 3+26	Construct
5625F	0+00 to 7+65	Reconstruct

**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>
5625D	0+00 to 18+00	Reconstruct
5625E	0+00 to 3+05	Reconstruct

**0-4 CONSTRUCTION**

Construction includes, but is not limited to: clearing; grubbing; right-of-way debris disposal; excavation and/or embankment to subgrade; landing construction; acquisition and installation of drainage structures; acquisition, manufacture, and application of rock.

**0-5 RECONSTRUCTION**

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
5625	All	Brush road. Reconstruct to the dimensions shown on the Typical Section Sheet. Clean or reconstruct ditches, culvert inlets and outlets, headwalls and catchbasins. Construct landings. Install culverts as shown on the Culvert List. Armor ditchline in accordance with Clause 8-6. Construct rock berms in accordance with Clause 8-7. Grade, shape, and compact existing road surface. Apply rock as shown on the Rock List. Grade, shape and compact the applied rock.
5625D, 5625F	All	Brush road. Reconstruct to the dimensions shown on the Typical Section Sheet. Clean or reconstruct ditches, and headwalls and catchbasins. Construct landing(s). Install culverts as shown on the Culvert List. Grade, shape, and compact existing road surface. Apply rock as shown on the Rock List. Grade, shape and compact the applied rock.
5625E	All	Reconstruct to the dimensions shown on the Typical Section Sheet. Reconstruct ditches, headwalls and catchbasins. Construct landing. Grade, shape, and compact existing road surface. Apply rock as shown on the Rock List. Grade, shape and compact the applied rock.

**0-6 PRE-HAUL MAINTENANCE**

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
5100	0+00 to 81+65	Grade and shape existing road prior to rock application. Apply rock as shown on the Rock List. Grade, shape and compact the applied rock.
5600	0+00 to 140+00	Grade and shape existing road prior to rock application. Apply rock as shown on the Rock List.
2730	0+00 to 80+60	Grade and shape existing road.

**0-7 POST-HAUL MAINTENANCE**

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

**0-12 DEVELOP ROCK SOURCE**

Purchaser shall develop an existing rock source. Rock source development will involve clearing, stripping and manufacturing rock. Work for developing rock sources is listed in Section 6 ROCK AND SURFACING.

**SECTION 1 – GENERAL**

**1-1 ROAD PLAN CHANGES**

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

**1-2 UNFORESEEN CONDITIONS**

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

**1-3 ROAD DIMENSIONS**

Purchaser shall perform road work in accordance with the dimensions shown on the TYPICAL SECTION SHEET and the specifications within this road plan.

**1-4 ROAD TOLERANCES**

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

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

**1-6 ORDER OF PRECEDENCE**

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

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

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

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

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

**1-9 DAMAGED METALLIC COATING**

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

**1-15 ROAD MARKING**

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

- Centerline construction stakes, orange paint, orange flagging and RP’s for new construction.
- Orange painted trees and RP’s along reconstruction.

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

Purchaser shall perform work on the following roads in accordance with the construction stakes and reference points set in the field for grade and alignment.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
5625 Tie	0+00 to 23+73	Slope stakes and RP’s.

**1-18 REFERENCE POINT DAMAGE**

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

**1-21 HAUL APPROVAL**

Purchaser shall not use roads under this road plan for timber hauling, 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 5 calendar days before work begins.

**1-23 ROAD WORK PHASE APPROVAL**

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

- Subgrade construction, compaction and drainage installation
- Rock application and compaction

**1-25 ACTIVITY TIMING RESTRICTION**

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

<u>Road</u>	<u>Activity</u>	<u>Closure Period</u>
All Roads	Construction and Reconstruction	September 30 to June 1

**1-26 OPERATING DURING CLOSURE PERIOD**

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

**1-29 SEDIMENT RESTRICTION**

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

**1-30 CLOSURE TO PREVENT DAMAGE**

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

- Wheel track rutting exceeds 6 inches on pit run, jaw run, or native surface roads.
- Wheel track rutting exceeds 4 inches on crushed rock roads.
- Surface or base stability problems persist.

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

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

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

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

**1-33 SNOW PLOWING RESTRICTION**

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

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

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

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

**SECTION 2 – MAINTENANCE**

**2-1 GENERAL ROAD MAINTENANCE**

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

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

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

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

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

**2-4 PASSAGE OF LIGHT VEHICLES**

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

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

On the following roads, Purchaser shall use a grader to shape the existing surface before timber haul, other than right-of-way timber.

<u>Road</u>	<u>Stations</u>
5100	0+00 to 81+65
5600	0+00 to 140+00
2730	0+00 to 80+60

**2-6 CLEANING CULVERTS**

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

<u>Road</u>	<u>Stations</u>
5625	0+00 to 93+35

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

On the following road, Purchaser shall clean ditches, headwalls, and catchbasins. Work must be completed before rock application and must be done in accordance with the TYPICAL SECTION SHEET.

<u>Road</u>	<u>Stations</u>
5625	0+00 to 93+35
5625D	0+00 to 18+00
5625E	0+00 to 3+05
5625F	0+00 to 7+65

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

**3-1 BRUSHING**

On the following roads, Purchaser shall cut vegetative material up to 5 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>
5625	0+00 to 93+35
5625D	0+00 to 18+00
5625F	0+00 to 7+65

**3-5 CLEARING**

Purchaser shall fall all vegetative material larger than 2 inches DBH or over 4 feet high between the marked right-of-way boundaries and within waste and debris areas, or if not marked in the field, between the clearing limits specified on the TYPICAL SECTION SHEET. Clearing must be completed before starting excavation and embankment.

**3-8 PROHIBITED DECKING AREAS**

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

- Within the grubbing limits.
- Within 50 feet of any stream.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- On slopes greater than 50%.
- 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.

**3-12 STUMP PLACEMENT**

Purchaser shall place grubbed stumps outside of the grubbing limits and in compliance with all other clauses in this road plan.

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

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

**3-20 ORGANIC DEBRIS DEFINITION**

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

**3-21 DISPOSAL COMPLETION**

Purchaser shall remove organic debris from the road surface, ditchlines, and culvert inlets and outlets. Purchaser shall complete all disposal of organic debris, before subgrade compaction, the application of rock, and timber haul.

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

Waste areas for organic debris are located as listed below or within the cleared right-of-way or in natural openings.

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
5610	7+50	On left.
5625	4+50, 24+35, 30+45	On right.
5625 Tie	9+80 15+90	On left. On right.

**3-23 PROHIBITED DISPOSAL AREAS**

Purchaser shall not place organic debris in the following areas:

- Within 15 feet of a cross drain culvert.
- Within 50 feet of a live stream, or wetland.
- On road subgrades, or excavation and embankment slopes.
- On slopes greater than 50%.
- Within the operational area for cable landings where debris may shift or roll.
- On locations where brush can fall into the ditch or onto the road surface.
- Against standing timber.

**3-24 BURYING ORGANIC DEBRIS RESTRICTED**

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

**3-25 SCATTERING ORGANIC DEBRIS**

Purchaser shall scatter organic debris outside of the grubbing limits and in natural openings. Where natural openings are unavailable or restrictive, alternate debris disposal methods are subject to the written approval of the Contract Administrator.

**3-32 END HAULING ORGANIC DEBRIS**

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

<u>Road</u>	<u>Stations</u>
5625 Tie	11+75 to 14+70

**SECTION 4 – EXCAVATION**

**4-2 PIONEERING**

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

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

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

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

- Grade and alignment must have smooth continuity, without abrupt changes in direction.
- Maximum grades may not exceed 18 percent favorable and 15 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.

**4-4 SWITCHBACK STANDARDS**

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

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

**4-5 CUT SLOPE RATIO**

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

<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>
5625E	0+00 to 3+05

**4-12 FULL BENCH CONSTRUCTION**

Where side slopes exceed 50%, Purchaser shall use full bench construction for the entire subgrade width. Purchaser shall end haul waste material to the location specified in Clause 4-37 WASTE AREA LOCATION.

**4-21 TURNOUTS**

Purchaser shall construct turnouts intervisible with a maximum distance of 1,000 feet between turnouts. Locations may be adjusted to fit the final subgrade alignment and sight distances. Minimum dimensions are shown on the ROCK LIST.

**4-22 TURNAROUNDS**

Purchaser shall construct turnarounds as designated on the ROCK LIST. Turnarounds must be no larger than 30 feet long and 30 feet wide.

**4-25 DITCH CONSTRUCTION AND RECONSTRUCTION**

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

**4-28 DITCH DRAINAGE**

Ditches must drain to cross-drain culverts or ditchouts.

**4-29 DITCHOUTS**

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

**4-35 WASTE MATERIAL DEFINITION**

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

**4-36 DISPOSAL OF WASTE MATERIAL**

Purchaser may sidecast waste material on side slopes up to 50% if the waste material is compacted and free of organic debris. On side slopes greater than 50%, all waste material must be end hauled or pushed to the designated embankment sites and waste areas identified in Clause 4-37 WASTE AREA LOCATION.

**4-37 WASTE AREA LOCATION**

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

<u>Road</u>	<u>Waste Area Location</u>	<u>Comments</u>
5625	4+50, 24+35, 30+45	On right.
5625 Tie	9+80 15+90	On left. On right.

**4-38 PROHIBITED WASTE DISPOSAL AREAS**

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

- Within 15 feet of a cross drain culvert.
- Within 50 feet of a live stream or wetland.
- On side slopes steeper than 50%.
- 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.

**4-60 FILL COMPACTION**

Purchaser shall compact all embankment and waste material in accordance with the COMPACTION LIST by routing equipment over the entire width of each lift. Waste material may be placed by end-dumping or sidecasting until sufficiently wide enough to support the equipment.

**4-61 SUBGRADE COMPACTION**

Purchaser shall compact constructed and reconstructed subgrades in accordance with the COMPACTION LIST by routing equipment over the entire width, except ditch.

**4-63 EXISTING SURFACE COMPACTION**

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

## SECTION 5 – DRAINAGE

### 5-5 CULVERTS

Purchaser shall install culverts as part of this contract. Culverts must be installed concurrently with subgrade work and must be installed before subgrade compaction and rock application. Culvert locations and the minimum requirements for culvert length and diameter are designated on the CULVERT LIST. Culvert, downspout, and flume lengths may be adjusted to fit as-built conditions and may not terminate directly on unprotected soil. Culverts must be new material and meet the specifications in Clauses 10-17 through 10-22.

### 5-11 UNUSED MATERIALS STATE PROPERTY

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

### 5-15 CULVERT INSTALLATION

Culvert installation must be in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL 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.

### 5-17 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

The type of energy dissipater and the amount of material and must be consistent with the specifications on the CULVERT LIST, except for temporary culverts. Placement must be by zero-drop-height method only. Energy dissipater installation is subject to approval by the Contract Administrator.

### 5-25 CATCH BASINS

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

### 5-26 HEADWALLS FOR CROSS DRAIN CULVERTS

Purchaser shall construct headwalls in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all culverts on the CULVERT LIST that specify placement of rock, except for temporary culverts. Rock may not restrict the flow of water into culvert inlets or catch basins.

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

At the following culverts, Purchaser shall place LIGHT LOOSE RIP RAP 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 or as directed by the Contract Administrator. Rock may not restrict the flow of water into culvert inlets or catch basins.

<u>Road</u>	<u>Stations</u>	<u>Rock Type</u>
5625	2+40, 9+40, 13+80, 57+40, 64+95, 83+35, 85+12	Light Loose Rip Rap

**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. Purchaser shall notify the Contract Administrator a minimum of 5 days before starting any operations in the listed locations.

<u>Source</u>	<u>Location</u>	<u>Remarks</u>
Flair Pit	Sec. 21, T9N R3E	
4250 Pit	Sec. 11, T9N R2E	
5625 (35+50 and 74+50)	Sec. 22, T9N R3E	Potential Rock Source

**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 stockpiles on state land at no charge to the Purchaser. Purchaser shall not remove additional yardage, without prior written approval from the Contract Administrator. Other stockpiles may not be used, without prior written approval from the Contract Administrator.

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
4250 Stockpile	Sec. 11, T9N R2E	1 ½" Crushed Rock
4672 Stockpile	Sec. 21, T9N R2E	1 ½" Crushed Rock

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

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

<u>Source</u>
Flair Pit

**6-11 ROCK SOURCE DEVELOPMENT PLAN BY PURCHASER**

Purchaser shall conduct rock source development and use at the following source, in accordance with a written ROCK SOURCE DEVELOPMENT PLAN to be prepared by the Purchaser. The plan is subject to written approval by the Contract Administrator before any rock source operations. Upon completion of operations, the rock source must be left in the condition specified in the ROCK SOURCE DEVELOPMENT PLAN, and approved in writing by the Contract Administrator. Purchaser shall notify the Contract Administrator a minimum of 5 calendar days before starting any operations in the rock source.

<u>Source</u>
5625 (35+50 and 74+50)

Rock source development plans prepared by the Purchaser must show the following information:

- Rock source location.
- Rock source overview showing access roads, development areas, stockpile locations, waste areas, and floor drainage.
- Rock source profiles showing development areas, bench locations including widths, and wall faces including heights.

**6-13 ROCK EXPLORATION**

Purchaser shall provide an excavator and/or rock drill with operator for up to 10 hours of exploration of rock and other related work as directed by the Contract Administrator at the following sites.

<u>Site</u>	<u>Location</u>
5625	35+50, 74+50

**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 when placed in hauling vehicles. Purchaser shall provide a sieve analysis upon request from the Contract Administrator.

**6-41 SELECT PIT RUN ROCK**

No more than 50 percent of the rock may be larger than 8 inches in any dimension and no rock may be larger than 12 inches in any dimension. Select Pit Run rock may not contain more than 5 percent by weight of organic debris, dirt, and trash. Rock may require processing to meet this specification.

**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>
80% / 90%	12"-30"
10% / 20%	3"- 12"

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

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

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

Measurement of culvert armoring, ditch armoring, rock berms, energy dissipaters, and landing rock is on a cubic yard truck measure basis. The Contract Administrator will measure each truck box before rock hauling. An average of such volumes for each truck will be used to tally the volume hauled. The Contract Administrator may periodically require that a load be flattened off and its volume calculated. Purchaser shall maintain load tally sheets for each truck and shall give them to the Contract Administrator on a weekly basis during rocking operations.

**6-70 APPROVAL BEFORE ROCK APPLICATION**

Purchaser shall obtain written approval from the Contract Administrator for SUBGRADE CONSTRUCTION AND DRAINAGE INSTALLATION 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. The Contract Administrator will direct locations for rock that is to be applied as spot patching. Road surfaces must be compacted in accordance with the COMPACTION LIST by routing equipment over the entire width.

**6-73 ROCK FOR WIDENED PORTIONS**

Purchaser shall apply rock to turnarounds, turnouts, and areas with curve widening to the same depth and specifications as the traveled way, unless otherwise specified in the ROCK LIST.

**6-75 OPTIONAL ROCK EXCEPTION**

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

If less rock is applied, Purchaser shall submit a written plan, for approval, describing how these roads will be constructed, used, maintained, and treated post-haul. Purchaser shall meet post-haul specifications in Section 9 POST-HAUL ROAD WORK and Clause 9-23, the FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS, or other conditions of the approved plan.

<u>Road</u>	<u>Stations</u>
5625D	0+00 to 18+00
5625E	0+00 to 3+05

**7-6 STREAM CROSSING INSTALLATION**

Purchaser shall install stream crossing structures in accordance with the manufacturer's requirements.

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

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

**7-70 GATE CLOSURE**

On the following roads, Purchaser shall keep gates closed and locked except during periods of haul. All gates must be closed at termination of use.

<u>Road</u>	<u>Milepost or Station</u>
4100	8.3
5100	0+50

**SECTION 8 – EROSION CONTROL**

**8-1 SEDIMENT CONTROL**

Sediment control shall be accomplished using sediment traps, silt fences, settling ponds, or other methods as approved, in writing, by the Contract Administrator.

**8-2 PROTECTION FOR EXPOSED SOIL**

Purchaser shall provide and evenly spread a 6-inch layer of straw to all exposed soils within 50 feet of a stream or wetland. Soils must be covered before the first anticipated storm event. Soils may not sit exposed during any rain event.

**8-6 DITCH ARMOR**

On the following roads, Purchaser shall armor ditchlines with Select Pit Run rock in accordance with the ROCK LIST.

<u>Road</u>	<u>Stations</u>
5625	1+00 to 3+10
	13+80 to 15+20
	17+10 to 18+70
	43+95 to 47+00
	56+40 to 57+40
	66+00 to 67+90

**8-7 ROAD SHOULDER BERM INSTALLATION**

On the following roads, Purchaser shall construct berms on the road shoulders as shown on the ROAD SURFACE SHOULDER BERM DETAIL.

<u>Road</u>	<u>Stations</u>	<u>Remarks</u>
5625	9+20 to 10+45	On right.
	16+90 to 18+70	On right.
	39+90 to 41+10	On right.
	41+25 to 42+40	On right.
	49+50 to 50+50	Both sides.
	57+10 to 57+60	On right.

**8-15 REVEGETATION**

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

<u>Road</u>	<u>Location</u>	<u>Qty (lbs)*</u>	<u>Type</u>
5625	0+00 to 92+30	180	Seed
5625 Tie	0+00 to 23+73	71	Seed
5625 Ext.	0+00 to 3+26	9	Seed
5625D	0+00 to 18+00	36	Seed
5625E	0+00 to 3+05	9	Seed
5625F	0+00 to 7+65	15	Seed

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

**8-16 REVEGETATION SUPPLY**

The Purchaser shall provide the seed.

**8-17 REVEGETATION TIMING**

Purchaser shall revegetate after road work is completed and between March 15 and September 15. 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 on all exposed soils within 50 feet of streams or wetlands. The protective cover may consist of straw or hay.

**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**

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

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

**9-5 POST-HAUL MAINTENANCE**

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

<u>Road</u>	<u>Stations</u>	<u>Additional Requirements</u>
2730	0+00 to 80+60	Grade and shape existing road.

**9-10 LANDING DRAINAGE**

Purchaser shall provide for drainage of the landing surface.

**9-11 LANDING EMBANKMENT**

Purchaser shall slope landing embankments to the original construction specifications.

SECTION 10 MATERIALS

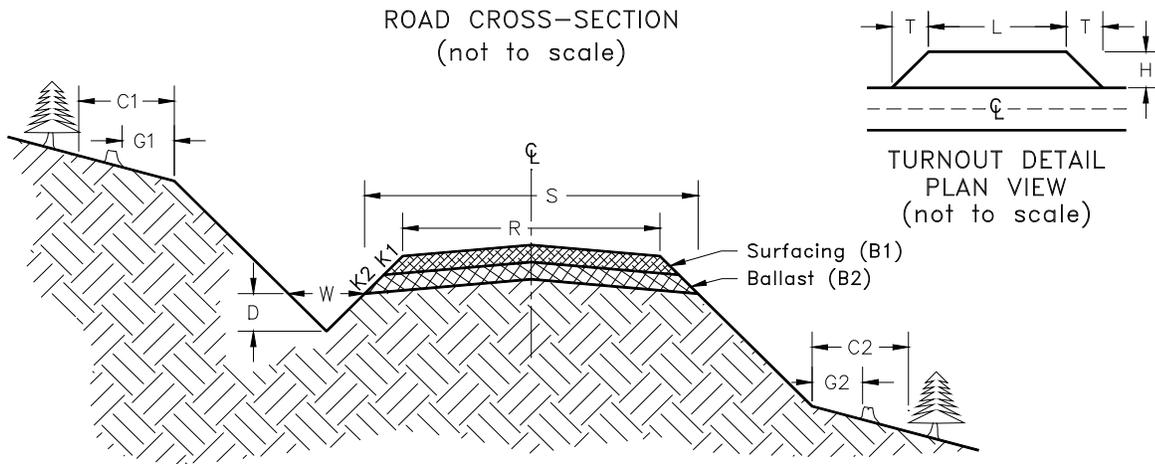
**10-17 CORRUGATED PLASTIC CULVERT**

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

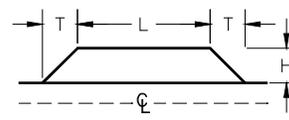
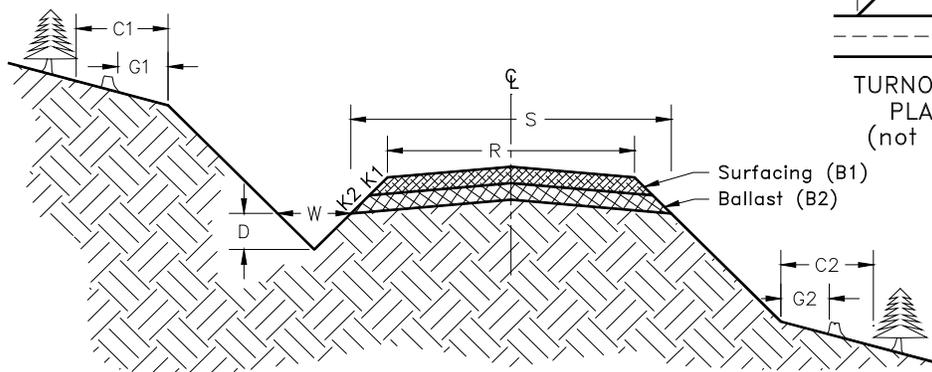


Road Number	From Station	To Station	Tolerance Class	Subgrade Width	Road Width	Ditch		Crown in. @ CL	Grubbing Limits		Clearing Limits	
						Width	Depth		G1	G2	C1	C2
				S	R	W	D					
5100	0+00	81+65	A	-	14'	-	-	4	-	-	-	-
5600	0+00	140+00	A	-	14'	-	-	4	-	-	-	-
2730	0+00	80+60	A	-	12'	-	-	4	-	-	-	-
5625	0+00	19+10	B	16'	12'	3'	1'	4	2'	2'	ROW Tags	
	19+10	39+30	B	16'	12'	3'	1'	4	2'	2'	10'	10'
	39+30	86+90	B	16'	12'	3'	1'	4	2'	2'	ROW Tags	
	86+90	93+35	B	16'	12'	3'	1'	4	2'	2'	10'	10'
5625 Tie	0+00	13+64	C	18'	12'	3'	1'	4	5'	5'	10'	10'
	13+64	17+96	C	20'	16'	3'	1'	4	5'	5'	10'	10'
	17+96	23+73	C	18'	12'	3'	1'	4	5'	5'	10'	10'
5625 Ext.	0+00	3+26	C	18'	12'	3'	1'	4	5'	5'	10'	10'
5625D	0+00	18+00	C	16'	12'	3'	1'	4	2'	2'	5'	5'
5625E	0+00	3+05	C	16'	12'	3'	1'	4	2'	2'	5'	5'
5625F	0+00	7+65	C	16'	12'	3'	1'	4	2'	2'	5'	5'

# ROCK LIST

(Page 1 of 2)

ROAD CROSS-SECTION  
(not to scale)



TURNOUT DETAIL  
PLAN VIEW  
(not to scale)

## SELECT PIT RUN

Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth	C.Y./ Station	# of Stations	C.Y. Subtotal	Rock Source	Turnout		
									Length	Width	Taper
			K2	B2				FLAIR PIT	L	H	T
5625	0+00	93+35	1 ½:1	8"	40	93.35	3,734				
		Curve Widening					131				
		Junction					10				
		All Culvert Backfill					410				
		Turnaround (7)					210				
		Turnouts (2)					40				
		Landings					150				
		(20+70, 30+45, 92+30)									
		Ditch Armor					70				
		Energy Dissipator					30				
5625 Tie	0+00	13+64	1 ½:1	15"	81	13.64	1,105				
	13+64	17+96	1 ½:1	15"	104	4.32	449				
	17+96	23+73	1 ½:1	15"	81	5.77	467				
		Curve Widening					71				
		Junction					15				
		Turnarounds (2)					86				
		Landings					120				
		(9+10, 20+54)									
		Energy Dissipator					6				
5625 Ext.	0+00	3+26	1 ½:1	15"	81	3.26	264				
		Curve Widening					9				
		Junction					15				
*5625D	0+00	18+00	1 ½:1	8"	40	18.00	720				
		*Curve Widening					25				
		*Junction					10				
		*Landing					240				
		(2+35, 9+35, 18+00)									
		*Energy Dissipator					3				
*5625E	0+00	3+05	1 ½:1	12"	63	3.05	192				
		Junction					12				
		Curve Widening					7				
		Landing (3+05)					80				
5625F	0+00	7+65	1 ½:1	8"	40	7.65	306				
		Curve Widening					11				
		Turnaround (7+65)					30				
		Energy Dissipator					3				
5610 - Flair Pit		Energy Dissipator					1				

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

Required SELECT PIT RUN Total: 7,743 Cubic Yards  
 Optional SELECT PIT RUN Total: 1,289 Cubic Yards  
 Total SELECT PIT RUN Total: 9,032 Cubic Yards

**ROCK LIST**  
(Page 2 of 2)

**1 ½"-INCH MINUS CRUSHED**

Road Number	From Station or Mile Post	To Station or Mile Post	Rock Slope	Compacted Rock Depth	C.Y./ Station	# of Stations	C.Y. Subtotal	Rock Source	Turnout		
									Length	Width	Taper
			K2	B2				4250 Pit or 4672 Pit Stockpile	L	H	T
5100	Spot Rock (18+90 to 81+65)						200				
5600	Spot Rock (11+90 to 69+50)						100				
5625	Rock Berms						45				
5625 Tie	Spot Rock (traction coat as needed)						250				

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

Required 1 ½"-Inch Minus Total: 595 Cubic Yards

**LIGHT LOOSE RIP RAP**  
(Fill Slope Armor)

Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth	C.Y./ Station	# of Stations	C.Y. Total	Rock Source
			K1	B1				4250 Pit or 5625 (35+50)
5625	2+40, 9+40, 13+80, 57+40, 64+95, 83+35, 85+12						63	

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

TOTAL 63 Cubic Yards

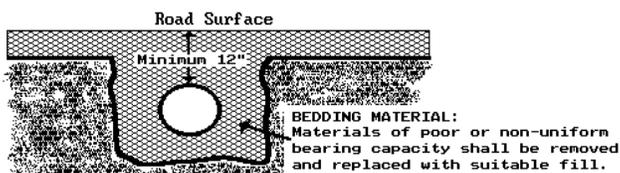
# CULVERT LIST

Road Number	Location	Culvert		Length (ft)			(C.Y.)			Backfill Material	Placement Method	Const. Staked	Remarks
		Dia	Gauge	Culvert	Downspt	Flume	Inlet	Outlet	Type				
			If Steel										
5625	1+80	18"		30			1/2	1/2	SP	NT/SP	ZDH		Ns Seep
	2+40	24"		45			2	4	LL	NT/SP	ZDH		Ns/Type 5 Stream
	3+10	18"		40			1/2	1/2	SP	NT/SP	ZDH		
	5+75	18"		40			1/2	1/2	SP	NT/SP	ZDH		Ns Seep
	7+00	18"		40			1/2	1/2	SP	NT/SP	ZDH		
	9+40	24"		60			6	12	LL	NT/SP	ZDH		Ns/Type 5 Stream
	10+45	18"		40			1/2	1/2	SP	NT/SP	ZDH		
	13+80	30"		50			4	10	LL	NT/SP	ZDH		Np/Type 4 Stream
	15+20	18"		30			1/2	1/2	SP	NT/SP	ZDH		
	25+60	18"		40			1/2	1/2	SP	NT/SP	ZDH		Ns Seep
	26+50	18"		30			1/2	1/2	SP	NT/SP	ZDH		
	32+30	18"		30			1/2	1/2	SP	NT/SP	ZDH		
	37+80	18"		30			1/2	1/2	SP	NT/SP	ZDH		
	42+85	18"		40			1/2	1/2	SP	NT/SP	ZDH		
	43+95	18"		40	15		1/2	-	SP	NT/SP	ZDH		Ns Seep
	45+50	18"		40	15		1/2	-	SP	NT/SP	ZDH		Ns Seep
	49+10	18"		40			1/2	1/2	SP	NT/SP	ZDH		
	51+80	18"		40			1/2	1/2	SP	NT/SP	ZDH		
	54+80	18"		40			1/2	1/2	SP	NT/SP	ZDH		
	57+40	24"		40			3	5	LL	NT/SP	ZDH		Np/Type 4 Stream
	58+20	18"		40			1/2	1/2	SP	NT/SP	ZDH		
	64+15	18"		40			1/2	1/2	SP	NT/SP	ZDH		
	64+95	24"		40			2	3	LL	NT/SP	ZDH		Np Seep
	66+80	18"		40			1/2	1/2	SP	NT/SP	ZDH		Np Seep
	72+10	18"		30			1/2	1/2	SP	NT/SP	ZDH		
	74+15	18"		40			1/2	1/2	SP	NT/SP	ZDH		Ns Seep
	76+30	18"		30			1/2	1/2	SP	NT/SP	ZDH		
	78+00	18"		40			1/2	1/2	SP	NT/SP	ZDH		
	80+00	18"		45			1/2	1/2	SP	NT/SP	ZDH		Ns Seep
	80+80	18"		30			1/2	1/2	SP	NT/SP	ZDH		
	83+35	24"		40			2	4	LL	NT/SP	ZDH		Np/Type 5 Stream
	84+40	18"		30			1/2	1/2	SP	NT/SP	ZDH		
	85+12	24"		40			2	4	LL	NT/SP	ZDH		Np Seep
86+00	18"		30			1/2	1/2	SP	NT/SP	ZDH			
5625 Tie	2+15	18"		40			1/2	1/2	SP	NT	ZDH		
	6+93	18"		40			1/2	1/2	SP	NT	ZDH		
	11+75	18"		40			1/2	1/2	SP	NT	ZDH		
	15+44	18"		40			1/2	1/2	SP	NT	ZDH		
	18+14	18"		30	15		1/2	-	SP	NT	ZDH		
5625D	23+72	18"		30			1/2	1/2	SP	NT	ZDH		
	5+68	18"		30			1/2	1/2	SP	NT	ZDH		
	7+66	18"		40			1/2	1/2	SP	NT	ZDH		
5625F	15+38	18"		30			1/2	1/2	SP	NT	ZDH		
	0+00	18"		30			1/2	1/2	SP	NT	ZDH		
5610 - Flair Pit	5+42	18"		30			1/2	1/2	SP	NT	ZDH		
		18"		60			1/2	1/2	SP	NT	ZDH		

**Key:**

- CR - Crushed Rock
- NT - Native (bank run)
- SP - Select Pit Run
- HL - Heavy Loose Riprap
- LL - Light Loose Riprap
- Flume - Half round pipe
- Downspt - Full round pipe
- ZDH - Zero Drop Height

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

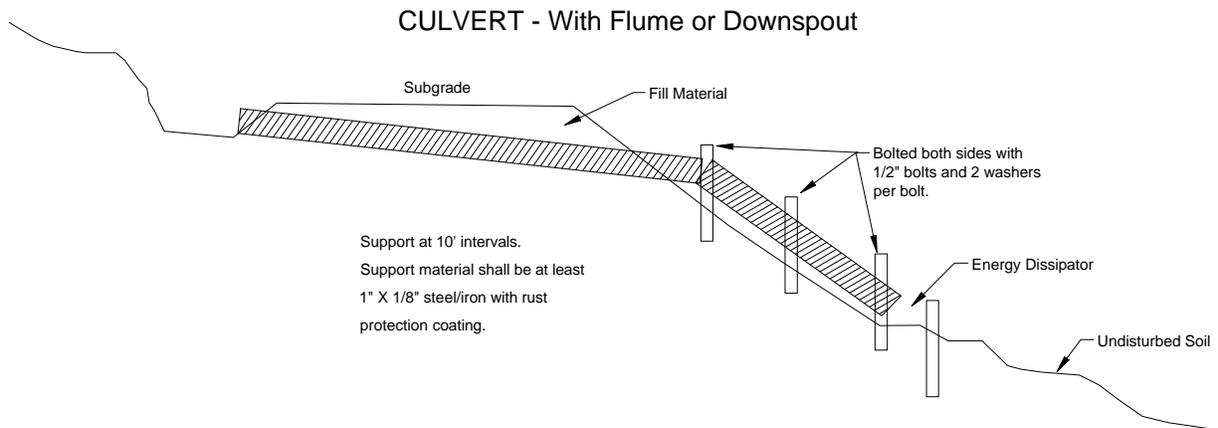
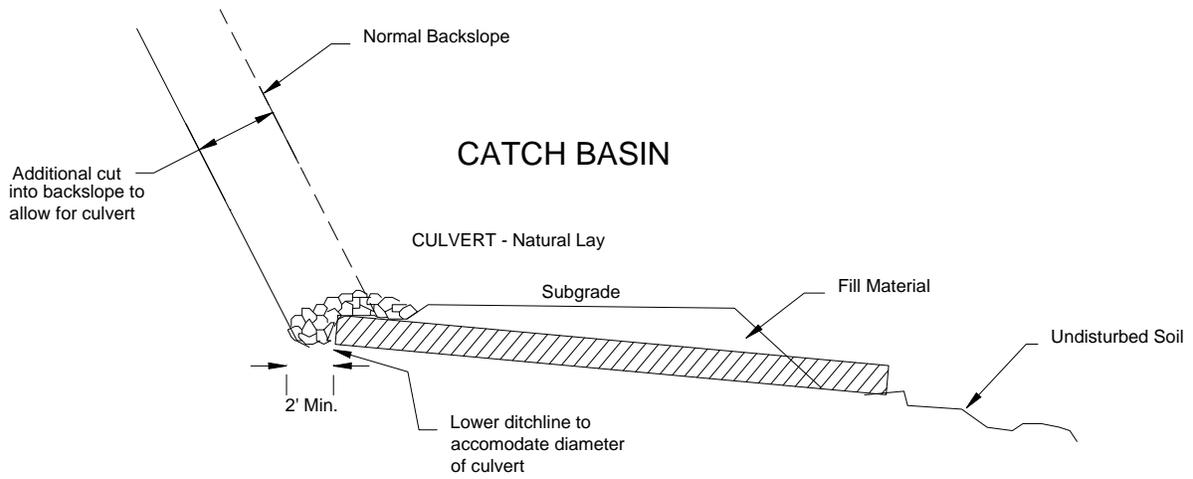


## COMPACTION LIST

Road	From Station	To Station	Type	Max Depth Per Lift (inches)	Equipment Type	Equipment Weight (lbs)	Minimum Number of Passes	Maximum Operating Speed (mph)	Maximum Amount of Deflection (inches)
All Roads			Subgrade	12	Vibratory Smooth Drum	14000	4	3	2
All Roads			Fill	24	Vibratory Smooth Drum	14000	4	3	2
All Roads			Waste Area	24	Excavation	28,000	-	-	4
All Roads			Pre-haul Surface	6	Vibratory Smooth Drum	14000	5	3	1
All Roads			Rock	12	Vibratory Smooth Drum	14000	5	3	1

# CULVERT AND DRAINAGE SPECIFICATION DETAIL

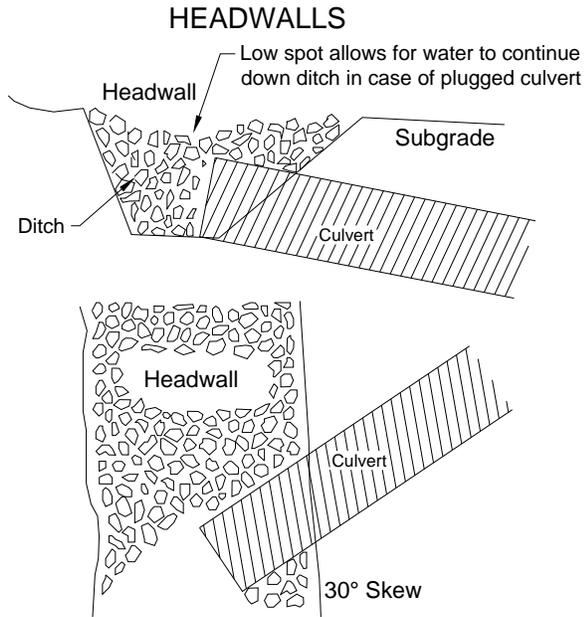
(Page 1 of 3)



# CULVERT AND DRAINAGE SPECIFICATION DETAIL

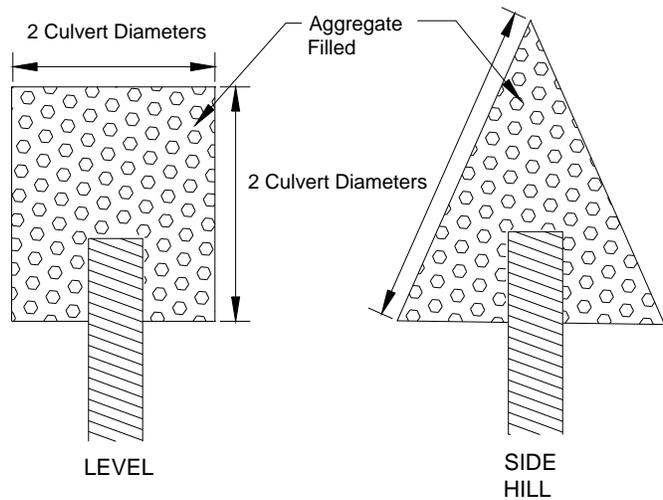
(Page 2 of 3)

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



Headwalls to be constructed of material that will resist erosion.

## ENERGY DISSIPATORS



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

# CULVERT AND DRAINAGE SPECIFICATION DETAIL

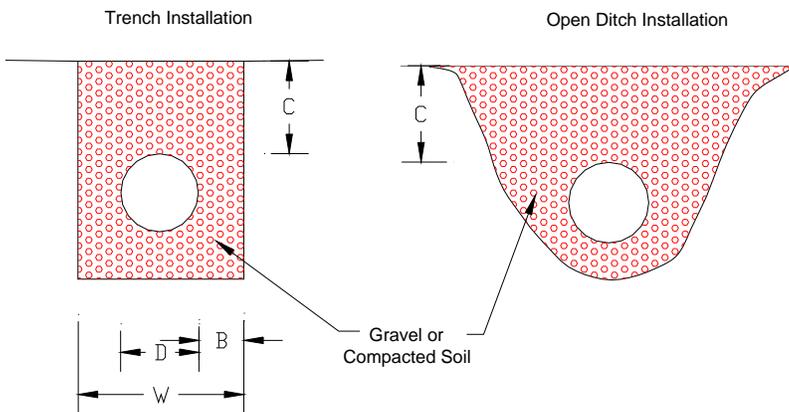
(Page 3 of 3)

## POLYETHYLENE PIPE INSTALLATION

### INSTALLATION REQUIREMENTS:

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

### MINIMUM DIMENSIONS Trench or Open Ditch Installation



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

# FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

Page 1 of 2

## Cuts and Fills

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

## Surface

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

## Drainage

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

# FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

Page 2 of 2

## Preventative Maintenance

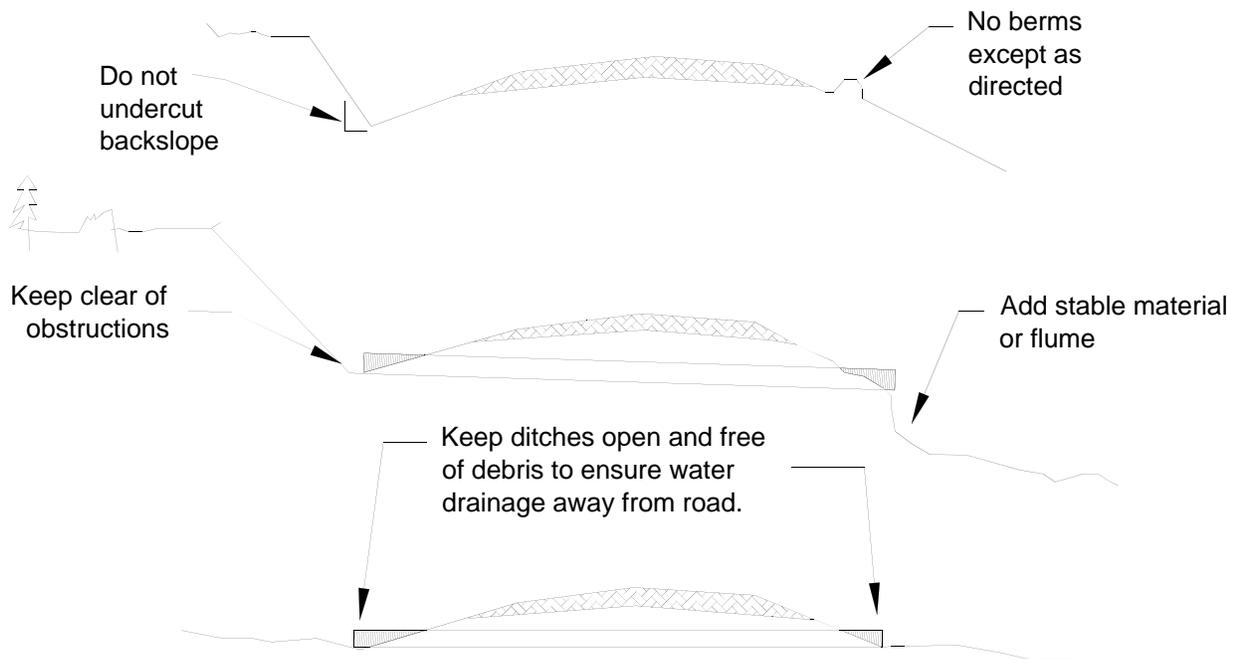
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

## Termination of Use or End of Season

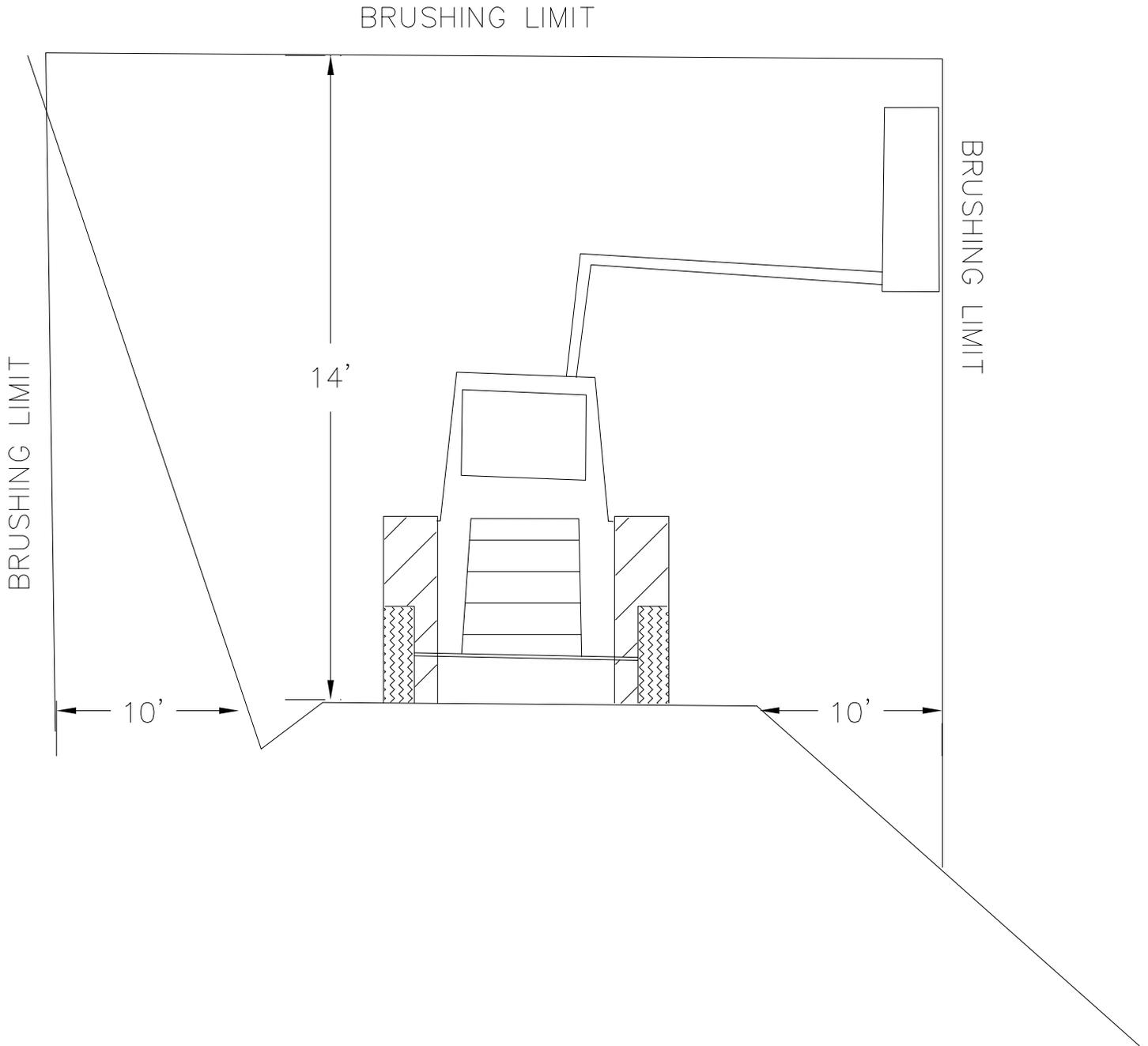
- At the conclusion of logging operations, ensure all conditions of these specifications have been met.

## Debris

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



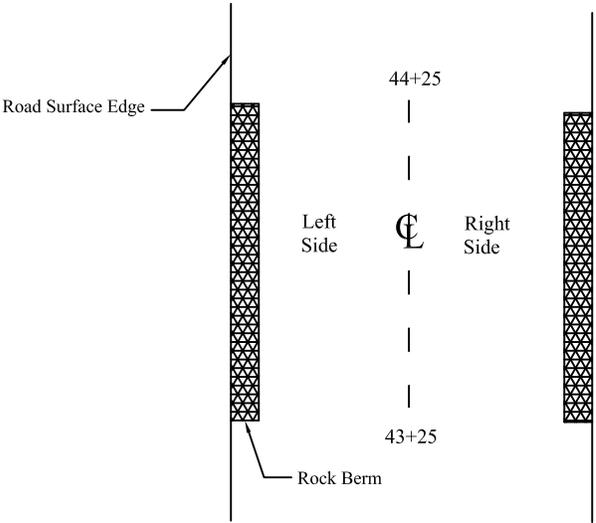
# BRUSHING SECTION DETAIL



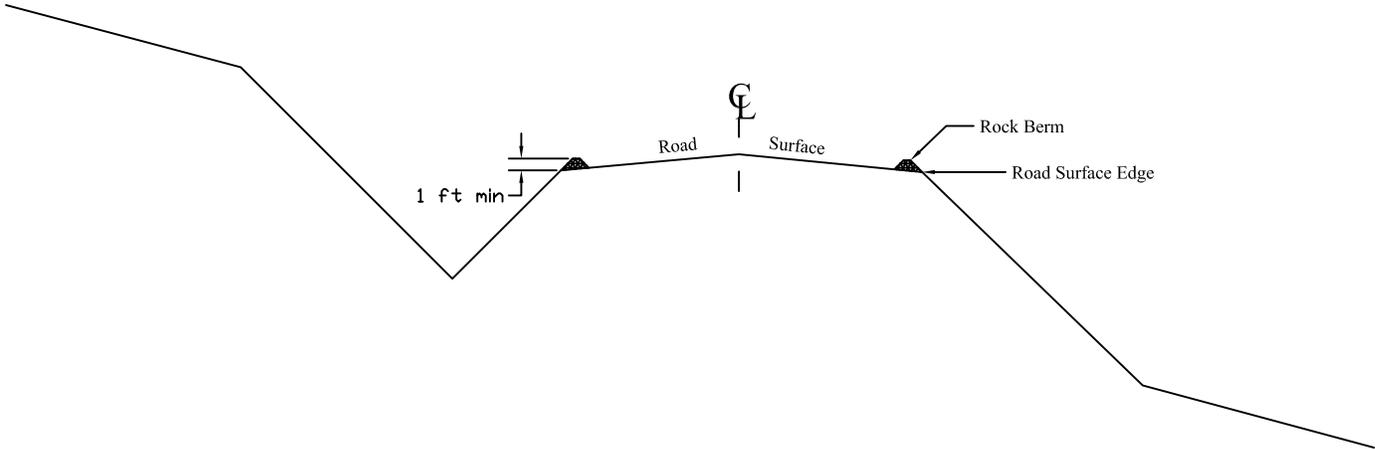
# ROAD SURFACE SHOULDER BERM DETAIL

Not to Scale

## PLAN VIEW



## PROFILE VIEW



## FLAIR DEVELOPMENT PLAN

Sec. 12, T9N, R3E, W.M.

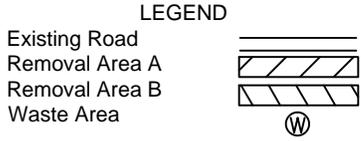
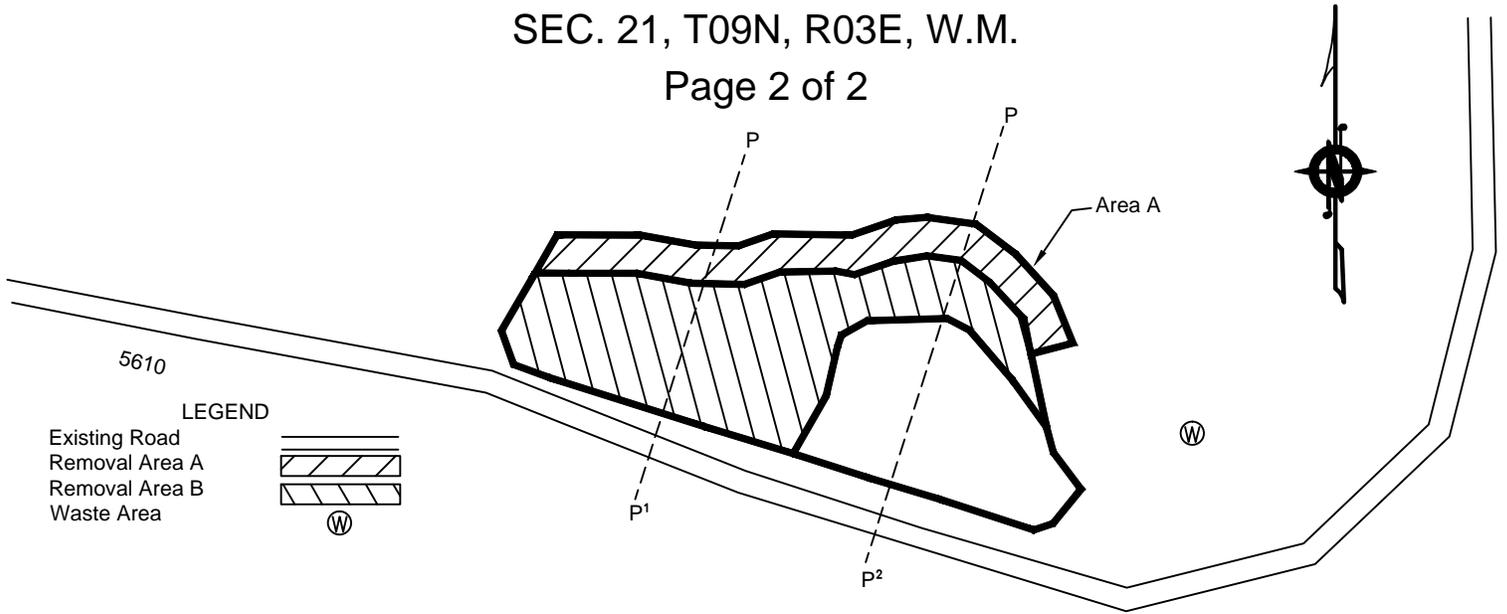
(Page 1 of 2)

1. Mining shall occur first in Area A and progress to Area B and C. Area C shall mine into the pit floor and shall be allowed to drain through the road with the installation of a culvert, as approved in writing by the Contract Administrator. Development in any other area shall be approved in writing by the Contract Administrator.
2. All vegetation including stumps shall be cleared a minimum of 15 feet beyond the top of all working faces. The Contractor shall maintain a minimum of 12 foot wide stripped area from the pit face at all times. Working bench width shall be a minimum of 12 feet.
3. Overburden shall be pushed or end hauled to the designated waste area and compacted. Minimal acceptable compaction is achieved by placing waste material in 2 foot or shallower lifts and routing excavation equipment over entire width of the lifts. Wasting in any other area shall be approved in writing by the Contract Administrator.
4. Root wads and organic debris larger than one cubic foot in volume shall be separated from overburden material and piled in the designated waste area.
5. Pit faces shall not exceed 30 feet in height and shall be sloped no steeper than ¼:1.
6. The pit floor shall have continuity of slope be left in a smooth and neat condition, providing drainage at a minimum of 2 percent. All knobs, bumps, or extrusions shall be removed to the designated floor level by excavation or drill and shoot techniques.
7. Oversize material produced as part of this sale and remaining in the rock source at the conclusion of the timber sale shall not exceed 5 percent of the total volume mined for the sale. Oversize material is defined as rock fragments larger than two feet in any direction.
8. At the end of operations, pit faces and walls shall be scaled and cleared of loose and overhanging material, road side and benches shall have safety berms constructed or access blocked to highway vehicles. Upon completion of operations in the pit, the area will be left in a condition that will not endanger public safety, damage property, or be hazardous to animal or human life.
9. All operations shall be carried out in compliance with all regulations of:
  - a. Regulations and Standards Applicable to Metal and Nonmetal Mining and Milling Operations (30 CFR) U.S. Department of Labor, Mine Safety and Health Administration.
  - b. Safety Standards – Metal and Nonmetallic Mines, Quarries, Pits, and Crushing Operations” (296-61 WAC), Washington Department of Labor and Industries.
10. At the completion of rock source operations, Purchaser shall ask Contract Administrator for written approval of final rock source condition and compliance with the terms of this plan.
11. Upon completion of operations, the site shall be cleared of all temporary structures, equipment and rubbish, and shall be left in a neat and presentable condition.

# FLAIR PIT DEVELOPMENT PLAN

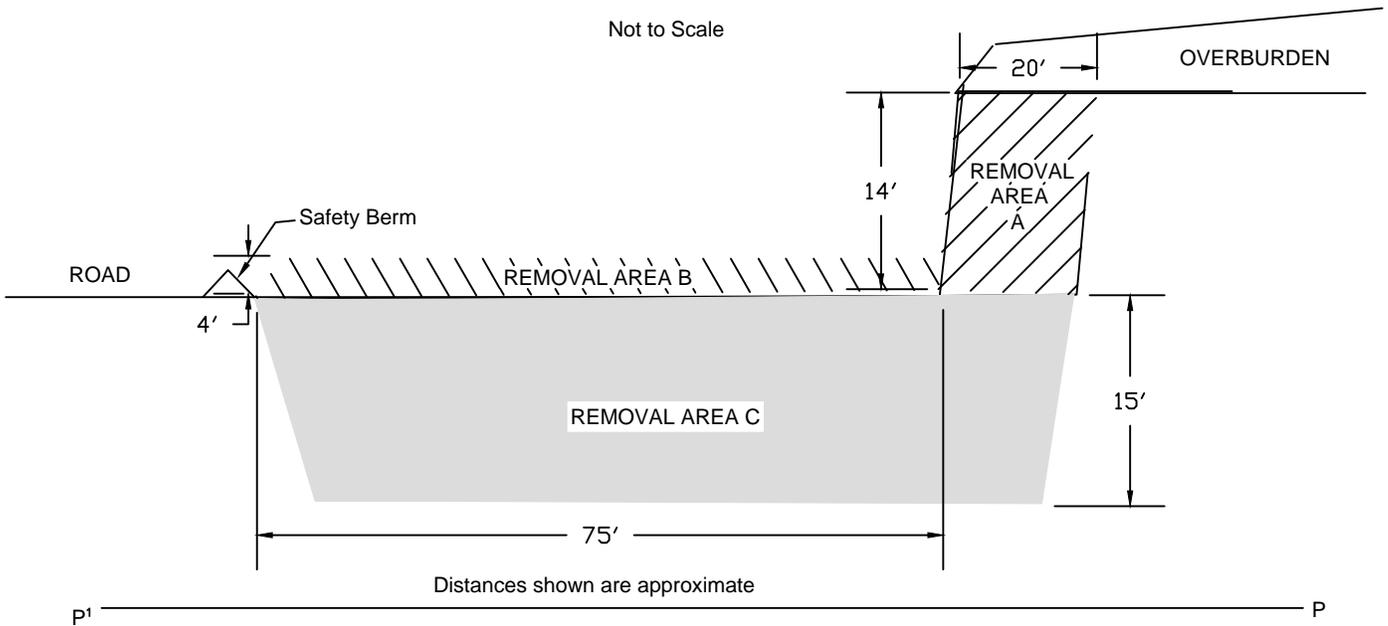
SEC. 21, T09N, R03E, W.M.

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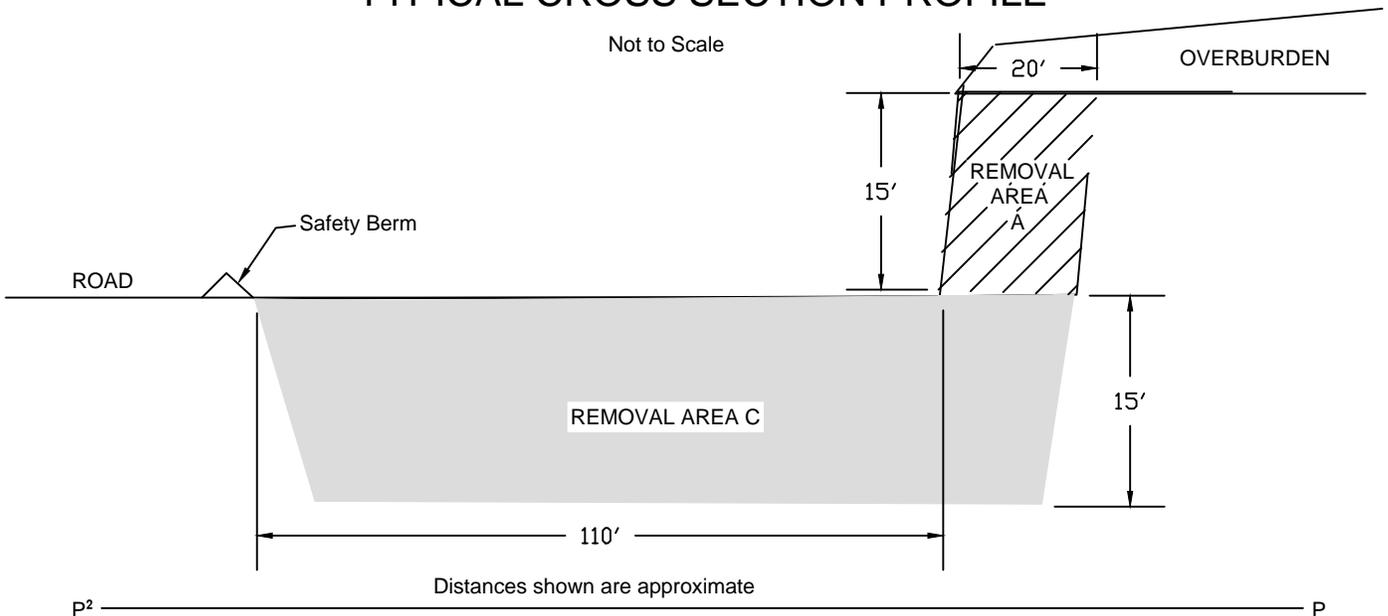
## TYPICAL CROSS SECTION PROFILE

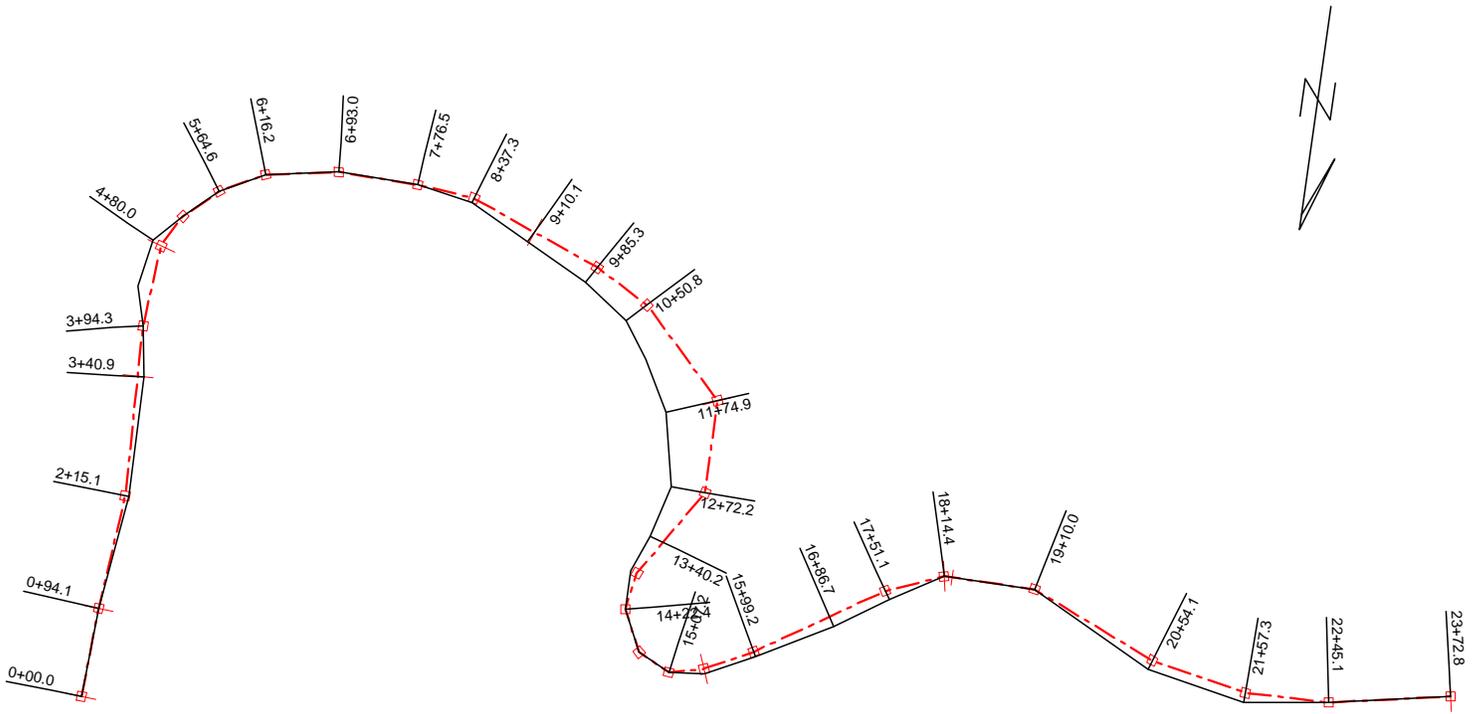
Not to Scale



## TYPICAL CROSS SECTION PROFILE

Not to Scale





1 inch = 200 feet

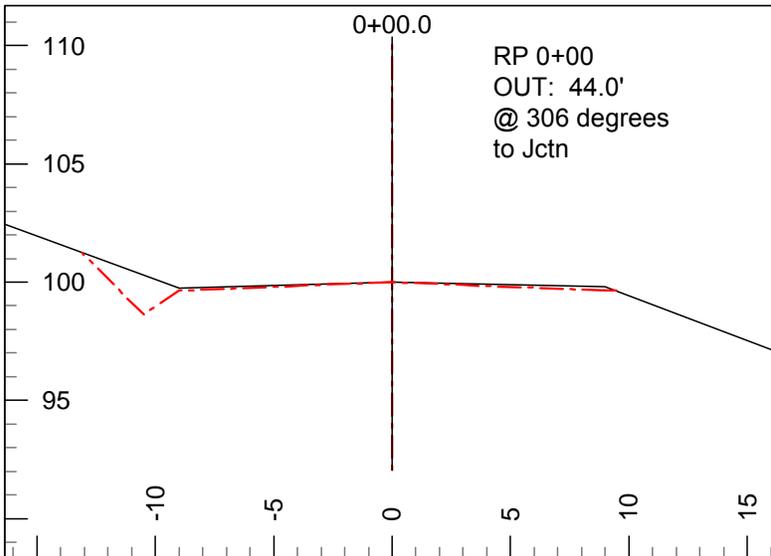
Legend



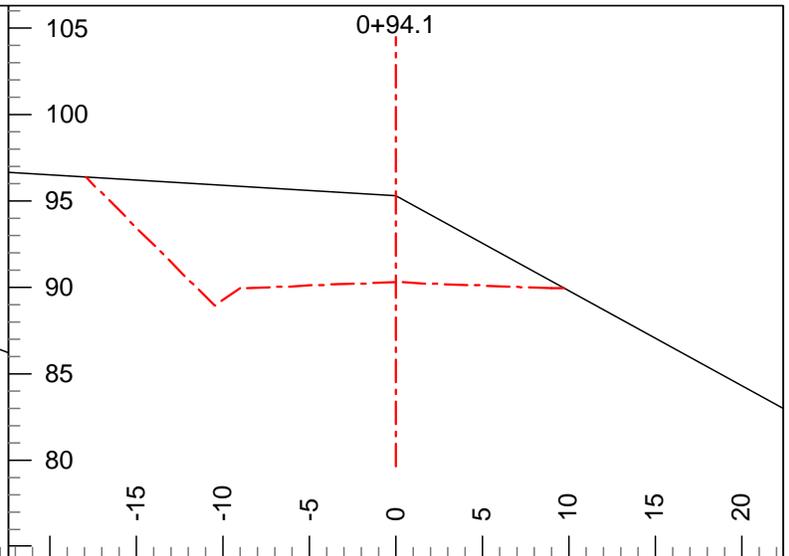
L-line Location



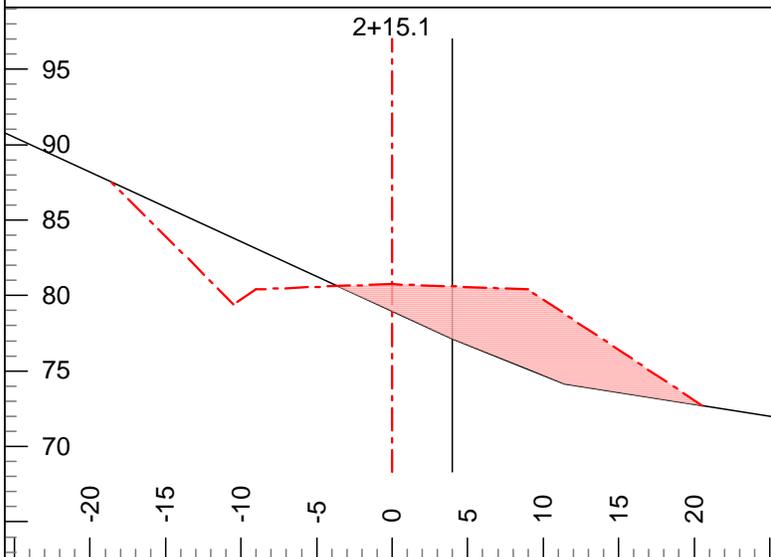
P-line Location



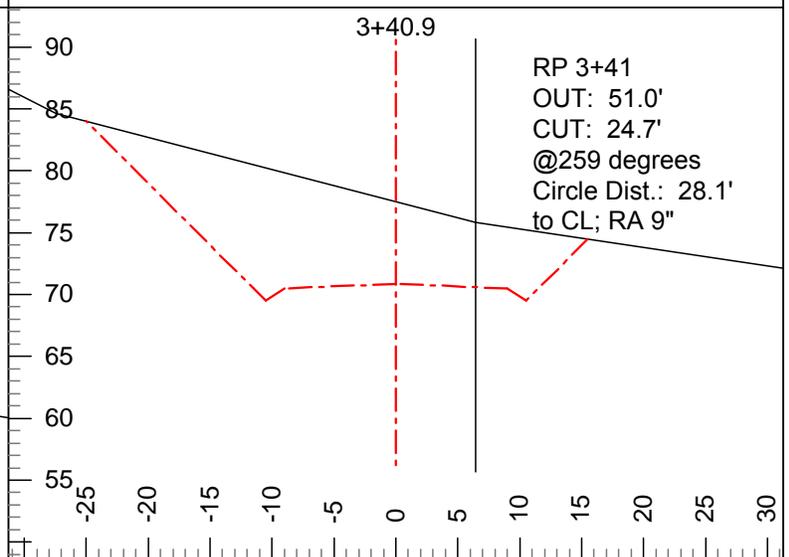
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L-Stn: 0+00.0 Grd.Lst: n/a



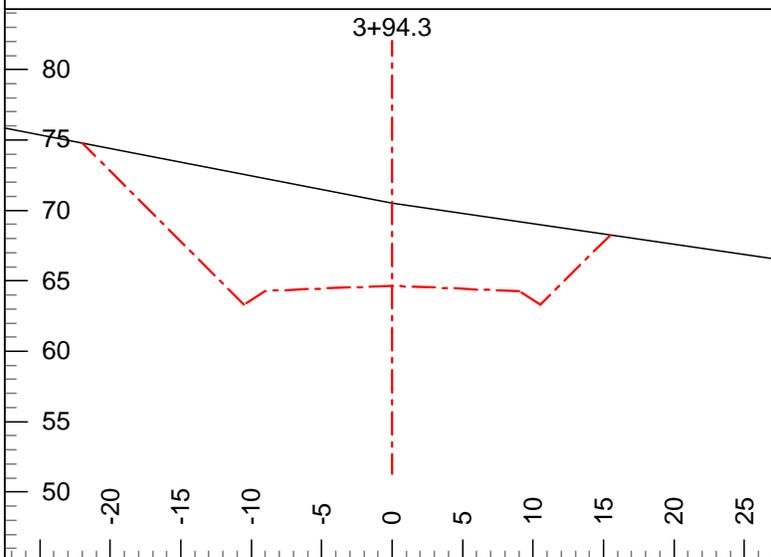
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L-Stn: 0+94.1 Grd.Lst: -10.3



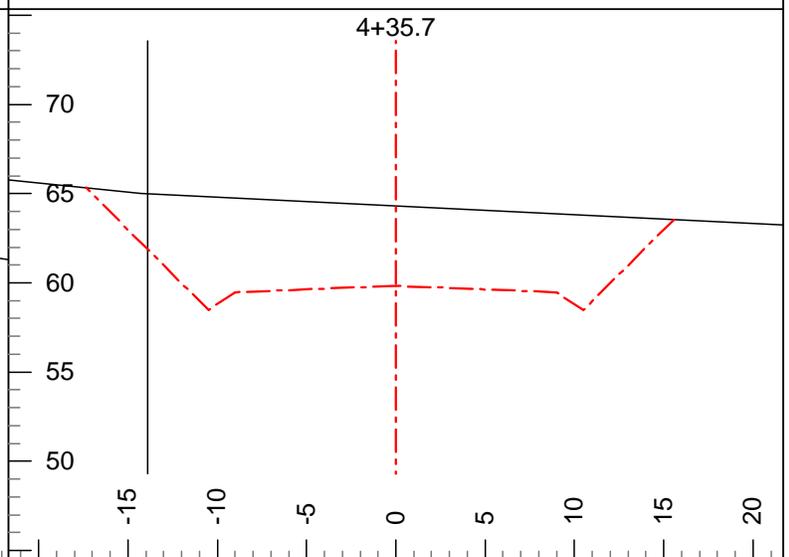
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L-Stn: 2+15.1 Grd.Lst: -7.9



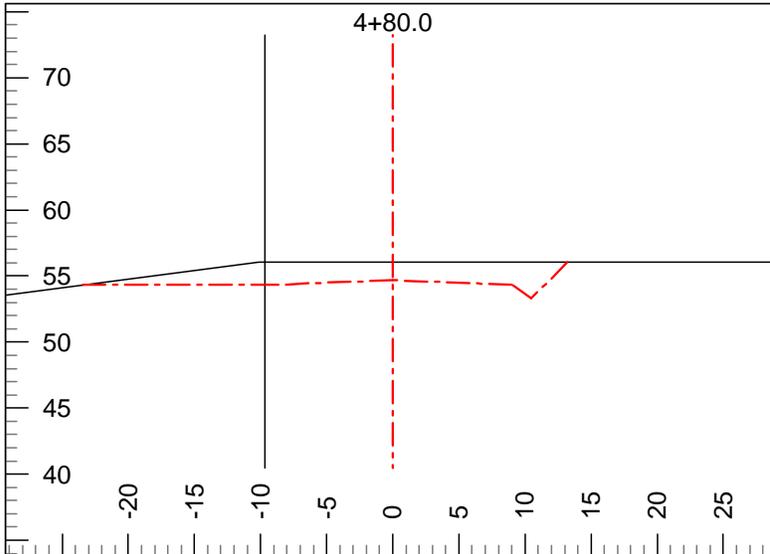
Index: 4 Grd.Nxt.: -11.6 Cut Dp: 6.7  
L-Stn: 3+40.9 Grd.Lst: -7.9



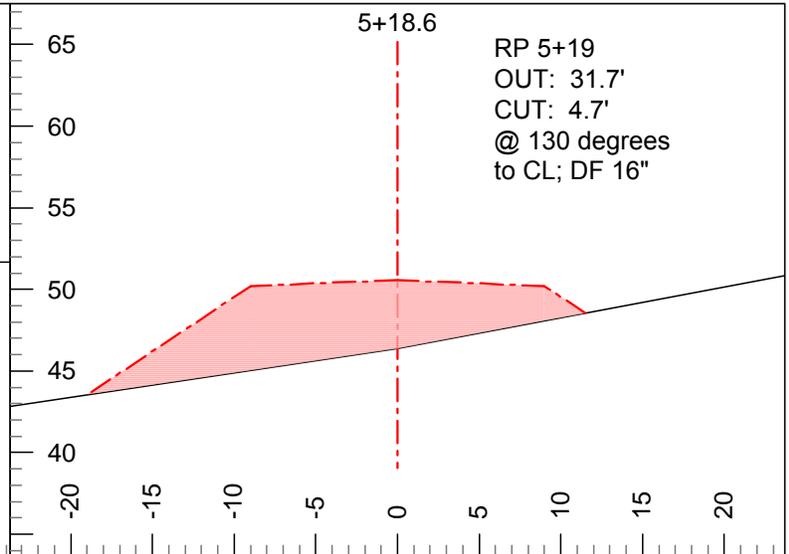
Index: 5 Grd.Nxt.: -11.6 Cut Dp: 5.9  
L-Stn: 3+94.3 Grd.Lst: -11.6



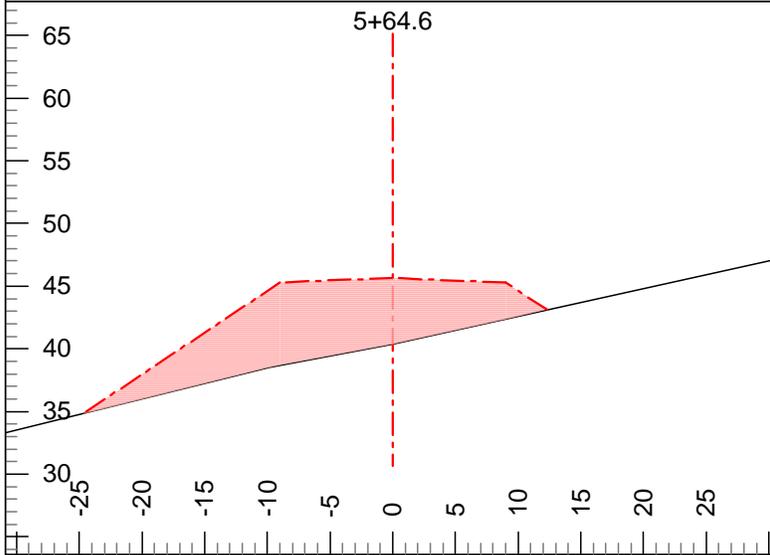
Index: 6 Grd.Nxt.: -11.6 Cut Dp: 4.5  
L-Stn: 4+35.7 Grd.Lst: -11.6



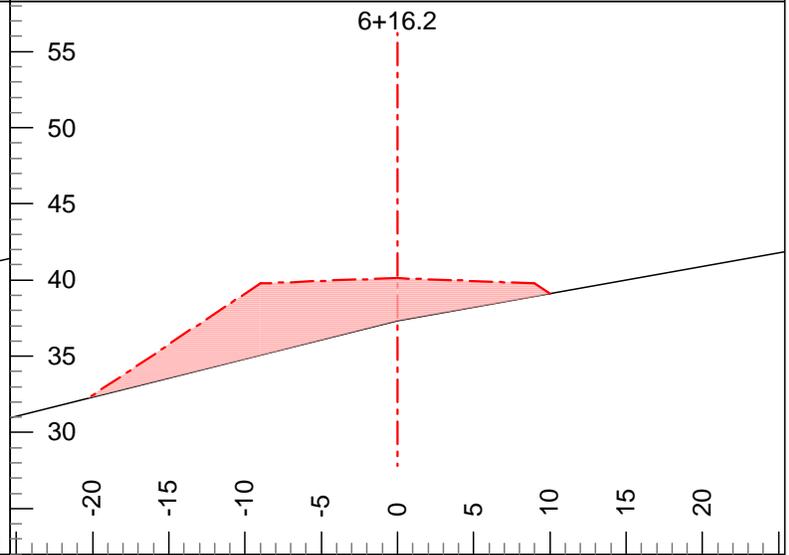
Index: 7 Grd.Nxt.: -10.7 Cut Dp: 1.3  
L-Stn: 4+80.0 Grd.Lst: -11.6



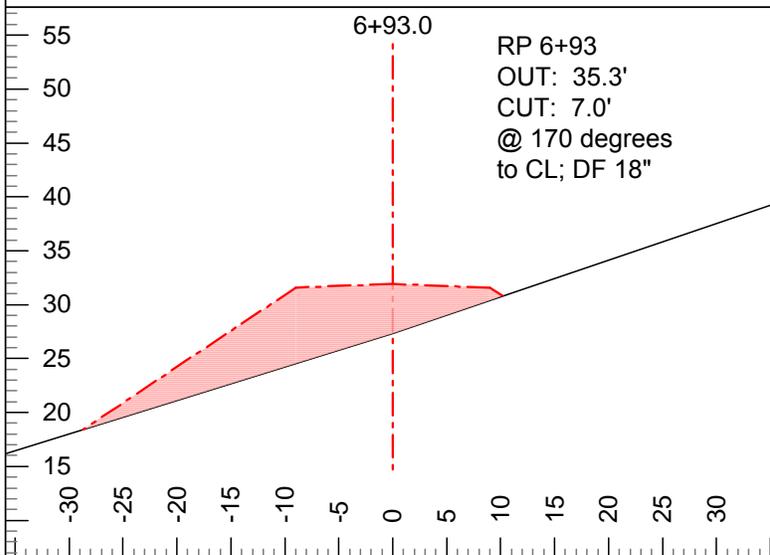
Index: 8 Grd.Nxt.: -10.7 Cut Dp: -4.2  
L-Stn: 5+18.6 Grd.Lst: -10.7



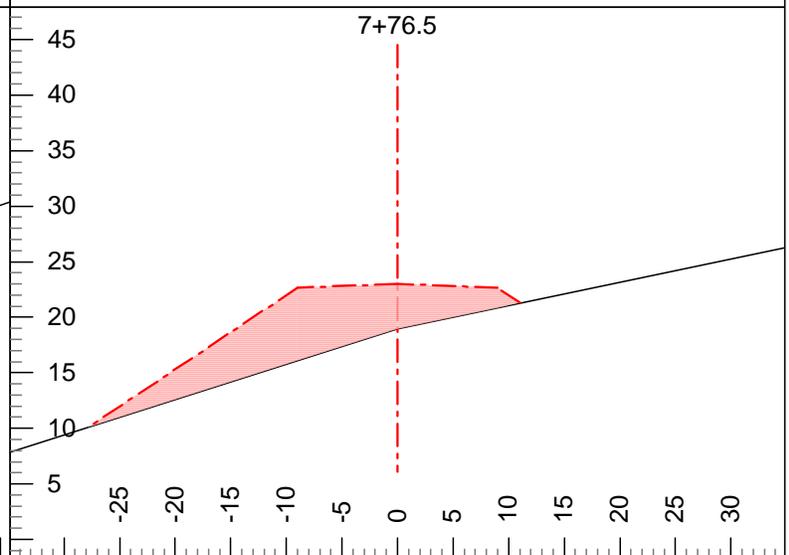
Index: 9 Grd.Nxt.: -10.7 Cut Dp: -5.3  
L-Stn: 5+64.6 Grd.Lst: -10.7



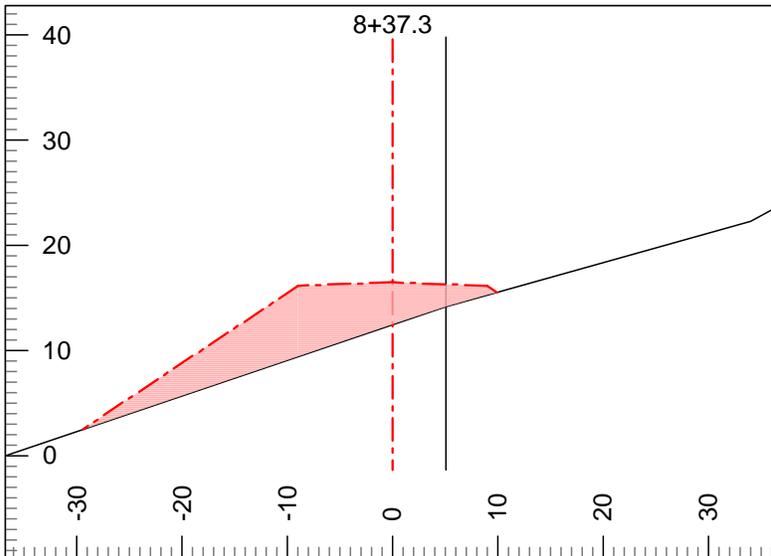
Index: 10 Grd.Nxt.: -10.7 Cut Dp: -2.8  
L-Stn: 6+16.2 Grd.Lst: -10.7



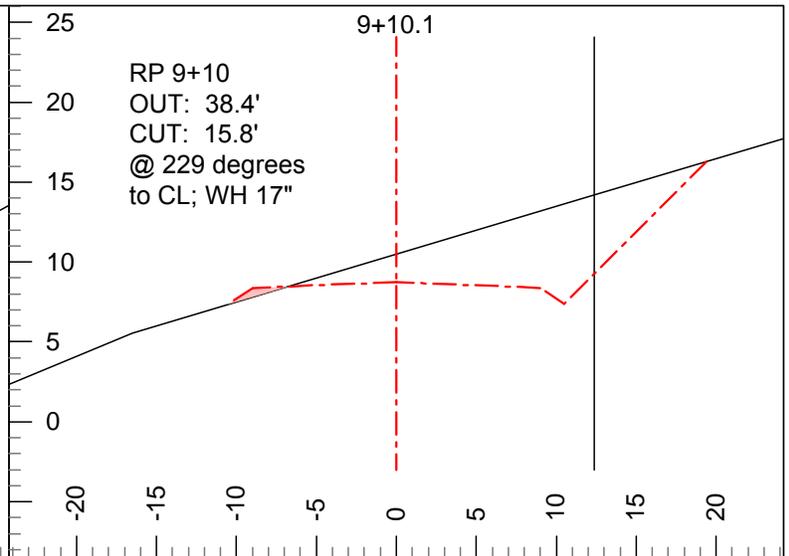
Index: 11 Grd.Nxt.: -10.7 Cut Dp: -4.6  
L-Stn: 6+93.0 Grd.Lst: -10.7



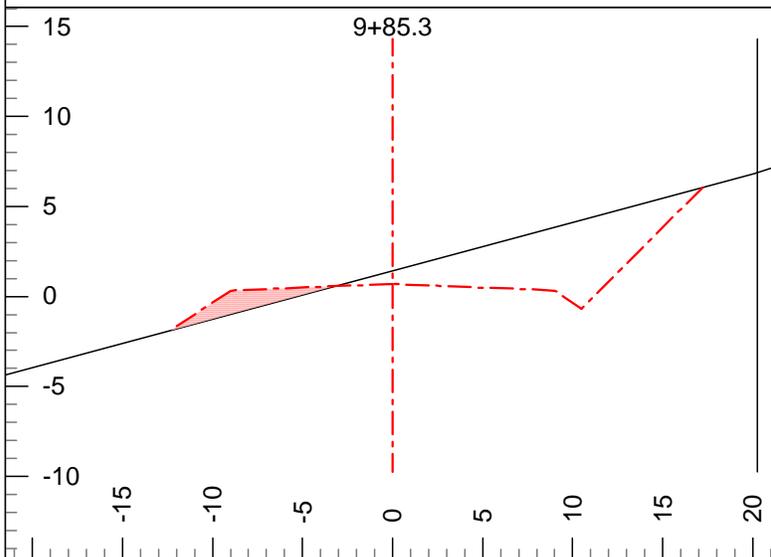
Index: 12 Grd.Nxt.: -10.7 Cut Dp: -4.0  
L-Stn: 7+76.5 Grd.Lst: -10.7



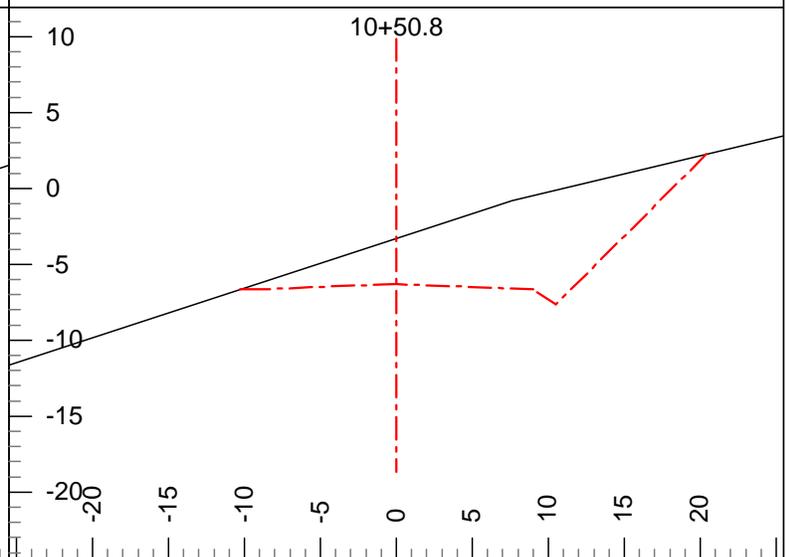
Index: 13 Grd.Nxt.: -10.7 Cut Dp: -4.0  
L-Stn: 8+37.3 Grd.Lst: -10.7



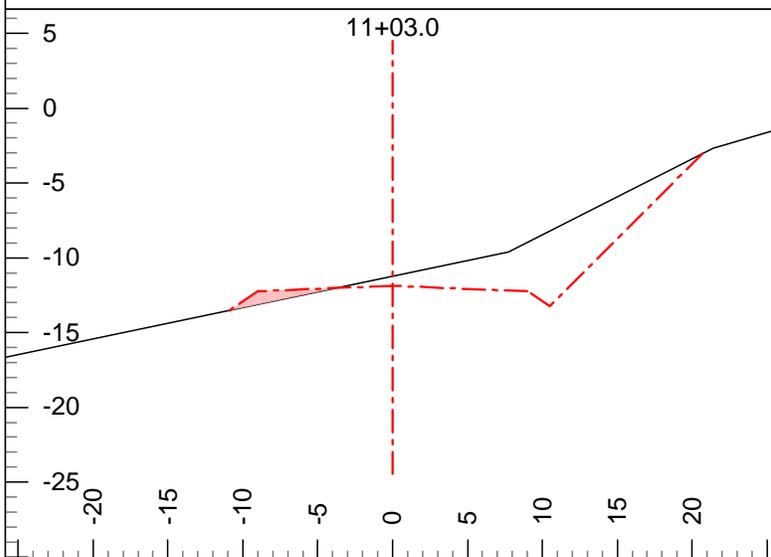
Index: 14 Grd.Nxt.: -10.7 Cut Dp: 1.7  
L-Stn: 9+10.1 Grd.Lst: -10.7



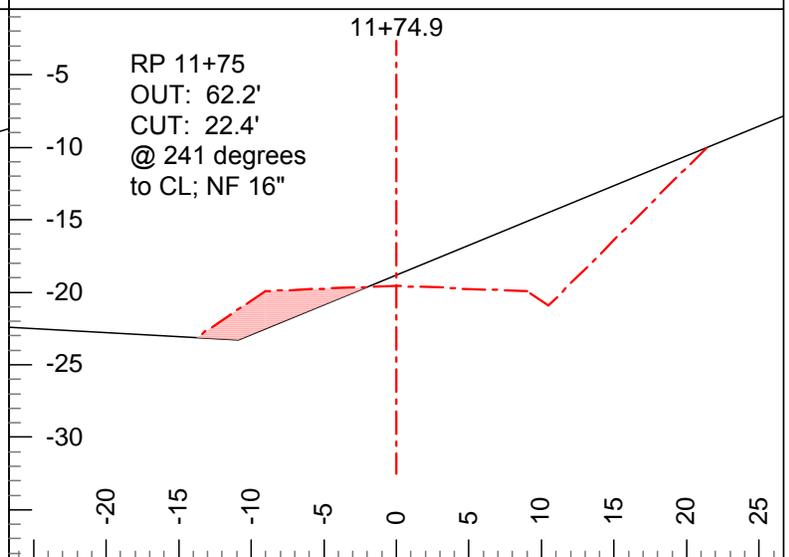
Index: 15 Grd.Nxt.: -10.7 Cut Dp: 0.7  
L-Stn: 9+85.3 Grd.Lst: -10.7



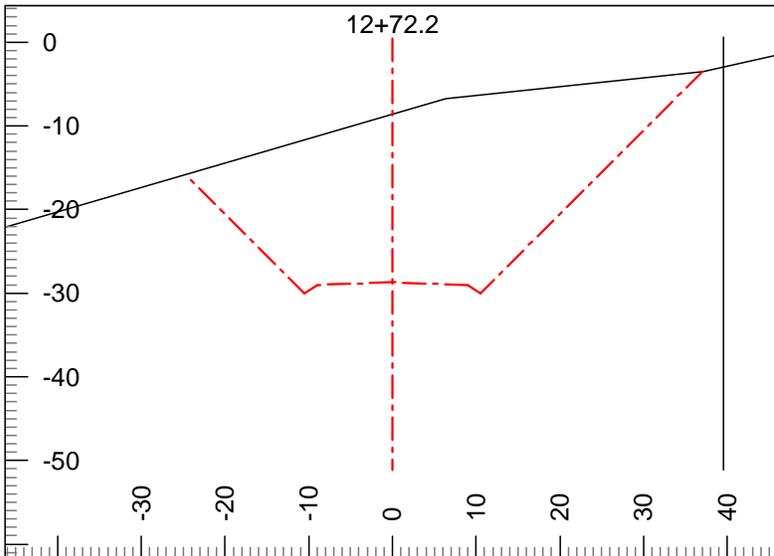
Index: 16 Grd.Nxt.: -10.7 Cut Dp: 3.0  
L-Stn: 10+50.8 Grd.Lst: -10.7



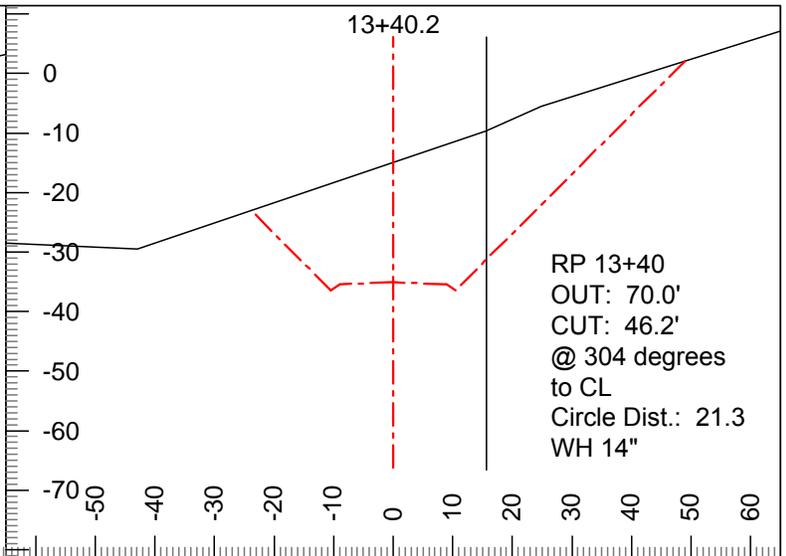
Index: 17 Grd.Nxt.: -10.7 Cut Dp: 0.6 V.Offset: -13.5  
L-Stn: 11+03.0 Grd.Lst: -10.7 H. Offset: -35.2



Index: 18 Grd.Nxt.: -9.4 Cut Dp: 0.7  
L-Stn: 11+74.9 Grd.Lst: -10.7

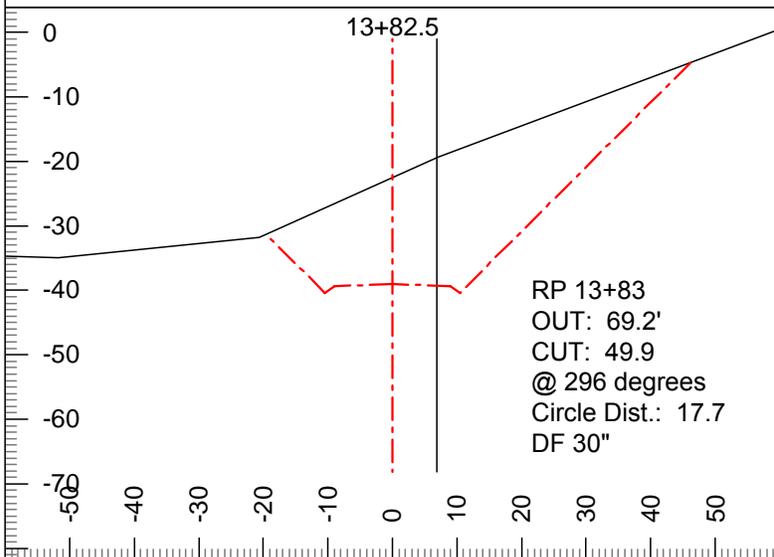


Index: 19 Grd.Nxt.: -9.4 Cut Dp: 20.0  
L-Stn: 12+72.2 Grd.Lst: -9.4



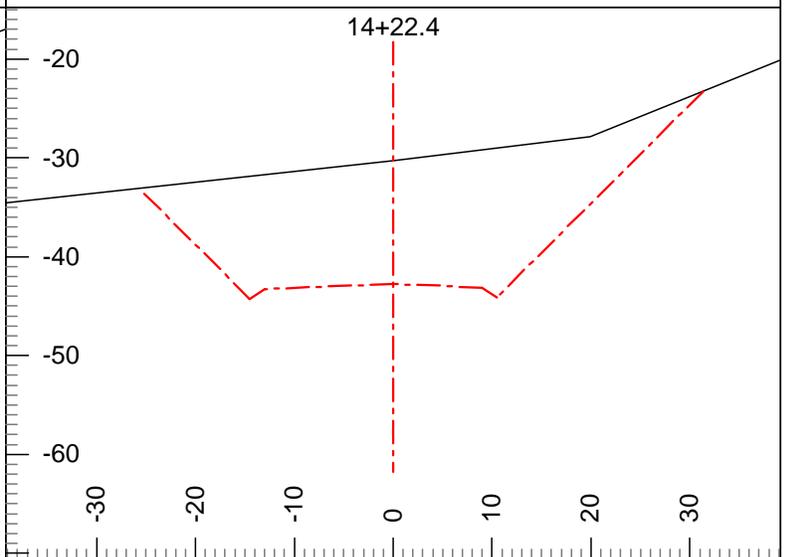
RP 13+40  
OUT: 70.0'  
CUT: 46.2'  
@ 304 degrees  
to CL  
Circle Dist.: 21.3  
WH 14"

Index: 20 Grd.Nxt.: -9.4 Cut Dp: 20.2  
L-Stn: 13+40.2 Grd.Lst: -9.4

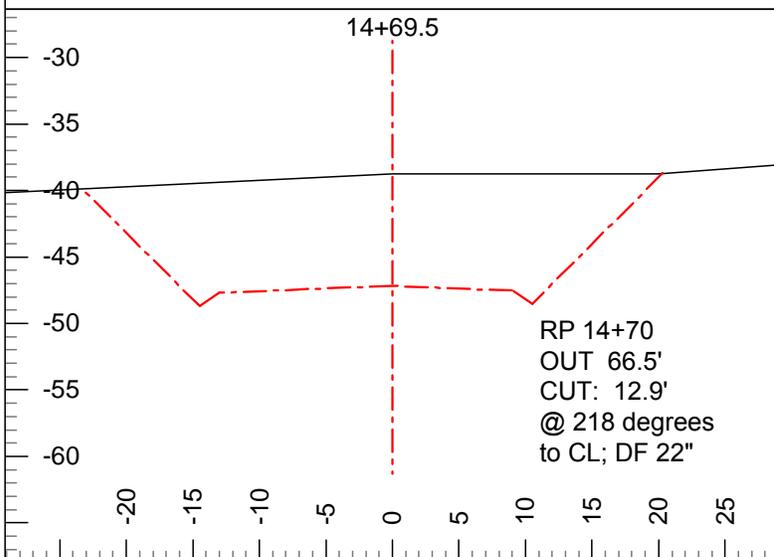


RP 13+83  
OUT: 69.2'  
CUT: 49.9  
@ 296 degrees  
Circle Dist.: 17.7  
DF 30"

Index: 21 Grd.Nxt.: -9.4 Cut Dp: 16.5  
L-Stn: 13+82.5 Grd.Lst: -9.4

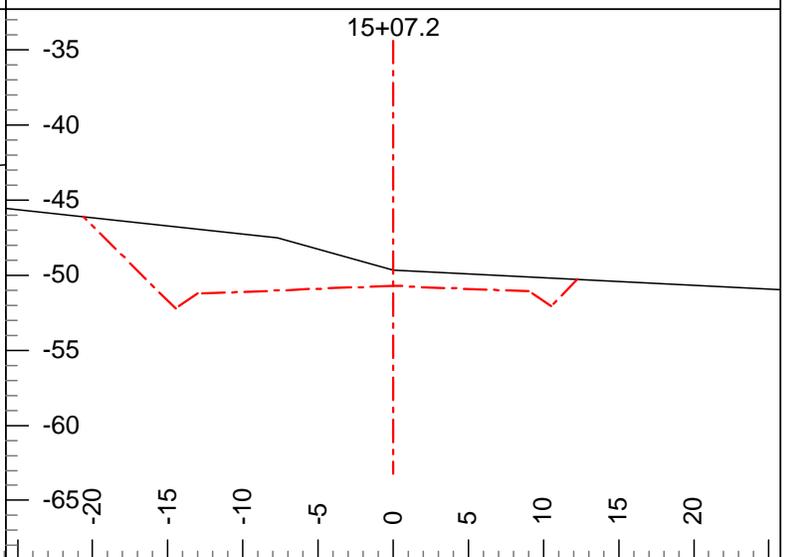


Index: 22 Grd.Nxt.: -9.4 Cut Dp: 12.5  
L-Stn: 14+22.4 Grd.Lst: -9.4

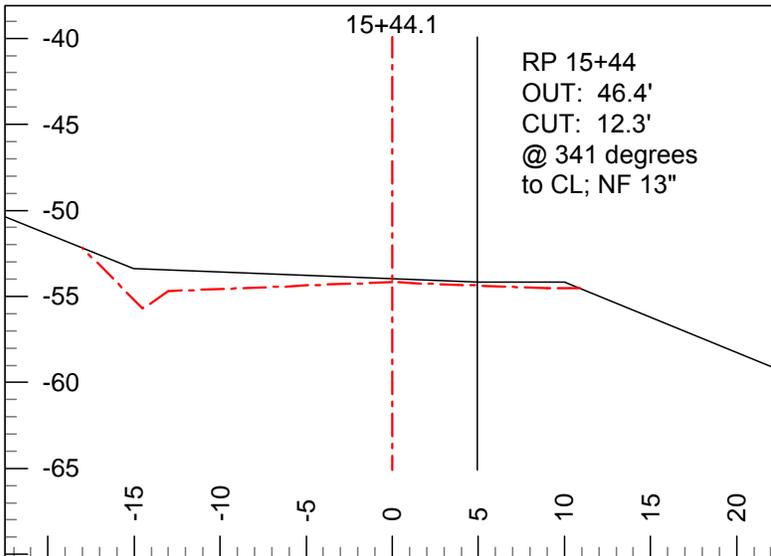


RP 14+70  
OUT 66.5'  
CUT: 12.9'  
@ 218 degrees  
to CL; DF 22"

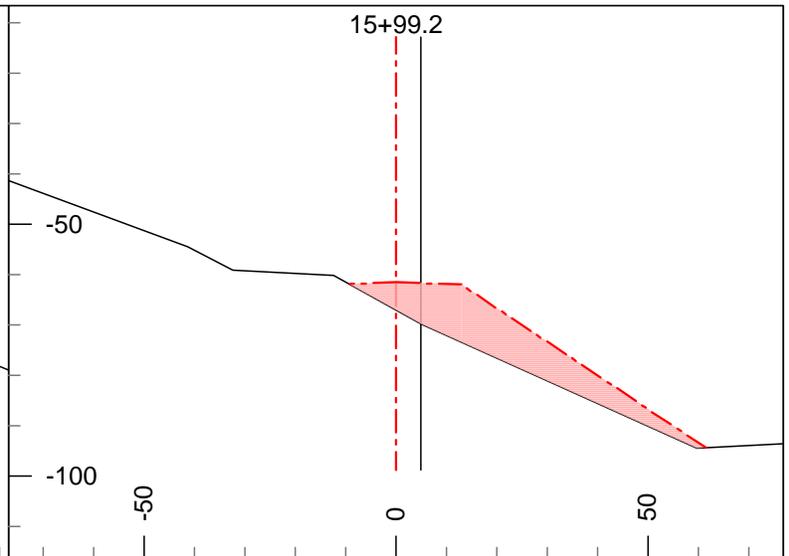
Index: 23 Grd.Nxt.: -9.4 Cut Dp: 8.4  
L-Stn: 14+69.5 Grd.Lst: -9.4



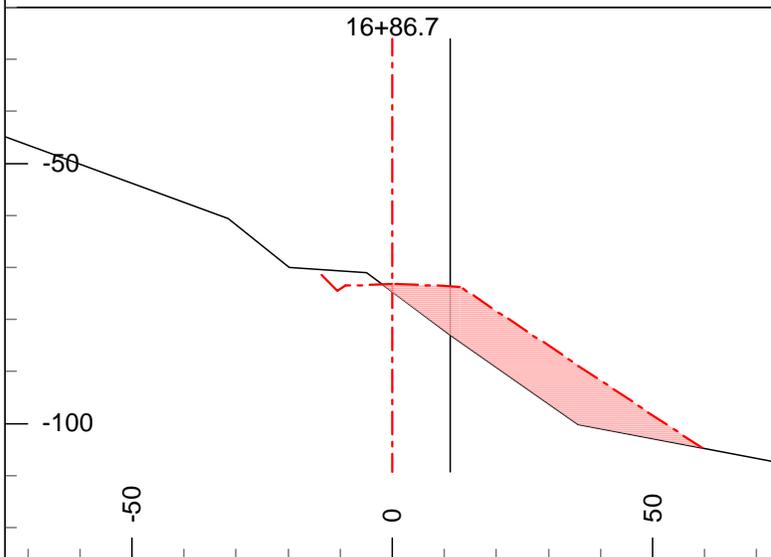
Index: 24 Grd.Nxt.: -9.4 Cut Dp: 1.0  
L-Stn: 15+07.2 Grd.Lst: -9.4



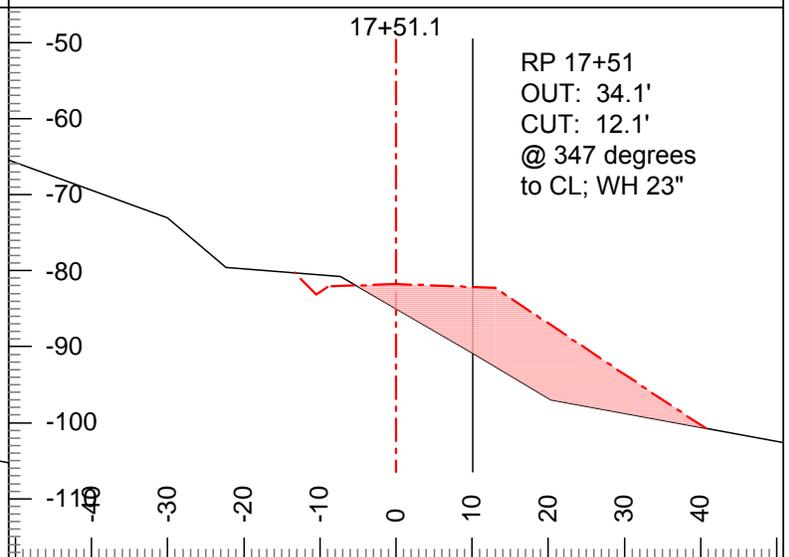
Index: 25 Grd.Nxt.: -13.3 Cut Dp: 0.2  
L-Stn: 15+44.1 Grd.Lst: -9.4



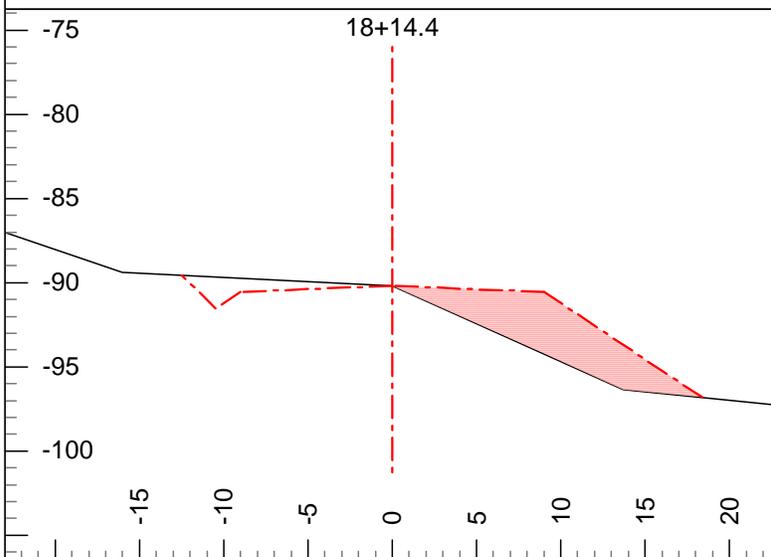
Index: 26 Grd.Nxt.: -13.3 Cut Dp: -5.6  
L-Stn: 15+99.2 Grd.Lst: -13.3



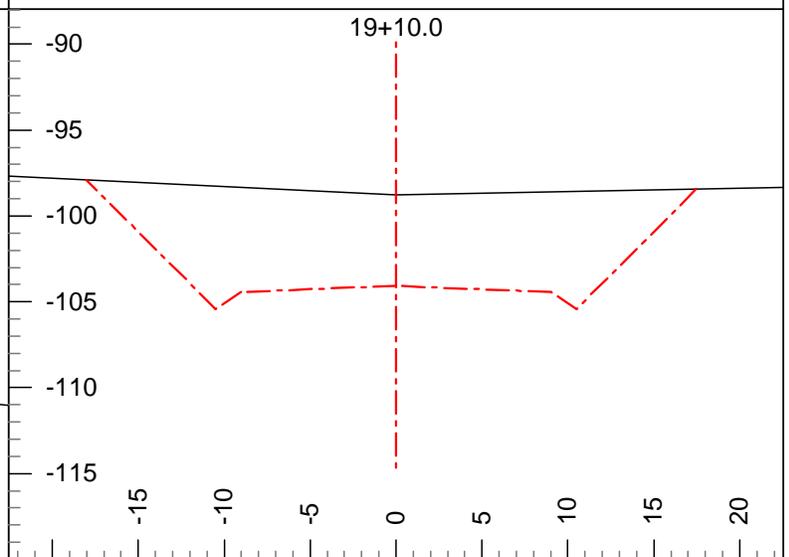
Index: 27 Grd.Nxt.: -13.3 Cut Dp: -1.5  
L-Stn: 16+86.7 Grd.Lst: -13.3



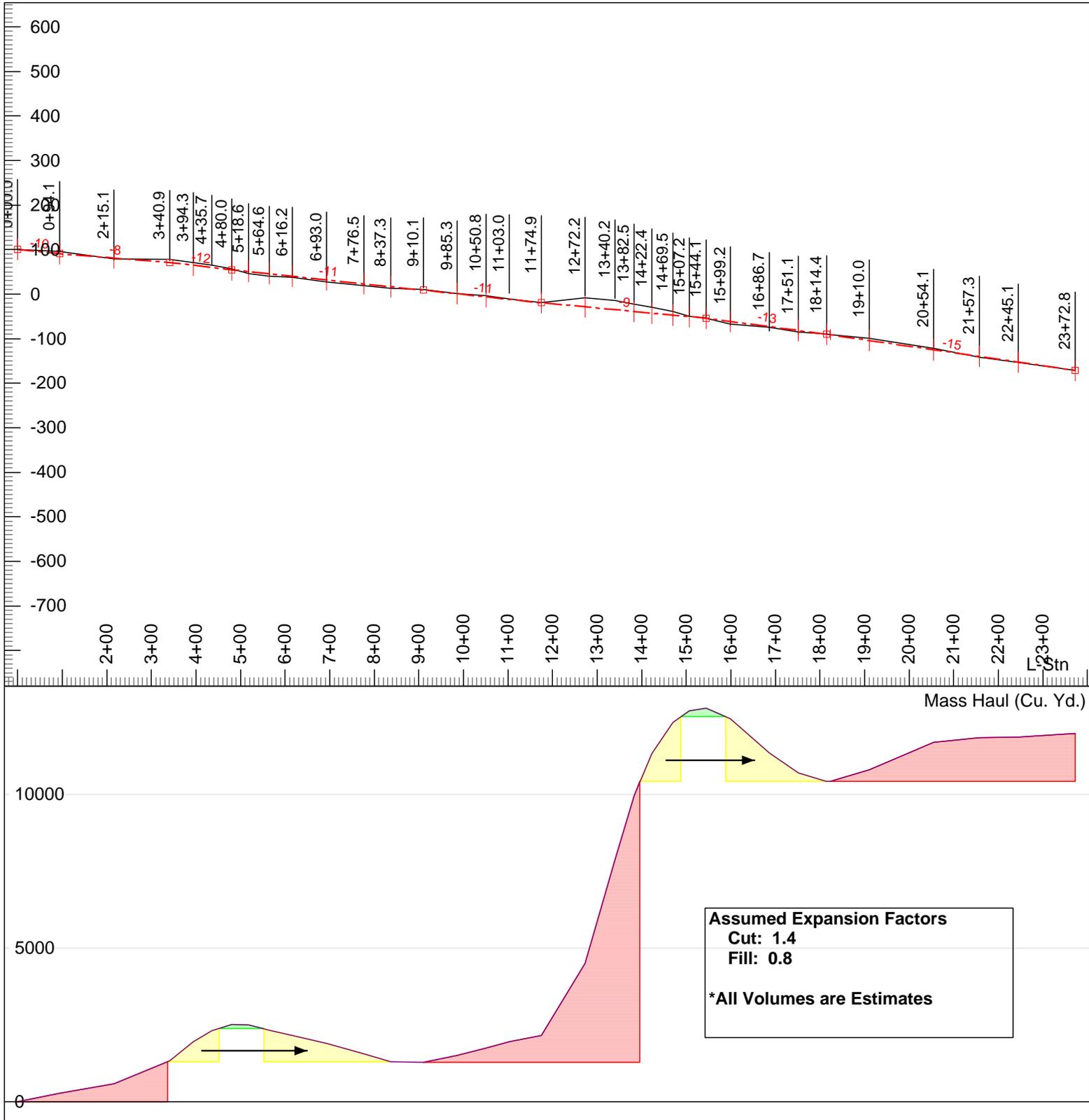
Index: 28 Grd.Nxt.: -13.3 Cut Dp: -3.3  
L-Stn: 17+51.1 Grd.Lst: -13.3



Index: 29 Grd.Nxt.: -14.5 Cut Dp: 0.0  
L-Stn: 18+14.4 Grd.Lst: -13.3



Index: 30 Grd.Nxt.: -14.5 Cut Dp: 5.3  
L-Stn: 19+10.0 Grd.Lst: -14.5



Legend	
	L-line Location
	P-line Location

## SUMMARY - Road Development Costs

REGION: Pacific Cascade

DISTRICT: St. Helens

SALE/PROJECT NAME: Large Farva

AGREEMENT #:

30-093916

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ROAD NUMBERS:	Optional: 5625D, 5625E			
	Required: 5100, 5600, 2730, 5625, 5625 Tie, 5625 Ext., 5625F			
ROAD STANDARD:	Construction	Reconstruction	Maintenance	
NUMBER OF STATIONS:	26.99	122.05	302.25	
CLEARING & GRUBBING, EXCAVATION AND FILL, MISC.:	\$30,981.79	\$22,088.14	\$8,560.20	
ROAD ROCK:				
	Optional:	\$0.00	\$15,480.74	\$0.00
	Required:	\$34,685.49	\$57,827.55	\$3,765.00
	Total:	\$34,685.49	\$73,308.29	\$3,765.00
STOCKPILE:	-	-	\$0.00	
CULVERTS AND FLUMES:	\$3,671.70	\$25,626.90	\$0.00	
STRUCTURES:	-	-	-	
MOBILIZATION:	\$2,727.54	\$1,944.57	\$753.61	
TOTAL COSTS:	\$72,066.52	\$122,967.90	\$13,078.81	
COST PER STATION:	\$2,670	\$1,008	\$43	
ROAD DEACTIVATION & ABANDONMENT COSTS:	\$0.00	\$0.00	\$0	

<b>10% OVERHEAD AND GENERAL EXPENSE =</b>	<b>\$20,811.32</b>
<b>TOTAL (All Roads) =</b>	<b>\$228,924.55</b>
<b>TOTAL (Minus Optional Rock) =</b>	<b>\$213,443.81</b>
<b>SALE VOLUME MBF =</b>	<b>3,435</b>
<b>TOTAL \$/MBF =</b>	<b>\$66.64</b>
<b>TOTAL \$/MBF (Minus Optional Rock) =</b>	<b>\$62.14</b>

Profit and Risk costs are accounted on an individual basis.

Compiled by: Rich Wallmow

Date: May 17, 2016

## SUMMARY OF ROAD

Sale:	<b>Large Farva</b>		Road:	<b>5100</b>	
Required Pre-Haul Maintenance-	81+65 <hr style="width: 50%; margin: 0 auto;"/> 1.55	stations miles	Required Reconstruction -	0+00 <hr style="width: 50%; margin: 0 auto;"/> 0.00	stations miles
Required Abandonment-	0+00 <hr style="width: 50%; margin: 0 auto;"/> 0.00	stations miles	Optional Reconstruction -	0+00 <hr style="width: 50%; margin: 0 auto;"/> 0.00	stations miles
			Required Construction -	0+00 <hr style="width: 50%; margin: 0 auto;"/> 0.00	stations miles
			Optional Construction -	0+00 <hr style="width: 50%; margin: 0 auto;"/> 0.00	stations miles

### PRE-HAUL MAINTENANCE

<b>MISC.</b>					
Grade and shape existing road surface -	81.65	stations @	\$19.48	per station	\$1,590.54
Roll shaped road surface w/ vibratory roller prior to rocking -	81.65	stations @	\$13.50	per station	\$1,102.28
TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC.					<b>\$2,692.82</b>

### ROCK

Spot Rock	See Rock List	200	cy. of	Crushed	@	\$12.27	per c.y. =	\$2,454.00	
								TOTAL ROCK	<b>\$2,454.00</b>
Required Pre-Haul Maintenance-	\$5,146.82								
Required Abandonment-	\$0.00								
Required Construction -	\$0.00								
Optional Rock?	NO								
								SUBTOTAL	<b>\$5,146.82</b>
								TOTAL	<b>\$5,146.82</b>
								COST PER STATION	<b>\$63.04</b>

## SUMMARY OF ROAD

Sale:	<b>Large Farva</b>		Road:	<b>5600</b>				
Required Pre-Haul Maintenance-	140+00 <hr style="width: 50%; margin: 0 auto;"/> 2.65	stations miles	Required Reconstruction -	0+00 <hr style="width: 50%; margin: 0 auto;"/> 0.00	stations miles	Required Construction -	0+00 <hr style="width: 50%; margin: 0 auto;"/> 0.00	stations miles
Required Abandonment-	0+00 <hr style="width: 50%; margin: 0 auto;"/> 0.00	stations miles	Optional Reconstruction -	0+00 <hr style="width: 50%; margin: 0 auto;"/> 0.00	stations miles	Optional Construction -	0+00 <hr style="width: 50%; margin: 0 auto;"/> 0.00	stations miles

### PRE-HAUL MAINTENANCE

<b>MISC.</b> Grade, shape existing road surface -	140.00	stations @	\$19.48	per station	<u>\$2,727.20</u>	
					<u>TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC.</u>	<b>\$2,727.20</b>

### ROCK

Spot Rock	See Rock List	100	cy. of	Crushed	@	\$13.11	per c.y.=	<u>\$1,311.00</u>			
								<u>TOTAL ROCK</u>	<b>\$1,311.00</b>		
Required Pre-Haul Maintenance-	\$4,038.20	Required Reconstruction -	\$0.00							SUBTOTAL	<b>\$4,038.20</b>
Required Abandonment-	\$0.00	Optional Reconstruction -	\$0.00								
Required Construction -	\$0.00	Optional Construction -	\$0.00								
Optional Rock?	NO								<b>TOTAL</b>	<b>\$4,038.20</b>	
									<b>COST PER STATION</b>	<b>\$28.84</b>	

## SUMMARY OF ROAD

Sale: Large Farva

Road: 2730

Required  
Pre and Post-Haul  
Maintenance- 80+60 stations  
1.53 miles

Required  
Reconstruction - 0+00 stations  
0.00 miles

Required  
Construction - 0+00 stations  
0.00 miles

Required Abandonment- 0+00 stations  
0.00 miles

Optional  
Reconstruction - 0+00 stations  
0.00 miles

Optional  
Construction - 0+00 stations  
0.00 miles

### PRE-HAUL and POST HAUL MAINTENANCE

**MISC.**

Grade and shape existing road surface - 161.20 stations @ \$19.48 per station \$3,140.18  
TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$3,140.18**

Required  
Pre-Haul Maintenance- \$3,140.18

Required  
Reconstruction - \$0.00

SUBTOTAL **\$3,140.18**

Required Abandonment- \$0.00

Optional  
Reconstruction - \$0.00

Required Construction - \$0.00

Optional  
Construction - \$0.00

**TOTAL \$3,140.18**

Optional Rock? NO

**COST PER STATION \$38.96**

## SUMMARY OF ROAD

Sale:	<b>Large Farva</b>		Road:	<b>5625</b>	
Required Pre-Haul Maintenance -	0+00 0.00	stations miles	Required Reconstruction -	93+35 1.77	stations miles
Required Abandonment-	0+00 0.00	stations miles	Optional Reconstruction -	0+00 0.00	stations miles
			Required Construction -	0+00 0.00	stations miles
			Optional Construction -	0+00 0.00	stations miles

### RECONSTRUCTION

#### CLEARING/GRUBBING

Scattering Organic Debris	2.140	acres @	\$918.00	per acre	\$1,964.52
Roadside Brushing -	1.75	miles @	\$1,120.00	per acre	\$1,960.00
Construct waste areas -	6.00	hours @	\$280.00	per hour	\$1,680.00

#### EXCAVATION

Side cast	0.750	acres @	\$610.00	per acre	\$457.50
Construct settling ponds -	20.00	@	\$45.50	each	\$910.00
Clean ditch-	92.30	stations @	\$39.76	per station	\$3,669.85
Grade and shape subgrade -	93.35	stations @	\$15.96	per station	\$1,489.87

#### MISC.

Roll subgrade w/ vibratory roller prior to rocking -	93.35	stations @	\$13.50	per station	\$1,260.23
Reconstruct turnouts @ sta. -	2.00	@	\$73.00	each	\$146.00
Reconstruct turnaround @ sta. -	7.00	@	\$90.00	each	\$630.00
Reconstruct landing -	3.00	@	\$142.50	each	\$427.50
Grass seed and fertilize -	180.00	lbs @	\$2.80	per lbs	\$504.00

#### ENDHAUL

Clean ditch-	513	cy. @	\$2.20	per c.y.	\$1,128.60
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**TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC.      \$16,228.07**

### CULVERTS - MATERIALS & INSTALLATION

#### Culverts

	995	LF of 18"	\$15,074.25		275	LF of 24"	\$5,788.75
	50	LF of 30"	\$1,462.50		0	LF of 36"	\$0.00
			\$16,536.75				\$5,788.75

#### Half Rounds

	30	LF of 24"	\$533.40		0	LF of 30"	\$0.00
			\$533.40				\$0.00

#### Culvert Stakes & Markers

	6 stakes		\$48.00
	34 markers		\$272.00
			\$320.00

**TOTAL CULVERTS      \$23,178.90**

### ROCK

Culvert Backfill	See Rock List	410	cy. of	PitRun	@	\$13.62	per c.y.=	\$5,584.20
Fill Armor	See Culvert List	63	cy. of	Riprap	@	\$18.73	per c.y.=	\$1,179.99
Rock Berms	See Rock List	30	cy. of	Crushed	@	\$18.73	per c.y.=	\$561.90
0+00 to	93+35	4,275	cy. of	PitRun	@	\$10.52	per c.y.=	\$44,973.00
Energy Dissipator	See Culvert List	30	cy. of	Pit-Run	@	\$13.62	per c.y.=	\$408.60
Rock Ditchline	See Rock List	70	cy. of	Pit-Run	@	\$13.62	per c.y.=	\$953.40
							TOTAL ROCK	<b>\$53,661.09</b>

### ADDITIONAL REQUIREMENTS

Stream diversion -	1.00	@	\$1,000.00	each	\$1,000.00
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**TOTAL ADDITIONAL REQUIREMENTS      \$1,000.00**

Required Pre-Haul Maintenance-	\$0.00	Required Reconstruction -	\$94,068.06			
Required Abandonment-	\$0.00	Optional Reconstruction -	\$0.00	SUBTOTAL		<b>\$94,068.06</b>
Required Construction -	\$0.00	Optional Construction -	\$0.00			
Optional Rock?	NO			TOTAL		<b>\$94,068.06</b>
				<b>COST PER STATION</b>		<b>\$1,007.69</b>

## SUMMARY OF ROAD

Sale:	<b>Large Farva</b>		Road: <b>5625 Tie</b>
Required Pre-Haul Maintenance-	0+00 0.00	stations miles	Required Reconstruction -
			0+00 0.00
			stations miles
Required Abandonment-	0+00 0.00	stations miles	Optional Reconstruction -
			0+00 0.00
			stations miles
			Required Construction -
			23+73 0.45
			stations miles
			Optional Construction -
			0+00 0.00
			stations miles

### CONSTRUCTION

#### CLEARING/GRUBBING

Scattering Organic Debris	2.180	acres @	\$918.00	per acre	\$2,001.24
Endhaul Organic Debris	0.450	acres @	\$1,500.00	per acre	\$675.00
Remove large stumps -	14.00	@	\$90.00	each	\$1,260.00
Construct waste areas -	8.00	hours @	\$280.00	per hour	\$2,240.00

#### EXCAVATION

Road Construction Earthwork	23.73	sta. @	\$121.74	per sta. =	\$2,888.89
Grade and shape subgrade -	23.73	stations @	\$15.96	per station	\$378.73
Through Cut/Full Bench	14000	cy. @	\$1.35	per c.y.=	\$18,900.00

#### MISC.

Roll subgrade w/ vibratory roller prior to rocking -	23.73	stations @	\$13.50	per station	\$320.36
Construct turnaround @ sta. -	2.00	@	\$90.00	each	\$180.00
Construct landing -	3.00	@	\$285.00	each	\$855.00
Grass seed and fertilize -	71	lbs @	\$2.80	per lbs	\$198.80

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$29,898.02**

### CULVERTS - MATERIALS & INSTALLATION

#### Culverts

220	LF of 18"	\$3,333.00		0	LF of 24"	
		\$3,333.00				\$0.00

#### Half Rounds

15	LF of 24"	\$266.70		0	LF of 30"	
		\$266.70				\$0.00

#### Culvert Stakes & Markers

3 stakes		\$24.00
6 markers		\$48.00
		\$72.00

**TOTAL CULVERTS \$3,671.70**

### ROCK

17+96 to	23+73	533	cy. of	Pit Run	@	\$11.57	per c.y.=	\$6,166.81
Spot Rock	See Rock List	250	cy. of	Crushed	@	\$17.67	per c.y.=	\$4,417.50
Energy Dissipator	See Culvert List	6	cy. of	Riprap	@	\$14.67	per c.y.=	\$88.02
13+64 to	17+96	508	cy. of	Pit Run	@	\$11.57	per c.y.=	\$5,877.56
0+00 to	13+64	1,272	cy. of	PitRun	@	\$11.57	per c.y.=	\$14,717.04

**TOTAL ROCK \$31,266.93**

Required Pre-Haul Maintenance-	\$0.00	Required Reconstruction -	\$64,836.65	
				SUBTOTAL
Required Abandonment-	\$0.00	Optional Reconstruction -	\$0.00	
Required Construction -	\$0.00	Optional Construction -	\$0.00	
Optional Rock?	NO			TOTAL
				<b>\$64,836.65</b>
				<b>COST PER STATION \$2,732.27</b>

## SUMMARY OF ROAD

Sale:	<u>Large Farva</u>		Road: <u>5625 Ext.</u>
Required	0+00	stations	Required
Pre-Haul Maintenance-	0.00	miles	Reconstruction -
	0.00		0+00
			0.00
			stations
			miles
Required	0+00	stations	Optional
Abandonment-	0.00	miles	Reconstruction -
	0.00		0+00
			0.00
			stations
			miles
			Optional
			Construction -
			0+00
			0.00
			stations
			miles

### CONSTRUCTION

#### CLEARING/GRUBBING

Scattering Organic Debris	0.300	acres	@	\$918.00	per acre	\$275.40
Remove large stumps -	2.00	@		\$90.00	each	\$180.00

#### EXCAVATION

Road Construction Earthwork	3.26	sta.	@	\$155.56	per sta. =	\$507.13
Grade and shape subgrade -	3.26	stations	@	\$15.96	per station	\$52.03

#### MISC.

Roll subgrade w/ vibratory roller prior to rocking -	3.26	stations	@	\$13.50	per station	\$44.01
Grass seed and fertilize -	9.00	lbs	@	\$2.80	per lbs	\$25.20

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$1,083.77**

### ROCK

0+00	to	3+26	288	cy. of	PitRun	@	\$11.87	per c.y. =	\$3,418.56	
									TOTAL ROCK	<b>\$3,418.56</b>

Required		Required			
Pre-Haul Maintenance-	\$0.00	Reconstruction -	\$4,502.33	SUBTOTAL	<b>\$4,502.33</b>
Required Abandonment-	\$0.00	Optional	\$0.00		
		Reconstruction -			
Required Construction -	\$0.00	Optional	\$0.00	TOTAL	<b>\$4,502.33</b>
		Construction -			
Optional Rock?	NO			COST PER STATION	<b>\$1,381.08</b>

## SUMMARY OF ROAD

Sale:	<u>Large Farva</u>		Road:	<u>5625D</u>	
Required Pre-Haul Maintenance-	0+00 0.00	stations miles	Required Reconstruction -	0+00 0.00	stations miles
Required Abandonment-	0+00 0.00	stations miles	Optional Reconstruction -	18+00 0.34	stations miles
			Required Construction -	0+00 0.00	stations miles
			Optional Construction -	0+00 0.00	stations miles

### RECONSTRUCTION

#### CLEARING/GRUBBING

Scattering Organic Debris 0.410 acres @ \$918.00 per acre \$376.38

#### EXCAVATION

Pull and clean ditch- 18.00 stations @ \$19.88 per station \$357.84  
 Grade and shape subgrade - 18.00 stations @ \$15.96 per station \$287.28

#### MISC.

Roll subgrade w/ vibratory roller prior to rocking - 18.00 stations @ \$13.50 per station \$243.00  
 Reconstruct landing and construct truck turnaround- 4.00 @ \$285.00 each \$1,140.00  
 Grass seed and fertilize - 20.00 lbs @ \$2.80 per lbs \$56.00

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$2,460.50**

### CULVERTS - MATERIALS & INSTALLATION

#### Culverts

100 LF of 18" \$1,515.00  
\$1,515.00

#### Culvert Stakes & Markers

3 markers \$24.00  
\$24.00

TOTAL CULVERTS **\$1,539.00**

### ROCK

0+00 to 18+00 995 cy. of Pit-Run @ \$12.04 per c.y. = \$11,979.80  
 Energy Dissipator See Culvert List 3 cy. of Pit-Run @ \$6.86 per c.y. = \$20.58

TOTAL ROCK **\$12,000.38**

Required Pre-Haul Maintenance-	\$0.00	Required Reconstruction -	\$0.00			
				SUBTOTAL		<b>\$15,999.88</b>
Required Abandonment-	\$0.00	Optional Reconstruction -	\$15,999.88			
Required Construction -	\$0.00	Optional Construction -	\$0.00			
Optional Rock?	YES			TOTAL		<b>\$15,999.88</b>
				COST PER STATION		<b>\$888.88</b>

## SUMMARY OF ROAD

Sale:	<b>Large Farva</b>		Road:	<b>5625E</b>	
Required Pre-Haul Maintenance-	0+00 0.00	stations miles	Required Reconstruction -	0+00 0.00	stations miles
Required Abandonment-	0+00 0.00	stations miles	Optional Reconstruction -	3+05 0.06	stations miles
			Required Construction -	0+00 0.00	stations miles
			Optional Construction -	0+00 0.00	stations miles

### RECONSTRUCTION

#### CLEARING/GRUBBING

Scattering Organic Debris	0.070	acres @	\$918.00	per acre	\$64.26
Remove large stumps -	2.00	@	\$90.00	each	\$180.00

#### EXCAVATION

Widening Road Prism	0.200	acres @	\$610.00	per acre	\$122.00
Pull and clean ditch-	3.05	stations @	\$19.88	per station	\$60.63
Construct ditchouts -	1.00	@	\$73.00	each	\$73.00
Grade and shape subgrade -	3.05	stations @	\$15.96	per station	\$48.68

#### MISC.

Roll subgrade w/ vibratory roller prior to rocking -	3.05	stations @	\$13.50	per station	\$41.18
Reconstruct landing -	2.00	@	\$285.00	each	\$570.00
Grass seed and fertilize -	6.00	lbs @	\$2.80	per lbs	\$16.80

#### ENDHAUL

Widening	400	cy. @	\$1.23	per c.y.	\$492.00
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TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$1,668.55**

### ROCK

0+00	to	3+05	291	cy. of	PitRun	@	\$11.96	per c.y.=	\$3,480.36
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TOTAL ROCK **\$3,480.36**

Required Pre-Haul Maintenance-	\$0.00	Required Reconstruction -	\$0.00		
Required Abandonment-	\$0.00	Optional Reconstruction -	\$5,148.91	SUBTOTAL	<b>\$5,148.91</b>
Required Construction -	\$0.00	Optional Construction -	\$0.00	TOTAL	<b>\$5,148.91</b>
Optional Rock?	YES			COST PER STATION	<b>\$1,688.17</b>



## ROCK DEVELOPMENT COST SUMMARY

Pit:	Flair	Location:	Sec. 21, T9N R3E
Sale:	<b>Large Farva</b>	Road:	9030 c.y.
Swell:	1.40	Stockpile:	c.y.
Shrinkage	1.16	Total Truck Loads:	9030 c.y.
Drill Pct.:	0%	In Place Total:	6450 c.y.

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

	\$2.45 /cu.yd x	667 cu.yds.	\$1,634.15
Rip Rock:	\$1.96 /cu.yd x	6450 cu.yds.	\$12,642.00
Push Rock:	\$0.67 /cu.yd x	9030 cu.yds.	\$6,050.10
Load Dump Truck:	\$0.56 /cu.yd x	9030 cu.yds.	\$5,056.80
		Subtotal	\$25,383.05

TOTAL PRODUCTION COSTS \$25,383.05

Base Cost= \$2.81 Per Cu.Yd.

Road Segment	Haul Cost /cu.yd.	Proc Cost /cu.yd.	Base Cst. /cu.yd.	Cost /cu.yd.	Number Cu. Yds	Speed (Mi/hr.)	One-Way Dist (ft)	ROCK COST
5625 Culvert Backfill	\$6.81	\$4.00	\$2.81	\$13.62	410	15	26300	\$5,584.20
5625	\$6.81	\$0.90	\$2.81	\$10.52	4275	15	26300	\$44,973.00
5625 Energy Dissipator	\$6.81	\$4.00	\$2.81	\$13.62	30	15	26300	\$408.60
5625 Rock Ditchline	\$6.81	\$4.00	\$2.81	\$13.62	70	15	26300	\$953.40
5625 Tie	\$7.86	\$0.90	\$2.81	\$11.57	533	15	30975	\$6,166.81
5625 Tie Energy Dissipator	\$7.86	\$4.00	\$2.81	\$14.67	6	15	30975	\$88.02
5625 Tie	\$7.86	\$0.90	\$2.81	\$11.57	508	15	30975	\$5,877.56
5625 Tie	\$7.86	\$0.90	\$2.81	\$11.57	1272	15	30975	\$14,717.04
5625 Ext.	\$8.16	\$0.90	\$2.81	\$11.87	288	15	32300	\$3,418.56
5625D	\$8.33	\$0.90	\$2.81	\$12.04	995	15	33054	\$11,979.80
5625D Energy Dissipator	\$1.05	\$3.00	\$2.81	\$6.86	3	15	700	\$20.58
5625F Energy Dissipator	\$8.23	\$0.60	\$2.81	\$11.64	2	15	32600	\$23.28
5625F	\$8.23	\$0.90	\$2.81	\$11.94	347	15	32600	\$4,143.18
5625E	\$8.25	\$0.90	\$2.81	\$11.96	291	15	32700	\$3,480.36
				Total C.Y.	9030		Sub Total	\$101,834.39

TOTAL ROCKING COSTS \$101,834.39

## ROCK DEVELOPMENT COST SUMMARY

Pit:	4250 Stock Pile	Location:	Sec. 11, T9N R2E
Sale:	<b>Large Farva</b>	Road:	643 c.y.
Swell:	1.40	Stockpile:	c.y.
Shrinkage	1.16	Total Truck Loads:	643 c.y.
Drill Pct.:	0%	In Place Total:	459 c.y.

Load Dump Truck:	\$0.56	/cu.yd x	643 cu.yds.	\$360.08
Move in Excavator	1	@	\$451.85	= \$451.85

Base Cost=	\$1.26	Per Cu.Yd.	TOTAL PRODUCTION COSTS	\$811.93
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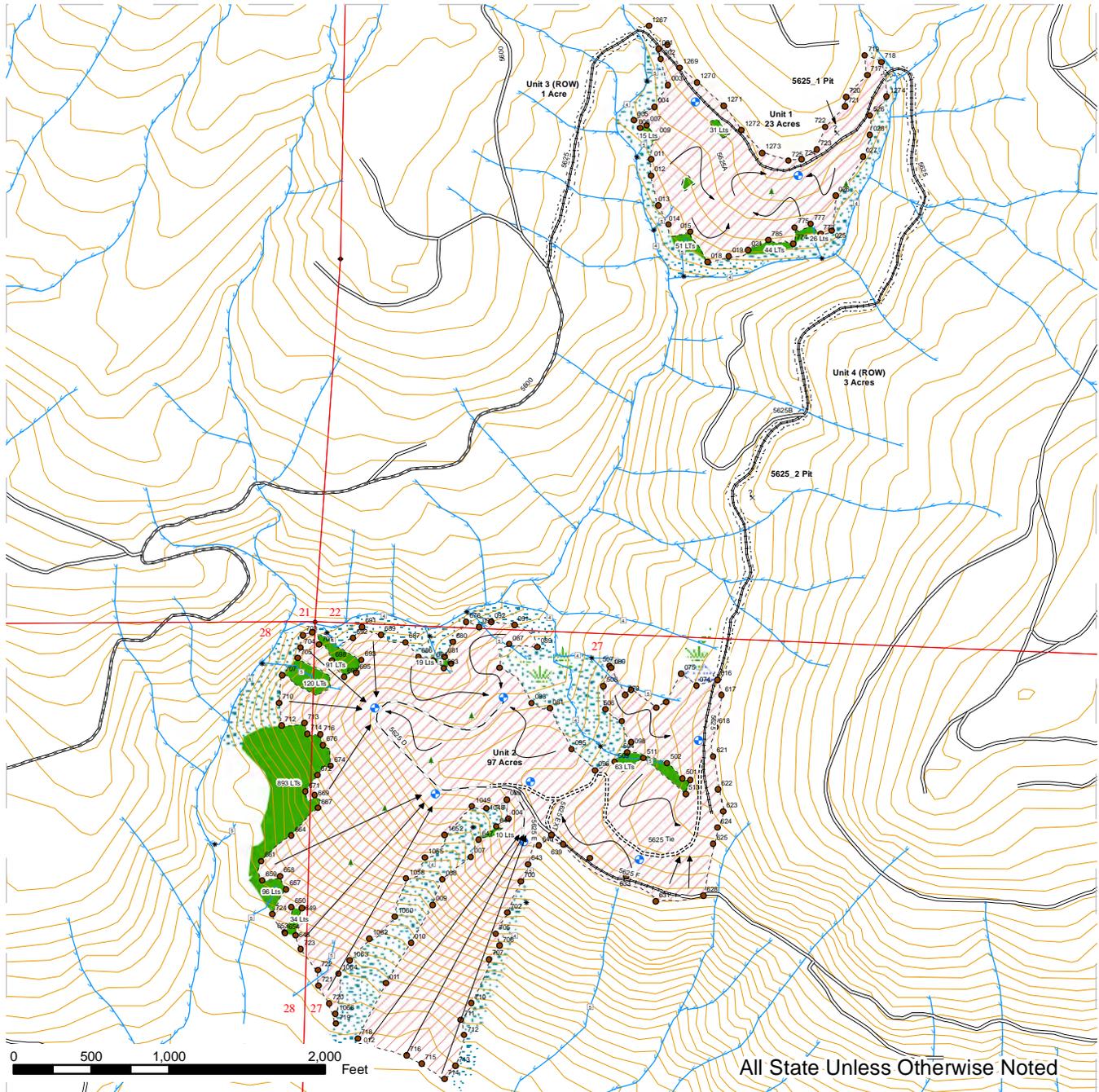
Road Segment	Haul Cost /cu.yd.	Proc Cost /cu.yd.	Base Cst. /cu.yd.	Cost /cu.yd.	Number Cu. Yds	Speed (Mi/hr.)	One-way Dist (ft)	ROCK COST
5600 Spot Rock	\$10.95	\$0.90	\$1.26	\$13.11	100	15	44700	\$1,311.00
5625 Fill Armor	\$13.47	\$4.00	\$1.26	\$18.73	63	15	55900	\$1,179.99
5625 Rock Berms	\$13.47	\$4.00	\$1.26	\$18.73	30	15	55900	\$561.90
5625 Tie Spot Rock	\$15.51	\$0.90	\$1.26	\$17.67	250	15	65000	\$4,417.50
5100 Spot Rock	\$10.11	\$0.90	\$1.26	\$12.27	200	15	41000	\$2,454.00
					Total C.Y.	643	Sub Total	\$9,924.39

TOTAL ROCKING COSTS    \$9,924.39

# LOGGING PLAN MAP

**SALE NAME:** Large Farva  
**AGREEMENT#:** 30-093916  
**TOWNSHIP(S):** T03R03E  
**TRUST(S):** Common School (03), Normal School (08), Scientific School (10)

**REGION:** Pacific Cascade  
**COUNTY(S):** Cowlitz  
**ELEVATION RGE:** 1400ft-2700ft



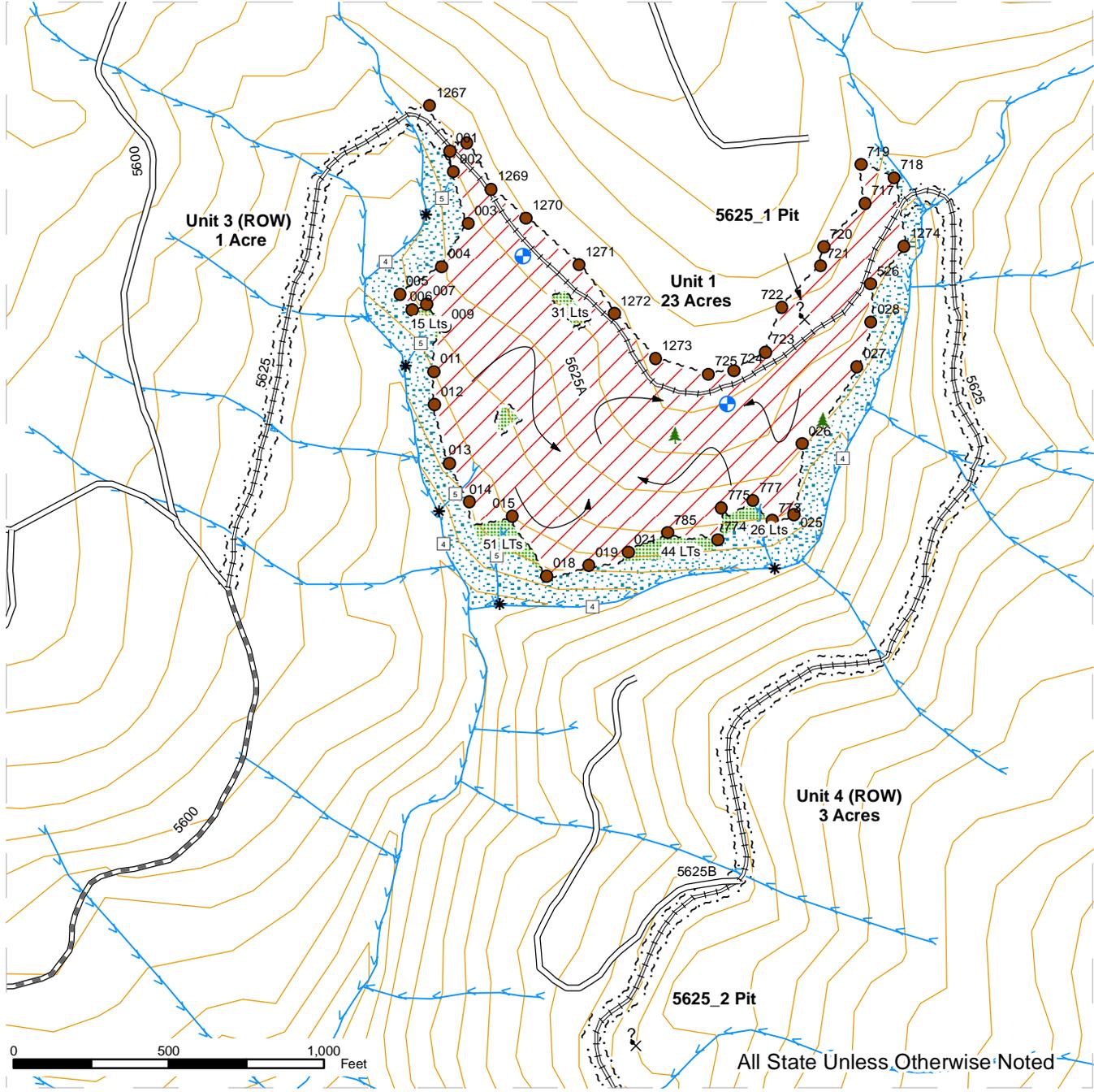
Ground	Existing Road	Stream Type
Forested Wetland	Designated Skid Trail	Stream Type Break
Riparian Mgt Zone	Required Reconstruction	Monumented Corners
Wetland Mgt Zone	Required Pre-Haul Maintenance	Landing
Leave Tree Area	Required Construction	Leave Trees
Sale Boundary Tags	Optional Reconstruction	Potential Rock Source
Right of Way Tags	Streams	Rock Pit
Leave Tree Tags		Ground Harvest



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All State Unless Otherwise Noted

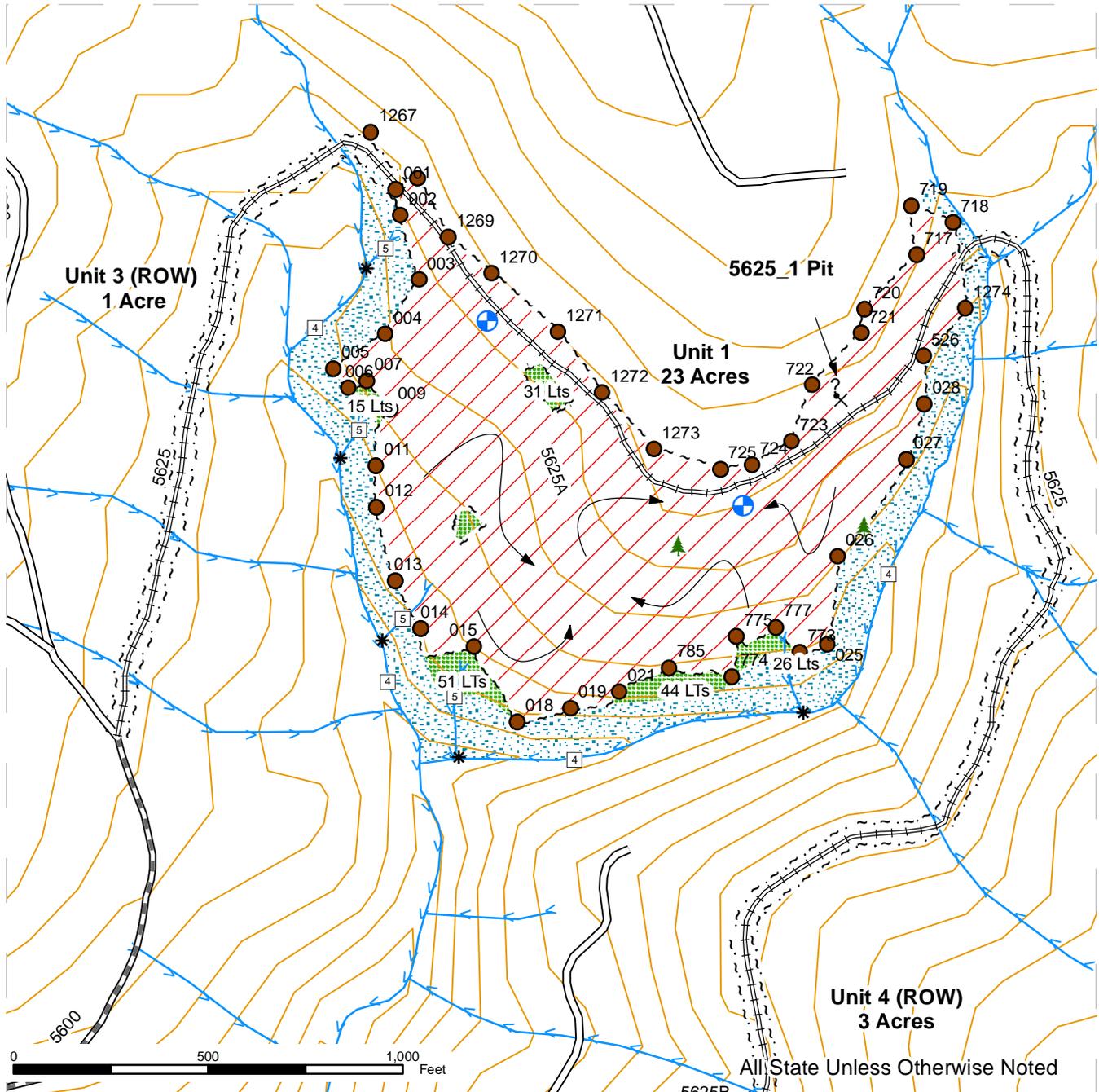
Ground	Existing Road	Stream Type
Forested Wetland	Designated Skid Trail	Stream Type Break
Riparian Mgt Zone	Required Reconstruction	Monumented Corners
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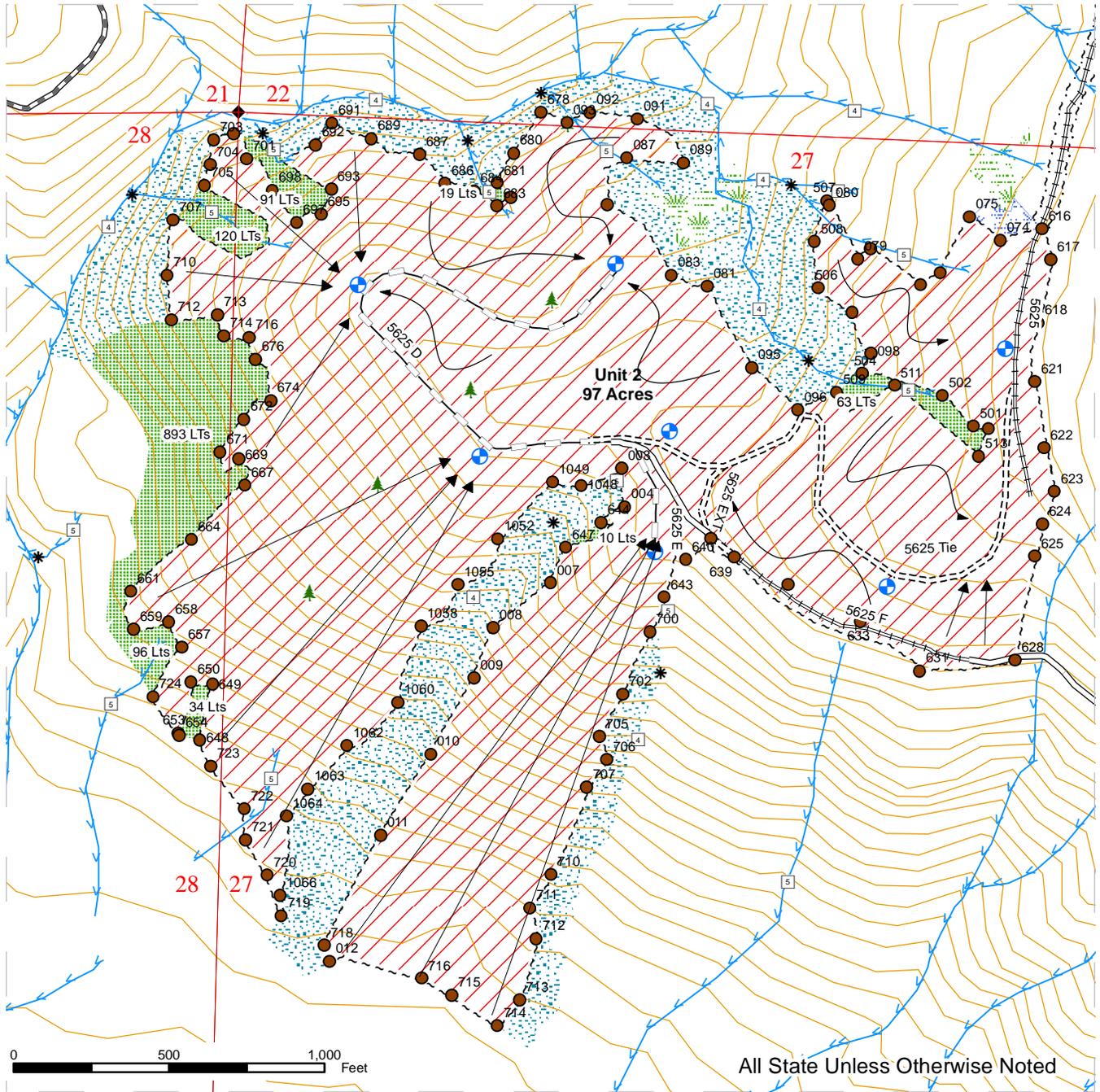
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Ground	Existing Road	Stream Type
Forested Wetland	Designated Skid Trail	Stream Type Break
Riparian Mgt Zone	Required Reconstruction	Monumented Corners
Wetland Mgt Zone	Required Pre-Haul Maintenance	Landing
Leave Tree Area	Required Construction	Leave Trees
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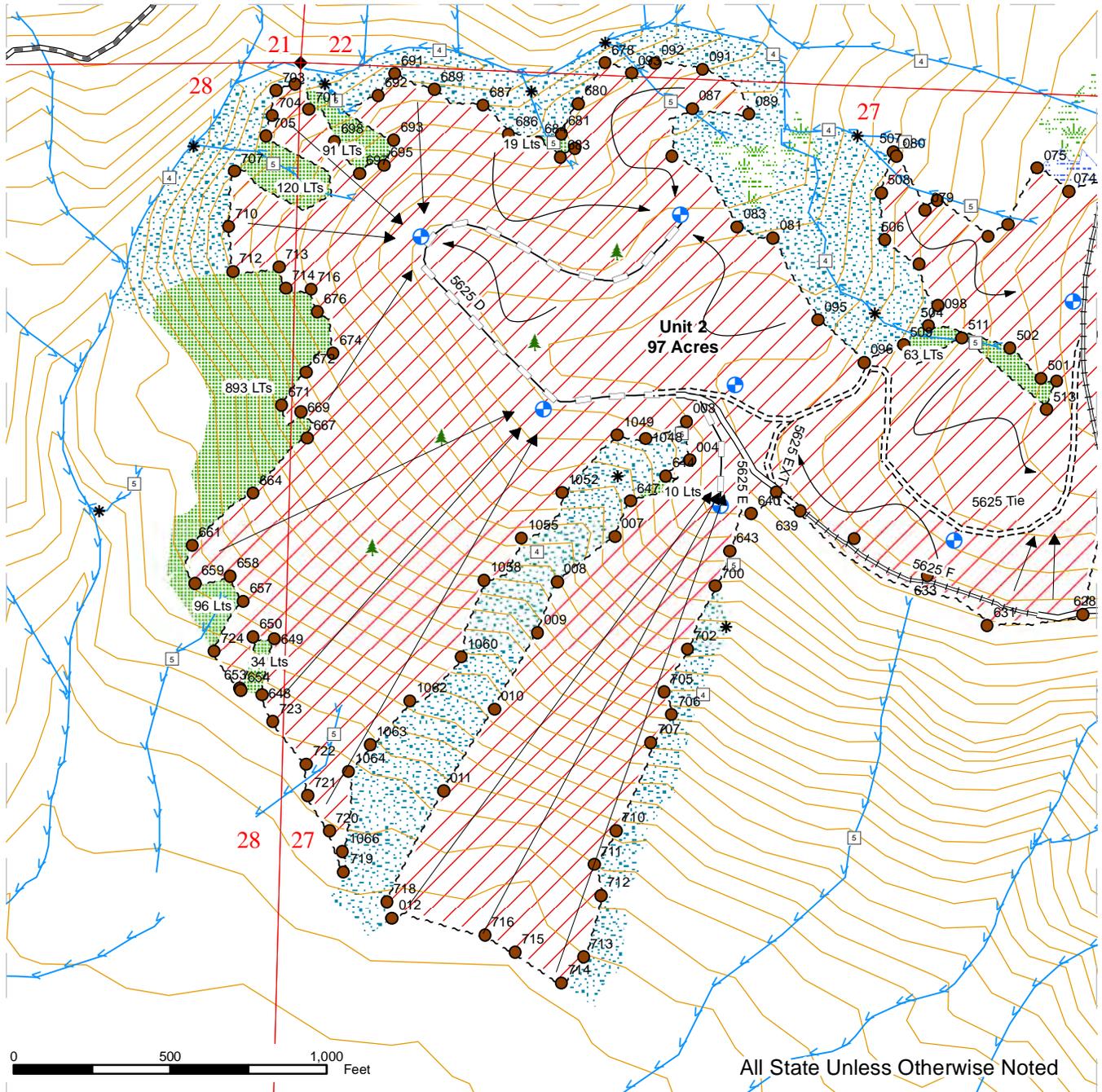




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