



TIMBER NOTICE OF SALE

SALE NAME: CHAMELEON

AGREEMENT NO: 30-097290

AUCTION: February 25, 2020 starting at 10:00 a.m., COUNTY: Thurston South Puget Sound Region Office, Enumclaw, WA

SALE LOCATION: Sale located approximately 7 miles northwest of Littlerock.

PRODUCTS SOLD AND SALE AREA:

All timber, except leave trees bounded out by yellow leave tree area tags, snags, trees marked with blue paint, and down timber existing more than 5 years from the day of sale, bounded by the following: white Timber Sale Boundary tags, timber type change marked with pink flagging, property line with white Carsonite posts, the C-Line, C-7010, and D-4000 roads in Unit #1; white Timber Sale Boundary tags, timber type change marked with pink flagging, and the E-9000 and E-9600 roads in Unit #4;

All timber, except snags, trees marked with blue paint and down timber existing more than 5 years from the day of sale, bounded by white Timber Sale Boundary tags, and the C-Line Road in Unit #2;

All timber, except leave trees bounded out by yellow leave tree area tags, snags, and down timber existing more than 5 years from the day of sale, bounded by the following: white Timber Sale Boundary tags, property line with white Carsonite posts, and the D-4900 and D-4950 roads in Unit #3;

All timber banded with orange paint in Right-of-Way Unit #5;

All timber, except snags and down timber existing more than 5 years from the day of sale, bounded by the following: white Timber Sale Boundary tags, the C-7010 Road, and existing rock pit edge marked with pink flagging in Rock Pit Expansion Unit #6; white Timber Sale Boundary tags and existing rock pit edge marked with pink flagging in Rock Pit Expansion Unit #7; white Timber Sale Boundary tags and existing rock pit edge marked with pink flagging in Rock Pit Expansion Unit #8;

All forest products above located on part(s) of Sections 17, 18, 19, 20, 29, 32 and 33 all in Township 17 North, Range 3 West, W.M., containing 187 acres, more or less.

CERTIFICATION: This sale is certified under the Sustainable Forestry Initiative® program Standard (cert no: PwC-SFIFM-513)

ESTIMATED SALE VOLUMES AND QUALITY:

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

MINIMUM BID: \$3,346,000.00

BID METHOD: Sealed Bids





## TIMBER NOTICE OF SALE

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Units #1-#4 consist of high quality Douglas-fir that includes high quality logs and poles.

Within Units #1-#4, all live stems over 2 inches including all vine maple within the harvest units, shall be felled, leaving a stump no more than 12 inches in height per contract clause H-250.

At Greenline Quarry, Purchaser shall move overburden in Area A and Area B to established waste area. Development for crushed surfacing rock shall begin in Area A. Development for jaw run and riprap shall occur in Area A. Once Area A is developed and depleted, the Purchaser shall work in Area B. Once Area B has been depleted, Purchaser shall move to areas designated by the Contract Administrator. See Greenline Quarry Development Plan for more details.

Tailhold locations are restricted due to protection of potentially unstable slopes. Trees shall not be used as tailholds within non-tradable leave tree clumps within the sale area or locations identified as Slope Stability Mitigation Zones on the Logging Plan Map. Stringing cables through and suspending cables over these areas may be allowed with approval by the Contract Administrator. Tailhold locations and cable corridors for Units #1, #3, and #4 shall be identified in a harvest plan by the Purchaser and approved in writing by the Contract Administrator prior to the start of operations.

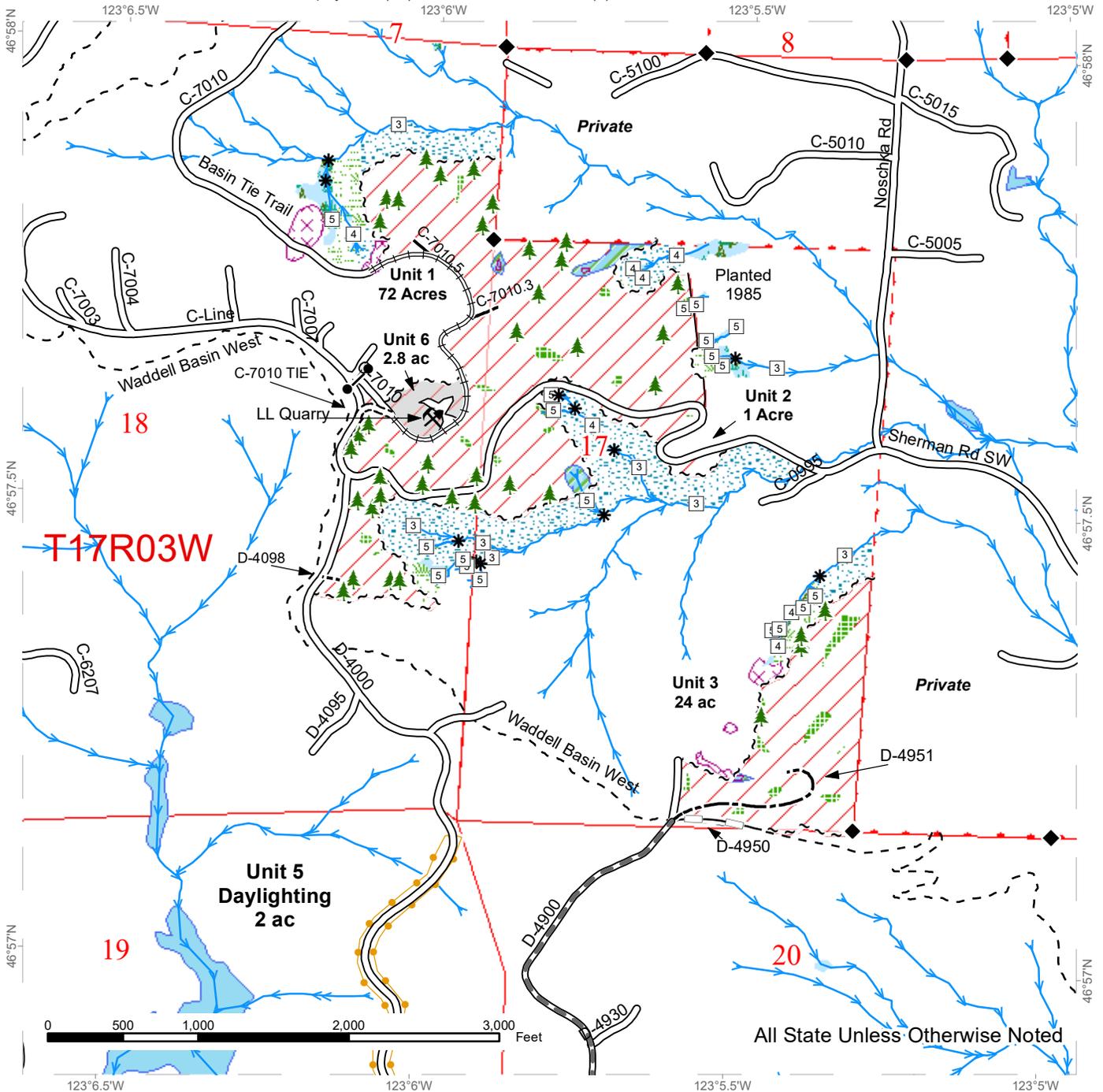
Within Units #1 and #3, all trees with double banded orange paint are required to be high stumped. This is done to identify monumented corner locations. Trees are to be felled away from this area. Location of the monumented corners are shown on the logging plan map. Purchaser will be responsible for repairing or replacing monumented corners that are damaged during any logging activities. Contract Administrator must be notified five calendar days prior to cutting these trees.

This proposal is in close proximity to utilities. Purchaser is responsible for identifying any utilities and all notifications, per Road Plan clause 1-43.

# TIMBER SALE MAP

**SALE NAME:** CHAMELEON  
**AGREEMENT #:** 30-097290  
**TOWNSHIP(S):** T17R3W  
**TRUST(S):** Forest Board Repayment (42), State Forest Purchase (2)

**REGION:** South Puget Sound Region  
**COUNTY(S):** Thurston  
**ELEVATION RGE:** 440-1160



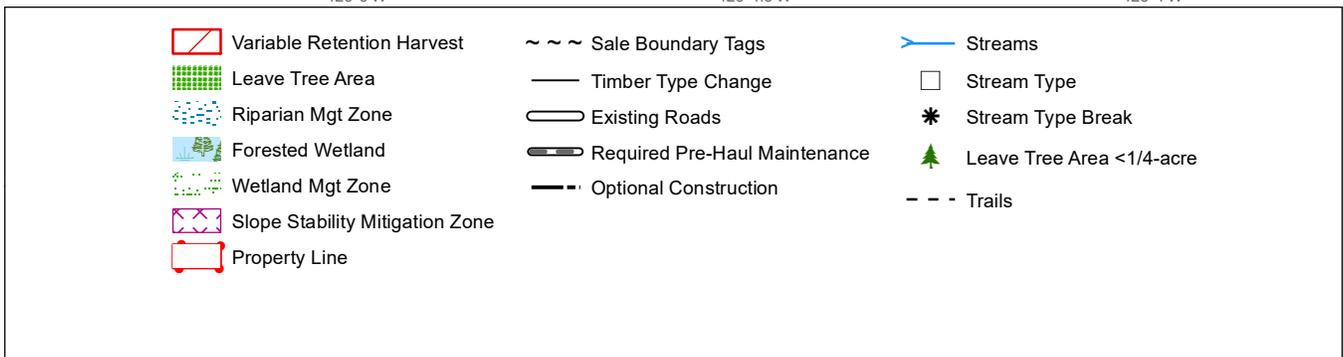
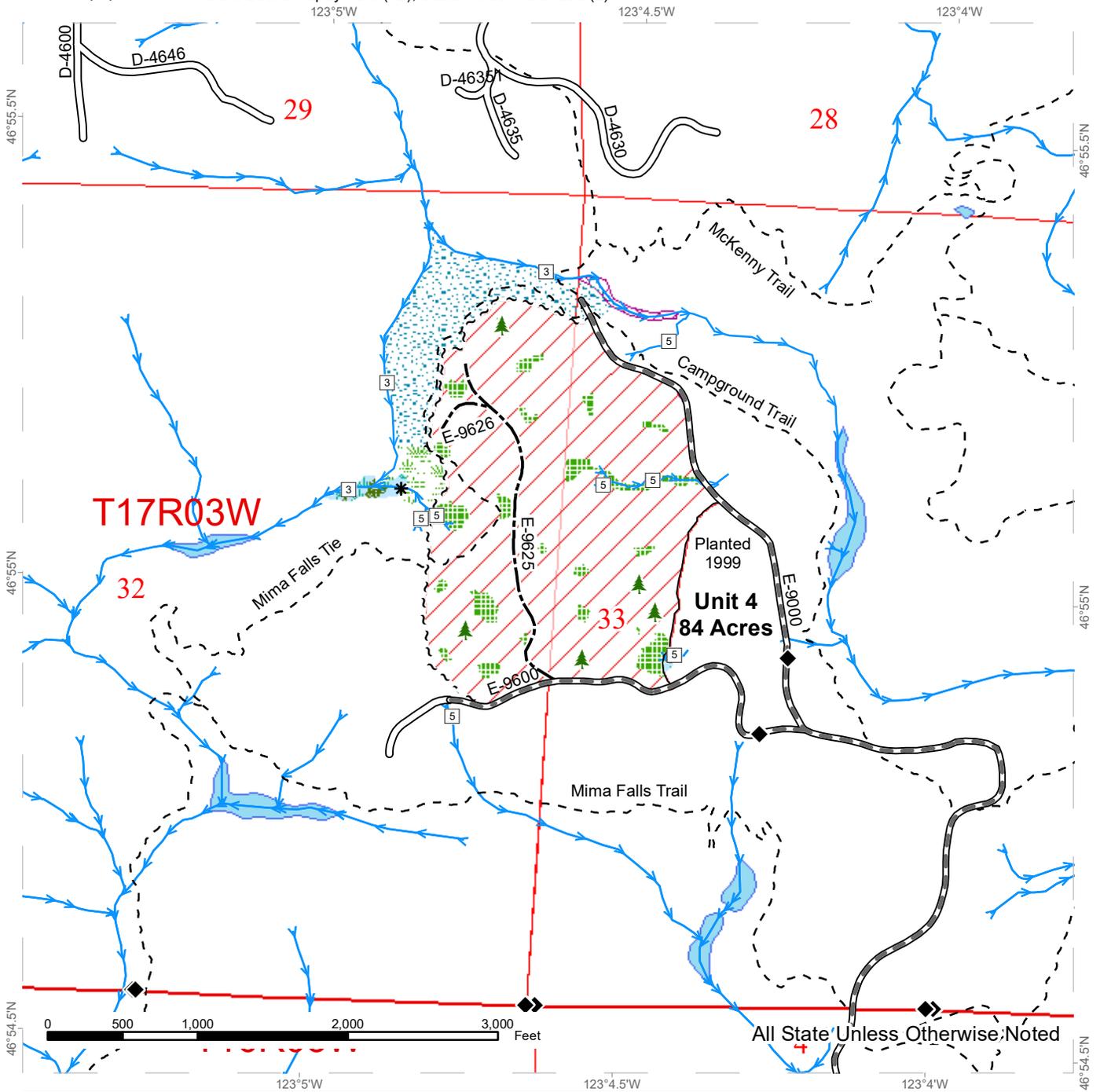
Variable Retention Harvest	Sale Boundary Tags	Streams
Rock pit expansion	Take / Removal Trees	Stream Type
Non-Tradeable Leave Trees	Timber Type Change	Stream Type Break
Leave Tree Area	Existing Roads	Survey Monument
Riparian Mgt Zone	Required Pre-Haul Maintenance	Gate (H957)
Forested Wetland	Required Construction	Leave Tree Area <1/4-acre
Wetland Mgt Zone	Required Reconstruction	Trails
Slope Stability Mitigation Zone	Optional Construction	
Property Line	Optional Reconstruction	



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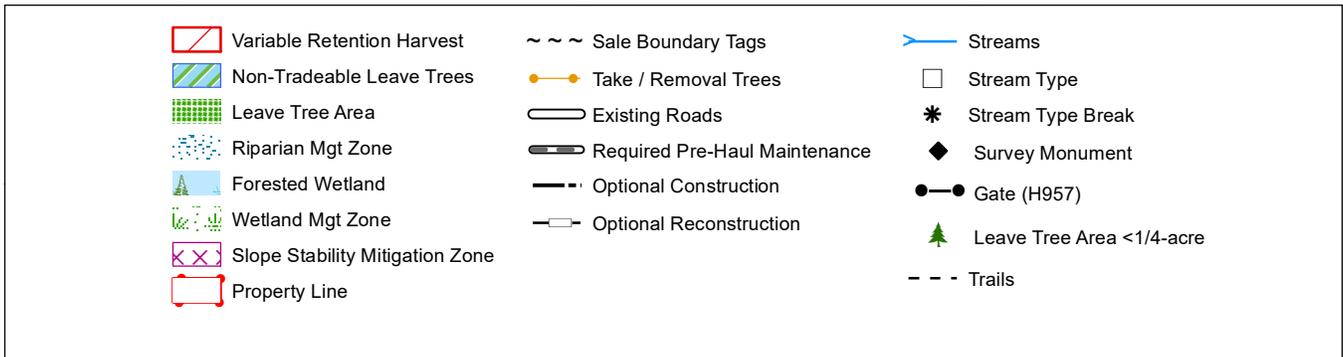
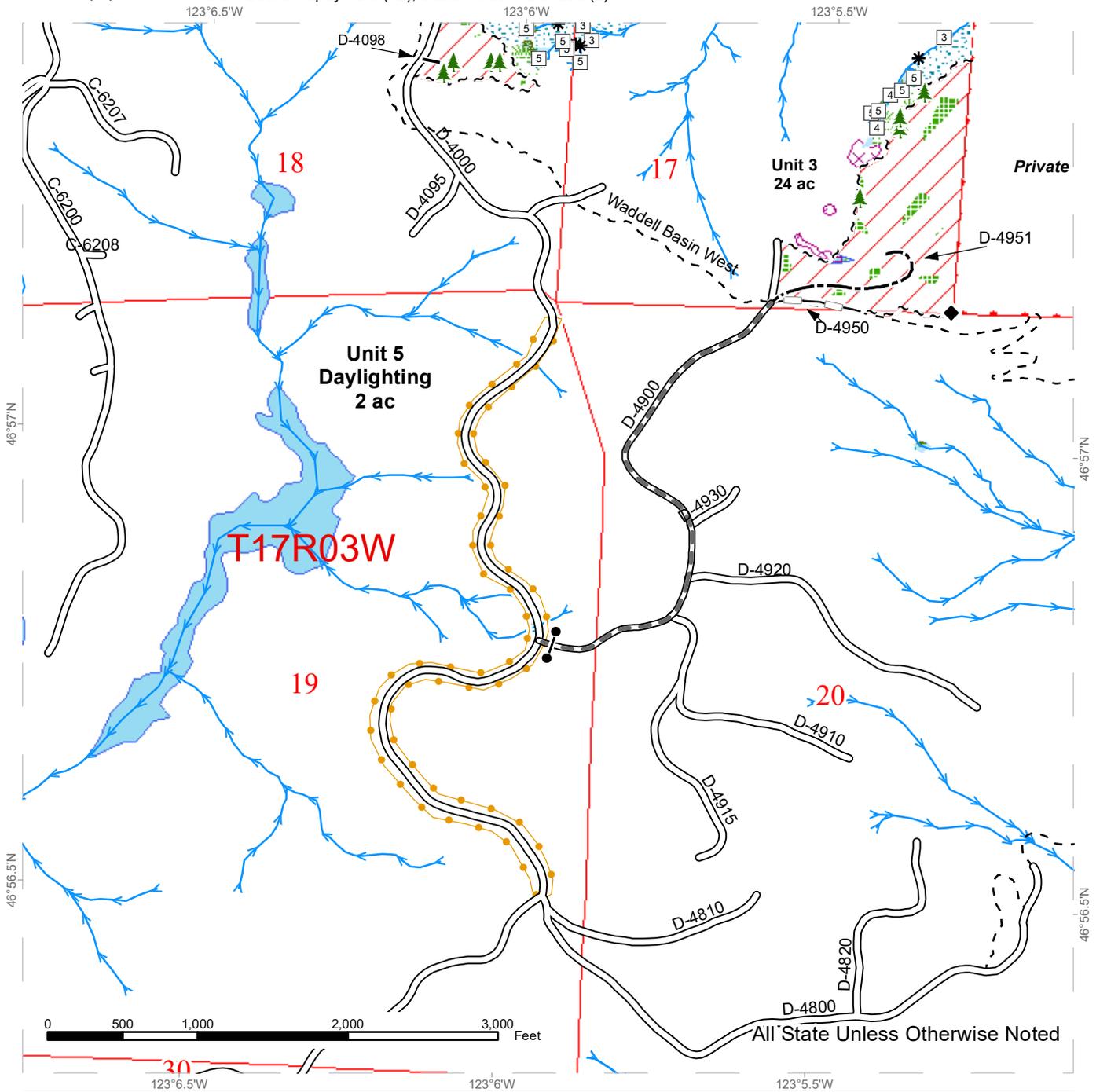
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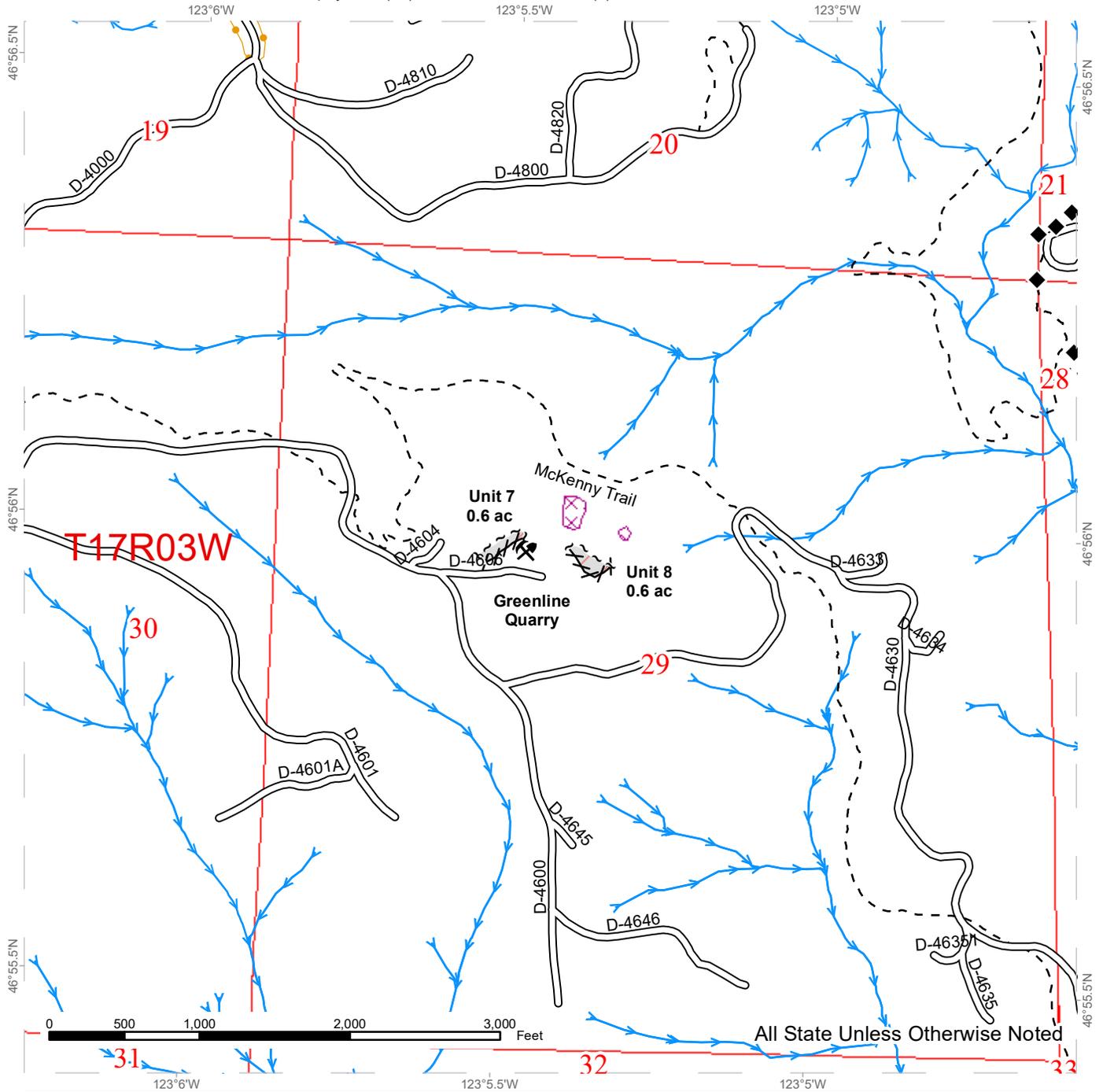
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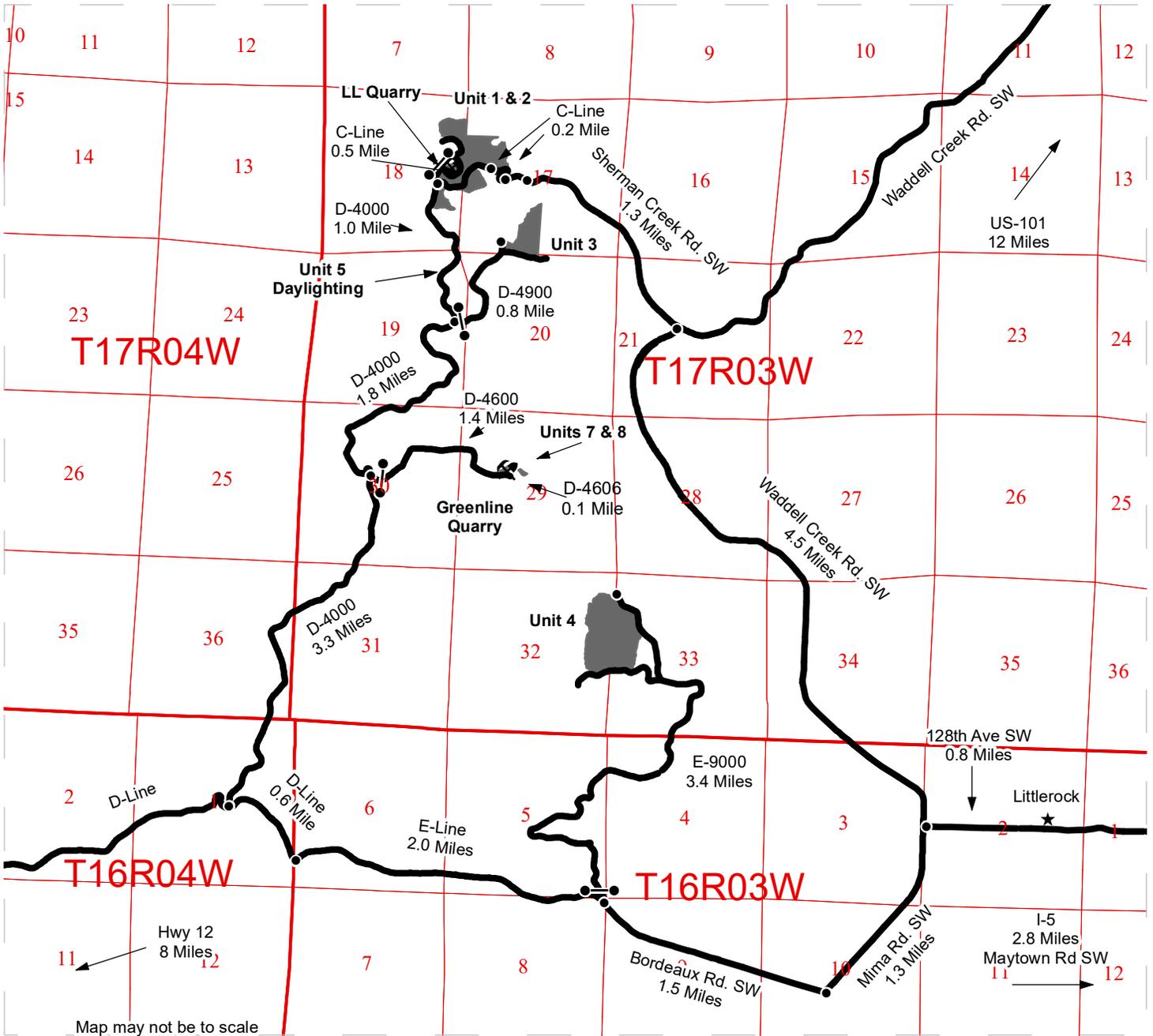
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# DRIVING MAP

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REGION: South Puget Sound Region  
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- Timber Sale Unit
- Haul Route
- Distance Indicator
- Gate (H957)
- Rock Pit
- Town

**DRIVING DIRECTIONS:**

From I-5, take exit 95, turn East and follow Maytown Rd SW for 2.8 miles to the town of Little Rock. From Little Rock follow 128th Ave SW for 0.8 Miles to intersection with Waddell Creek Rd.

**Units 1, 2, 3 & 5**  
 Turn right onto Waddell Creek Rd SW, follow for 4.5 miles. Turn left onto Sherman Valley Rd SW, follow for 1.3 miles. Turn left onto the C-line and follow for 0.2 mile to arrive at Unit 2 on left. Continue on the C-Line from Unit 2 for 0.2 mile to arrive at Unit 1 on left and right. Continue on C-Line for 0.5 Mile and turn left on D-4000 and follow for 1.0 mile to arrive at Unit 5.

**Unit 4**  
 Turn left onto Mima Rd SW, follow for 1.3 miles. Turn right onto Bordeaux Rd SW, follow for 1.5 miles. Turn right on to the E-9000 and follow for 3.4 miles and arrive at Unit 4 on left.

**Greenline Quarry / Units 7 & 8**  
 From Unit 1 continue on C-Line for 0.5 Mile and turn left on D-4000 and follow for 1.8 miles, turn left on D-4600 and follow for 1.4 miles turn left on D-4606 and follow for 0.1 mile to arrive at Greenline Quarry/ Units 7 & 8.



**STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES**

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

**Export Restricted Lump Sum AGREEMENT NO. 30-097290**

**SALE NAME: CHAMELEON**

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

Section G: General Terms

G-001 Definitions

The following definitions apply throughout this contract;

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

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

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

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

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

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

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

G-011 Right to Remove Forest Products and Contract Area

Purchaser was the successful bidder on February 25, 2020 and the sale was confirmed on \_\_\_\_\_. The State, as owner, agrees to sell to Purchaser, and Purchaser agrees to purchase as much of the following forest products as can be cut and removed during the term of this contract: All timber, except leave trees bounded out by yellow leave tree area tags, snags, trees marked with blue paint, and down timber existing more than 5 years from the day of sale, bounded by the following: white Timber Sale Boundary tags, timber type change marked with pink flagging, property line with white Carsonite posts, the C-Line, C-7010, and D-4000 roads in Unit #1; white Timber Sale Boundary tags, timber type change marked with pink flagging, and the E-9000 and E-9600 roads in Unit #4;

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All forest products above located, located on approximately 187 acres on part(s) of Sections 17, 18, 19, 20, 29, 32, and 33 all in Township 17 North, Range 3 West W.M. in Thurston County(s) as designated on the sale area and as shown on the attached timber sale map.

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

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

G-020 Inspection By Purchaser

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

G-025 Schedules

The following attached schedules are hereby incorporated by reference:

Schedule	Title
A	Recreation Trail Clean Out and Repair

G-031 Contract Term

Purchaser shall complete all work required by this contract prior to October 31, 2022.

G-040 Contract Term Adjustment - No Payment

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

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

## G-051 Contract Term Extension - Payment

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

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

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

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

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

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

- e. Payment of \$997.00 per acre per annum for the acres on which an operating release has not been issued in the harvest area.
- f. In no event will the extension charge be less than \$200.00.
- g. Extension payments are non-refundable.

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

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

## G-060 Exclusion of Warranties

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

- a. The **MERCHANTABILITY** of the forest products. The use of the term "merchantable" in any document is not intended to vary the foregoing.
- b. The **CONDITION** of the forest products. The forest products will be conveyed "AS IS."
- c. The **ACREAGE** contained within any sale area. Any acreage descriptions appearing in the timber notice of sale, timber sale contract, or other documents are estimates only, provided solely for administrative and identification purposes.
- d. The **VOLUME, QUALITY, OR GRADE** of the forest products. The State neither warrants nor limits the amount of timber to be harvested. The descriptions of the forest products to be conveyed are estimates only, made solely for administrative and identification purposes.
- e. The **CORRECTNESS OF ANY SOIL OR SURFACE CONDITIONS, PRE-SALE CONSTRUCTION APPRAISALS, INVESTIGATIONS, AND ALL OTHER PRE-BID DOCUMENTS PREPARED BY OR FOR THE STATE**. These documents have been prepared for the State's appraisal purposes only.
- f. **THAT THE SALE AREA IS FREE FROM THREATENED OR ENDANGERED SPECIES** or their habitat. The State is not responsible for any interference with forestry operations that result from the presence of any threatened or endangered species, or the presence of their habitat, within the sale area.
- g. **THAT THE FORESTRY OPERATIONS** to be performed under this contract **WILL BE FREE FROM REGULATORY ACTIONS** by governmental agencies. The State is not responsible for actions to enforce regulatory laws, such as the Washington Forest Practices Act (chapter 76.09 RCW), taken by the Department of Natural Resources or any other agency that may affect the operability of this timber sale.
- h. Items contained in any other documents prepared for or by the State.

G-062 Habitat Conservation Plan

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

ITP conditions. All HCP materials, including the ITP, are available for review at the State's Regional Offices and the administrative headquarters in Olympia, Washington.

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

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

G-063 Incidental Take Permit Notification Requirements

- a. Purchaser shall immediately notify the Contract Administrator of new locations of permit species covered by the Incidental Take Permits (ITP) that are discovered within the area covered by the State's Habitat Conservation Plan (HCP), including, but not limited to: locations of occupied murrelet habitat; spotted owl nest sites; wolves; grizzly bears; nests, communal roosts, or feeding concentrations of bald eagles; peregrine falcon nests; Columbian white-tailed deer; Aleutian Canada geese; Oregon silverspot butterflies; and additional stream reaches found to contain bull trout. Purchaser is required to notify the Contract Administrator upon discovery of any fish species found in streams or bodies of water classified as non-fish bearing. In all circumstances, notification must occur within a 24 hour time period.
- b. Upon locating any live, dead, injured, or sick specimens of any permit species covered by the ITP, Purchaser shall immediately notify the Contract Administrator. Purchaser shall notify the Contract Administrator if there is any doubt as to the identification of a discovered permit species. Purchaser may be required to take certain actions to help the Contract Administrator safeguard the well-being of any live, injured or sick specimens of any permit species discovered, until the proper disposition of such specimens can be determined by the Contract Administrator. Any such requirements will be explained to Purchaser by the Contract Administrator during the Pre-Work Conference. In all circumstances, notification must occur within a 24 hour time period.
- c. Purchaser shall refer to a specific ITP number, ITP TE812521-1 or ITP 1168 (copies which are located in the region office) in all correspondence and reports concerning permit activities.

- d. Provisions and requirements of the ITP shall be clearly presented and explained to Purchaser by Contract Administrator during the Pre-Work Conference as per contract clause G-330. All applicable provisions of the ITP and this schedule must be presented and clearly explained by Purchaser to all authorized officers, employees, contractors, or agents of Purchaser conducting authorized activities in the timber sale area. Any questions Purchaser may have about the ITP should be directed to the Contract Administrator.

G-064 Permits

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

G-065 Regulatory Disclaimer

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

G-066 Governmental Regulatory Actions

- a. Risk

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

- b. Sale Area

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

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

- c. Adjustment of Price

The State shall adjust the total contract price by subtracting from the total contract price an amount determined in the following manner: The State shall cause the timber sale area subject to governmental regulation or order to be measured. The State shall calculate the percentage of the total sale area subject to the governmental regulation or order. The State shall reduce the total contract price by that calculated percentage. However, variations in

species, value, costs, or other items pertaining to the affected sale area will be analyzed and included in the adjustment if deemed appropriate by the State. The State will further reduce the total contract price by the reasonable cost of unamortized roads Purchaser constructed but was unable to fully use for removing timber. A reduction in total contract price terminates all of the Purchaser's rights to purchase and remove the timber and all other interest in the affected sale area.

G-070 Limitation on Damage

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

G-080 Scope of State Advice

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

G-091 Sale Area Adjustment

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

G-101 Forest Products Not Designated

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

The pricing schedule has not been set for the sale.

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

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

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

Forest products purchased under this contract are certified as being in conformance with the Sustainable Forestry Initiative program Standard under certificate number: 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 Purchasers expense regardless of cost, to remedy deficiencies at any time.

#### G-140 Indemnity

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

#### G-150 Insurance

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

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

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

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

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

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

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

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

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

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

Commercial General Liability (CGL) Insurance. Purchaser shall maintain general liability (CGL) insurance, and, if necessary, commercial umbrella insurance with a limit of not less than \$1,000,000.00 per each occurrence. If such CGL insurance

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

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

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

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

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

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

G-160 Agents

The State's rights and duties will be exercised by the Region Manager at Enumclaw, Washington. The Region Manager will notify Purchaser in writing who is responsible for administering the contract. The Region Manager has sole authority to waive, modify, or amend the terms of this contract in the manner prescribed in clause G-180. No agent, employee, or representative of the State has any authority to bind the State to any affirmation, representation, or warranty concerning the forest products conveyed beyond the terms of this contract.

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

G-170 Assignment and Delegation

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

G-180 Modifications

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

G-190 Contract Complete

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

G-200 Notice

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

- G-210 Violation of Contract
- G-220 State Suspends Operations

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

G-210 Violation of Contract

- a. If Purchaser violates any provision of this contract, the Contract Administrator, by written notice, may suspend those operations in violation. If the violation is capable of being remedied, Purchaser has 30 days after

receipt of a suspension notice to remedy the violation. If the violation cannot be remedied (such as a violation of WAC 240-15-015) or Purchaser fails to remedy the violation within 30 days after receipt of a suspension notice, the State may terminate the rights of Purchaser under this contract and collect damages.

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

#### G-220 State Suspends Operation

The Contract Administrator may suspend any operation of Purchaser under this contract when the State is suffering, or there is a reasonable expectation the State will suffer environmental, monetary, or other damage if the operation is allowed to continue.

Purchaser shall be in breach of this contract if the operation continues after the suspension notice or if the operation resumes without prior approval and notice from the Contract Administrator.

Purchaser may request a modification of a suspension within 30 days of the start of suspension through the dispute resolution process in clause G-240. If this process results in a finding that the suspension exceeded the time reasonably necessary to stop or prevent damage to the State, Purchaser is entitled to request a contract term adjustment under clause G-040.

If it reasonably appears that the damage that the State is suffering, or can reasonably be expected to suffer if the operation is allowed to continue, will prevent harvest for a period that will exceed 6 months, and Purchaser has complied with this contract, the provisions of clause G-066 shall govern just as if the harvest was prevented by an applicable foreign or domestic governmental regulation or order.

#### G-230 Unauthorized Activity

Any cutting, removal, or damage of forest products by Purchaser, its employees, agents, or invitees, including independent contractors, in a manner inconsistent with the terms of this contract or State law, is unauthorized. Such activity may subject Purchaser to liability for triple the value of said forest products under RCW 79.02.320

or RCW 79.02.300 and may result in prosecution under RCW 79.02.330 or other applicable statutes.

G-240 Dispute Resolution

The following procedures apply in the event of a dispute regarding interpretation or administration of this contract and the parties agree that these procedures must be followed before a lawsuit can be initiated.

- a. In the event of a dispute, Purchaser must make a written request to the Region Manager for resolution prior to seeking other relief.
- b. The Region Manager will issue a written decision on Purchaser's request within ten business days.
- c. Within ten business days of receipt of the Region Manager's decision, Purchaser may make a written request for resolution to the Deputy Supervisor - Uplands of the Department of Natural Resources.
- d. Unless otherwise agreed, a conference will be held by the Deputy Supervisor - Uplands within 30 calendar days of the receipt of Purchaser's request for review of the Region Manager's written decision. Purchaser and the Region Manager will have an opportunity to present their positions. The Deputy Supervisor - Uplands will issue a decision within a reasonable time of being presented with both Parties' positions.

G-250 Compliance with All Laws

Purchaser shall comply with all applicable statutes, regulations and laws, including, but not limited to; chapter 27.53 RCW, chapter 68.50 RCW, WAC 240-15 and WAC 296-54. Failure to comply may result in forfeiture of this contract.

G-260 Venue

This contract shall be governed by the laws of the State of Washington. In the event of a lawsuit involving this contract, venue shall be proper only in Thurston County Superior Court.

G-270 Equipment Left on State Land

All equipment owned or in the possession of Purchaser, its employees, agents, or invitees, including independent contractors, shall be removed from the sale area and other State land by the termination date of this contract. Equipment remaining unclaimed on State land 60 days after the expiration of the contract period is subject to disposition as provided by law. Purchaser shall pay to the State all costs of moving, storing, and disposing of such equipment. The State shall not be responsible for any damages to or loss of the equipment or damage caused by the moving, storing or disposal of the equipment.

**G-280 Operating Release**

An operating release is a written document, signed by the State and Purchaser, indicating that Purchaser has been relieved of certain rights or responsibilities with regard to the entire or a portion of the timber sales contract. Purchaser and State may agree to an operating release for this sale, or portion of this sale, prior to the contract expiration, when all contract requirements pertaining to the release area have been satisfactorily completed. Upon issuance of a release, Purchaser's right to cut and remove forest products on the released area will terminate.

**G-310 Road Use Authorization**

Purchaser is authorized to use the following State roads and roads for which the State has acquired easements and road use permits; the C-Line from 775+50 to 879+62, C-7010, C-7010.3, C-7010.5, C-7010 TIE, D-Line, D-4000, D-4098, D-4600, D-4606, D-4900, D-4950, D-4951, E-Line from 583+42 to 676+94, E-9000, E-9600, E-9625, and E-9626 roads. The State may authorize in writing the use of other roads subject to fees, restrictions, and prior rights.

**G-330 Pre-work Conference**

Purchaser shall arrange with the Contract Administrator to review this contract and to examine the sale area before beginning any operations. A plan of operations shall be developed and agreed upon by the Contract Administrator and Purchaser before beginning any operations. To the extent that the plan of operations is inconsistent with the contract, the terms of the contract shall prevail. State's acceptance and approval of Purchaser's plan of operations shall not be construed as any statement or warranty that the plan of operations is adequate for Purchaser's purposes or complies with applicable laws.

**G-340 Preservation of Markers**

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

**G-360 Road Use Reservation**

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

**G-370 Blocking Roads**

Purchaser shall not block the C-Line, D-Line, D-4000, D-4600, D-4606 and E-Line roads, 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 #55-000753 entered into between the State and Mason County Logging Company, dated April 13, 1942.

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: Bonneville Power Administration (BPA)  
Disclosed by Application No.: 50-003109  
Granted: 12/28/1955  
Expires: Indefinite

Easement, including the terms and provisions thereof,  
For: Buried & Overhead Power Transmission, Road  
In Favor of: Puget Sound Power & Light Company  
Disclosed by Application No.: 50-034178  
Granted: 10/3/1969  
Expires: Indefinite

Easement, including the terms and provisions thereof,  
For: Road Use Permit  
In Favor of: Pacific Northwest Bell  
Disclosed by Application No.: 50-038179  
Granted: 4/28/1975  
Expires: Indefinite

Easement, including the terms and provisions thereof,  
For: Buried Power Transmission and Road  
In Favor of: Federal Aviation Administration (FAA)  
Disclosed by Application No.: 50-040788  
Granted: 9/19/1978  
Expires: Indefinite

Easement, including the terms and provisions thereof,  
For: Railroad  
In Favor of: Mason County Logging Company  
Disclosed by Application No.: 50-041441  
Granted: 2/12/1937  
Expires: Indefinite

Easement, including the terms and provisions thereof,  
For: Buried Power Transmission and Road  
In Favor of: Puget Sound Power & Light Company  
Disclosed by Application No.: 50-054098  
Granted: 9/26/1944  
Expires: Indefinite

Easement, including the terms and provisions thereof,  
For: Trail  
In Favor of: Washington State Department of Natural Resources (DNR)  
Disclosed by Application No.: 50-070357  
Granted: 4/13/1998  
Expires: 1/31/2047

Easement, including the terms and provisions thereof,  
For: Road  
In Favor of: Weyerhaeuser Company  
Disclosed by Application No.: 50-090943  
Granted: 6/17/2015  
Expires: Indefinite

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

Lease, including the terms and provisions thereof,  
For: Land Use License  
In Favor of: Washington Department of Fish & Wildlife  
Disclosed by Application No.: 60-096820  
Granted: 4/23/2018  
Expires: 6/30/2022

Region Encumbrances

Lease, including the terms and provisions thereof,  
 For: Minor Forest Products  
 In Favor of: Washington State Department of Natural Resources (DNR) – South Puget Sound  
 Disclosed by Application No.: 35-SPSTCO1  
 Granted: 1/1/2015  
 Expires: Indefinite

Lease, including the terms and provisions thereof,  
 For: Land Use License  
 In Favor of: Washington State Department of Health  
 Disclosed by Application No.: 60-WS0948  
 Granted: 4/2/2018  
 Expires: 12/31/2020

Special Notations

- Located within the Medicine Creek Treaty area. Intergovernmental agreements for vehicle access with Squaxin Island Tribe (92-095269), Puyallup Tribe (92-095272), Muckleshoot Tribe (92-095267), and Nisqually Indian Tribe (92-097198).
- Roads are used to access Capitol Peak communication site lease in Section 12, Township 17 North, Range 4 West.

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 \$246,298.00. The total contract price consists of a \$0.00 contract bid price plus \$246,298.00 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 unit containing the damaged leave tree, as approved by the Contract Administrator. Purchaser may be required to pay liquidated damages for Excessive Reserve Tree Damage as detailed in clause D-041.

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

H-017 Preventing Excessive Soil Disturbance

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

H-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 entire sale area. The plan shall address the slash management plan, tailhold and cable corridor locations within Units #1, #3, and #4, and landing locations per H-140, which are part(s) of this contract. The harvest plan shall be approved by the Contract Administrator prior to beginning the harvest operation. Purchaser shall not deviate from the harvest plan without prior written approval by the Contract Administrator.

**H-051 Branding and Painting**

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

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

**H-080 Snags Not to be Felled**

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

**H-120 Harvesting Equipment**

Forest products sold under this contract shall be harvested and removed using cable, cable-tethered, and tracked ground based equipment. Cable-tethered equipment is limited to sustained slopes of 75 percent and less. Non-tethered self-leveling tracked equipment is limited to sustained slopes of 65 percent and less. Other ground based equipment is limited to tracked equipment on sustained slopes that are 45 percent and less. Authority to use other equipment or to operate outside the equipment specifications detailed above must be approved in writing by the State.

**H-125 Log Suspension Requirements**

Lead-end suspension is required for all yarding activities.

**H-126 Tailholds on State Land**

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

**H-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-130 Hauling Schedule**

The hauling of forest products will not be permitted from November 1 to April 30 unless authorized in writing by the Contract Administrator.

**H-140 Special Harvest Requirements**

Purchaser shall accomplish the following during the harvest operations:

- a. Existing downed trees or logs dead for more than 5 years yarded to the landing shall be returned to their original locations.
- b. Equipment limitation zones are required within 30 feet of Type 5 streams.
- c. Crossings of Type 5 streams may be allowed at locations approved in writing by the Contract Administrator. Purchaser shall place a culvert or log puncheon at crossing locations (when water is present) to protect the stream bank and prevent sedimentation. All materials placed in and/or over the stream at these crossings shall be removed immediately upon completion of yarding on that skid trail.
- d. Any and all operations associated with this sale may be temporarily suspended when, in the opinion of the Contract Administrator, there is the potential for delivery to typed water.
- e. No equipment shall operate, outside the timber sale boundary.
- f. Trees within RMZs and WMZs may be felled for safety reasons with the exception of trees within the Slope Stability Mitigation Zones adjacent to units 1, 3, and 4. Any trees felled in RMZs and WMZs will be left on-site, and trees needing to be felled within the Slope Stability Mitigation Zones will need a plan approved by Forest Practices prior to cutting.
- g. To facilitate proper reforestation in areas of high slash concentrations, purchaser shall, in concurrence with ground based yarding, clear plantable spots for units 1 and 3 at 11.5 foot by 11.5 foot spacing and for units 2 and 4 at 11 foot by 11 foot spacing.
- h. The Purchaser shall notify all employees and contractors working on this sale that any danger tree marked or unmarked may be felled. Any marked danger tree will be replaced with a suitable tree of similar size and species as approved by the Contract Administrator.
- i. Purchaser shall take measures throughout operations to control soil erosion, water channelization, and prevent sediment delivery to streams or wetlands. Methods may include construction of water bars, "sweeping" with logs, silt traps, or other measures on skid trails, yarding corridors and haul roads.
- j. Within Units #1 and #3, all trees with double banded with orange paint are required to be high stumped. This is done to identify monumented corner locations. Trees are to be felled away from this area. Location of the monumented corners are shown on the logging plan map. Purchaser will be responsible for repairing or replacing monumented corners that are damaged during any logging activities. Contract Administrator must be notified five calendar days prior to cutting these trees.

- k. Designated haul roads have been designed to allow for the transport of poles 60 feet in length or less. If the Purchaser chooses to remove poles greater than 60 feet in length a haul plan must be submitted in writing to the Contract Administrator, which details the desired haul route, additional reconstruction needs, and mitigation for damage, which is a result of hauling oversize material. If approved in writing by the Contract Administrator, all work shall be at the Purchaser's expense.

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

H-141 Additional Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

- a. Purchaser shall leave 2 down logs per acre. A log is defined as having a minimum diameter of 12 inches on the small end of the log and a minimum length of 20 feet or at least 100 board feet.
- b. Areas restricting operations due to protection of potentially unstable slopes are located within and outside the sale boundary.
- Locations inside the sale boundary are identified as Non-Tradeable Leave Trees marked with yellow Leave Tree Area tags as shown on the Timber Sale and Logging Plan Maps inside which no trees may be used as tailholds and no equipment may operate within, nor logs yarded through or over.
  - Locations outside the sale boundary are identified as Slope Stability Mitigation Zones on the Logging Plan and Timber Sales Maps. Trees within these areas shall not be used as tailholds.

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

H-190 Completion of Settings

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

H-220 Protection of Residual or Adjacent Trees

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

H-230 Tops and Limbs Outside the Sale Boundary

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

**H-250 Additional Falling Requirements**

Within Units #1-#4, all live stems greater than 2 inches, including vine maple, shall be felled concurrently with felling operations. The remaining stump shall be no more than 12 inches in height. Areas of young or immature timber may be excluded from this requirement by the Contract Administrator. Trees will be cut below the lowest live limb and cut completely free of the stump. Cut tree must be on the ground and not "hung up" or leaning against leave tress.

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

Road construction and associated work provisions of the Road Plan for this sale, dated 1/23/2019 are hereby made a part of this contract.

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

Purchaser shall perform work at their own expense on the C-7010, C-7010.3, C-7010.5, C-7010 TIE, D-4098, D-4900, D-4950, D-4951, E-9600, E-9625, and E-9626 roads. All work shall be completed to the specifications detailed in the Road Plan.

**C-060 Designated Road Maintainer**

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

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

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

**C-090 Landing Location**

Landings shall be built a minimum of 50 feet off the C-Line road(s).

**C-140 Water Bars**

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

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

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

the State shall be promptly notified whenever an incident occurs requiring an emergency response.

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

S-010 Fire Hazardous Conditions

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

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

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

S-030 Landing Debris Clean Up

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

S-035 Logging Debris Clean Up

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

S-050 Cessation of Operations for Low Humidity

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

S-060 Pump Truck or Pump Trailer

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

S-100 Stream Cleanout

Slash or debris which enters Type 5 streams as a result of operations under this contract and which is identified by the Contract Administrator shall be removed and deposited in a stable position. Removal of slash or debris shall be accomplished in a manner that avoids damage to the natural stream bed and bank vegetation.

S-110 Resource Protection

No ground based equipment may operate within 30 feet of a Type 5 stream unless authority is granted in writing by the Contract Administrator.

## S-120 Stream Protection

No timber shall be felled into, across, or yarded through Type 3 or Type 4 stream channels.

## S-130 Hazardous Materials

## a. Hazardous Materials and Waste - Regulatory Compliance

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

## b. Hazardous Materials Spill Prevention

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

## c. Hazardous Materials Spill Containment, Control and Cleanup

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

## d. Hazardous Material Release Reporting

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

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

DNR Contract Administrator

ECY - Northwest Region:

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

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

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

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

S-131 Refuse Disposal

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

Section D: Damages

D-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 all units.

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

STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

\_\_\_\_\_  
Purchaser

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

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

South Puget Sound Region Manager

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

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

Address:

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

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

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

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

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

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

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

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

**Schedule A**  
**Recreation Trail Clean Out and Repair**

This schedule applies to the Basin Tie, Mima Falls Tie, and Waddell Basin West trails.

Purchaser is responsible for locating and marking the recreation trail within the sale boundary on the ground prior to harvest as approved by the Contract Administrator (CA).

- If needed, upon completion of harvest activities Purchaser shall locate the original recreation trail with pink fluorescent flagging. The CA will then approve the trail location in writing and repair/clean out can begin.
- The CA may require cleanout of the trail prior to completion of harvest, if there is a delay in harvesting activities.

Recreation trail repair/clean out shall occur within 2 weeks of completion of harvest within 200 feet of the trail and shall consist of the following:

- Remove all logging debris from the recreation trail and the area on each side of the trail within 5 feet of the travel path.
- Trail will be repaired where holes or ruts resulted due to logging damage. The trail will be returned to its original width on mineral soils and free of organic debris.
- Existing drainage control measures shall be returned to pre-harvest condition.

All work described above shall be done as determined by the CA. The logging release for the unit will not be issued until repair and clean out is completed and approved in writing by the CA.



## WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

### FOREST EXCISE TAX ROAD SUMMARY SHEET

**Region:** South Puget Sound

**Timber Sale Name:** Chameleon

**Application Number:** 30- 097290

#### EXCISE TAX APPLICABLE ACTIVITIES

**Construction:** 4,772 linear feet  
*Road to be constructed (optional and required) but not abandoned*

**Reconstruction:** 3201 linear feet  
*Road to be reconstructed (optional and required) but not abandoned*

**Abandonment:** 0 linear feet  
*Abandonment of existing roads not reconstructed under the contract*

**Decommission:** 0 linear feet  
*Road to be made undriveable but not officially abandoned.*

**Pre-Haul Maintenance:** 24908 linear feet  
*Existing road to receive maintenance work (optional and required) prior to haul*

#### EXCISE TAX EXEMPT ACTIVITIES

**Temporary Construction:** 86 linear feet  
*Roads to be constructed (optional and required) and then abandoned*

0 linear feet

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

All parties must make their own assessment of the taxable or non-taxable status of any work performed under the timber sale contract. The Department of Revenue bears responsibility for determining forest road excise taxes. The Department of Natural Resources developed this form to help estimate the impact of forest excise taxes. However, the information provided may not precisely calculate the actual amount of taxes due. The Department of Revenue is available for consultation by calling 1.800.548.8829.

(Revised 9/18)

## PRE-CRUISE NARRATIVE

Sale Name: <b>Chameleon</b>	Region: <b>South Puget Sound</b>
Agreement #: <b>30-097290</b>	District: <b>Black Hills</b>
Contact <b>Allyn Cole</b> Forester:	Phone/ Location: <b>(360)-280-3314</b> Ext: <b>/</b>
Alternate Contact: <b>Derwood Duncan III</b>	Phone/ Location: <b>(360) 280-3113</b> Ext: <b>/</b>

Type of Sale (lump sum, mbf scale, tonnage scale or contract harvest): <b>Lump Sum</b>
Required or Optional removal of utility as pulp: <b>N/A</b>
Evaluated for RFRS Implementation?: <b>Due to low RD, RFRS was not viable.</b>
Percentage cable (specify downhill vs uphill): <b>50%</b>
Percentage ground based: <b>50%</b>
Species Onsite: <input checked="" type="checkbox"/> RC, <input checked="" type="checkbox"/> DF, <input checked="" type="checkbox"/> WH, <input checked="" type="checkbox"/> RA, <input type="checkbox"/> BC, <input checked="" type="checkbox"/> BLM, <input type="checkbox"/> NF, <input type="checkbox"/> SF, <input type="checkbox"/> SS, <input type="checkbox"/> Other:(Please List)

### UNIT ACREAGES\* AND METHOD OF DETERMINATION:

Unit # Harvest R/W or RMZ WMZ	Legal Description Sec/Twp/Rng	Trust	Gross Traversed Acres	Deductions from Gross Acres (No harvest acres)				Net Harvest Acres	Acreage Determination  (List method, dimensions and error of closure if applicable)
				RMZ/ WMZ Acres	Leave Tree Acres	Existing Road Acres	Other Acres (describe)		
1 (VRH)	Sec 17&18/T17N/ R03W	42	77.6	0	3.8	2.0 (35 FT WIDTH X 2553 FT LENGTH)	0	71.8	GPS (Garmin and Trimble)
2 (VRH)	Sec 17/T17N/ R03W	42	0.95	0	0	0	0	0.95	GPS (Garmin and Trimble)
3 (VRH)	Sec 17&20/T17N/ R03W	42	25.6	0	1.6	0	0	24.0	GPS (Garmin and Trimble)
4 (VRH)	Sec 33/T17N/ R03W	42	90.4	0	6.4	0	0	84	GPS (Garmin and Trimble)
5 (Right-of- Way)	Sec 18&19/T17N/ R03W	02 & 42	2.0	0	0	0	0	2.0	GPS (Garmin and Trimble)
6 (Rock Pit)	Sec 18/T17N/ R03W	42	3.1	0	0	0	0.3 (Void)	2.8	GPS (Garmin)
7 (Rock Pit)	Sec 29/T17N/ R03W	01	0.6	0	0	0	0	0.6	GPS (Garmin)
8 (Rock Pit)	Sec 29/T17N/ R03W	01	0.6	0	0	0	0	0.6	GPS (Garmin)
<b>TOTAL ACRES</b>			200.85	0	11.8	2.0	0.3	186.75	

### HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription: (Mark leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
1 (VRH)	Variable Retention Harvest: Boundaries are marked with white "Timber Sale Boundary" tags with pink flagging, timber type change marked with pink flagging, property line with	N/A	8 leave trees per acre

	white carsonite posts, C-Line, C-7010, and D-4000 roads. Clumped leave trees are marked with yellow "Leave Tree Area" tags and pink flagging. Single leave trees are banded with blue paint.		
2 (VRH)	Variable Retention Harvest: Boundaries are marked with white "Timber Sale Boundary" tags with pink flagging, and C-line road. Scattered individual leave trees are marked with a band of blue paint.	N/A	8 leave trees per acre
3 (VRH)	Variable Retention Harvest: Boundaries are marked with white "Timber Sale Boundary" tags with pink flagging, and D-4900 and D-4950 roads. Clumped leave trees are marked with yellow "Leave Tree Area" tags and pink flagging.	N/A	8 leave trees per acre
4 (VRH)	Variable Retention Harvest: Boundaries are marked with white "Timber Sale Boundary" tags with pink flagging, timber type change marked with pink flagging, E-9000 and E-9600 roads. Clumped leave trees are marked with yellow "Leave Tree Area" tags with pink flagging. Single leave trees are banded with blue paint.	N/A	8 leave trees per acre
5 (Right-of-Way)	Right-of-Way trees are marked with a band of orange paint along D-4000.	N/A	100% removal
6 (ROCK PIT)	Rock Pit Expansion Harvest: Boundaries are marked with white "Timber Sale Boundary" tags and pink flagging, Pink Flagging, and the C-7010 road.	N/A	100% removal
7 (ROCK PIT)	Rock Pit Expansion Harvest: Boundaries are marked with white "Timber Sale Boundary" tags and pink flagging, and Pink Flagging.	N/A	100% removal
8 (ROCK PIT)	Rock Pit Expansion Harvest: Boundaries are marked with white "Timber Sale Boundary" tags and pink flagging, and Pink Flagging.	N/A	100% removal

**OTHER PRE-CRUISE INFORMATION:**

Unit #	Estimated Volume	Access information (Gates, locks, etc.)	Photos, traverse maps required
1 (VRH)	See Cruise	C-7010 is gated.	Traverse maps with contours, roads and leave trees. Photo (Scale 1" to 500')
2 (VRH)	See Cruise	N/A	Traverse maps with contours, roads and leave trees. Photo (Scale 1" to 400')

3 (VRH)	See Cruise	D-4900 is gated.	Traverse maps with contours, roads and leave trees. Photo (Scale 1" to 400')
4 (VRH)	See Cruise	E-9000 is gated.	Traverse maps with contours, roads and leave trees. Photo (Scale 1" to 500')
5 (Right-of-Way)	See Cruise	N/A	Traverse maps with roads. Photo (Scale 1" to 800')
6 (Rock Pit)	See Cruise	N/A	Traverse maps with contours, Photo (Scale 1" to 400')
7 (Rock Pit)	See Cruise	N/A	Traverse maps with contours, Photo (Scale 1" to 400')
8 (Rock Pit)	See Cruise	N/A	Traverse maps with contours, Photo (Scale 1" to 400')

**REMARKS:**

All Units have been completed.  
Unit 1-4 have a large assortment of high quality DF that includes high quality logs and poles.  
Units 1, 2, and 4 have large amounts of root rot.  
Unit 5: All take trees are painted orange.  
Units 6, 7 and 8 are associated with pit expansion.

<b>Prepared By:</b> Allyn Cole <b>Date:</b> 02/06/2019	<b>Title:</b> NRS 2	<b>CC:</b>
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*Revised 2/23/2007 (PSLD)*

## Cruise Narrative

<b>Sale Name:</b> Chameleon	<b>Region:</b> South Puget Sound
<b>Agree. #:</b> 30-097290	<b>District:</b> Black Hills
<b>Lead cruiser: John Piety</b>	<b>Completion date:</b> 3/18/2019 edited by Dan Hohl 5/15/19 -Revised 10/31/19 – Aaron Coleman (acreage adjustment)
<b>Other cruisers on sale: Daniel Hohl – cruised rock pits</b>	

### Unit acreage specifications:

Unit #	Cruised acres	Cruised acres agree with sale acres? Yes/No	If acres do not agree explain why.
1	71.8	Yes	
2	0.95	Yes	
3	24.0	Yes	
4	84.0	Yes	
5	2.0	Yes	
6 (Rock Pit)	2.8	Yes	
7 (Rock Pit)	0.6	Yes	
8 (Rock Pit)	0.6	Yes	
<b>Total</b>	<b>186.75</b>		

### Unit cruise specifications:

Unit #	Sample type (VP, FP, ITS,100%)	Expansion factor (BAF, full/ half)	Sighting height (4.5 ft, 16 ft.)	Grid size (Plot spacing or % of area)	Plot ratio (cruise:count)	Total number of plots
1	VP	54.4 BAF	4.5	290' X 290'	1:1	35
2	VP	54.4 BAF	4.5	150' X 150'	100%	2
3	VP	54.4 BAF	4.5	250' X 250'	1:1	17
4	VP	54.4 BAF	4.5	290' X 290'	1:1	43
5	ITS	DF 1:12.26 RA 1:6.5 WH 1:3.125	4.5	N/A	N/A	1
6 (Rock Pit)	ITS	DF 1:10.22 RA 1:10.21 WH & RC 1:1	4.5	N/A	N/A	1
7 (Rock Pit)	ITS	DF 1:10.66	4.5	N/A	N/A	1
8 (Rock Pit)	ITS	DF 1:10.4 WH, RA & BM 1:1	4.5	N/A	N/A	1

**Sale/Cruise Description:**

<b>Minor species cruise intensity:</b>	<b>100% up to 5 trees per species</b>					
<b>Minimum cruise spec:</b>	<p>HA - Logs meeting the following criteria: Surface characteristics for a high quality A sort will have sound tight knots not to exceed 1 1/2" in diameter, numbering not more than an average of one per foot of log length. May include logs with not more than two larger knots. Knots and knot indicators 1/2" in diameter and smaller shall not be a determining factor. Logs will have a growth ring count of 6 or more rings per inch in the outer third top end of the log. (High Quality sort. Grades SM, 2S, 3S. Lengths 16ft-40ft, 2ft multiples min TDIB 8". )</p> <p>HB - Logs meeting the following criteria: Surface characteristics for an Intermediate B sort will have sound tight knots not to exceed 1 1/2" in diameter. May include logs with not more than two larger knots up to 2 1/2" in diameter. Logs will have a growth ring count of 6 or more rings per inch in the outer third to end of the log. (Intermediate sort. Grades 2S, 3S. . Lengths 16ft-40ft, 2ft multiples min TDIB 8". ).</p> <p>D - Domestic quality logs that do not meet high quality or intermediate definitions. (Domestic sort. Grades 2S, 3S, 4S and utility. Lengths 16ft-40ft, min TDIB 2in.)</p> <p>O- Logs exceeding 27" on the large end. (Oversize sort. Grade 2S. Lengths 16ft-40ft, 2ft multiples butt diameter min dia. 27 in. +)</p> <p>R - Logs meeting the following criteria: Surface characteristics for a rough log sort will not meet the requirements for a domestic 2S, but still be in limitations for a domestic 3S. Meaning logs will contain excessive knots in excess of 2 1/2" and not exceeding 3" with a recovery of less than 65% of the net scale and greater than 33% of the gross scale. (Rough oversize sort. Grade 3S. Lengths 16ft-40ft, 2ft multiples TDIB 12"+)</p>					
<b>Avg ring count by sp:</b>	<b>DF =</b>	5	<b>WH =</b>	6		
<b>Leave/take tree description:</b>	Leave trees are banded with blue paint and tagged out with yellow leave tree tags.					
<b>Other conditions</b>	Unit # 5 is daylighting along the mainline, take trees are banded with orange paint.					

**Field observations:**

<p>There is a 50/50 split between tower and ground based logging in this sale. All units have some road building. Large DF dominates these units. There is quite a bit of variability in the stocking levels, with BM, WH, RA and some RC in the understory. Unit #1 contains a large amount of oversized high quality logs. There are some large openings throughout these units. Units #2 , #3, and #4 also contain high quality. Unit #3 has a high percentage of high quality logs among the DF species. Defect in this sale is from sweep, forks, spike knots and some bole rot, mostly in the hardwoods.</p> <p>Rock pit expansion Unit 6 contains a mix of small hardwood with larger second growth conifer. Rock pit expansion Units 7 &amp; 8 contain much smaller timber compared to the rest of the sale. The majority of the volume in Units 7 &amp; 8 is #4 Saw and Utility.</p>
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**Grants: 01, 02, and 42****Prepared by:****John Piety edited 5/15/19 by Daniel Hohl****Title: Check Cruiser**

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																			
T017 R003 S18 Ty0006 THRU T17N R03W S33 Ty0004				Project: <b>CHAMELH</b>											Page <b>1</b>								
				Acres <b>186.75</b>											Date <b>10/31/2019</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							
RA	D	2S		41	10.2	641	576	108				84	16		63		37	32	13	193	1.51	3.0	
RA	D	3S		17	.2	237	236	44			100				96		4	30	10	101	0.80	2.3	
RA	D	4S		36	.3	496	495	92	79	21				4	61	1	35	30	6	40	0.40	12.4	
RA	D	UT		6	47.0	134	71	13	7		46	47		3	97			24	11	86	1.51	.8	
<b>RA Totals</b>				3	8.7	1,508	1,378	257	29	25	38	9		2	70	0	29	30	8	74	0.68	18.5	
DF	HA	3P		7	1.3	3,323	3,279	612				100					100	40	27	1335	5.82	2.5	
DF	HA	SM		8	2.3	4,029	3,937	735				100					100	40	19	614	2.94	6.4	
DF	HA	2S		4	2.2	1,820	1,781	333			100						100	40	13	246	1.38	7.2	
DF	HA	3S		1		608	608	114		100							100	40	10	151	0.82	4.0	
DF	HB	2S		22	2.4	9,969	9,727	1,817			12	88					100	40	19	618	2.87	15.7	
DF	HB	3S		2		1,073	1,073	200		100							100	40	10	141	0.78	7.6	
DF	D	2S		21	1.4	9,932	9,790	1,828		0	37	63			0	0	99	40	15	379	1.90	25.8	
DF	D	3S		8	3.2	3,455	3,344	625	0	100				1	8	5	86	37	10	120	0.88	27.8	
DF	D	4S		3	.1	1,726	1,724	322	79	20	2			12	14	9	65	31	6	46	0.42	37.4	
DF	D	UT		1		35	35	6	100					100				10	5	5	0.08	6.8	
DF	OS	2S		21	4.2	10,421	9,979	1,864				100					100	40	24	972	4.50	10.3	
DF	RO	2S		2	5.8	579	545	102			35	65			10	15	76	34	15	302	2.11	1.8	
<b>DF Totals</b>				90	2.4	46,968	45,822	8,557	3	12	15	71		1	1	1	97	36	12	299	1.68	153.3	
DF	P	HA	SM	27		64	64	12				100					100	40	18	530	2.45	.1	
DF	P	HA	2S	24		55	55	10			100						100	40	14	290	1.52	.2	
DF	P	HB	2S	19		43	43	8			100						100	40	15	360	1.50	.1	
DF	P	HB	3S	14		34	34	6		100							100	40	11	180	0.86	.2	
DF	P	D	3S	8		18	18	3		100							100	40	10	150	0.89	.1	
DF	P	D	4S	8		17	17	3	78	22				22			78	31	7	54	0.46	.3	
<b>DF Totals</b>				0		231	231	43	6	24	42	28		2			98	37	12	220	1.17	1.0	
WH	D	2S		52	3.8	923	888	166			46	54		9			91	34	15	288	1.78	3.1	
WH	D	3S		16	3.2	288	278	52		100					8	1	92	37	10	133	0.99	2.1	
WH	D	4S		14	.0	221	221	41	87	13				7	10	34	49	32	5	41	0.45	5.4	
WH	D	UT				1	1	0	100					40	60			12	5	2	0.04	.4	
WH	OS	2S		18	6.7	324	303	56				100					100	40	22	770	3.68	.4	
<b>WH Totals</b>				3	3.8	1,757	1,691	316	11	18	24	46		5	3	5	87	33	9	149	1.06	11.3	
RC	D	3S		23		29	29	5			100						100	30	13	180	1.25	.2	
RC	D	4S		31	.0	38	38	7	100								26	74	37	5	44	0.54	.9
RC	D	UT																4			0.00	.0	
RC	OS	3S		46		57	57	11				100					100	30	17	350	2.93	.2	
<b>RC Totals</b>				0		123	123	23	30		24	46		70	8	23		35	8	104	0.91	1.2	
CW	D	3S		78	8.3	1	1	0			100			100				20	13	110	1.35	.0	
CW	D	UT		22		0	0	0	100								100	28	5	30	0.53	.0	
<b>CW Totals</b>				0	6.7	1	1	0	21		79			79	21			24	9	70	0.87	.0	
BM	D	2S		31	4.1	488	468	87			55	45			63		37	33	16	313	2.17	1.5	
BM	D	3S		30	4.9	464	441	82		100					56	44		31	11	120	1.00	3.7	
BM	D	4S		38	2.1	585	572	107	53	27	19				44	14	42	33	8	76	0.66	7.5	

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

T017 R003 S18 Ty0006  
 THRU  
 T17N R03W S33 Ty0004

**Project: CHAMELH**  
**Acres 186.75**

**Page 2**  
**Date 10/31/2019**  
**Time 12:19:42PM**

S Spp	So T	Gr rt ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre			
				Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf				
								5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99								
BM	D	UT	1		0	0	0	100						100					7	5	0	0.01	1.8
<b>BM Totals</b>			3	3.6	1,536	1,481	277	21	40	25	14		54	19	28	29	9	102	0.90		14.5		
<b>Totals</b>				2.7	52,125	50,727	9,473	5	13	16	66	1	5	2	93	35	11	254	1.51		199.9		

TC PSTATS		<b>PROJECT STATISTICS</b>							PAGE	<b>1</b>		
		<b>PROJECT CHAMELH</b>							DATE	10/31/2019		
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt		
017	003	18	CHAMELEON	0006	THR	186.75	101	480	S	W		
17N	03W	33	CHAMELEON	0004								
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES					
TOTAL			101	480	4.8							
CRUISE			54	282	5.2	15,354		1.8				
DBH COUNT												
REFOREST												
COUNT			44	194	4.4							
BLANKS			3									
100 %												
<b>STAND SUMMARY</b>												
			SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR			189	53.2	24.7	107	35.6	176.7	46,968	45,822	9,203	9,202
DOUG FIR-P			2	.3	22.1	137	0.2	.8	231	231	46	46
R ALDER			51	12.6	14.1	49	3.6	13.6	1,508	1,378	382	382
BL MAPLE			11	8.5	17.1	64	3.3	13.6	1,536	1,481	383	383
WHEMLOCK			25	6.8	17.1	62	2.6	10.8	1,757	1,691	400	400
WR CEDAR			3	.9	16.0	50	0.3	1.2	123	123	37	37
COTWOOD			1	.0	18.0	50	0.0	.0	1	1	0	0
<b>TOTAL</b>			<b>282</b>	<b>82.2</b>	<b>22.0</b>	<b>90</b>	<b>46.2</b>	<b>216.7</b>	<b>52,125</b>	<b>50,727</b>	<b>10,452</b>	<b>10,451</b>
CONFIDENCE LIMITS OF THE SAMPLE												
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR												
CL	68.1	COEFF		SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.			
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10			
DOUG FIR		91.6	6.7	1,139	1,220	1,302						
DOUG FIR-P		46.6	43.6	454	805	1,156						
R ALDER		130.9	18.3	82	100	119						
BL MAPLE		102.2	32.3	114	168	222						
WHEMLOCK		157.9	32.2	222	327	432						
WR CEDAR		142.2	98.4	4	223	443						
COTWOOD												
<b>TOTAL</b>		<b>119.5</b>	<b>7.1</b>	<b>818</b>	<b>880</b>	<b>943</b>	<b>570</b>	<b>291</b>	<b>142</b>			
CL	68.1	COEFF		TREES/ACRE			# OF PLOTS REQ.		INF. POP.			
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10			
DOUG FIR		89.3	8.9	48	53	58						
DOUG FIR-P		1005.0	99.9	0	0	1						
R ALDER		327.9	32.6	8	13	17						
BL MAPLE		290.0	28.8	6	9	11						
WHEMLOCK		313.1	31.1	5	7	9						
WR CEDAR		828.9	82.4	0	1	2						
COTWOOD		1005.0	99.9	0	0	0						
<b>TOTAL</b>		<b>69.4</b>	<b>6.9</b>	<b>77</b>	<b>82</b>	<b>88</b>	<b>193</b>	<b>98</b>	<b>48</b>			
CL	68.1	COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.			
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10			
DOUG FIR		70.8	7.0	164	177	189						
DOUG FIR-P		1005.0	99.9	0	1	2						
R ALDER		280.7	27.9	10	14	17						
BL MAPLE		293.8	29.2	10	14	18						
WHEMLOCK		299.1	29.7	8	11	14						
WR CEDAR		703.1	69.9	0	1	2						
COTWOOD		1005.0	99.9	0	0	0						
<b>TOTAL</b>		<b>54.2</b>	<b>5.4</b>	<b>205</b>	<b>217</b>	<b>228</b>	<b>117</b>	<b>60</b>	<b>29</b>			

**PROJECT STATISTICS**  
**PROJECT CHAMELH**

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
017	003	18	CHAMELEON	0006	THR	186.75	101	480	S	W
17N	03W	33	CHAMELEON	0004						

CL	68.1	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR		77.4	7.7	42,296	45,822	49,349			
DOUG FIR-P		1005.0	99.9	0	231	462			
R ALDER		290.5	28.9	980	1,378	1,775			
BL MAPLE		291.2	29.0	1,052	1,481	1,910			
WHEMLOCK		357.1	35.5	1,090	1,691	2,291			
WR CEDAR		808.1	80.3	24	123	223			
COTWOOD		1005.0	99.9	0	1	1			
<b>TOTAL</b>		<i>67.4</i>	<i>6.7</i>	<i>47,327</i>	<i>50,727</i>	<i>54,127</i>	<i>182</i>	<i>93</i>	<i>45</i>

CL	68.1	COEFF	V_BAR/ACRE				# OF PLOTS REQ.		INF. POP.
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR				239	259	279			
DOUG FIR-P		1005.0	99.9	0	281	561			
R ALDER		290.3	28.9	72	101	130			
BL MAPLE		59.4	5.9	77	109	141			
WHEMLOCK		285.4	28.4	101	156	212			
WR CEDAR		754.2	75.0	20	103	185			
COTWOOD		1005.0	99.9	0	79	158			
<b>TOTAL</b>		<i>66.1</i>	<i>6.6</i>	<i>218</i>	<i>234</i>	<i>250</i>	<i>175</i>	<i>89</i>	<i>44</i>

<b>T017 R003 S18 T0006</b>										<b>T017 R003 S18 T0006</b>				
<b>Twp</b>	<b>Rge</b>	<b>Sec</b>	<b>Tract</b>	<b>Type</b>	<b>Acres</b>	<b>Plots</b>	<b>Sample Trees</b>	<b>CuFt</b>	<b>BdFt</b>					
<b>017</b>	<b>003</b>	<b>18</b>	<b>CHAMELEON</b>	<b>0006</b>	<b>2.80</b>	<b>1</b>	<b>27</b>	<b>S</b>	<b>W</b>					

Spp	S	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs		
									Net	Def%	Gross	Net	Net MBF	Log Scale Dia.				Log Length				Ln	Dia
					T	rt	ad							BdFt	5-7	8-11	12-15	16+	12-20	21-30			
DF	DM	2S		80	1.4	10,512	10,366	29	5	6	89				100	40	17	568	3.17	18.3			
DF	DM	3S		15		1,825	1,825	5	14	86				20	80	37	9	100	0.91	18.3			
DF	DM	4S		4		548	548	2	100				73	27		19	5	21	0.28	25.6			
DF	DM	UT		1		73	73	0	100				100			8	6	10	0.40	7.3			
<b>DF</b>	<b>Totals</b>			<b>89</b>	<b>1.1</b>	<b>12,958</b>	<b>12,812</b>	<b>36</b>	<b>7</b>	<b>17</b>	<b>5</b>	<b>72</b>	<b>4</b>	<b>3</b>	<b>1</b>	<b>92</b>	<b>28</b>	<b>9</b>	<b>185</b>	<b>1.59</b>	<b>69.4</b>		
RA	DM	3S		19	11.1	328	292	1		100					100	40	8	80	1.38	3.6			
RA	DM	4S		76	3.1	1,167	1,130	3	100				35	39	13	13	23	5	24	0.28	47.4		
RA	DM	UT		5		73	73	0	100				100			5	5	7	0.20	10.9			
<b>RA</b>	<b>Totals</b>			<b>10</b>	<b>4.7</b>	<b>1,568</b>	<b>1,495</b>	<b>4</b>	<b>80</b>	<b>20</b>			<b>32</b>	<b>29</b>	<b>10</b>	<b>29</b>	<b>21</b>	<b>5</b>	<b>24</b>	<b>0.39</b>	<b>62.0</b>		
CW	DM	3S		78	8.3	43	39	0		100			100			20	13	110	1.35	.4			
CW	DM	UT		22		11	11	0	100					100		28	5	30	0.53	.4			
<b>CW</b>	<b>Totals</b>			<b>0</b>	<b>6.7</b>	<b>54</b>	<b>50</b>	<b>0</b>	<b>21</b>	<b>79</b>			<b>79</b>	<b>21</b>		<b>24</b>	<b>9</b>	<b>70</b>	<b>0.87</b>	<b>.7</b>			
RC	DM	4S		100		14	14	0	100						100	37	5	40	0.86	.4			
RC	DM	UT															4		0.00	.4			
<b>RC</b>	<b>Totals</b>			<b>0</b>		<b>14</b>	<b>14</b>	<b>0</b>	<b>100</b>						<b>100</b>	<b>19</b>	<b>5</b>	<b>20</b>	<b>0.86</b>	<b>.7</b>			
WH	DM	4S		100		11	11	0	100					100		30	5	30	0.68	.4			
<b>WH</b>	<b>Totals</b>			<b>0</b>		<b>11</b>	<b>11</b>	<b>0</b>	<b>100</b>					<b>100</b>		<b>30</b>	<b>5</b>	<b>30</b>	<b>0.68</b>	<b>.4</b>			
<b>Type Totals</b>					<b>1.5</b>	<b>14,604</b>	<b>14,382</b>	<b>40</b>	<b>15</b>	<b>17</b>	<b>4</b>	<b>64</b>	<b>7</b>	<b>6</b>	<b>2</b>	<b>85</b>	<b>25</b>	<b>7</b>	<b>108</b>	<b>1.11</b>	<b>133.1</b>		

<b>T017 R003 S29 T0007</b>										<b>T017 R003 S29 T0007</b>			
<b>Twp</b>	<b>Rge</b>	<b>Sec</b>	<b>Tract</b>	<b>Type</b>	<b>Acres</b>	<b>Plots</b>	<b>Sample Trees</b>	<b>CuFt</b>	<b>BdFt</b>				
<b>017</b>	<b>003</b>	<b>29</b>	<b>CHAMELEON</b>	<b>0007</b>	<b>.60</b>	<b>1</b>	<b>6</b>	<b>S</b>	<b>W</b>				

S Spp	So T	Gr rt ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre	
								Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/		
								5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf		
DF	DM	4S	80	1,421	Gross	1,421	1	100					75	25			17	5	20	0.22	71.1
DF		DM UT	20	355	Net	355	0	100					100				13	6	10	0.20	35.5
<b>DF</b>	<b>Totals</b>		100	1,777		1,777	1	100					80	20			16	5	17	0.22	106.6
<b>Type Totals</b>				1,777		1,777	1	100					80	20			16	5	17	0.22	106.6

T017 R003 S29 T0008										T017 R003 S29 T0008				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
017	003	29	CHAMELEON	0008	.60	1	14	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
									Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/	
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf	
DF		DM	4S	100		2,080	2,080	1	100		8	25	33	33	25	5	24	0.28	86.7		
DF		DM	UT												4		0.00	17.3			
<b>DF</b>	<b>Totals</b>			93		2,080	2,080	1	100		8	25	33	33	21	5	20	0.28	104.0		
BM		DM	UT	100		83	83	0	100					100	18	5	17	0.33	5.0		
<b>BM</b>	<b>Totals</b>			4		83	83	0	100					100	18	5	17	0.33	5.0		
WH		DM	4S	100	25.0	67	50	0	100		33	67			20	5	15	0.20	3.3		
WH		DM	UT												2	5		0.00	3.3		
<b>WH</b>	<b>Totals</b>			2	25.0	67	50	0	100		33	67			11	5	7	0.19	6.7		
RA		DM	4S	100		33	33	0	100					100	16	5	20	0.17	1.7		
RA		DM	UT												5		0.00	1.7			
<b>RA</b>	<b>Totals</b>			1		33	33	0	100					100	8	5	10	0.17	3.3		
<b>Type Totals</b>					.7	2,263	2,247	1	100		10	28	31	31	20	5	19	0.27	119.0		





**T17N R03W S17 T0003** **T17N R03W S17 T0003**  
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt  
 17N 03W 17 CHAMELEON 0003 24.00 17 35 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	HA	3P		21	.6	12,510	12,435	298											40	26	1200	5.27	10.4
DF	HA	SM		4	2.9	2,471	2,398	58											40	17	473	2.37	5.1
DF	HA	2S		2		1,046	1,046	25			100								40	13	240	1.34	4.4
DF	HB	2S		35	1.4	19,940	19,662	472			3	97							40	21	839	3.59	23.4
DF	HB	3S				392	392	9			100								40	8	90	0.64	4.4
DF	DM	2S		17	.3	9,736	9,708	233			25	75			3	97			39	16	423	2.09	23.0
DF	DM	3S		4		2,050	2,050	49			100			4	32	23	41		29	11	120	1.08	17.1
DF	DM	4S		2		1,481	1,481	36	94	6				6	6		88		35	6	46	0.39	32.5
DF	DM	UT																	7	5		0.00	10.5
DF	OS	2S		14	1.9	7,888	7,739	186				100							40	24	1042	4.38	7.4
DF	RO	2S		1		277	277	7			100				46	54			29	12	145	1.40	1.9
<b>DF</b>	<b>Totals</b>			87	1.0	57,791	57,189	1,373	2	4	7	86	0	2	2	97			35	14	408	2.18	140.0
DF	P	HA	SM	27		498	498	12				100							40	18	530	2.45	.9
DF	P	HA	2S	24		425	425	10				100							40	14	290	1.52	1.5
DF	P	HB	2S	19		338	338	8				100							40	15	360	1.50	.9
DF	P	HB	3S	14		264	264	6			100								40	11	180	0.86	1.5
DF	P	DM	3S	8		141	141	3			100								40	10	150	0.89	.9
DF	P	DM	4S	8		131	131	3	78	22			22			78			31	7	54	0.46	2.4
<b>DF</b>	<b>P</b>	<b>Totals</b>		3		1,797	1,797	43	6	24	42	28	2			98			37	12	220	1.17	8.2
BM	DM	2S		27	2.8	1,375	1,337	32				100							40	15	350	2.18	3.8
BM	DM	3S		40	8.4	2,110	1,932	46			100			100					30	10	109	0.99	17.8
BM	DM	4S		33	5.7	1,698	1,602	38	46		54			46		54			31	7	71	0.73	22.6
<b>BM</b>	<b>Totals</b>			7	6.0	5,183	4,871	117	15	40	45			55		45			32	9	110	0.98	44.2
WH	DM	2S		36		659	659	16			48	52					100		40	16	446	2.15	1.5
WH	DM	3S		3		46	46	1			100						100		22	10	80	0.89	.6
WH	DM	4S		12		223	223	5			100						100		40	8	90	0.79	2.5
WH	DM	UT																	11	5		0.00	2.5
WH	OS	2S		49	13.2	1,001	869	21				100					100		40	23	848	4.09	1.0
<b>WH</b>	<b>Totals</b>			3	6.8	1,929	1,797	43	15	18	68			3		97			30	11	224	1.61	8.0
RA	DM	2S		85		362	362	9				100							38	13	230	1.45	1.6
RA	DM	4S		15		63	63	2	100										38	5	40	0.53	1.6
<b>RA</b>	<b>Totals</b>			1		425	425	10	15		85						100		38	9	135	0.99	3.2
<b>Type Totals</b>					1.6	67,125	66,078	1,586	3	8	12	77	0	5	1	93			34	13	325	1.86	203.6

<b>T17N R03W S18 T0005</b>										<b>T17N R03W S18 T0005</b>				
<b>Twp</b>	<b>Rge</b>	<b>Sec</b>	<b>Tract</b>	<b>Type</b>	<b>Acres</b>	<b>Plots</b>	<b>Sample Trees</b>	<b>CuFt</b>	<b>BdFt</b>					
17N	03W	18	CHAMELEON	0005	2.00	1	43	S	W					

S Spp	So T	Gr rt ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
								Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/	
								5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf	
DF	DM	2S	23	4.0	7,726	7,419	15		32	68			100	40	14	303	1.84	24.5		
DF	DM	3S	27	3.4	9,013	8,707	17		100			11	89	37	10	129	1.05	67.4		
DF	DM	4S	14		4,231	4,231	8	65	35			17	9	6	43	0.47	98.1			
DF	DM	UT												7	5		0.00	18.4		
DF	OS	2S	36	3.1	11,711	11,343	23			100			100	40	23	925	4.53	12.3		
<b>DF</b>	<b>Totals</b>		85	3.0	32,681	31,700	63	9	32	8	52	2	4	1	93	32	9	144	1.15	220.7
RA	DM	2S	28	2.8	1,170	1,138	2		100				100	40	15	350	1.82	3.3		
RA	DM	3S	22		845	845	2		100				42	58	35	10	130	0.89	6.5	
RA	DM	4S	40	5.7	1,723	1,625	3	88	12			8	46	8	38	29	6	38	0.51	42.3
RA	DM	UT	10		358	358	1	100				18	82	24	5	28	0.25	13.0		
<b>RA</b>	<b>Totals</b>		11	3.2	4,095	3,965	8	45	26	29		5	35	3	57	29	7	61	0.60	65.0
WH	DM	3S	29		531	531	1		100				29	71	38	9	113	0.98	4.7	
WH	DM	4S	14		266	266	1	100					53	47	30	5	34	0.47	7.8	
WH	DM	UT	5		78	78	0	100				40	60	21	5	25	0.27	3.1		
WH	OS	2S	52		938	938	2			100			100	40	19	600	3.28	1.6		
<b>WH</b>	<b>Totals</b>		5		1,813	1,813	4	19	29	52		2	10	9	79	32	7	105	0.94	17.2
<b>Type Totals</b>				2.9	38,588	37,477	75	13	31	9	46	3	8	1	88	31	8	124	1.03	302.9



TC TSTATS		STATISTICS							PAGE	1
		PROJECT					CHAMELH		DATE	10/31/2019
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
017	003	18	CHAMELEON	0006	2.80	1	27	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		1	27	27.0						
CRUISE		1	27	27.0	248		10.9			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	10	36.5	20.3	57	18.3	82.3	12,958	12,812	3,093	3,091
R ALDER	14	51.0	10.0	31	8.9	28.1	1,568	1,495	517	517
COTWOOD	1	.4	18.0	50	0.1	.6	54	50	15	15
WR CEDAR	1	.4	15.0	42	0.1	.4	14	14	11	11
WHEMLOCK	1	.4	14.0	34	0.1	.4	11	11	7	7
<b>TOTAL</b>	<b>27</b>	<b>88.6</b>	<b>15.2</b>	<b>42</b>	<b>28.7</b>	<b>111.8</b>	<b>14,604</b>	<b>14,382</b>	<b>3,643</b>	<b>3,642</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		192.3	64.0	126	351	576				
R ALDER		57.6	15.9	25	29	34				
COTWOOD										
WR CEDAR										
WHEMLOCK										
<b>TOTAL</b>		<b>279.0</b>	<b>54.7</b>	<b>69</b>	<b>153</b>	<b>237</b>	<b>3,231</b>	<b>1,649</b>	<b>808</b>	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	CHAMELH			DATE	10/31/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
017	003	29	CHAMELEON	0007	0.60	1	6	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	1	6	6.0							
CRUISE	1	6	6.0		64		9.4			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
<b>STAND SUMMARY</b>										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	6	106.6	8.1	18	13.4	38.0	1,777	1,777	361	361
<b>TOTAL</b>	<b>6</b>	<b>106.6</b>	<b>8.1</b>	<b>18</b>	<b>13.4</b>	<b>38.0</b>	<b>1,777</b>	<b>1,777</b>	<b>361</b>	<b>361</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	7	10	
DOUG FIR	31.0	13.8		14	17	19				
<b>TOTAL</b>	<b>31.0</b>	<b>13.8</b>		<b>14</b>	<b>17</b>	<b>19</b>	<b>46</b>	<b>23</b>	<b>11</b>	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	CHAMELH			DATE	10/31/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
017	003	29	CHAMELEON	0008	0.60	1	14	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		1	14	14.0						
CRUISE		1	14	14.0	61		23.0			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	5	86.7	11.0	34	17.2	57.1	2,080	2,080	597	597
BL MAPLE	3	5.0	11.8	27	1.1	3.8	83	83	29	29
WHEMLOCK	4	6.7	7.9	23	0.8	2.2	67	50	13	13
R ALDER	2	3.3	7.1	25	0.3	.9	33	33	4	4
<b>TOTAL</b>	<b>14</b>	<b>101.7</b>	<b>10.7</b>	<b>33</b>	<b>19.5</b>	<b>64.1</b>	<b>2,263</b>	<b>2,247</b>	<b>643</b>	<b>643</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		75.7	37.6	15	24	33				
BL MAPLE		91.7	63.4	6	17	27				
WHEMLOCK		127.7	72.9	2	8	13				
R ALDER		141.4	132.4		10	23				
<b>TOTAL</b>		<b>95.7</b>	<b>26.5</b>	<b>12</b>	<b>16</b>	<b>20</b>	<b>394</b>	<b>201</b>	<b>98</b>	

TC TSTATS				STATISTICS				PAGE	1	
PROJECT				CHAMELH				DATE	10/31/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
17N	03W	17	CHAMELEON	0001	71.80	35	139	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	35	139	4.0							
CRUISE	18	67	3.7	4,974	1.3					
DBH COUNT										
REFOREST										
COUNT	15	68	4.5							
BLANKS	2									
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	47	30.4	32.1	138	30.2	171.0	54,693	53,178	10,042	10,042
WHEMLOCK	8	14.4	17.2	65	5.6	23.3	3,873	3,746	899	899
R ALDER	10	22.3	12.4	44	5.3	18.7	1,693	1,532	455	455
WR CEDAR	2	2.2	16.0	50	0.8	3.1	321	321	97	97
<b>TOTAL</b>	<b>67</b>	<b>69.3</b>	<b>23.9</b>	<b>90</b>	<b>44.2</b>	<b>216.0</b>	<b>60,580</b>	<b>58,776</b>	<b>11,493</b>	<b>11,492</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	49.0	7.1		1,964	2,115	2,266				
WHEMLOCK	94.4	35.6		296	460	624				
R ALDER	54.6	18.2		72	88	104				
WR CEDAR	123.5	115.6			315	679				
<b>TOTAL</b>	<b>78.8</b>	<b>9.6</b>		<b>1,411</b>	<b>1,561</b>	<b>1,711</b>	<b>248</b>	<b>126</b>	<b>62</b>	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	81.8	13.8		26	30	35				
WHEMLOCK	201.6	34.1		9	14	19				
R ALDER	263.5	44.5		12	22	32				
WR CEDAR	488.9	82.6		0	2	4				
<b>TOTAL</b>	<b>79.3</b>	<b>13.4</b>		<b>60</b>	<b>69</b>	<b>79</b>	<b>251</b>	<b>128</b>	<b>63</b>	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	74.1	12.5		150	171	192				
WHEMLOCK	190.1	32.1		16	23	31				
R ALDER	254.5	43.0		11	19	27				
WR CEDAR	412.1	69.6		1	3	5				
<b>TOTAL</b>	<b>47.9</b>	<b>8.1</b>		<b>199</b>	<b>216</b>	<b>234</b>	<b>92</b>	<b>47</b>	<b>23</b>	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	75.9	12.8		46,362	53,178	59,994				
WHEMLOCK	222.3	37.5		2,340	3,746	5,152				
R ALDER	264.4	44.7		848	1,532	2,216				
WR CEDAR	474.1	80.1		64	321	577				
<b>TOTAL</b>	<b>63.1</b>	<b>10.7</b>		<b>52,513</b>	<b>58,776</b>	<b>65,040</b>	<b>159</b>	<b>81</b>	<b>40</b>	
CL:	68.1 %	COEFF	V-BAR/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR				271	311	351				
WHEMLOCK	178.3	30.1		100	161	221				
R ALDER	254.8	43.0		45	82	119				
WR CEDAR	474.1	80.1		21	103	186				
<b>TOTAL</b>	<b>246.8</b>	<b>41.7</b>		<b>243</b>	<b>272</b>	<b>301</b>	<b>2,432</b>	<b>1,241</b>	<b>608</b>	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	CHAMELH			DATE	10/31/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
17N	03W	17	CHAMELEON	0002	0.95	2	3	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	2	3	1.5							
CRUISE	1	3	3.0	9	33.5					
DBH COUNT										
REFOREST										
COUNT										
BLANKS	1									
100 %										
STAND SUMMARY										
SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET	
TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC	
DOUG FIR	3	9.4	39.8	150	12.9	81.6	30,763	29,805	5,201	5,201
<b>TOTAL</b>	<b>3</b>	<b>9.4</b>	<b>39.8</b>	<b>150</b>	<b>12.9</b>	<b>81.6</b>	<b>30,763</b>	<b>29,805</b>	<b>5,201</b>	<b>5,201</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	7	10	
DOUG FIR	10.8	7.5	2,952	3,190	3,428					
<b>TOTAL</b>	<b>10.8</b>	<b>7.5</b>	<b>2,952</b>	<b>3,190</b>	<b>3,428</b>	<b>7</b>	<b>3</b>	<b>2</b>		
CL:	68.1 %	COEFF	<b>TREES/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	141.4	132.4		9	22					
<b>TOTAL</b>	<b>141.4</b>	<b>132.4</b>		<b>9</b>	<b>22</b>	<b>1,403</b>	<b>716</b>	<b>351</b>		
CL:	68.1 %	COEFF	<b>BASAL AREA/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	141.4	132.4		82	190					
<b>TOTAL</b>	<b>141.4</b>	<b>132.4</b>		<b>82</b>	<b>190</b>	<b>1,403</b>	<b>716</b>	<b>351</b>		
CL:	68.1 %	COEFF	<b>NET BF/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	141.4	132.4		29,805	69,275					
<b>TOTAL</b>	<b>141.4</b>	<b>132.4</b>		<b>29,805</b>	<b>69,275</b>	<b>1,403</b>	<b>716</b>	<b>351</b>		
CL:	68.1 %	COEFF	<b>V-BAR/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	141.4	132.4		365	849					
<b>TOTAL</b>	<b>141.4</b>	<b>132.4</b>		<b>365</b>	<b>849</b>	<b>1,403</b>	<b>716</b>	<b>351</b>		

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT		CHAMELH		DATE	10/31/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
17N	03W	17	CHAMELEON	0003	24.00	17	83	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	17	83	4.9							
CRUISE	9	35	3.9		2,222		1.6			
DBH COUNT										
REFOREST										
COUNT	8	48	6.0							
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	24	53.8	25.8	93	38.4	195.2	57,791	57,189	10,638	10,638
DOUG FIR-P	2	2.4	22.1	137	1.4	6.4	1,797	1,797	355	355
BL MAPLE	4	26.4	18.3	62	11.2	48.0	5,183	4,871	1,375	1,375
WHEMLOCK	4	8.3	16.8	52	3.1	12.8	1,929	1,797	384	384
R ALDER	1	1.6	19.3	78	0.7	3.2	425	425	118	118
<b>TOTAL</b>	<b>35</b>	<b>92.6</b>	<b>22.9</b>	<b>81</b>	<b>55.5</b>	<b>265.6</b>	<b>67,125</b>	<b>66,078</b>	<b>12,870</b>	<b>12,870</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	49.3	10.3		1,815	2,023	2,230				
DOUG FIR-P	46.6	43.6		454	805	1,156				
BL MAPLE	46.3	26.4		153	208	262				
WHEMLOCK	118.9	67.9		262	818	1,373				
R ALDER										
<b>TOTAL</b>	<b>72.4</b>	<b>12.2</b>		<b>1,367</b>	<b>1,558</b>	<b>1,748</b>	<b>210</b>	<b>107</b>	<b>52</b>	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	80.6	20.1		43	54	65				
DOUG FIR-P	412.3	103.0			2	5				
BL MAPLE	193.4	48.3		14	26	39				
WHEMLOCK	262.5	65.6		3	8	14				
R ALDER	412.3	103.0			2	3				
<b>TOTAL</b>	<b>69.3</b>	<b>17.3</b>		<b>77</b>	<b>93</b>	<b>109</b>	<b>204</b>	<b>104</b>	<b>51</b>	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	60.8	15.2		166	195	225				
DOUG FIR-P	412.3	103.0			6	13				
BL MAPLE	191.7	47.9		25	48	71				
WHEMLOCK	239.0	59.7		5	13	20				
R ALDER	412.3	103.0			3	6				
<b>TOTAL</b>	<b>51.7</b>	<b>12.9</b>		<b>231</b>	<b>266</b>	<b>300</b>	<b>113</b>	<b>58</b>	<b>28</b>	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	64.6	16.1		47,961	57,189	66,416				
DOUG FIR-P	412.3	103.0			1,797	3,647				
BL MAPLE	191.6	47.8		2,540	4,871	7,201				
WHEMLOCK	361.6	90.3		174	1,797	3,420				
R ALDER	412.3	103.0			425	863				
<b>TOTAL</b>	<b>56.0</b>	<b>14.0</b>		<b>56,829</b>	<b>66,078</b>	<b>75,327</b>	<b>133</b>	<b>68</b>	<b>33</b>	
CL:	68.1 %	COEFF	V-BAR/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR				246	293	340				

TC TSTATS				<b>STATISTICS</b>				PAGE	2	
				<b>PROJECT CHAMELH</b>				DATE	10/31/2019	
<b>TWP</b>	<b>RGE</b>	<b>SECT</b>	<b>TRACT</b>	<b>TYPE</b>	<b>ACRES</b>	<b>PLOTS</b>	<b>TREES</b>	<b>CuFt</b>	<b>BdFt</b>	
<b>17N</b>	<b>03W</b>	<b>17</b>	<b>CHAMELEON</b>	<b>0003</b>	24.00	17	83	S	W	
CL:	68.1 %	COEFF		<b>V-BAR/ACRE</b>			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR-P		412.3	103.0		281	570				
BL MAPLE				53	101	150				
WHEMLOCK		361.6	90.3	14	140	267				
R ALDER		412.3	103.0		133	270				
<b>TOTAL</b>		<b>258.9</b>	<b>64.7</b>	<b>214</b>	<b>249</b>	<b>284</b>	<b>2,844</b>	<b>1,451</b>	<b>711</b>	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	CHAMELH			DATE	10/31/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
17N	03W	18	CHAMELEON	0005	2.00	1	43	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		1	43	43.0						
CRUISE		1	43	43.0	362		11.9			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	19	116.5	19.2	65	53.6	235.0	32,681	31,700	8,023	8,023
R ALDER	16	52.0	12.7	43	12.8	45.5	4,095	3,965	1,143	1,143
WHEMLOCK	8	12.5	16.1	46	4.4	17.7	1,813	1,813	509	509
<b>TOTAL</b>	<b>43</b>	<b>181.0</b>	<b>17.4</b>	<b>57</b>	<b>71.5</b>	<b>298.2</b>	<b>38,588</b>	<b>37,477</b>	<b>9,675</b>	<b>9,675</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		140.1	33.0	182	272	362				
R ALDER		159.5	41.2	45	76	108				
WHEMLOCK		159.0	60.0	58	145	232				
<b>TOTAL</b>		<b>165.7</b>	<b>25.2</b>	<b>131</b>	<b>176</b>	<b>220</b>	<b>1,096</b>	<b>559</b>	<b>274</b>	

TC TSTATS				STATISTICS				PAGE	1	
PROJECT				CHAMELH				DATE	10/31/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
17N	03W	33	CHAMELEON	0004	84.00	43	165	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		43	165	3.8						
CRUISE		22	87	4.0	7,414	1.2				
DBH COUNT REFOREST COUNT		21	78	3.7						
BLANKS 100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	75	71.4	21.6	103	39.0	180.9	39,574	38,532	8,477	8,476
BL MAPLE	4	11.4	16.3	65	4.1	16.4	1,934	1,900	458	458
R ALDER	8	5.5	19.4	73	2.6	11.4	1,635	1,487	383	383
<b>TOTAL</b>	<b>87</b>	<b>88.3</b>	<b>20.8</b>	<b>96</b>	<b>45.7</b>	<b>208.7</b>	<b>43,142</b>	<b>41,920</b>	<b>9,319</b>	<b>9,317</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		86.5	10.0	771	856	942				
BL MAPLE		98.1	56.1	107	243	378				
R ALDER		58.9	22.2	225	289	353				
<b>TOTAL</b>		<b>92.7</b>	<b>9.9</b>	<b>699</b>	<b>776</b>	<b>853</b>	<b>343</b>	<b>175</b>	<b>86</b>	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		74.8	11.4	63	71	79				
BL MAPLE		226.1	34.5	7	11	15				
R ALDER		261.5	39.8	3	6	8				
<b>TOTAL</b>		<b>57.3</b>	<b>8.7</b>	<b>81</b>	<b>88</b>	<b>96</b>	<b>131</b>	<b>67</b>	<b>33</b>	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		63.9	9.7	163	181	199				
BL MAPLE		222.9	34.0	11	16	22				
R ALDER		267.0	40.7	7	11	16				
<b>TOTAL</b>		<b>52.4</b>	<b>8.0</b>	<b>192</b>	<b>209</b>	<b>225</b>	<b>110</b>	<b>56</b>	<b>27</b>	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		65.3	9.9	34,700	38,532	42,365				
BL MAPLE		225.6	34.4	1,247	1,900	2,554				
R ALDER		285.5	43.5	840	1,487	2,134				
<b>TOTAL</b>		<b>58.0</b>	<b>8.8</b>	<b>38,215</b>	<b>41,920</b>	<b>45,625</b>	<b>134</b>	<b>69</b>	<b>34</b>	
CL:	68.1 %	COEFF	V-BAR/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR				192	213	234				
BL MAPLE		37.4	5.7	76	116	155				
R ALDER		275.8	42.0	74	131	187				
<b>TOTAL</b>		<b>196.6</b>	<b>29.9</b>	<b>183</b>	<b>201</b>	<b>219</b>	<b>1,543</b>	<b>787</b>	<b>386</b>	

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

T017 R003 S18 Ty0006	2.8
T017 R003 S29 Ty0007	.6
T17N R03W S33 Ty000	84.0

**Project CHAMELH**  
**Acres 186.75**

**Page No 1**  
**Date: 10/31/2019**  
**Time 12:19:44PM**

Species	Total Trees	Total Logs	Total Tons	Net Cubic Ft/		CF/ LF	Total CCF		Total MBF	
				Tree	Log		Gross	Net	Gross	Net
DOUG FIR	9,929	28,609	48,982	173.07	60.07	1.68	17,187	17,185	8,771	8,557
WHEMLOCK	1,262	2,116	2,393	59.25	35.35	1.05	748	748	328	316
BL MAPLE	1,592	2,707	1,895	44.92	26.42	0.89	715	715	287	277
R ALDER	2,352	3,459	1,964	30.35	20.64	0.69	714	714	282	257
DOUG FIR P	58	196	243	147.75	43.58	1.18	85	85	43	43
WR CEDAR	160	222	164	43.65	31.53	0.90	70	70	23	23
COTWOOD	1	2	1	41.81	20.91	0.87	0	0	0	0
<b>Totals</b>	15,354	37,310	55,642	127.11	52.31	1.51	19,519	19,518	9,734	9,473

Wood Type Species	Total Trees	Total Logs	Total Tons	Net Cubic Ft/		CF/ LF	Total CCF		Total MBF	
				Tree	Log		Gross	Net	Gross	Net
C	11,410	31,142	51,782	158.54	58.08	1.63	18,090	18,088	9,166	8,939
H	3,945	6,168	3,860	36.24	23.17	0.78	1,430	1,429	569	534
<b>Totals</b>	15,354	37,310	55,642	127.11	52.31	1.51	19,519	19,518	9,734	9,473



**Appeal Information**

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

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

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

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

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

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

And

Department Of Natural Resources  
South Puget Sound Region  
950 Farman Ave N  
Enumclaw, WA 98022

**Other Applicable Laws**

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

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

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

Notify DNR of new Operators within 48 hours.

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

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

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

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

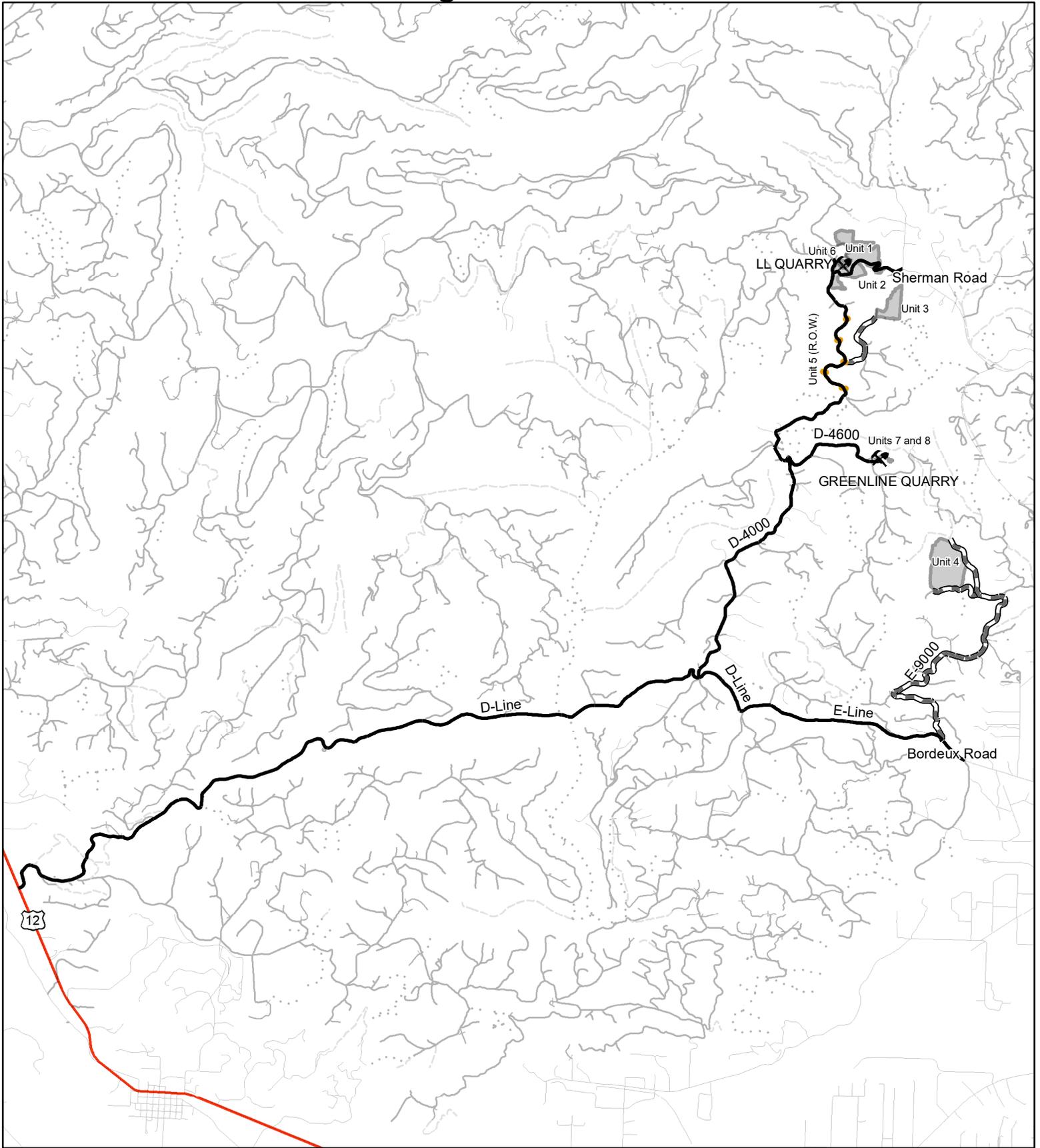
Failure by the seller to send the required notice to the DNR at the time of sale will be prima facie evidence in an action by the buyer against the seller for costs related to the continuing forest land obligation prior to sale.

**DNR affidavit of mailing:**

On this day <u>11/25/2019</u> , I placed in the United States mail at <u>Enumclaw</u> , WA,	
(date mm/dd/yyyy)	(post office location)
postage paid, a true and accurate copy of this document. Notice of Decision FPA # <u>2421335</u>	
<u>Meredith Dessens</u>	_____
(Printed name)	(Signature)

# Chameleon Vicinity Map

Page 1 of 8



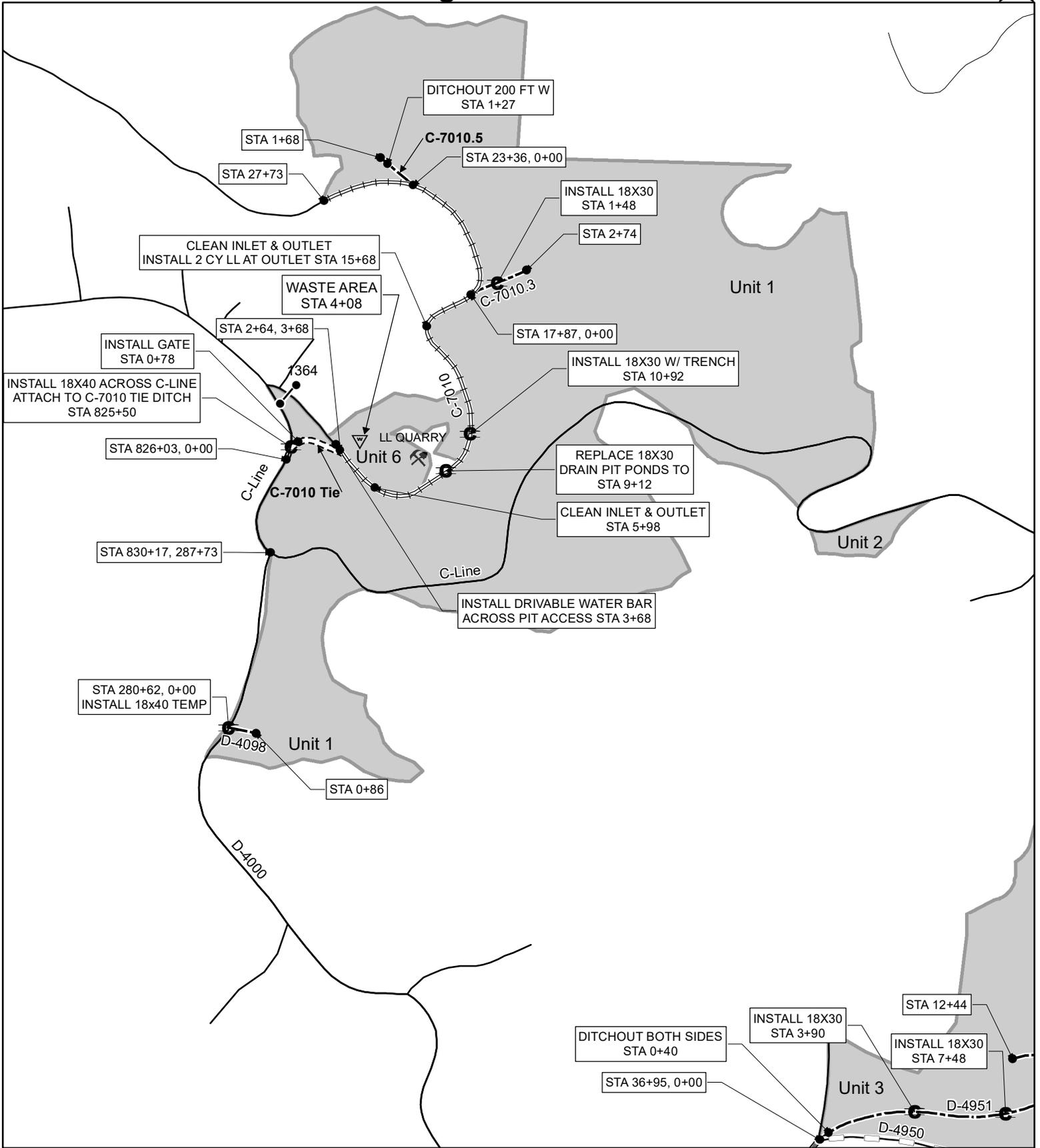
## Legend

- Haul Route
- <all other values>
- FP Abandoned
- Rockpits
- Unit 5
- Active
- Orphaned
- 12
- Prehaul\_Maintenance
- Decommissioned
- Chameleon\_Sale\_Boundary
- U.S.

0 0.75 1.5 3 Miles

# Chameleon Detail Maps

N



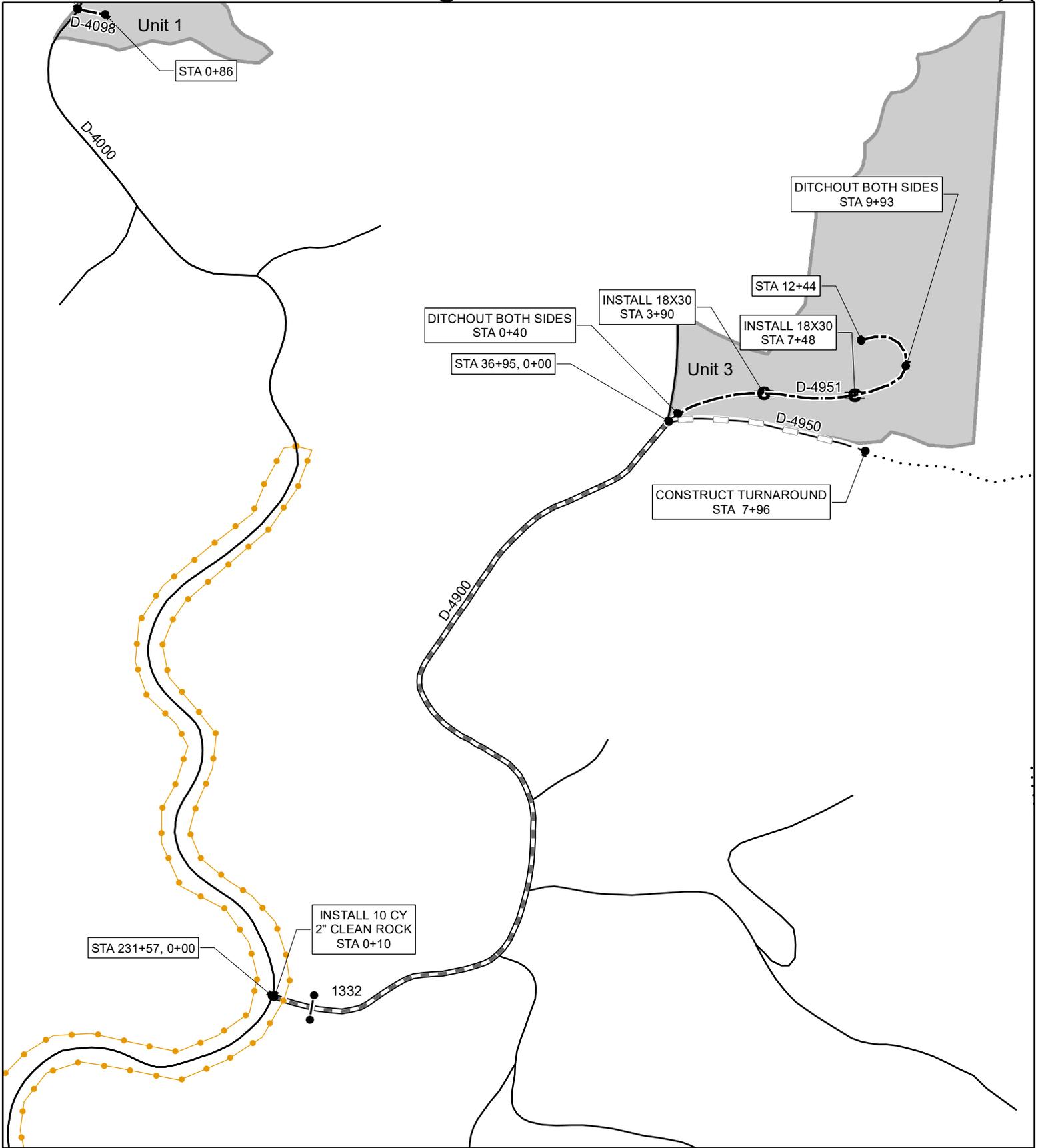
### Legend

- |                           |                           |                             |                           |                           |
|---------------------------|---------------------------|-----------------------------|---------------------------|---------------------------|
| ●—● Gates                 | ● Station                 | ▬▬▬ Prehaul_Maintenance     | ▬▬▬ Optional_Construction | ⋯⋯⋯ FP Abandoned          |
| ⊖ Culvert                 | ▽ Waste Area              | ▬▬▬ Required_Construction   | — <all other values>      | ▭ Chameleon_Sale_Boundary |
| ● Road Work<br>12/02/2019 | ▭ Optional_Reconstruction | ▬▬▬ Required_Reconstruction | — Active                  | ⚡ Rockpits                |

# Chameleon Detail Maps

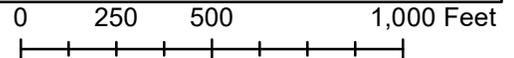
## Page 3 of 8

N



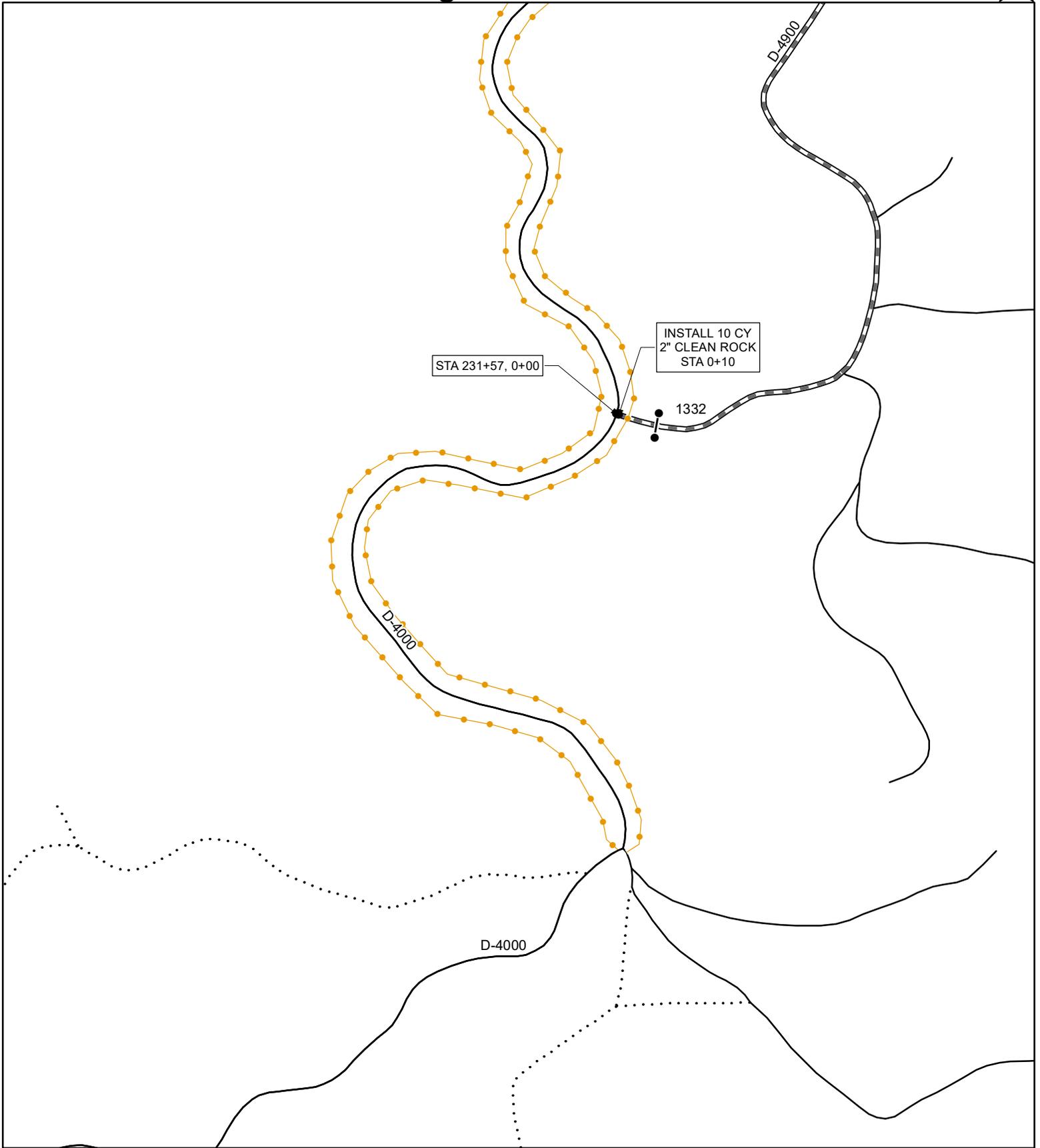
### Legend

- Gates
- Road Work
- Unit 5
- ▬▬▬ Prehaul\_Maintenance
- Active
- ▭ Chameleon\_Sale\_Boundary
- ⊖ Culvert
- Station
- ▬▬▬ Optional\_Reconstruction
- ▬▬▬ Optional\_Construction
- ⋯⋯⋯ FP Abandoned



# Chameleon Detail Maps

N



### Legend

- Gates
- Station
- ▬▬▬ Prehaul\_Maintenance
- ..... FP Abandoned
- Road Work
- Unit 5
- Active

0 250 500 1,000 Feet

# Chameleon Detail Maps

N



### Legend

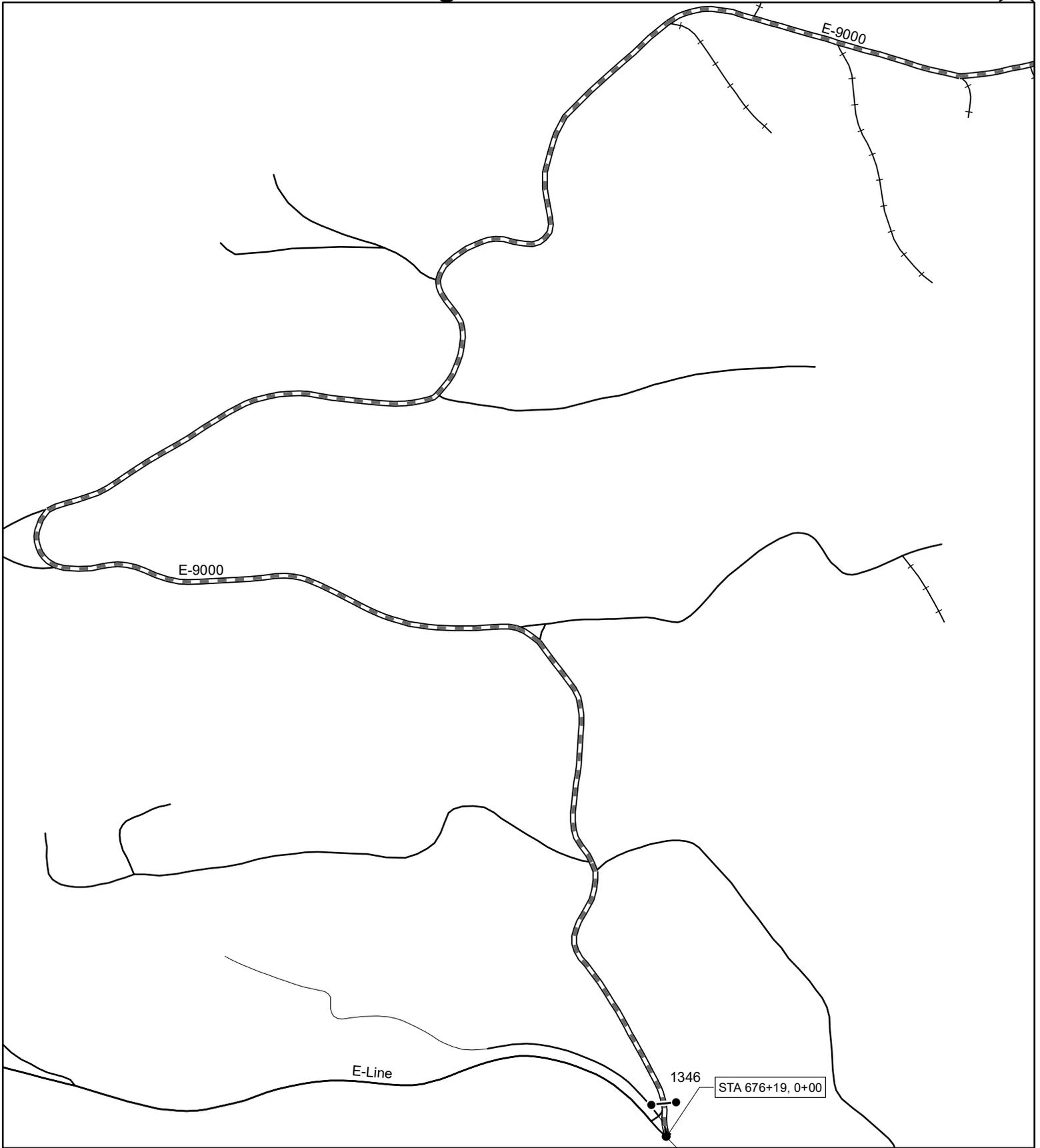
- <all other values>
- Active
- +— Decommissioned
- ..... FP Abandoned
- Orphaned
- █ Chameleon\_Sale\_Boundary



# Chameleon Detail Maps

Page 6 of 8

N



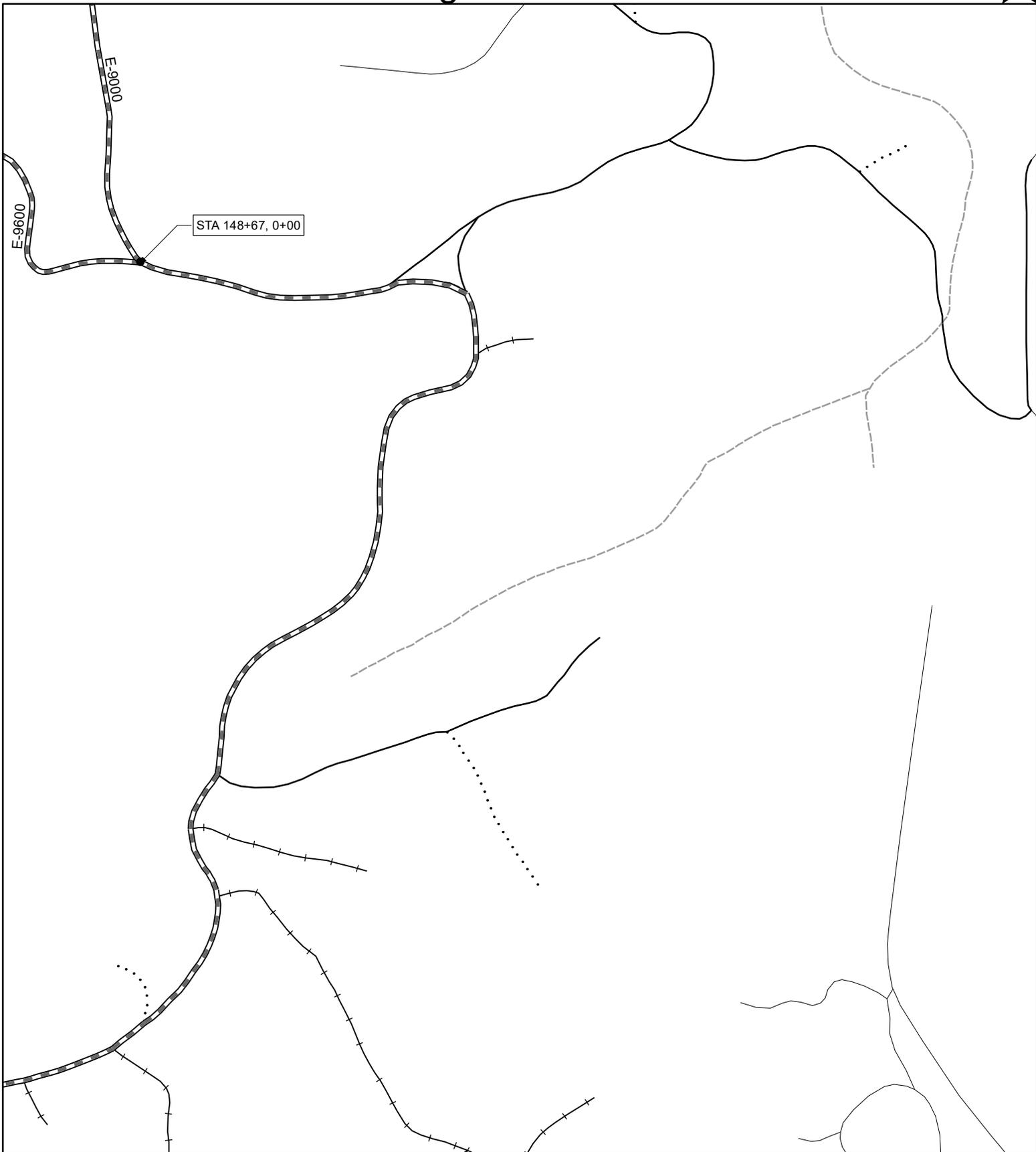
## Legend

- Gates
- Prehaul\_Maintenance
- Active
- Station
- <all other values>
- +—+ Decommissioned

0 250 500 1,000 Feet

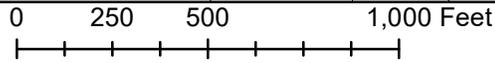
# Chameleon Detail Maps

N



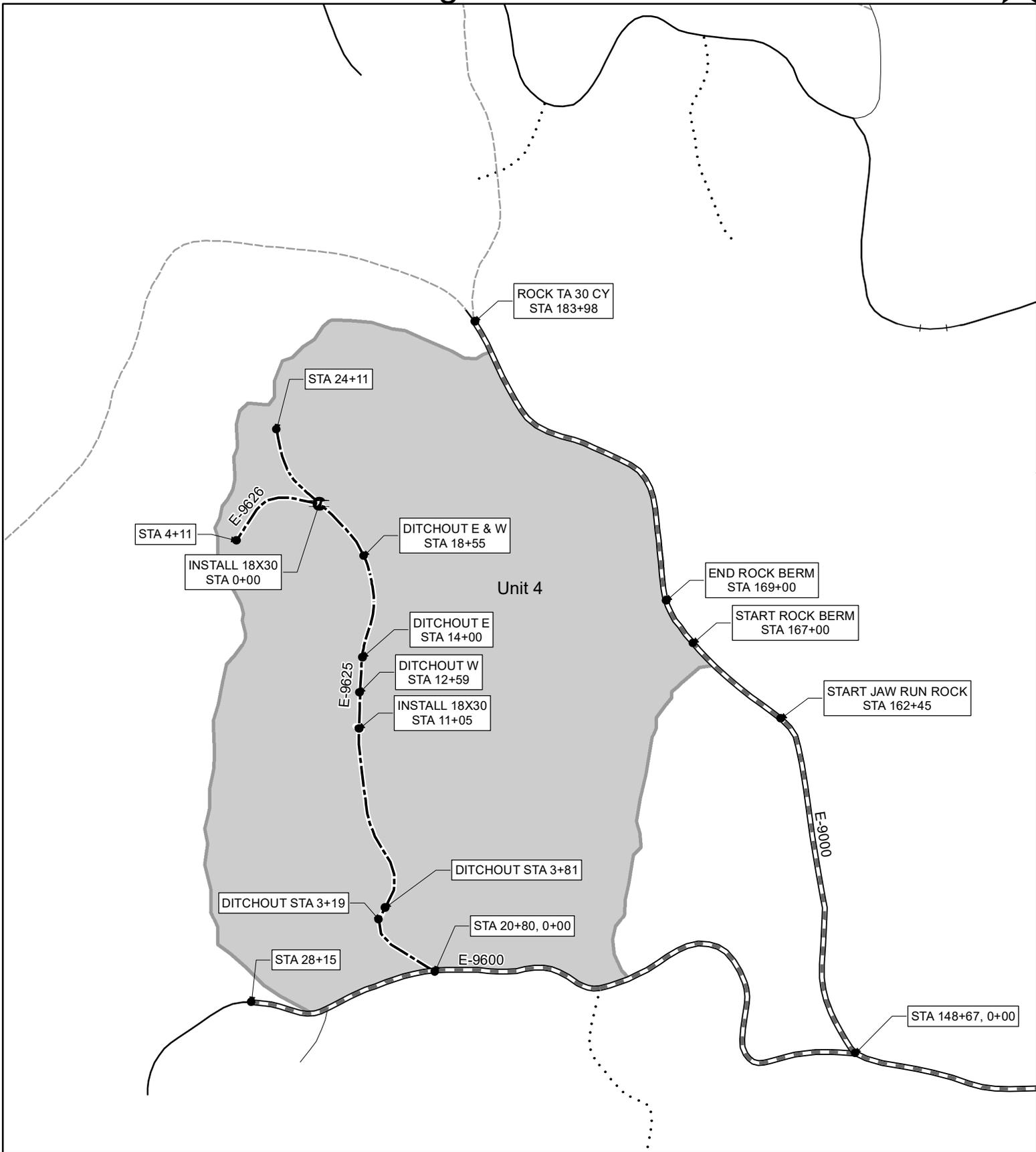
### Legend

- Station
- <all other values>
- +— Decommissioned
- Orphaned
- ▬▬▬ Prehaul\_Maintenance
- Active
- ..... FP Abandoned



# Chameleon Detail Maps

N



### Legend

- |           |                     |                       |                |              |                         |
|-----------|---------------------|-----------------------|----------------|--------------|-------------------------|
| Culvert   | Station             | Optional_Construction | Active         | FP Abandoned | Chameleon_Sale_Boundary |
| Road Work | Prehaul_Maintenance | <all other values>    | Decommissioned | Orphaned     |                         |

STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

CHAMELEON TIMBER SALE ROAD PLAN  
THURSTON COUNTY  
LITTLE ROCK UNIT  
BLACK HILLS DISTRICT

AGREEMENT NO.: 30-097290

STAFF ENGINEER: CHAD VANDEHEY

DATE: 23 JANUARY 2019

DRAWN & COMPILED BY: CHAD VANDEHEY

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>
C-Line	825+50	Prehaul Maintenance
C-7010	3+68 to 27+73	Reconstruction
C-7010 Tie	0+00 to 2+64	Construction, Gate Installation
D-4098	0+00 to 0+86	Abandonment (If Constructed)
D-4900	0+00 to 36+95	Prehaul Maintenance
E-9000	0+00 to 183+98	Prehaul Maintenance
E-9600	0+00 to 28+15	Prehaul Maintenance

**0-3 OPTIONAL ROADS**

The specified work on the following roads is not required. Any optional roads built by the Purchaser must meet all the specifications in the road plan.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
C-7010.3	0+00 to 2+74	Construction
C-7010.5	0+00 to 1+68	Construction
D-4098	0+00 to 0+86	Construction
D-4950	0+00 to 7+96	Reconstruction
D-4951	0+00 to 12+44	Construction

E-9625	0+00 to 24+11	Construction
E-9626	0+00 to 4+11	Construction

**0-4 CONSTRUCTION**

Construction includes, but is not limited to:

- Clearing;
- Grubbing;
- Right-of-way debris disposal;
- Excavation and/or embankment to subgrade;
- Turnout and turnaround construction;
- Landing construction;
- Curve widening;
- Acquisition and installation of drainage structures;
- Acquisition, manufacture, and application of rock;
- Gate Installation;

**0-5 RECONSTRUCTION**

Reconstruction 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 and application of rock;
- Installation of culvert inlet/outlet armoring;

**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>
C-Line	825+50	Culvert Installation
D-4900	0+00 to 36+95	Grade, Rock Lift
E-9000	0+00 to 183+98	Grade, Spot Rock, Rock Berm
E-9600	0+00 to 28+15	Grade, Rock Lift

**0-7 POST-HAUL MAINTENANCE**

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

**0-10 ABANDONMENT**

This project includes abandonment listed in Clause 9-21 ROAD ABANDONMENT.

**0-12 DEVELOP ROCK SOURCE**

Purchaser shall perform exploratory drilling and may develop an existing rock source. Rock source development will involve reducing oversize material, Clearing, Stripping, Drilling, Blasting and crushing. Work for developing rock sources is listed in Section 6 ROCK AND SURFACING.

**0-13 STRUCTURES**

Purchaser shall provide and install a Gate on the C-7010 Tie road. Requirements for these structures are listed in Section 7 STRUCTURES.

SECTION 1 – GENERAL

**1-1 ROAD PLAN CHANGES**

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

**1-2 UNFORESEEN CONDITIONS**

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

**1-3 ROAD DIMENSIONS**

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

**1-4 ROAD TOLERANCES**

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

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

**1-6 ORDER OF PRECEDENCE**

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

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

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

**1-7 TEMPORARY ROAD CLOSURE**

Purchaser shall notify the Contract Administrator a minimum of 3 calendar days before the closure of any road. Construction may not close the following roads for more than the specified number of hours.

<u>Road</u>	<u>Number of Allowable Closed Hours</u>
C-Line	4 consecutive hours
D-Line	4 consecutive hours
D-4000	4 consecutive hours
D-4600	4 consecutive hours
D-4606	4 consecutive hours
E-Line	4 consecutive hours

**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.

**1-10 WSDOT STANDARD SPECIFICATION REFERENCE**

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

## SUBSECTION ROAD MARKING

### **1-15 ROAD MARKING**

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

- Pre-haul activities: 2 in. x 48 in. wooden lath with station and activity
- Construction: Orange ribbon tied eye-height along centerline, w/orange pin flags or wooden lath marking centerline

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

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

### **1-18 REFERENCE POINT DAMAGE**

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

## SUBSECTION TIMING

### **1-20 COMPLETE BY DATE**

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

### **1-21 HAUL APPROVAL**

Purchaser shall not use roads under this road plan for any 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 3 working 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:

- Drainage installation
- Subgrade compaction
- Rock compaction

## SUBSECTION RESTRICTIONS

**1-25 ACTIVITY TIMING RESTRICTION**

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

<u>Activity</u>	<u>Closure Period</u>
The construction, reconstruction, abandonment and/or prehaul maintenance of any roads	November 1 to April 30

**1-26 OPERATING DURING CLOSURE PERIOD**

If permission is granted to operate during a closure period listed in Clause 1-25 ACTIVITY TIMING RESTRICTION or Contract Clause H-130 HAULING SCHEDULE, 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. Purchaser shall accomplish sediment removal through silt traps, silt fences, settling ponds, or other methods as approved, in writing by the Contract Administrator.

**1-30 CLOSURE TO PREVENT DAMAGE**

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

- Wheel track rutting exceeds 6 inches on jaw run 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.

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

The use of metal tracked equipment is not allowed on bridge or asphalt surfaces at any time. If Purchaser must run equipment on bridge or asphalt surfaces, then rubber tired

equipment or other methods, approved in writing by Contract Administrator, must be used.

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

**1-33 SNOW PLOWING RESTRICTION**

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

SUBSECTION OTHER INFRASTRUCTURE

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

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

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

**1-43 ROAD WORK AROUND UTILITIES**

Road work is in close proximity to a utility. It is the Purchaser's responsibility to identify any utilities. Purchaser shall work in accordance with all applicable laws or rules concerning utilities. Purchaser is responsible for all notification, including "call before you dig", and liabilities associated with the utilities and their rights-of-way.

<u>Road</u>	<u>Stations</u>
C-Line	825+50

SECTION 2 – MAINTENANCE

**2-1 GENERAL ROAD MAINTENANCE**

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

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

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

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

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

**2-4 PASSAGE OF LIGHT VEHICLES**

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

<u>Road</u>	<u>Stations</u>
C-line	830+29 to 879+62
D-Line	0+00 to 458+83
D-4000	0+00 to 287+63
D-4600	0+00 to 65+36
D-4606	0+00 to 6+86
D-4900	0+00 to 36+95
E-9000	0+00 to 183+98
E-9600	0+00 to 28+15

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

On the following road(s), Purchaser shall use a grader to shape the existing surface before rock application, if rock application is required. If rock application is not required, Purchaser shall use a grader to shape the existing surface before hauling of timber. Purchaser shall accomplish all grading using a motor grader. Desoding the road may be required.

<u>Road</u>	<u>Stations</u>
D-4900	0+00 to 36+95
E-9000	0+00 to 183+98
E-9600	0+00 to 28+15

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

**SUBSECTION CLEARING**

### **3-5 CLEARING**

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

### **3-8 PROHIBITED DECKING AREAS**

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

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

## **SUBSECTION GRUBBING**

### **3-10 GRUBBING**

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

## **SUBSECTION ORGANIC DEBRIS**

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

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

### **3-21 DISPOSAL COMPLETION**

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

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

Purchaser shall not place organic debris in the following areas:

- Within 50 feet of a cross drain culvert.
- Within 100 feet of a live stream, or wetland.
- On road subgrades, or excavation and embankment slopes.
- On slopes greater than 55%.
- Within the operational area for cable landings where debris may shift or roll.
- On locations where brush can fall into the ditch or onto the road surface.
- Against standing timber.

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

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

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

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

## **SECTION 4 – EXCAVATION**

### **4-2 PIONEERING**

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

- Drainage must be provided on all uncompleted construction as approved, in writing, by the Contract Administrator.
- Road pioneering operations may not undercut the final cut slope, deposit excavated material outside the grubbing limits, or restrict drainage.
- Culverts at live stream crossings must be installed during pioneering operations

### **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 12%.
- Maximum favorable grades for switchbacks is 14%.
- 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 extra feet for curves of 60 to 79 feet radius.
- 4 extra 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 less than 6 feet.
- 4 feet for embankment heights at centerline of 6 feet or greater.

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

**4-12 FULL BENCH CONSTRUCTION**

Where side slopes exceed 45%, Purchaser shall use full bench construction for the entire subgrade width except as construction staked or designed.

**4-21 TURNOUTS**

Purchaser shall construct turnouts as designated on the TURNOUT LIST. Locations may be adjusted to fit the final subgrade alignment and sight distances. Minimum dimensions are shown on the TURNOUT LIST.

**4-22 TURNAROUNDS**

Turnarounds must be no larger than 30 feet long and 30 feet wide.

SUBSECTION DITCH CONSTRUCTION

**4-25 DITCH CONSTRUCTION AND RECONSTRUCTION**

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

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

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

**4-28 DITCH DRAINAGE**

Ditches must drain to cross-drain culverts or ditchouts.

**4-29 DITCHOUTS**

Purchaser shall construct ditchouts as identified in maps, in field, 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.

SUBSECTION WASTE MATERIAL (DIRT)

**4-35 WASTE MATERIAL DEFINITION**

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

**4-36 DISPOSAL OF WASTE MATERIAL**

Purchaser may sidecast waste material on side slopes up to 55% if the waste material is compacted and free of organic debris.

**4-37 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 as listed.

<u>Road</u>	<u>Waste Area Location</u>	<u>Volume</u>
C-7010	STA 4+08	3000

**4-38 PROHIBITED WASTE DISPOSAL AREAS**

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

- Within 50 feet of a cross drain culvert.
- Within 100 feet of a live stream or wetland.
- On side slopes steeper than 55%.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Within the operational area for cable landings.
- Against standing timber.

SUBSECTION BORROW

**4-46 COMMON BORROW**

Common borrow consists of soil, and/or aggregate that is non-plastic and contains no more than 5% clay, organic debris, or trash by volume. The material is considered non-plastic if the fines in the sample cannot be rolled, between the hand and a smooth surface, into a thread at any moisture content.

**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.

**4-48 BORROW MATERIAL**

Borrow material may not contain more than 5% organic debris, or trash by volume.

**4-49 BORROW SOURCE**

Purchaser shall obtain borrow material from borrow sources identified or approved by the Contract Administrator. Development of the borrow source must be in accordance with a written BORROW SOURCE DEVELOPMENT PLAN to be submitted by the Purchaser and approved in writing by the Contract Administrator.

SUBSECTION SHAPING

**4-55 ROAD SHAPING**

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

**4-56 DRY WEATHER SHAPING**

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

SUBSECTION COMPACTION

**4-60 FILL COMPACTION**

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

**4-61 SUBGRADE COMPACTION**

Purchaser shall compact constructed subgrades in accordance with the COMPACTION LIST by routing equipment over the entire width except ditch. On fills deeper than 5 feet at the road shoulder Purchaser shall compact fill material in lifts no greater than 18 inches. Purchaser shall obtain written approval from the Contract Administrator for subgrade compaction before rock application.

**4-62 DRY WEATHER COMPACTION**

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

**4-63 EXISTING SURFACE COMPACTION**

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

SECTION 5 – DRAINAGE

**5-1 REMOVAL OF SHOULDER BERMS**

Purchaser shall remove berms from road shoulders to permit escape of runoff, except as specified in Clause 8-7 ROAD SHOULDER BERM INSTALLATION.

SUBSECTION CULVERTS

**5-5 CULVERTS**

Purchaser shall install culverts as part of this contract. Culverts must be installed concurrently with subgrade work and must be installed before subgrade compaction and rock application. Culvert locations and the minimum requirements for culvert length and diameter are designated on the CULVERT AND DRAINAGE LIST. Culvert, downspout, and flume lengths may be adjusted to fit as-built conditions and may not terminate directly on unprotected soil. Culverts must be new material and meet the specifications in Clauses 10-15 through 10-23 except as provided in clause 5-6 USED CULVERT MATERIAL.

**5-7 USED CULVERT MATERIAL**

On the following road(s), Purchaser may install used culverts. All other roads must have new culverts installed.

<u>Road</u>	<u>Stations</u>
D-4098	0+00 to 0+86

**5-10 CULVERT MARKER INSTALLATION**

Purchaser shall install culvert markers in accordance with the CULVERT MARKER DETAIL at all newly installed permanent culverts.

**5-12 UNUSED MATERIALS STATE PROPERTY**

On required roads, any materials listed on the CULVERT LIST and materials listed in Clause 5-13 CONTINGENCY CULVERTS that are not installed will become the property of the state. Purchaser shall stockpile materials at Mima Mounds Pit (SW ¼ NW ¼ Section 10, T16R03W).

**5-13 CONTINGENCY CULVERTS**

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

<u>Road</u>	<u>Size</u>
On any portion of road used for timber or rock haul.	18" x 30' culvert
	18" culvert band
	18" culvert band

**SUBSECTION CULVERT INSTALLATION**

**5-15 CULVERT INSTALLATION**

Culvert, downspout, flume and energy dissipater installation must be in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL and the Corrugated Polyethylene Pipe Association’s “Recommended Installation Practices for Corrugated Polyethylene Pipe and Fittings”. Culverts shall be banded using lengths of no less than 10 feet, and no more than one length less than 16 feet. Shorter section of banded culvert shall be installed at the inlet end.

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

Cross drains, on road grades in excess of 3%, must be skewed at least 30 degrees from perpendicular to the road centerline, except where the cross drain is at the low point in the road culverts will not be skewed. Cross drain culverts must be installed at a slope steeper than the incoming ditch grade, but not less than 3% or more than 12%.

**5-18 CULVERT DEPTH OF COVER**

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.

SUBSECTION ENERGY DISSIPATERS

**5-20 ENERGY DISSIPATERS**

Purchaser shall install energy dissipaters in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all culverts on the CULVERT LIST that specify the placement of rock. Energy dissipater installation is subject to approval by the Contract Administrator.

The type of energy dissipater and the amount of material must be consistent with the specifications listed on the CULVERT LIST. Placement must be by zero-drop-height method only. No placement by end dumping or dropping of rock is allowed. LIGHT, LOOSE RIP RAP shall meet the specifications in Clause 6-50.

SUBSECTION CATCH BASINS, HEADWALLS, AND ARMORING

**5-25 CATCH BASINS**

Purchaser shall construct catch basins to resist erosion 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 CULVERTS**

Purchaser shall construct headwalls in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all culverts on the CULVERT LIST that specify the placement of rock.

SUBSECTION SURFACE DRAINAGE

**5-30 DRIVABLE WATERBAR CONSTRUCTION**

Purchaser shall construct drivable waterbars in accordance with the drivable waterbar detail and as specified in the CULVERT AND DRAINAGE LIST. Drivable waterbars must be installed concurrently with construction of the subgrade and must be maintained in an operable condition.

SECTION 6 – ROCK AND SURFACING

SUBSECTION ROCK SOURCE

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

Rock used in accordance with the quantities on the ROCK LIST may be obtained from the following source(s) on state land at no charge to the Purchaser. Purchaser shall obtain written approval from the Contract Administrator for the use of material from any other source. If other operators are using, or desire to use the rock source(s), a joint operating plan must be developed. All parties shall follow this plan. Purchaser shall notify the Contract Administrator a minimum of 3 working days before starting any operations in the listed locations.

<u>Source</u>	<u>Location</u>
Greenline Quarry	T17N R3W S29
L.L. Quarry	T17N R3W S18

**6-5 ROCK FROM COMMERCIAL SOURCE**

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

SUBSECTION ROCK SOURCE DEVELOPMENT

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

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

<u>Source</u>	<u>Rock Type</u>
Greenline Quarry	2 Inch Minus, 2 Inch Clean, 4 Inch Jaw, Quarry Spalls, Pit Run, Light Loose Riprap.
L.L Quarry	2 Inch Minus, 2 Inch Clean, 4 Inch Jaw, Quarry Spalls, Pit Run, Light Loose Riprap.

## 6-12 ROCK SOURCE SPECIFICATIONS

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

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

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

- Pit walls must be maintained in a condition to minimize the possibility of the walls sliding or failing.
- The width of pit benches must be a minimum of 1.5 times the maximum length of the largest machine used.
- The surface of pit floors and benches must be uniform and free-draining at a minimum 2% outslope gradient.
- All operations must be carried out in compliance with all regulations of the Regulations and Standards Applicable to Metal and Nonmetal Mining and Milling Operations (30 CFR) U.S. Department of Labor, Mine Safety and Health Administration and Safety Standards for Construction Work (296-155 WAC), Washington Department of Labor and Industries.
- All vehicle access to the top of the pit faces must be blocked.

**6-13 ROCK EXPLORATION**

Purchaser shall provide an air track drill with operator for 320 vertical feet of exploratory drilling for rock.

<u>Site</u>	<u>Location</u>	<u>Vertical Feet of Drilling</u>
L.L. Quarry	See L.L. Quarry Development Plan	320

**6-14 DRILL AND SHOOT**

Rock drilling and shooting must meet the following specifications:

- Oversize material remaining in the rock source at the conclusion of the timber sale may not exceed 600 cubic yards.
- Oversize material is defined as rock fragments larger than two feet in any dimension.
- Oversized rock that exceeds the maximum allowable amount must be reduced to a smaller size within the rock source.
- Purchaser shall notify the Contract Administrator a minimum of 3 working days before blasting operations.
- Purchaser shall submit an informational drilling and shooting plan to the Contract Administrator 3 working days before any drilling. The drilling and shooting plan must include, at a minimum, the mapped location and spacing of all holes to be loaded, the type of blasting agent used, the powder factor calculated and the units of same, stem amount held per hole. After drilling, the type of rock encountered while drilling e.g. hard black, soft brown, etc. shall be amended to submitted plan.
- All operations must be carried out in compliance with the Regulations and Standards Applicable to Metal and Nonmetal Mining and Milling Operations (30 CFR) U.S. Department of Labor, Mine Safety and Health Administration and the Safety Standards for Construction Work (296-155 WAC), Washington Department of Labor and Industries.
- Purchaser shall block access roads before blasting operations.

SUBSECTION ROCK MANUFACTURE

**6-20 ROCK 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.

**6-23 ROCK CRUSHING OPERATIONS**

Rock crushing operations must conform to the following specifications:

- Operations and placement of oversize material must be conducted in or near the rock source site, as approved in writing by the Contract Administrator.
- The crushing operation must be concluded within 30 working days from the time it begins.

**SUBSECTION ROCK GRADATION**

**6-30 2-INCH MINUS CRUSHED ROCK**

% Passing 2" square sieve	100%
% Passing 1" square sieve	55 - 75%
% Passing U.S. #4 sieve	20 - 45%

Of the fraction passing the No. 4 sieve, 40% to 60% must pass the No. 10 sieve.

The portion of aggregate retained on the No. 4 sieve may not contain more than 0.2 percent organic debris and trash. All percentages are by weight.

**6-31 2-INCH CLEAN ROCK**

% Passing 2" square sieve	100%
% Passing U.S. #4 sieve	20%
% Passing U.S. #200 sieve	5% maximum

The portion of aggregate retained on the No. 4 sieve may not contain more than 0.1 percent organic debris and trash. All percentages are by weight.

**6-37 4-INCH JAW RUN ROCK**

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

The portion of aggregate retained on the No. 4 sieve may not contain more than 0.2 percent organic debris and trash. All percentages are by weight.

**6-41 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. 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.

**6-43 QUARRY SPALLS**

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

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

**6-50 LIGHT LOOSE RIP RAP**

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

<u>At Least/Not More Than</u>	<u>Size Range</u>
20% / 90%	20" - 36"
80% / --	12" - 30"
10% / 20%	3" - 8"

SUBSECTION ROCK MEASUREMENT

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

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

SUBSECTION ROCK APPLICATION

**6-70 APPROVAL BEFORE ROCK APPLICATION**

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

**6-71 ROCK APPLICATION**

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

**6-75 OPTIONAL ROCK EXCEPTION**

On the following roads, Purchaser may place less rock than shown on the ROCK LIST, when approved in writing by the Contract Administrator.

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

<u>Road</u>	<u>Stations</u>
C-7010.3	0+00 to 2+74
D-4098	0+00 to 0+86
D-4950	0+00 to 7+96
E-9626	0+00 to 4+11

SECTION 7 – STRUCTURES

SUBSECTION GATES AND FENCES

**7-71 GATE CLOSURE DURING HAUL**

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

<u>Road</u>	<u>Station</u>	<u>Gate No.</u>	<u>Comment</u>
D-4600	3+75	1331	An alternate plan shall include that the Purchaser is responsible for ensuring all unauthorized personnel behind the gate are out prior to locking each day.
D-4900	1+58	1332	
C-7010	0+94	1364	
C-7010 Tie	0+78	new	
E-9000	1+33	1346	

**7-76 GATE INSTALLATION**

Purchaser shall install the listed gate(s). Gate installations must be completed within 30 days of construction of C-7010 Tie road.

<u>Road</u>	<u>Station</u>	<u>Type*</u>
C-7010 Tie	0+78	Steel

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

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

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

The gate must be primed and painted Rodda Safety Yellow in accordance with the STEEL GATE DETAIL.

Purchaser shall provide and place 10 cubic yards of Light Loose rip rap to prevent vehicles driving around the gate.

**7-78 GATE SUPPLIED BY PURCHASER**

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

**SECTION 8 – EROSION CONTROL**

**8-1 SEDIMENT CONTROL STRUCTURES**

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

**8-7 ROAD SHOULDER BERM INSTALLATION**

On the following road(s), Purchaser shall construct berms on the road shoulders as shown on the ROAD SHOULDER BERM DETAIL.

<u>Road</u>	<u>Stations</u>
E-9000	167+00 to 169+00

## SUBSECTION REVEGETATION

### 8-16 REVEGETATION SUPPLY

The Purchaser shall provide the seed mixture.

### 8-17 REVEGETATION TIMING

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

### 8-19 ASSURANCE FOR SEEDED AREA

Purchaser shall ensure the growth of a uniform and dense crop (at least 50% coverage) of 3-inch tall grass. Purchaser shall reapply the grass seed in areas that have failed to germinate or have been damaged through any cause. Restore eroded or disturbed areas, clean up and properly dispose of eroded materials, and reapply the grass seed at no addition cost to the state.

### 8-25 GRASS SEED

Purchaser shall evenly spread the seed mixture listed below on all soil specified in CLAUSE 8-15 REVEGETATION 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.
- 6.

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

SECTION 9 – POST-HAUL ROAD WORK

SUBSECTION STRUCTURES

**9-1 BARRICADE DETAIL**

On the following road(s), Purchaser shall construct barricades in accordance with the BARRICADE DETAIL.

<u>Road</u>	<u>Station</u>
D-4098	0+00

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

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

SUBSECTION POST-HAUL MAINTENANCE

**9-5 POST-HAUL MAINTENANCE**

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

SUBSECTION POST-HAUL LANDING MAINTENANCE

**9-10 LANDING DRAINAGE**

Purchaser shall provide for drainage of the landing surface.

**9-21 ROAD ABANDONMENT**

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

<u>Road</u>	<u>Stations</u>
D-4098	0+00 to 0+86

**9-22 ABANDONMENT**

- Skew waterbars at least 30 degrees from perpendicular to the road centerline on roads in excess of 3 per cent grade.
- Key waterbars into the cut-slope to intercept the ditch. Waterbars must be outsloped to provide positive drainage. Outlets must be on stable locations.
- Remove culverts from State Land.
- Remove ditch cross drain culverts and leave the resulting trench open.
- Slope all trench walls and approach embankments no steeper than 1.5:1.
- Apply grass seed concurrently with abandonment at a rate of 50 lbs/acre.
- Construct barricade per clause 9-1 BARRICADE DETAIL.

## SECTION 10 MATERIALS

### SUBSECTION GEOTEXTILES

#### 10-6 GEOTEXTILE FOR TEMPORARY SILT FENCE

Geotextiles must meet the following minimum requirements for strength and property qualities, and must be designed by the manufacturer to be used for filtration. Woven slit-film geotextiles are not allowed. Material must be free of defects, cuts, and tears.

	<u>ASTM Test</u>	<u>Requirements</u>
Type	--	Unsupported between posts
Apparent opening size	D 4751	No. 30 max., No. 100 min.
Water permittivity	D 4491	0.02 sec <sup>-1</sup>
Grab tensile strength	D 4632	180 lb in machine direction, 100lb in cross-machine direction
Grab tensile elongation	D 4632	30% max. at 180 lb or more
Ultraviolet stability	D 4355	70% retained after 500 hours of exposure

### SUBSECTION CULVERTS

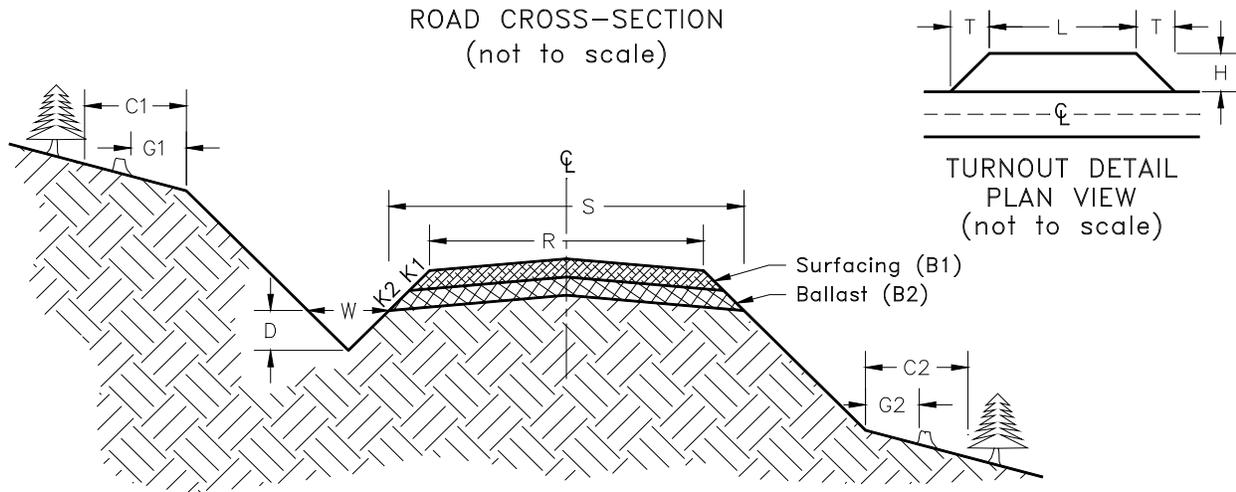
#### 10-17 CORRUGATED PLASTIC CULVERT

Polyethylene culverts must meet AASHTO M-294 specifications, or ASTM F-2648 specifications for recycled polyethylene. Culvert segments not specifically labeled as downspouts 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		Ditch		Crown in. @ CL	Grubbing Limits (feet)		Clearing Limits (feet)		Cut Slope Ratio	Fill Slope Ratio
				Width (feet)	Width (feet)	Width (feet)	Depth (feet)		G1	G2	C1	C2		
				S	R	W	D		G1	G2	C1	C2	Clause	Clause
C-line	825+50		A	-	16	3	1	4	-	-	-	-	4-5	4-6
C-7010	0+00	27+73	A	16	12	3	1	4	2	2	5	5	4-5	4-6
C-7010.3	0+00	2+74	C	16	12	3	1	4	2	2	5	5	4-5	4-6
C-7010.5	0+00	1+68	C	16	12	3	1	4	2	2	5	5	4-5	4-6
C-7010 Tie	0+00	2+64	C	16	12	3	1	4	2	2	5	5	4-5	4-6
D-4098	0+00	0+86	C	16	12	3	1	4	0	0	0	0	4-5	4-6
D-4900	0+00	36+95	A	-	12	3	1	4	-	-	-	-	4-5	4-6
D-4950	0+00	7+96	A	16	12	3	1	4	2	2	5	5	4-5	4-6
D-4951	0+00	12+44	C	16	12	3	1	4	2	2	5	5	4-5	4-6
E-9000	0+00	183+98	A	-	12	3	1	4	-	-	-	-	4-5	4-6
E-9600	0+00	28+15	A	-	12	3	1	4	-	-	-	-	4-5	4-6
E-9625	0+00	24+11	C	16	12	3	1	4	2	2	5	5	4-5	4-6
E-9626	0+00	4+11	C	16	12	3	1	4	2	2	5	5	4-5	4-6

### TURNOUT and TURNAROUND LIST

Road Number	Begin L- Station	End L- Station	Turnout Width (H)	Full Width Length (L)	Taper Length (T)	Comments
D-4950	7+66	7+96	30	30	25	Turnaround Left
D-4951	12+14	12+44	30	30	25	Turnaround Left
E-9000	183+98		-	-	-	Rock Turnaround 30 CY
E-9625	7+28	7+78	10	50	25	Turnout Left
	13+09	13+59	10	50	25	Turnout Right
	23+00	23+30	30	30	25	Turnaround Right

### COMPACTION LIST

Road	From Station	To Station	Type	Max Depth Per Lift (inches)	Equipment Type	Equipment Weight (lbs)	Minimum Number of Passes	Maximum Operating Speed (mph)
C-7010	3+68	27+73	Reconstruction	6"	Smooth Drum Vibratory Roller	14,000	2 low freq. vibration	3.5
C-7010.3	0+00	2+74	Construction	12"	Smooth Drum Vibratory Roller	14,000	2 low freq. vibration	3.5
C-7010.5	0+00	1+68	Construction	12"	Smooth Drum Vibratory Roller	14,000	2 low freq. vibration	3.5
C-7010 Tie	0+00	2+64	Construction	12"	Smooth Drum Vibratory Roller	14,000	2 low freq. vibration	3.5
D-4098	0+00	0+86	Construction	12"	Smooth Drum Vibratory Roller	14,000	2 low freq. vibration	3.5
D-4900	0+00	36+95	After Grading, Rock Lift	6"	Smooth Drum Vibratory Roller	14,000	2 low freq. vibration	3.5
D-4950	0+00	7+96	Reconstruction	12"	Smooth Drum Vibratory Roller	14,000	2 low freq. vibration	3.5
D-4951	0+00	12+44	Construction	12"	Smooth Drum Vibratory Roller	14,000	2 low freq. vibration	3.5
E-9000	0+00	183+98	After Grading, Spot Rock	12"	Smooth Drum Vibratory Roller	14,000	2 low freq. vibration	3.5
E-9600	0+00	28+15	After Grading, Rock Lift	12"	Smooth Drum Vibratory Roller	14,000	2 low freq. vibration	3.5
E-9625	0+00	24+11	Construction	12"	Smooth Drum Vibratory Roller	14,000	2 low freq. vibration	3.5
E-9626	0+00	4+11	Construction	12"	Smooth Drum Vibratory Roller	14,000	2 low freq. vibration	3.5

## ROCK LIST Ballast

Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth	C.Y./ Station	# of Stations	C.Y. Subtotal	Rock Source	Comments		
									CW	TO	TA
			K2	B2							
<b>4 Inch Jaw Run</b>											
C-7010	3+68	27+73	1½ : 1	8"	35	24.05	842	Greenline/ L.L.			
C-7010.3*	0+00	2+74	1½ : 1	12"	52	2.74	157	Greenline/ L.L.	14		
C-7010.5	0+00	1+68	1½ : 1	12"	52	1.68	88	Greenline/ L.L.			
C-7010 Tie	0+00	2+64	1½ : 1	12"	52	2.64	159	Greenline/ L.L.	21		
D-4098*	0+00	0+86	1½ : 1	12"	52	0.86	45	Greenline/ L.L.			
D-4950*	0+00	7+96	1½ : 1	12"	52	7.96	444	Greenline/ L.L.			30
D-4951	0+00	12+44	1½ : 1	12"	52	12.44	769	Greenline/ L.L.	79		43
E-9000	162+45	183+98	1½ : 1	8"	35	21.53	754	Greenline/ L.L.			
E-9625	0+00	24+11	1½ : 1	12"	52	24.11	1487	Greenline/ L.L.	125	57	48
E-9626*	0+00	4+11	1½ : 1	12"	52	4.11	226	Greenline/ L.L.	12		
<b>Quarry Spalls</b>											
All Permanent Culverts Except Live Stream					2.5 per culvert	12	30	Greenline/ L.L.			
<b>Pit Run</b>											
Landings*					50 per landing	26	1300	Greenline/ L.L.			
<b>Light Loose Riprap</b>											
Dissipaters					Place at Outlet	1	2	Greenline/ L.L.	See CULVERT AND DRAINAGE LIST		
Gate							10				

4 Inch Jaw Total 4,971 Cubic Yards  
 Quarry Spalls Total 30 Cubic Yards  
 Light Loose Riprap Total 12 Cubic Yards  
 Pit Run Total 1,300 Cubic Yards  
 Ballast Total 6,313 Cubic Yards

Included in C.Y. Subtotal

CW- Curve Widening  
 TO- Turn Out  
 TA- Turn Around

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

\*\* Post Haul Rock

## ROCK LIST

### Surfacing

Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth	C.Y./ Station	# of Stations	C.Y. Subtotal	Rock Source	Comments		
									CW	TO	TA
			K1	B1	<b>2 Inch Minus</b>						
C-7010 Tie	0+00	2+64	1½ : 1	6"	26	2.64	80	Greenline/ L.L.	11		
D-4900	0+00	36+95	1½ : 1	4"	18	36.95	666	Greenline/ L.L.			
D-4951	0+00	12+44	1½ : 1	6"	26	12.44	366	Greenline/ L.L.	42		43
E-9000	0+00	17+79	1½ : 1		-	-	30	Greenline/ L.L.	Spot Rock		
	17+19	162+45	1½ : 1	-	-	-	500	Greenline/ L.L.	Spot Rock		30
E-9000 Rock Berm	167+00	169+00	1½ : 1	6"	3	2.00	6	Greenline/ L.L.			
E-9600	0+00	28+15	1½ : 1	6"	26	28.15	732	Greenline/ L.L.			
Prehaul/ Reconstruction Culverts					10 Per Culvert	3	30	Greenline/ L.L.	Includes Contingency Culverts		
					<b>2 Inch Clean</b>						
D-4900	0+50				-	-	10	Greenline/ L.L.	Fill Drivable Water Bar		

2 Inch Minus Total   2,410   Cubic Yards  
 2 Inch Clean Total       10   Cubic Yards  
 Surfacing Total   2,420   Cubic Yards

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

Included in C.Y. Subtotal

CW- Curve Widening

TO- Turn Out

TA- Turn Around

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

\*\* Post Haul Rock

## CULVERT AND DRAINAGE LIST

Page 1 of 2

Road Number	Location	Culvert		Length (ft)			Riprap (C.Y.)			Backfill Material *	Placement Method*	Const. Staked*	Remarks	
		Dia. (in)	Type	Culvert	Downspt	Flume	Inlet	Outlet	Type					
C-Line	825+50	18	PD	40			1	1.5	QS	NT			Install Across C-Line, Attach to C-7010 Tie Ditch	
C-7010	3+68	-	-	-			-	-	-	-			Install Drivable Water Bar Across Pit Access	
	5+98	-	-	-			-	-	-	-			Clean Inlet and Outlet	
	9+12	18	PD	30			1	1.5	QS	NT			Replace, Drain Standing Water	
	10+92	18	PD	30			1	1.5	QS	NT	With Trench		Install	
	15+68	-	-	-			-	-	-	-			Clean Inlet and Outlet, Install 2 CY LL at Outlet	
C-7010.3	1+48	18	PD	30			1	1.5	QS	NT			Install	
C-7010.5	1+27	-	-	-			-	-	-	-			Install 200 ft ditchout W	
D-4098	0+00	18	TEMP	40			-	-	-	NT	In D-4000 Ditch		Install Temp	
D-4951	0+40	-	-	-			-	-	-	-			Ditchout Both Sides	
	3+90	18	PD	30			1	1.5	QS	NT			Install	
	7+48	18	PD	30			1	1.5	QS	NT			Install	
	9+93	-	-	-			-	-	-	-			Ditchout Both Sides	
E-9625	3+19	-	-	-			-	-	-	-			Ditchout W	
	3+81	-	-	-			-	-	-	-			Ditchout E	
	11+05	18	PD	30			1	1.5	QS	NT			Install	
	12+59	-	-	-			-	-	-	-			Ditchout W	
	14+00	-	-	-			-	-	-	-			Ditchout E	
	18+55	-	-	-			-	-	-	-			Ditchout W and East	
D-9626	0+00	18	PD	30			1	1.5	QS	NT			Install	
Contingency Culverts		18	PD	30			1	1.5	QS	NT			At CA Discretion	
		18	PD	30			1	1.5	QS	NT				
		18	PD	30			1	1.5	QS	NT				
		18	PD	30			1	1.5	QS	NT				
			PD	Band				-	-	-	-			
			PD	Band				-	-	-	-			

\* SEE CULVERT AND DRAINAGE SPECIFICATION DETAIL

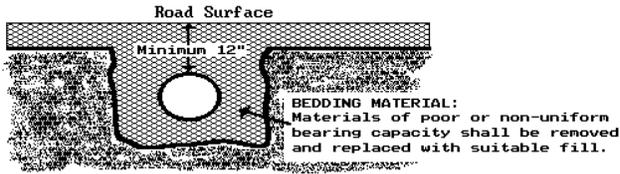
PD = Polyethylene Pipe Dual Wall AASHTO No. M294 Type S or ASTM F2648

TEMP = Temporary Culvert

# CULVERT AND DRAINAGE LIST

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

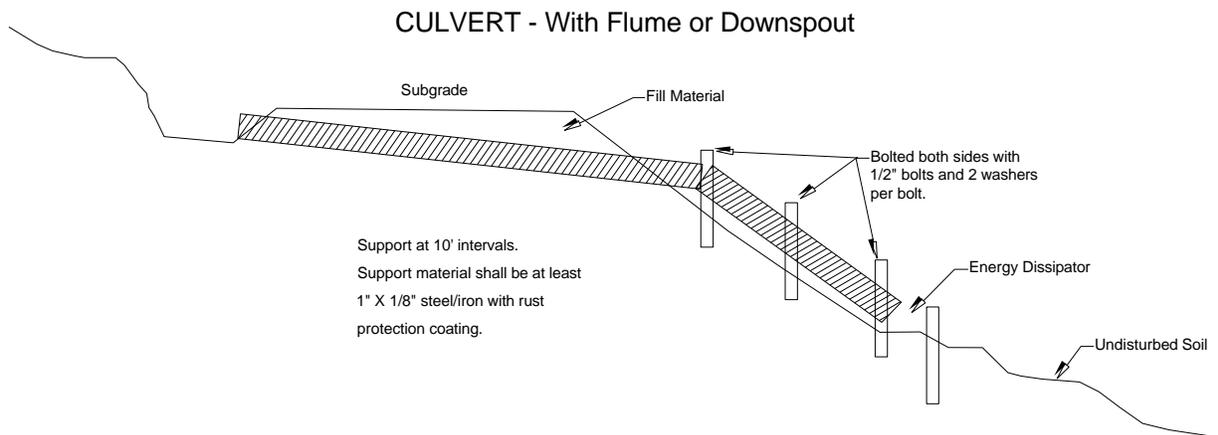
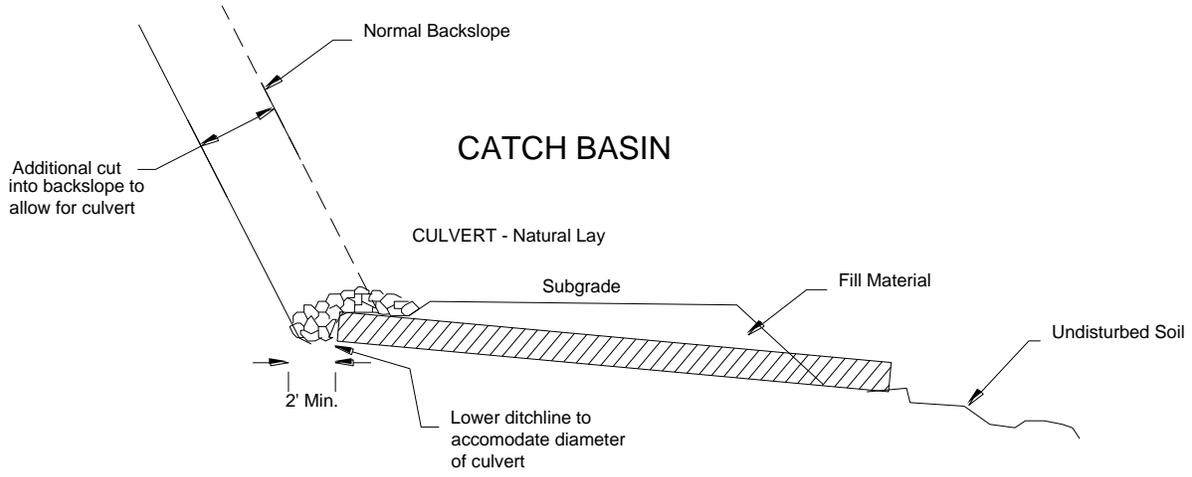


### Key:

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

# CULVERT AND DRAINAGE SPECIFICATION DETAIL

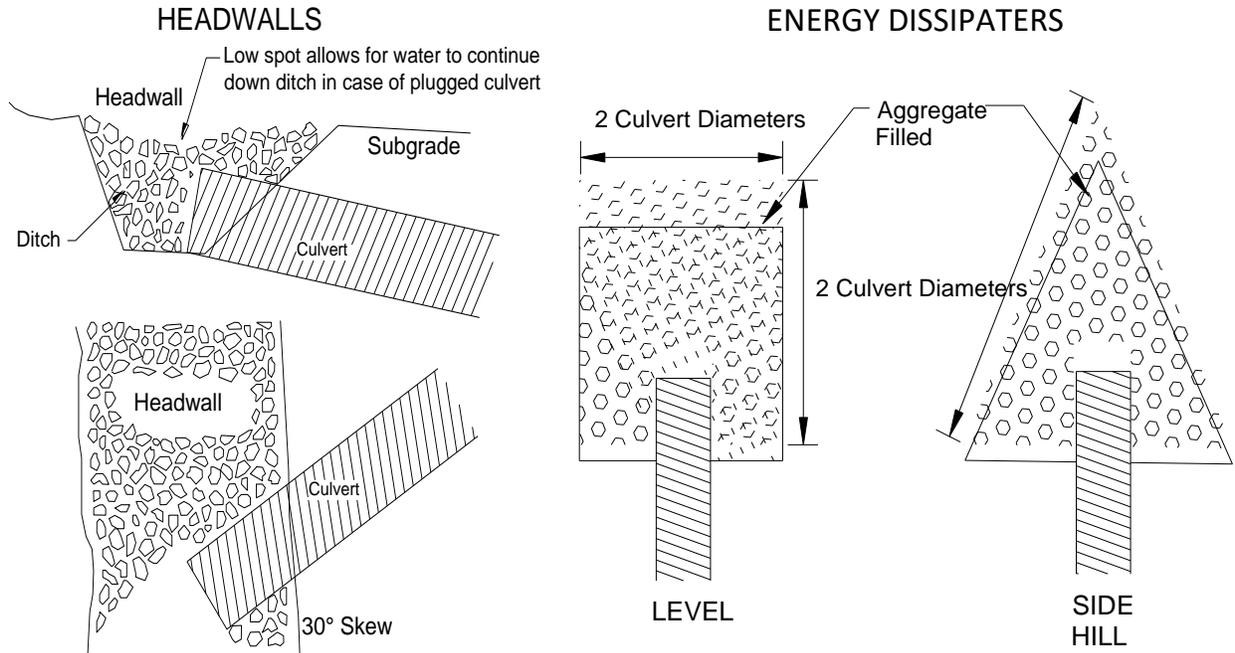
(Page 1 of 3)



## 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.

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

## CULVERT AND DRAINAGE SPECIFICATION DETAIL

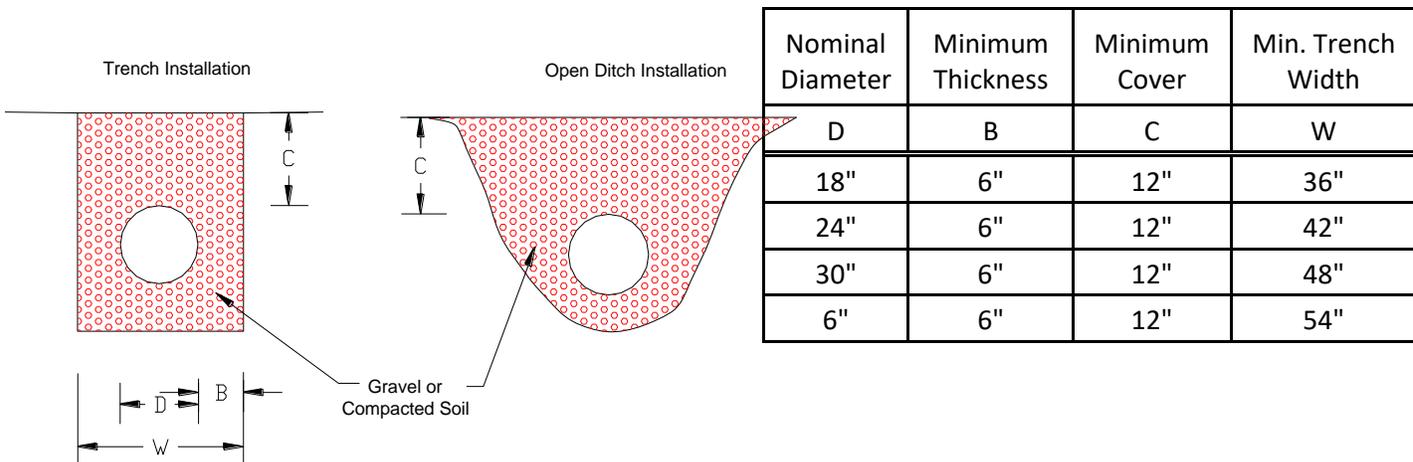
(Page 3 of 3)

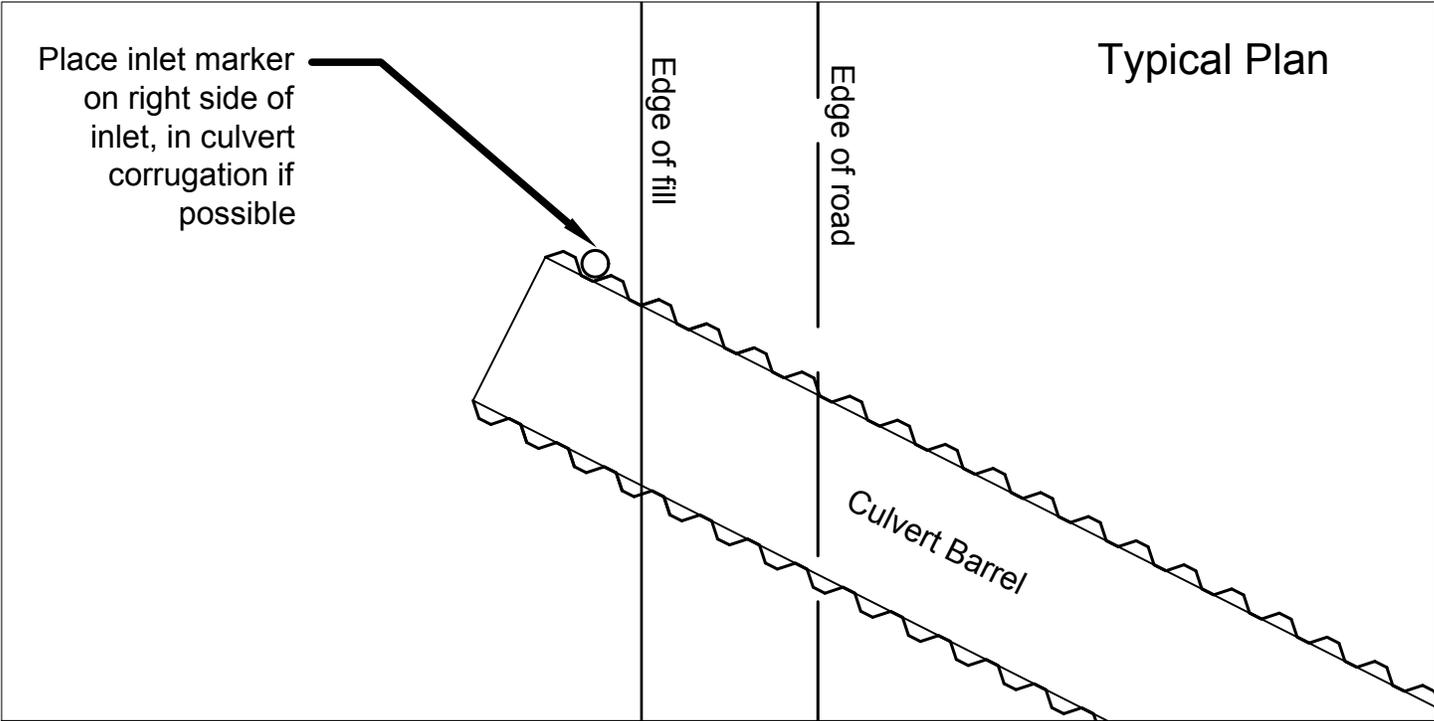
### POLYETHYLENE PIPE INSTALLATION

#### INSTALLATION REQUIREMENTS:

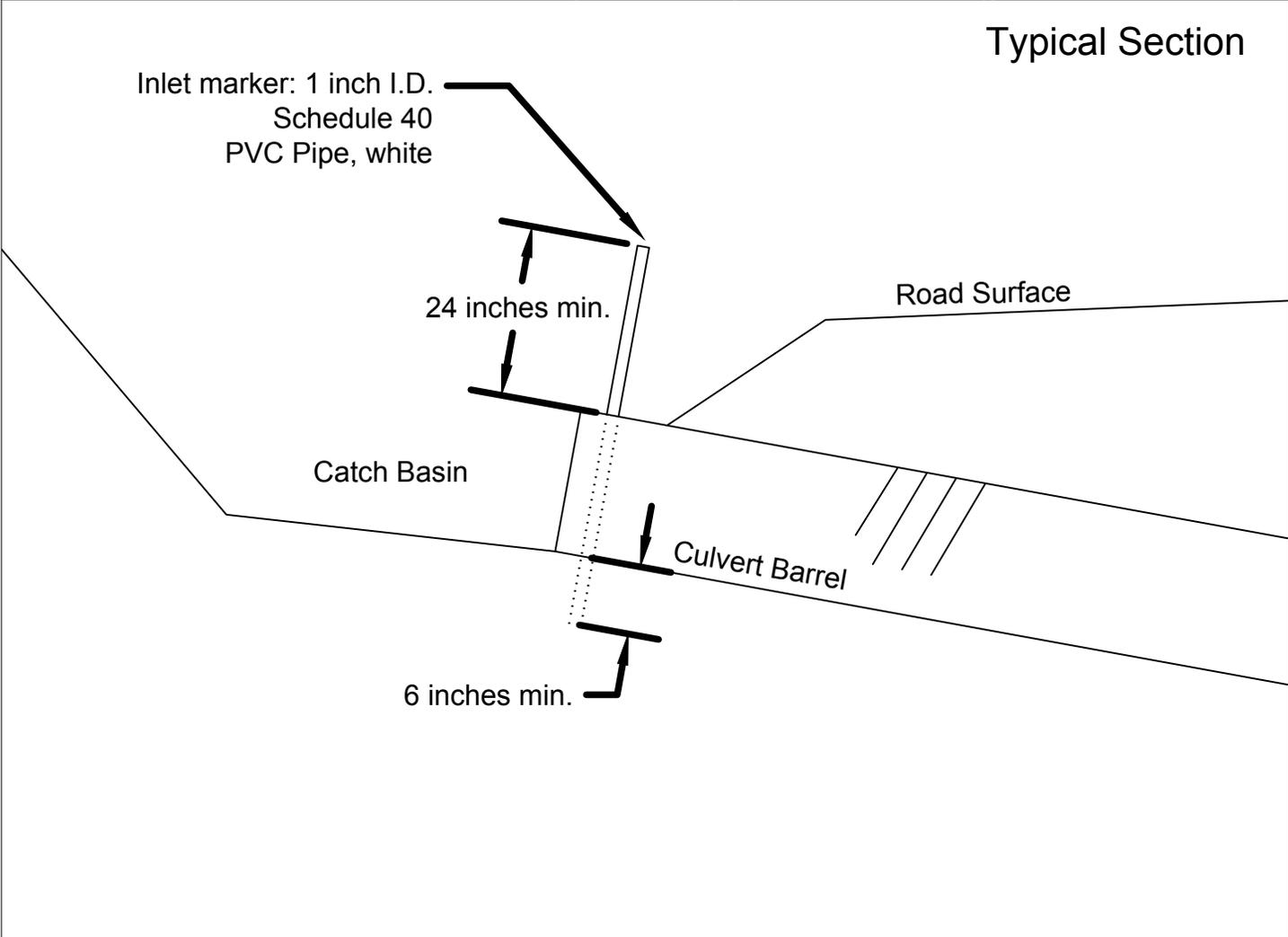
1. Crushed stone, gravel, or compacted soil backfill material shall be used as the bedding and envelope material around the culvert. The aggregate size shall not exceed 1/6 pipe diameter or 4" diameter, whichever is smaller.
2. The corrugated pipe shall be laid on grade, on a layer of bedding material 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





Typical Plan



Typical Section

**CULVERT MARKER DETAIL (INLET SHOWN)**



WASHINGTON STATE DEPARTMENT OF  
**NATURAL RESOURCES**

Drawn by: WP Hoskins

## FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

### Page 1 of 2

#### Cuts and Fills

- Maintain slope lines to a stable gradient compatible with the construction materials. Remove slides up to 100 cubic yards in volume from ditches and the roadway. Repair fill-failures with selected material or material approved by the Contract Administrator. Remove overhanging material from the top of cut slopes.
- Waste material from slides or other sources shall be placed and compacted in stable locations identified in the road plan or approved by the Contract Administrator, so that sediment will not deliver to any streams or wetlands.
- Slide material and debris shall not be mixed into the road surface materials, unless approved by the Contract Administrator.

#### Surface

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

#### Drainage

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

## FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

Page 2 of 2

### Preventative Maintenance

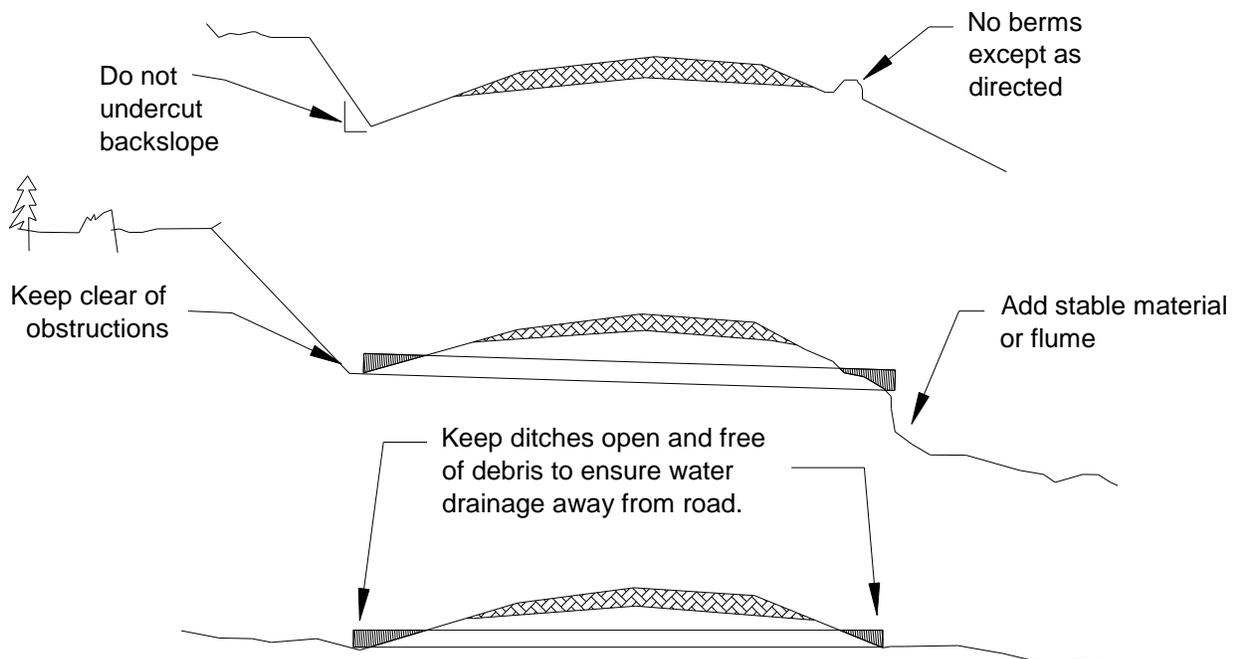
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

### Termination of Use or End of Season

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

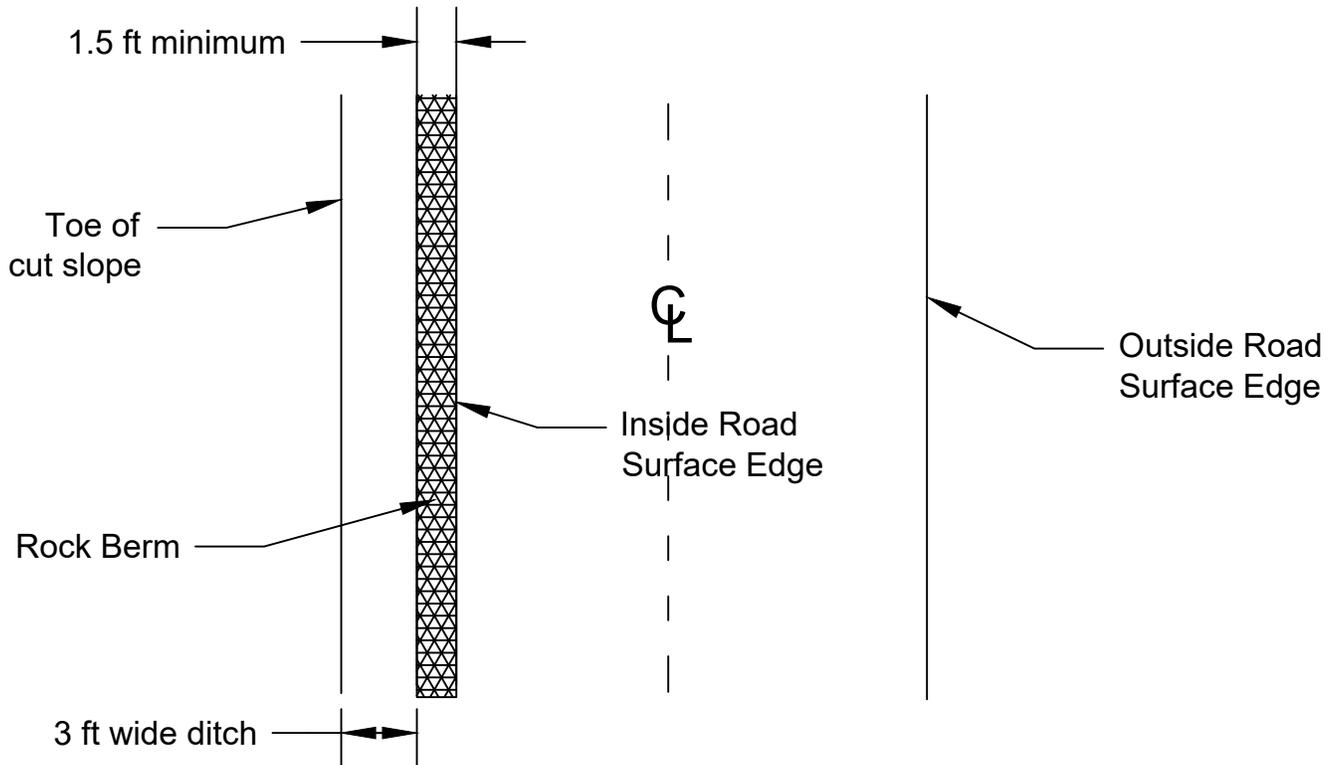
### Debris

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

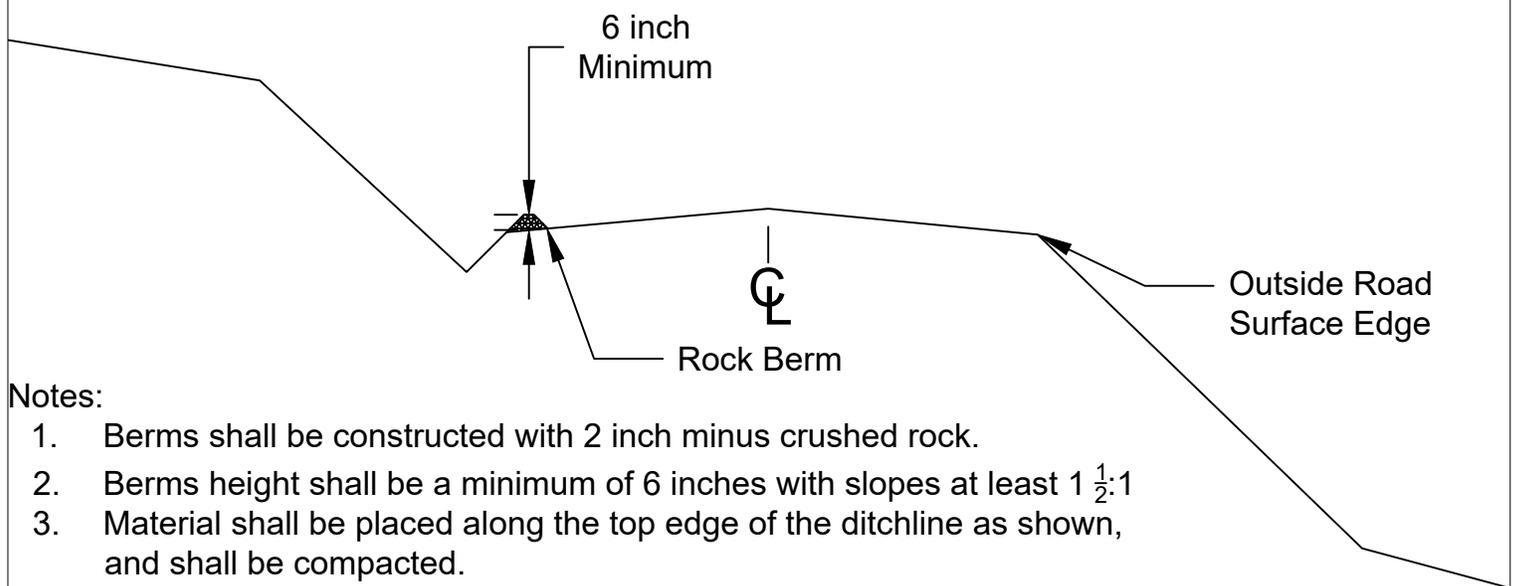


# Road Shoulder Berm Detail

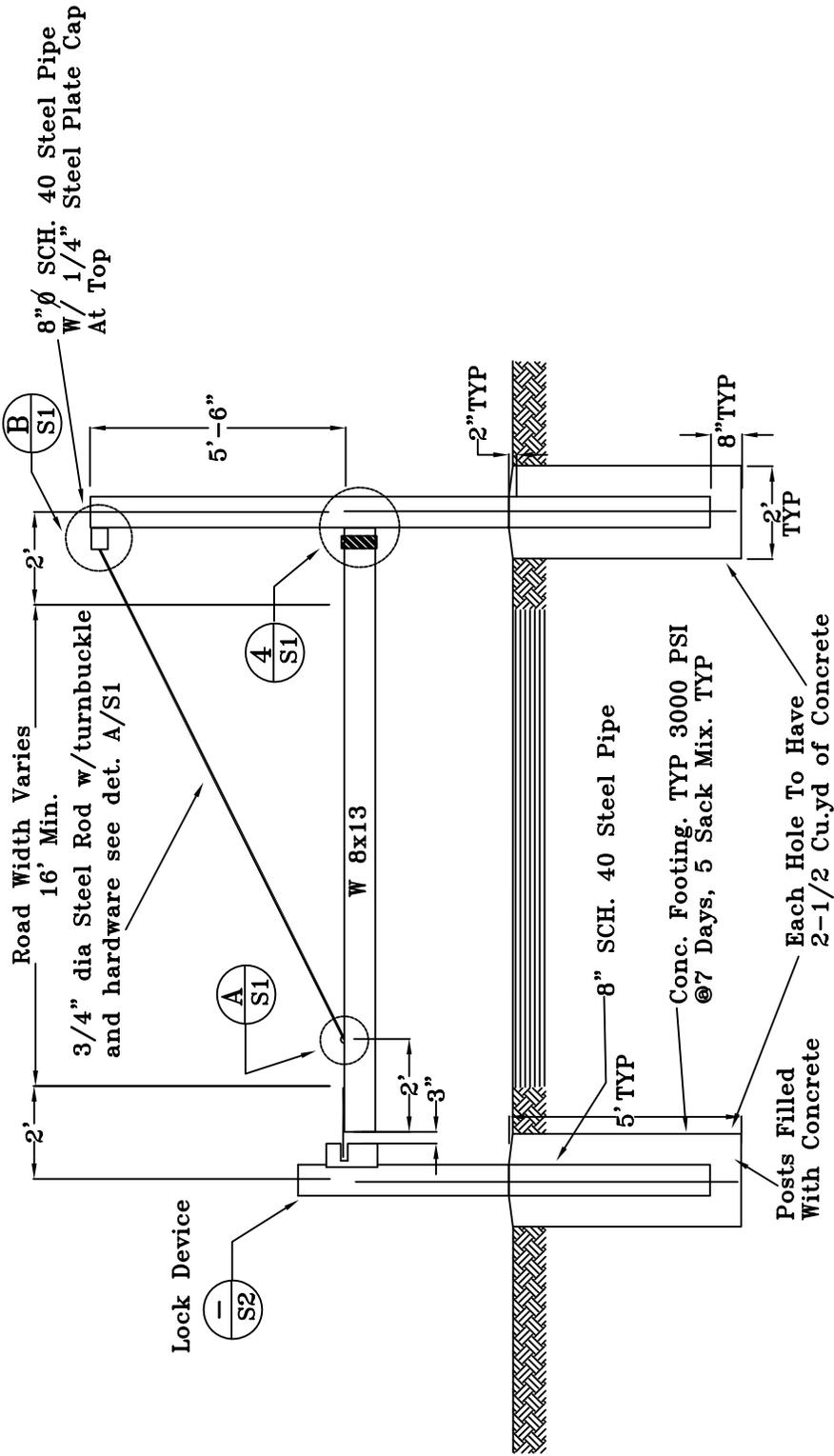
## Plan View NTS



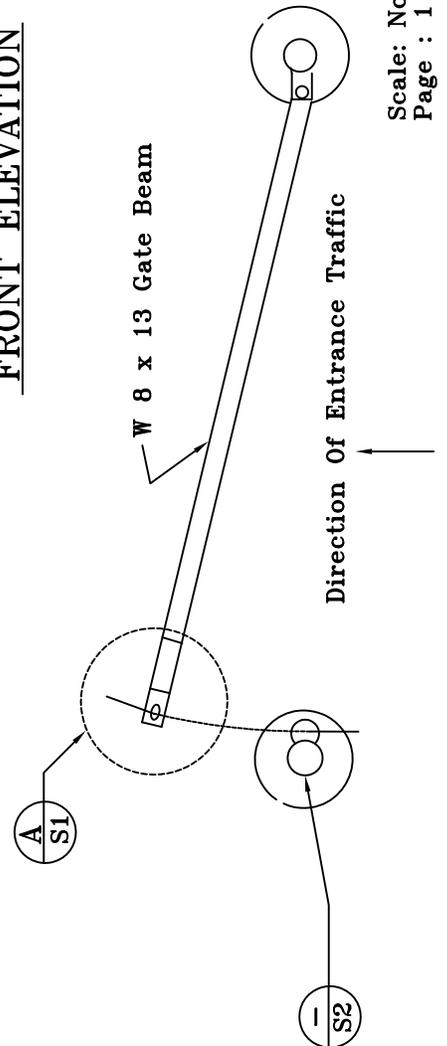
## Cross Section View NTS



Steel Gate Detail



FRONT ELEVATION



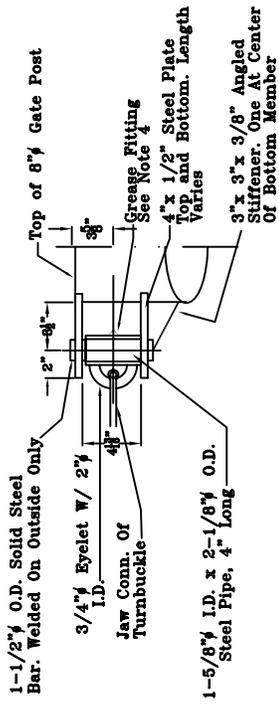
PLAN

Gate Plan And Elevations  
Sections and Details

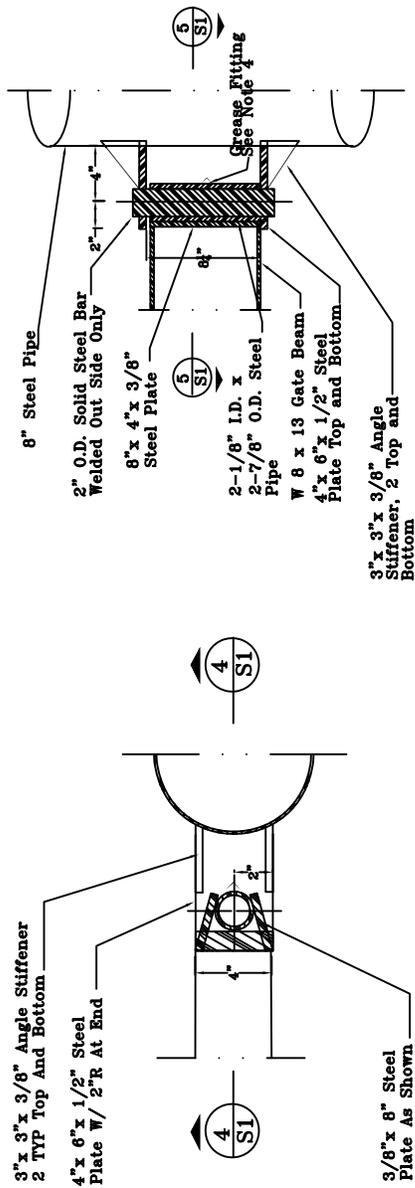
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Page : 1 of 3

**GENERAL NOTES:**

1. Fabrication materials shall meet the following criteria:
  - A. Non-structural steel bars, plates and items ASTM A36 or ASTM A283 Steel.
  - B. Pipe columns ASTM A53 and ASTM A120, Grade B Steel.
  - C. Steel bolts ASTM A307, Grade A Steel.
  - D. Standard rolled steel sections ASTM A36.
  - E. Structural steel tubing ASTM A500, Grade B Steel.
2. Welding shall conform to AWS code for arc welding in building construction.
3. No drifting of bolts nor enlargement of holes will be allowed to correct misalignment. Mismatched holes shall be corrected with new material.
4. Locate grease fittings for convenient access.
5. Each gate is to be assembled to the specifications below.
  - A. Cut the vertical pipes to length & cap, and provide opening(s) to fit 2" SCH. 40 horizontal members as shown on DWG. S1, Front Elevation.
  - B. Fabricate, assemble and attach assemblies shown in detail (B/S1) and in section (4/S1) to the 8" dia SCH. 40 pipe as shown on DWG. S1, Front Elevation.
  - C. Fabricate locking device and lock open device.
  - D. Clean all surfaces of grease and oils before applying primer.
  - E. Paint gate with color: Rodda Safety Yellow.
6. All materials shown on DWG. (S1 & S2) is to be supplied.

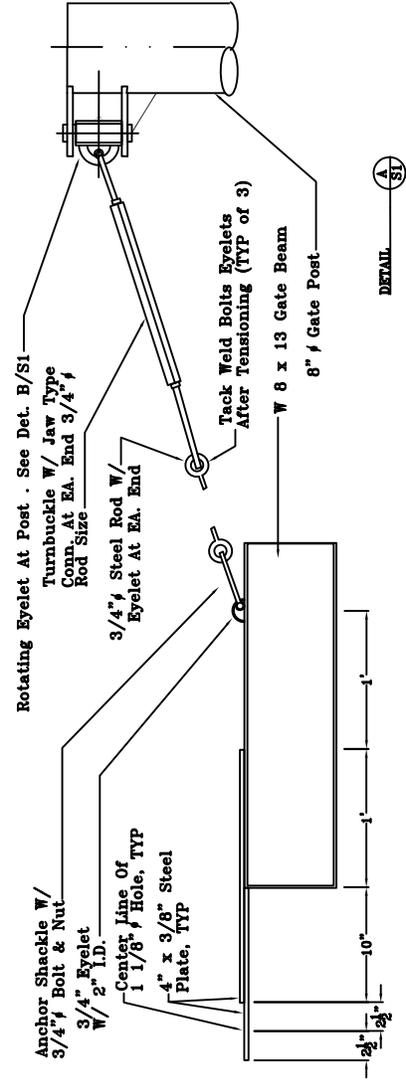


DETAIL B/S1

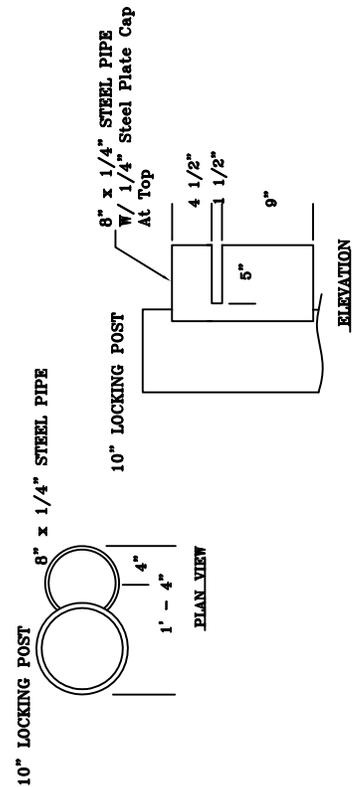


SECTION 4/S1

SECTION 5/S1



DETAIL A/S1

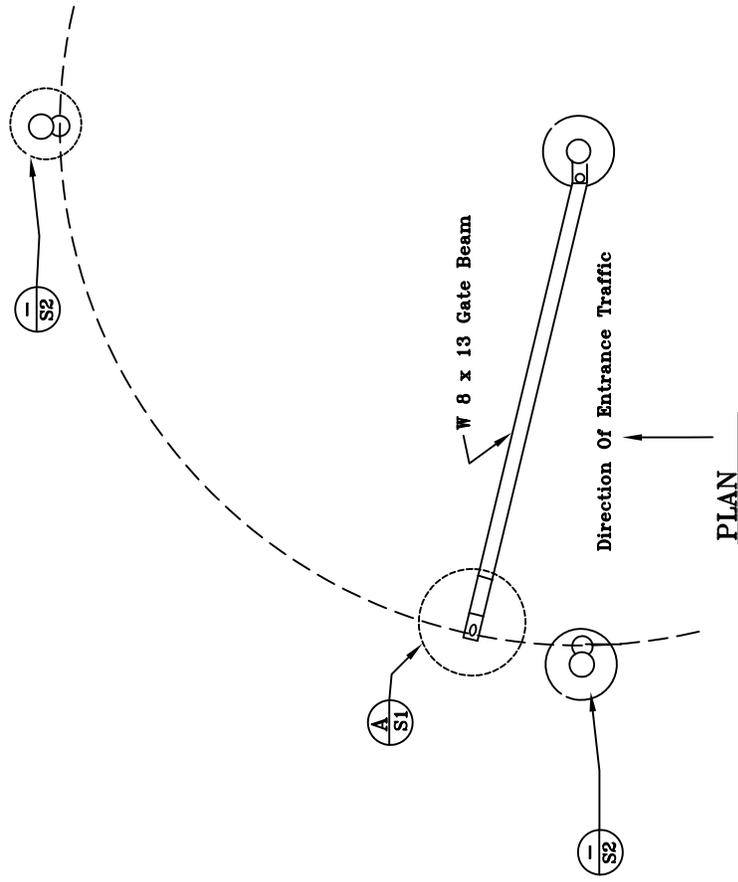


DETAIL S2

**Steel Gate Details**

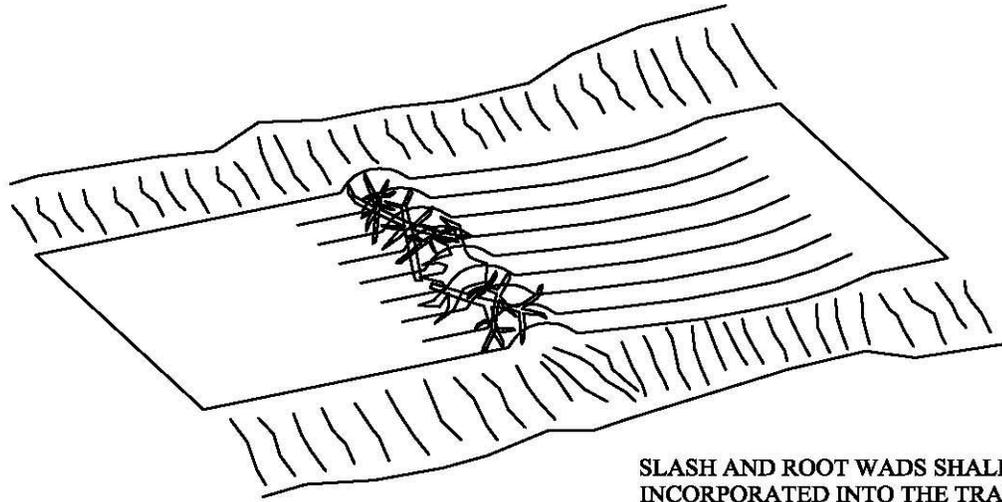
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Page : 2 of 3

# STANDARD LOCK OPEN DEVICE



LOCKING POST AND DEVICE FOR OPEN GATE POSITION, TO BE CONSTRUCTED IDENTICAL TO LOCKING POST AND DEVICE FOR CLOSED POSITION.

# BARRICADE DETAIL

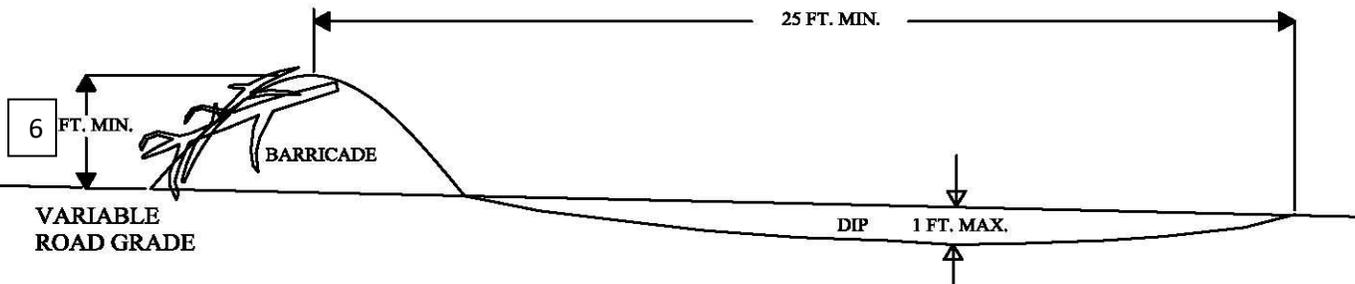


SLASH AND ROOT WADS SHALL BE INCORPORATED INTO THE TRAFFIC SIDE OF THE BARRICADE.

PLAN VIEW

TRAFFIC SIDE OF BARRICADE

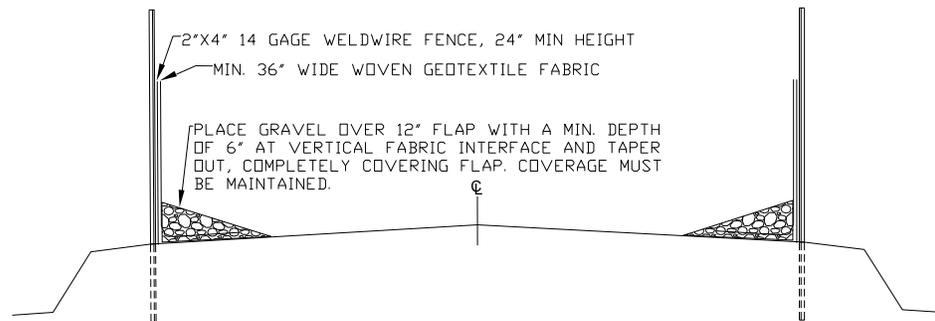
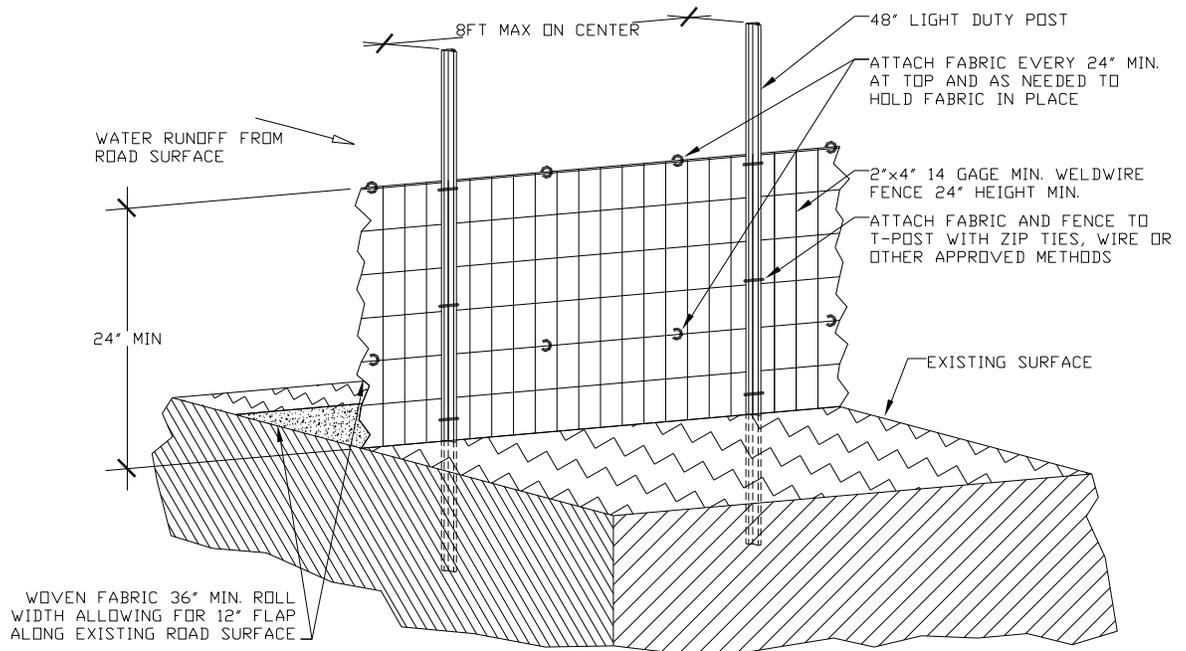
CLOSED SIDE OF BARRICADE



BOTTOM OF DIP SHALL BE OUTSLOPED SO AS TO DRAIN FREELY

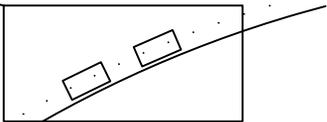
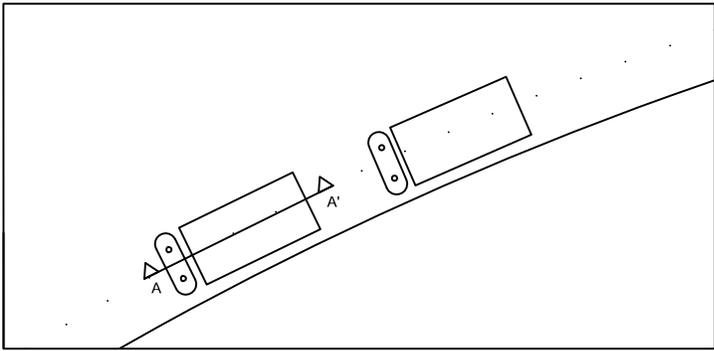
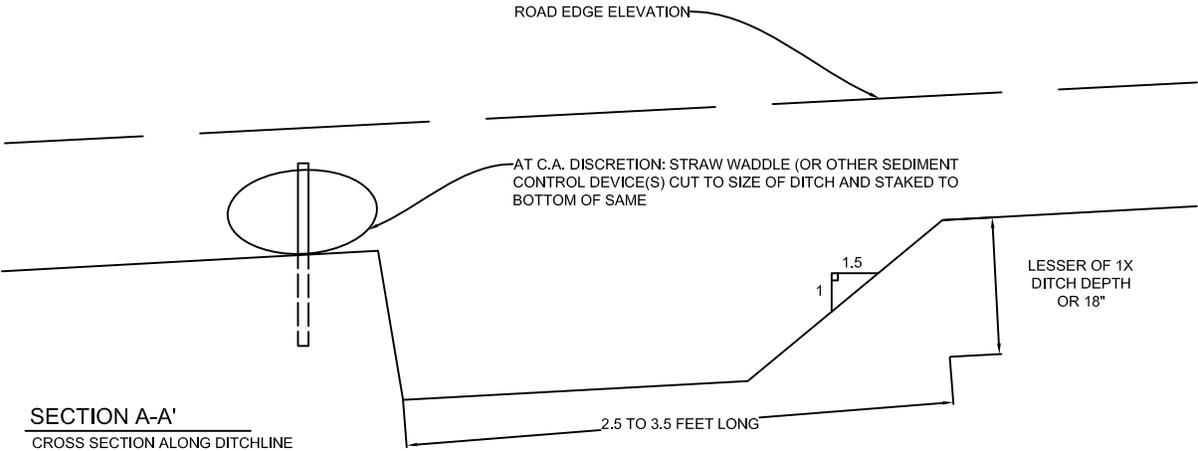
PROFILE VIEW

# SILT FENCE DETAIL



1. Silt fence shall be installed with Contract Administrator approval prior to haul.
2. Silt fence shall be installed with a minimum of 6' of cover starting at fabric/weldwire and tapering toward road centerline. Coverage of fabric shall be maintained.
3. Light Duty T-Posts shall be placed on the down slope side of the fabric/weldwire. If conditions exist that a taller silt fence is required, such as splash, longer T-Posts, wider fabric rolls and taller fence maybe necessary or other methods as approved by the Contract Administrator.
4. When a silt fence is continued from another run, the end T-Posts shall be connected together and not overlapped.
5. If runoff of silt laden water flows around the sides and additional fence may be used, realignment of the fence, removal of built up sediment and/or other BMP's such as ditch filters shall be used until controlled. Until under control haul shall be suspended.
6. FABRIC SPECS - min tensile strength: 120lbs, min puncture strength: 50lbs, min tear strength: 40lbs, min burst strength: 200lbs, min permittivity: 0.1 sec-1, UV resistance: 70%.

# SEDIMENT TRAP DETAIL

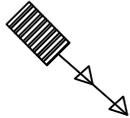
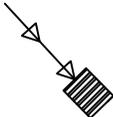


**NOTES:**

CONSTRUCT SEDIMENT TRAPS IN SETS GREATER THAN ONE, WHENEVER POSSIBLE.

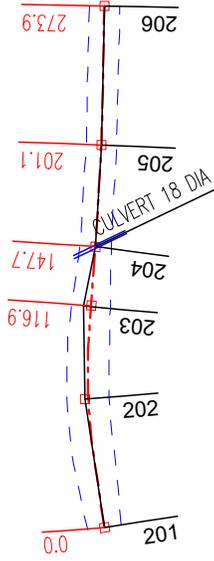
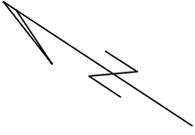
IF SEDIMENT TRAPS FILL WITH SEDIMENT DURING HAUL OPERATIONS, REMOVING SEDIMENT FROM TRAPS IS CONSIDERED ROUTINE MAINTENANCE.

ADDITIONAL SEDIMENT CONTROL DEVICES, SUCH AS HAY BALES, STRAW WADDLES OR OTHERS MAY BE REQUIRED AS SHOWN IF IN THE OPINION OF THE CONTRACT ADMINISTRATOR, SEDIMENT TRAP ALONE DOES NOT APPEAR TO BE EFFECTIVE.



<b>SEDIMENT TRAP DETAIL</b>	
	WASHINGTON STATE DEPARTMENT OF <b>NATURAL RESOURCES</b>

Date: 09/16/2014  
 Scale : NTS  
 App#  
 Drawn by: WPH  
 Sheet 1 of 1



12/02/2019

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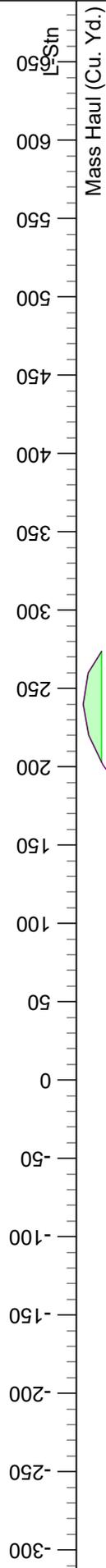
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Chameleon Timber Sale  
 C-7010.3  
 Contract#: 30-097290

Washington State Department of Natural Resources  
 South Puget Sound Region

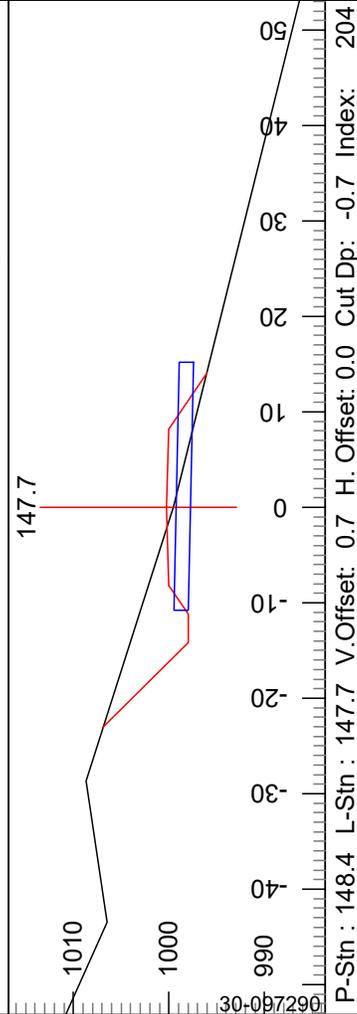
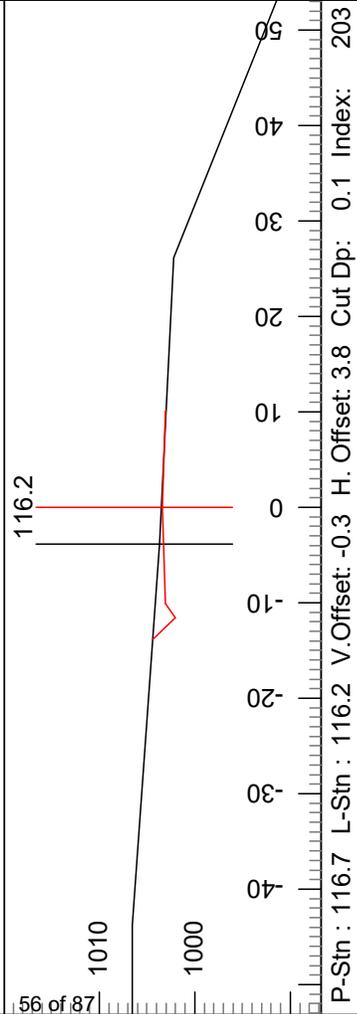
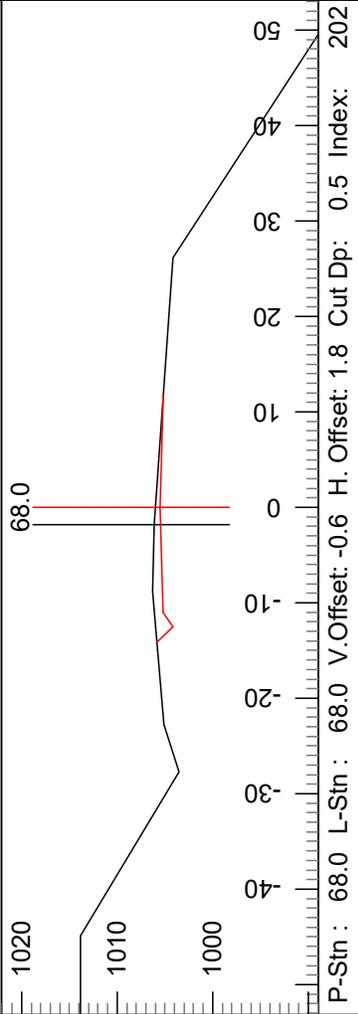
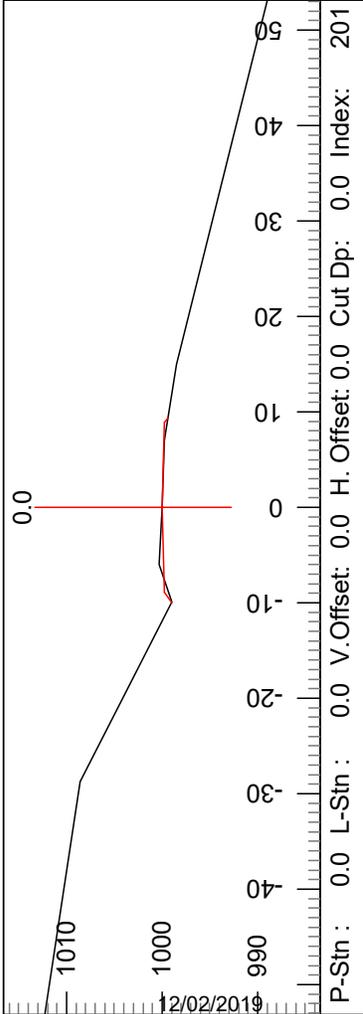
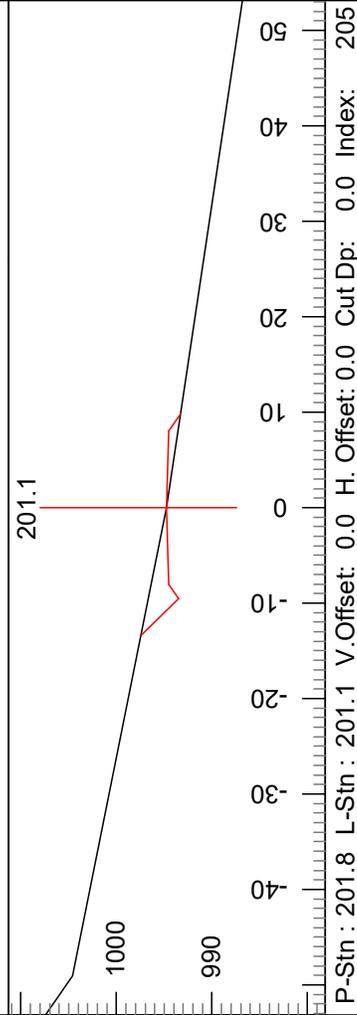
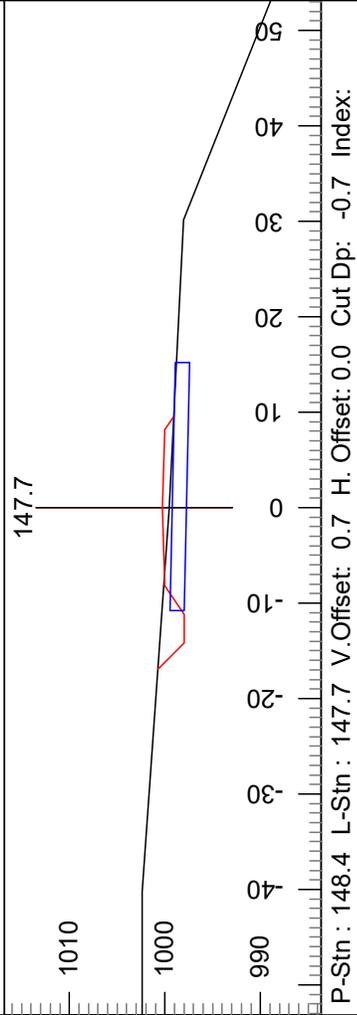
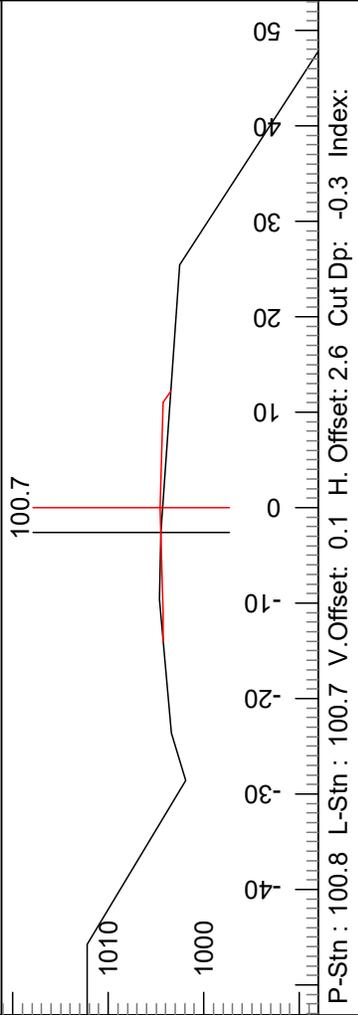
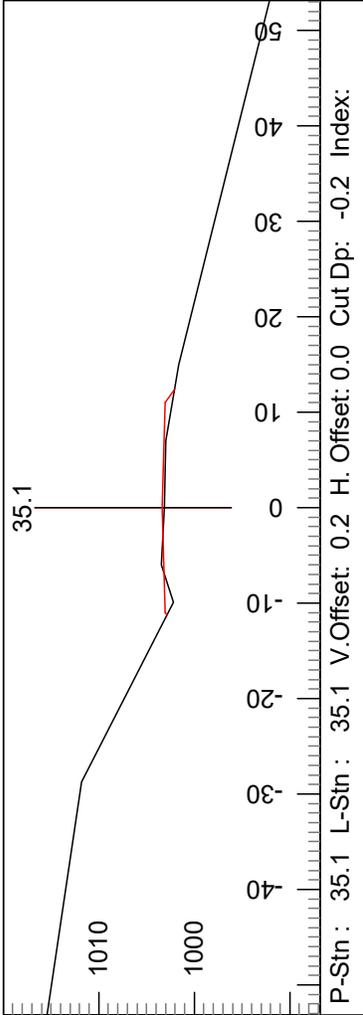


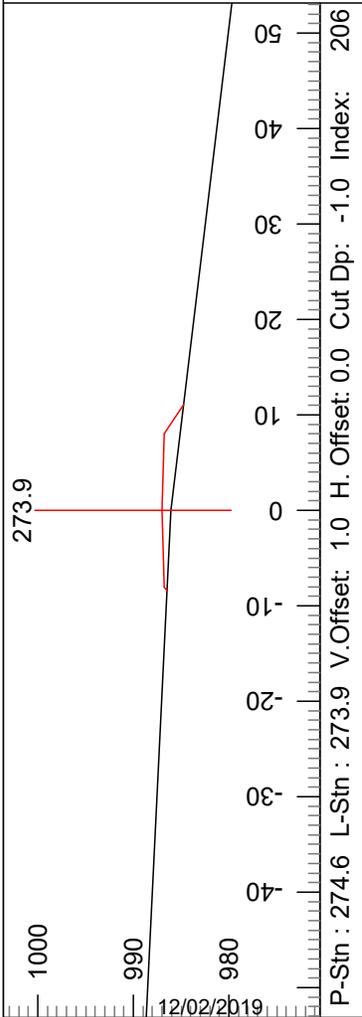
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Engineer: C. Vandehey

19/02/13

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C-7010.3  
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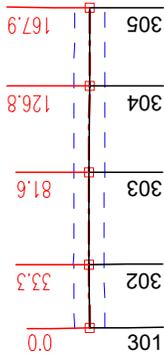
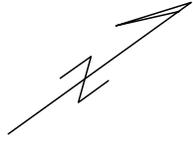
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South Puget Sound Region



Section Scale 1:240

Engineer: C. Vandehey

19/02/13



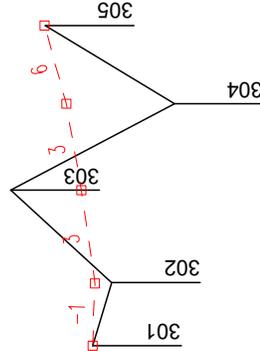
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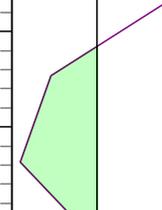
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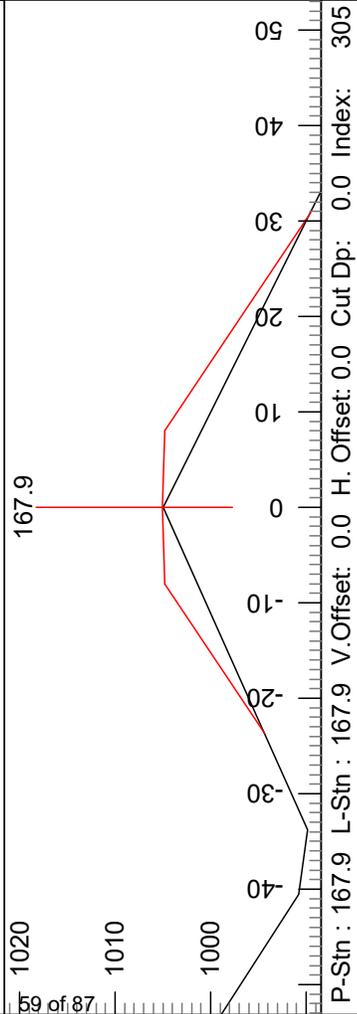
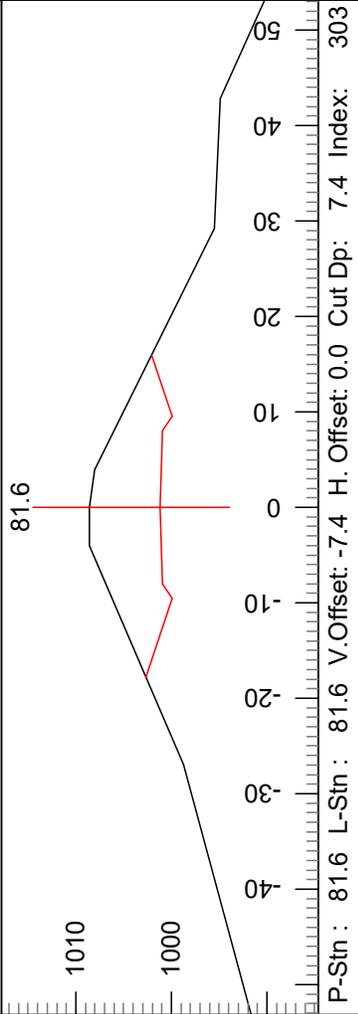
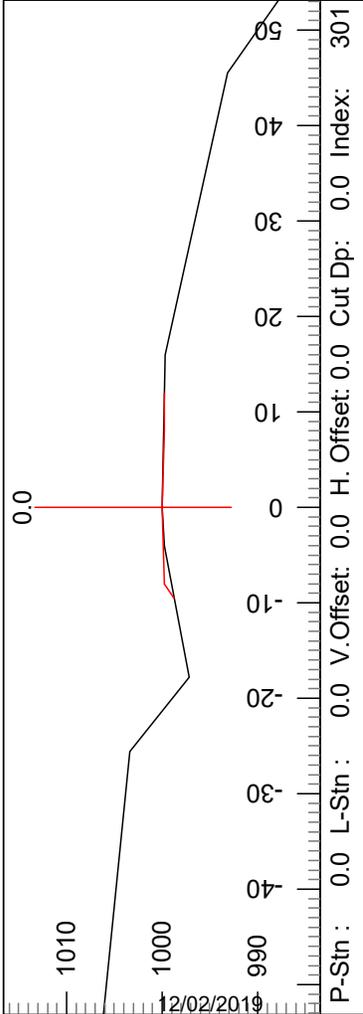
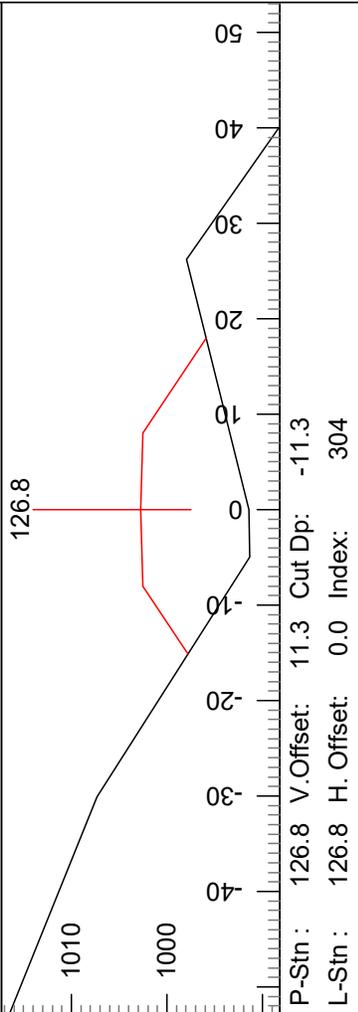
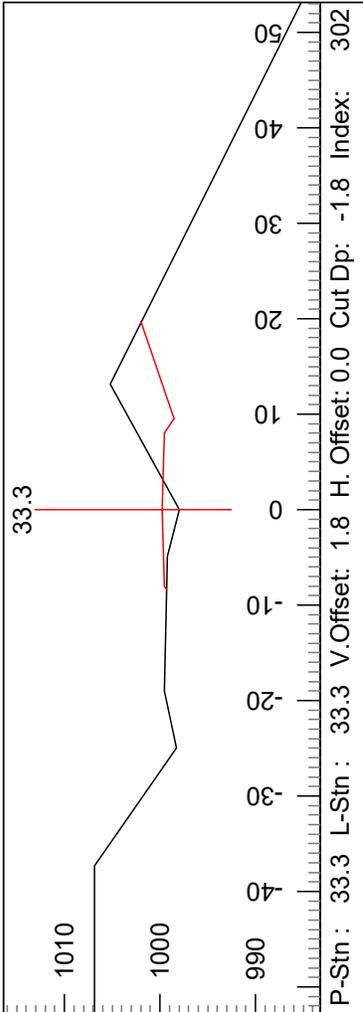
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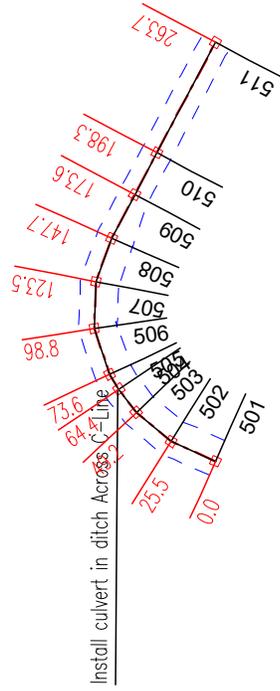
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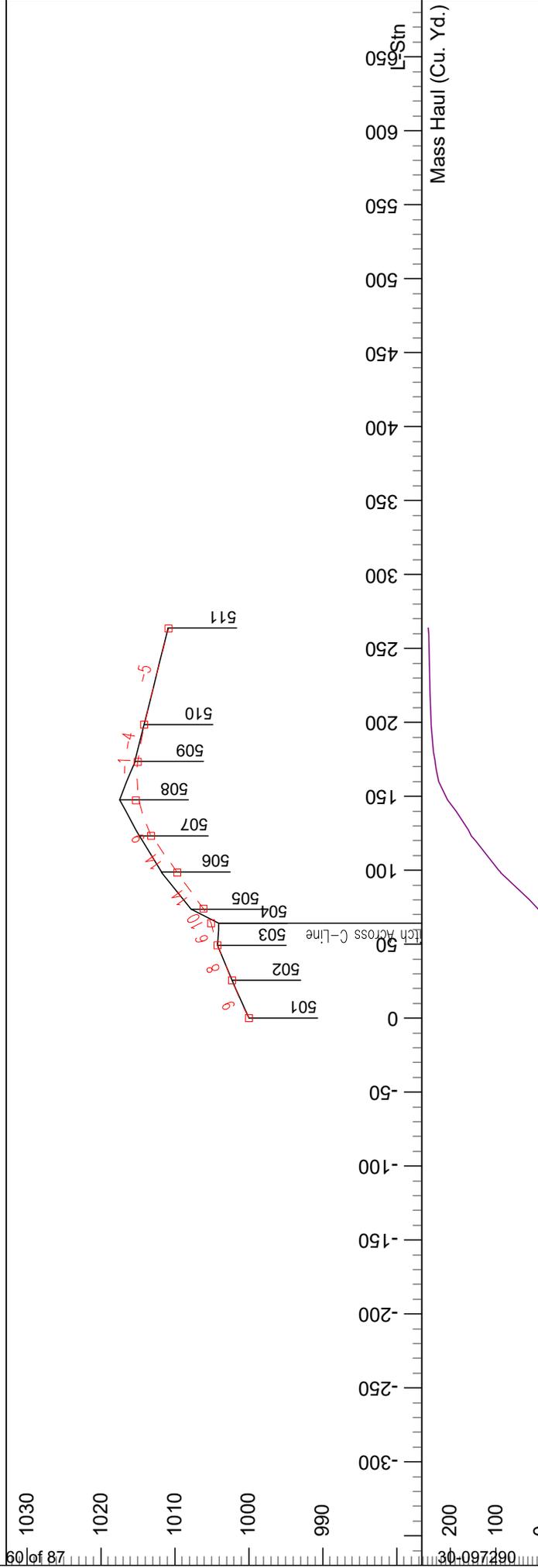






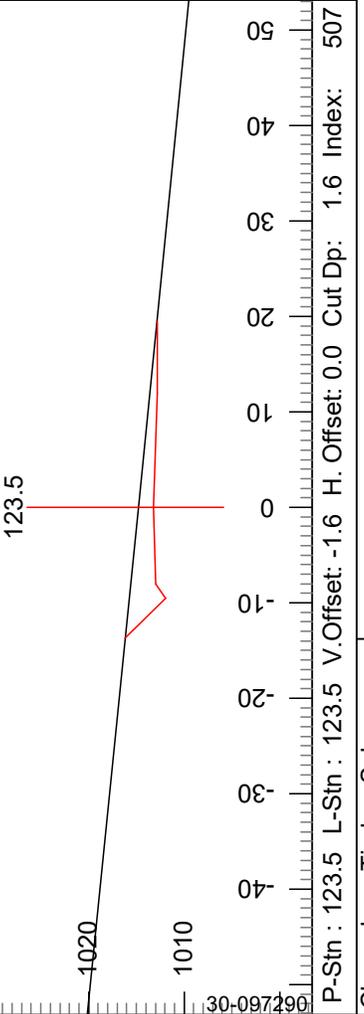
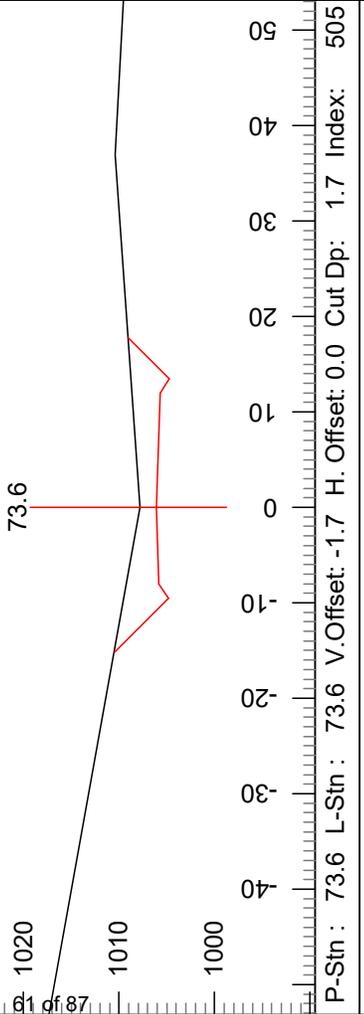
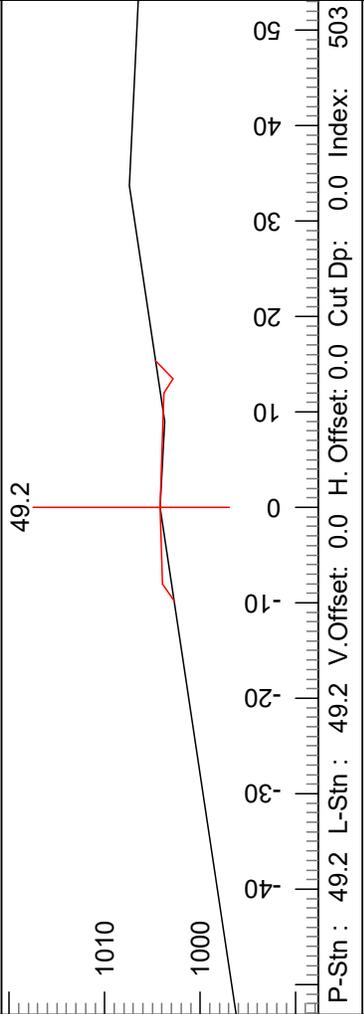
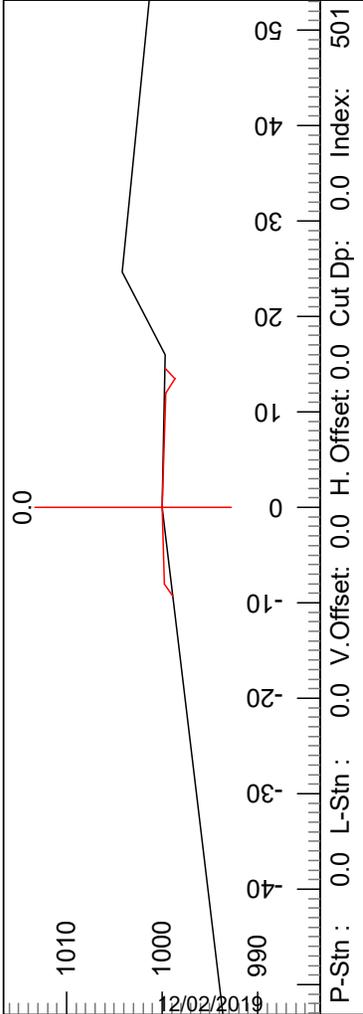
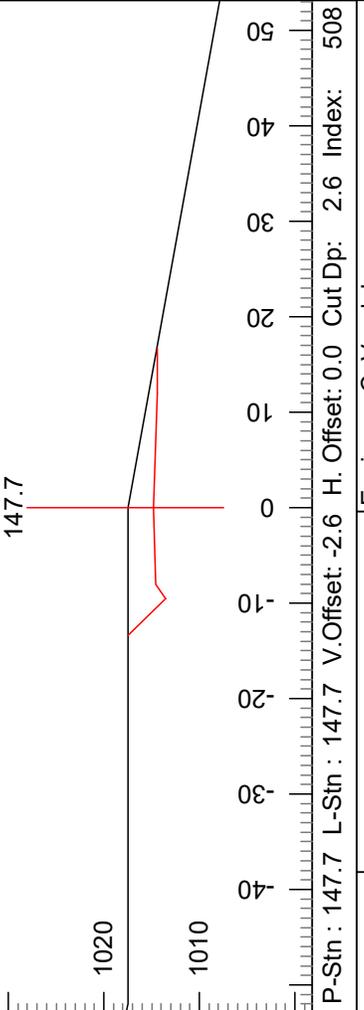
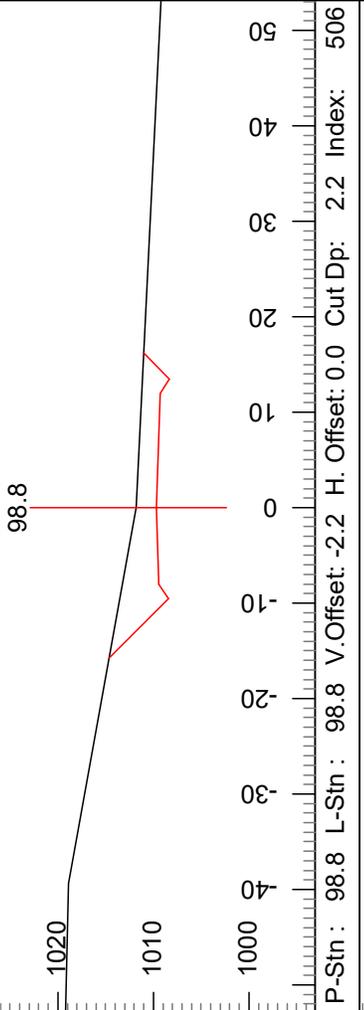
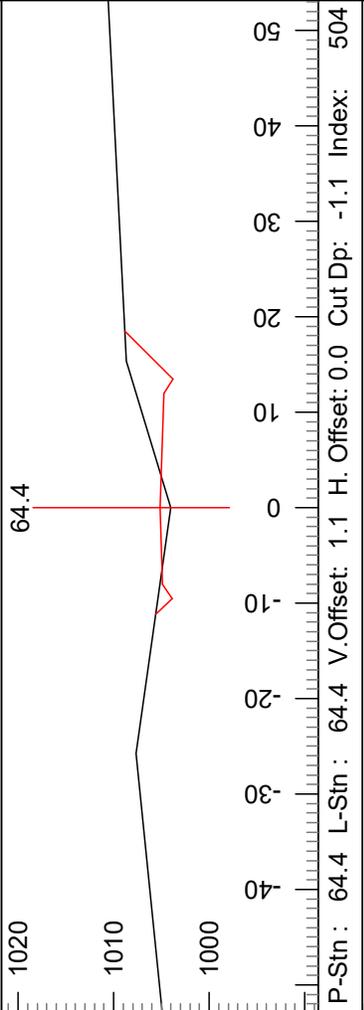
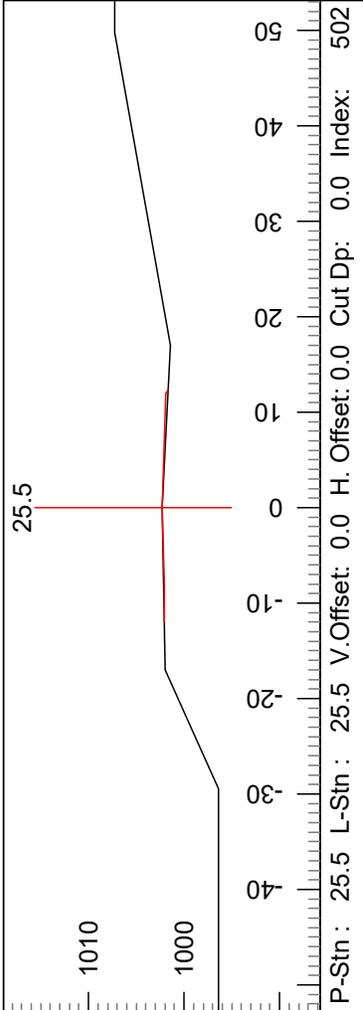
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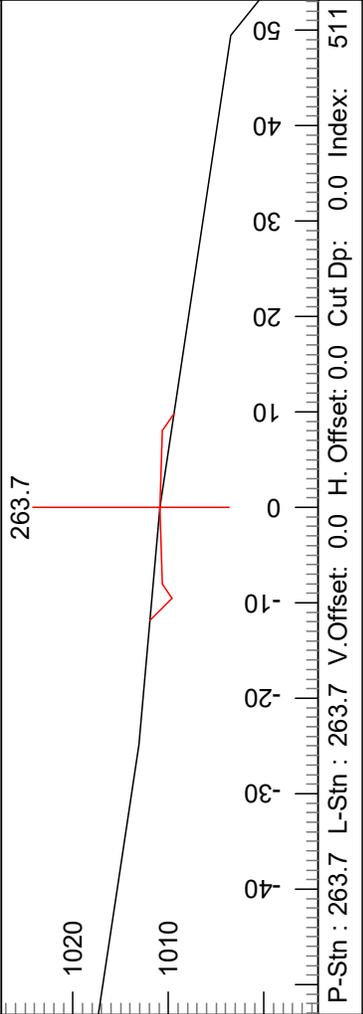
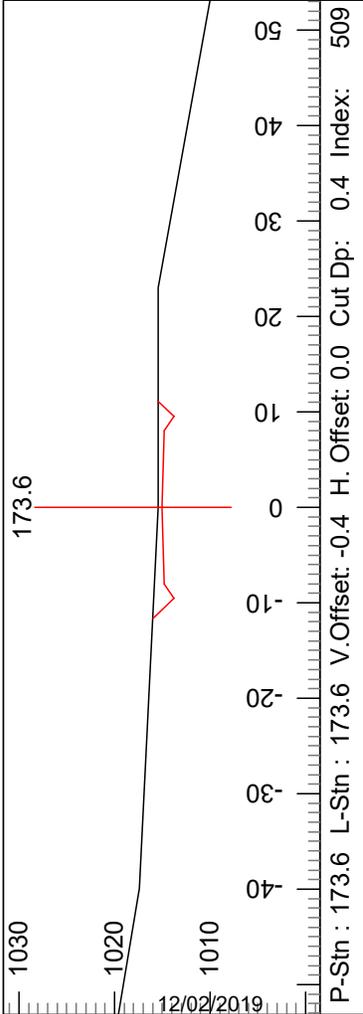
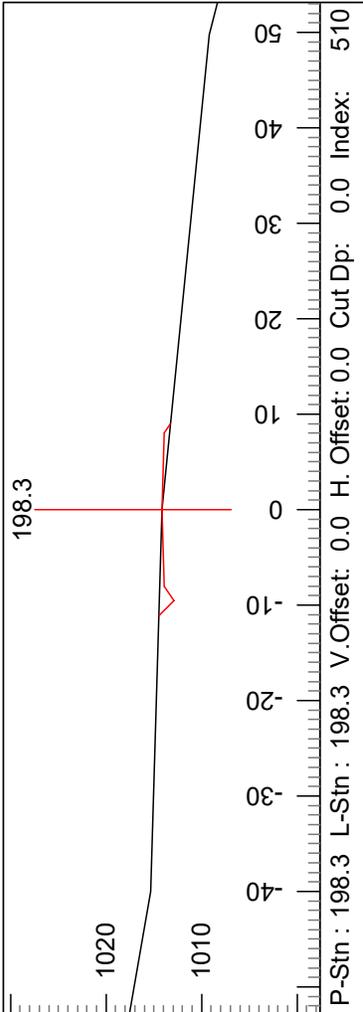
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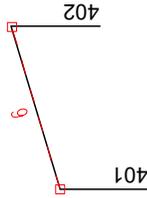
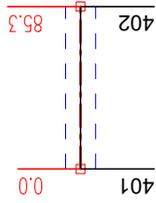


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Chameleon Timber Sale C-7010 Tie Contract#: 30-097290	Washington State Department of Natural Resources South Puget Sound Region		Plan Scale 1:1200 Profile Vert Scale 1:240 Profile Horz Scale 1:1200	Engineer: C. Vandehey 19/02/13	Page 1 of 3
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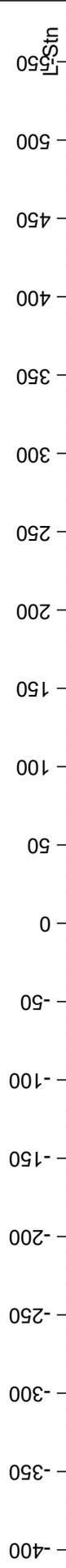




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Chameleon Timber Sale  
D-4098  
Contract#: 30-097290

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Plan Scale 1:1200

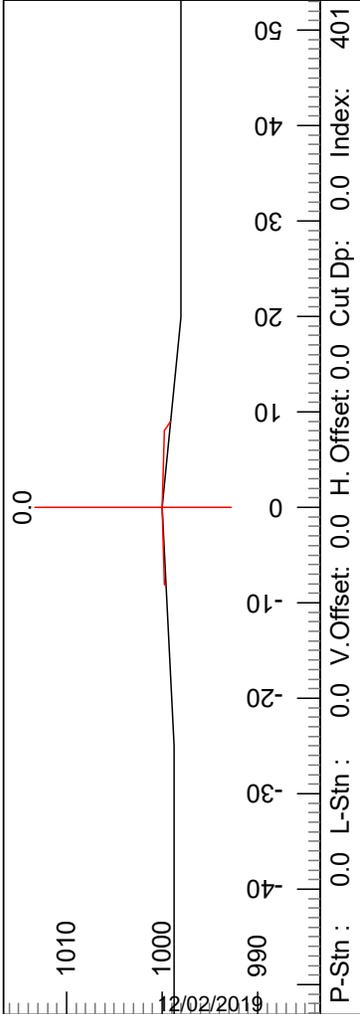
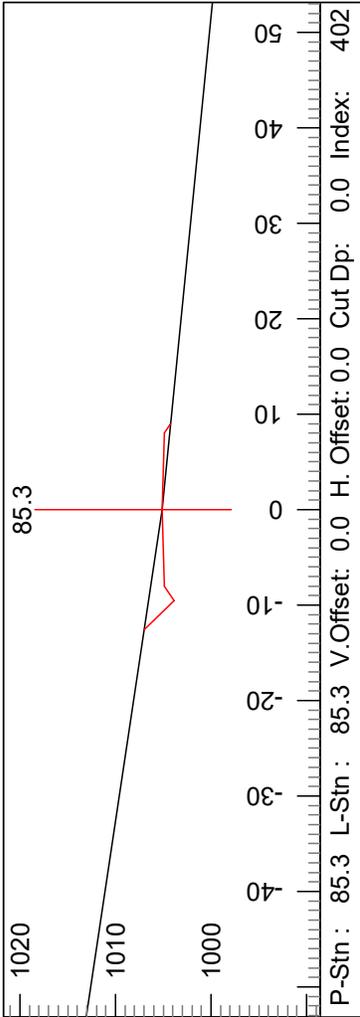
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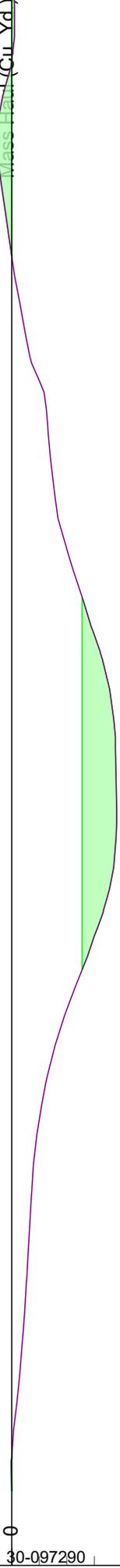
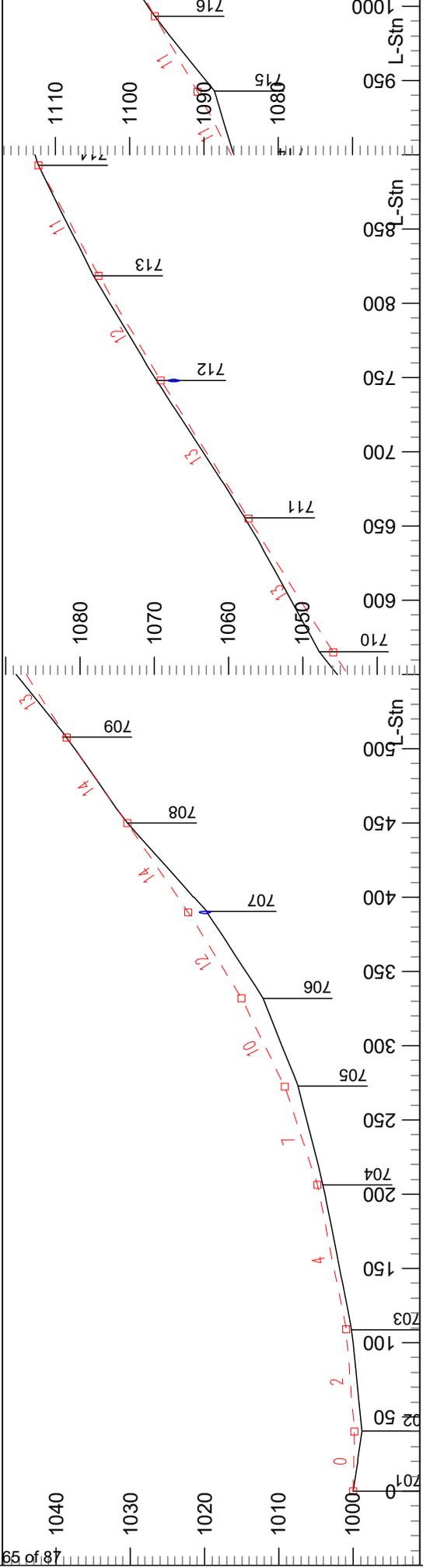
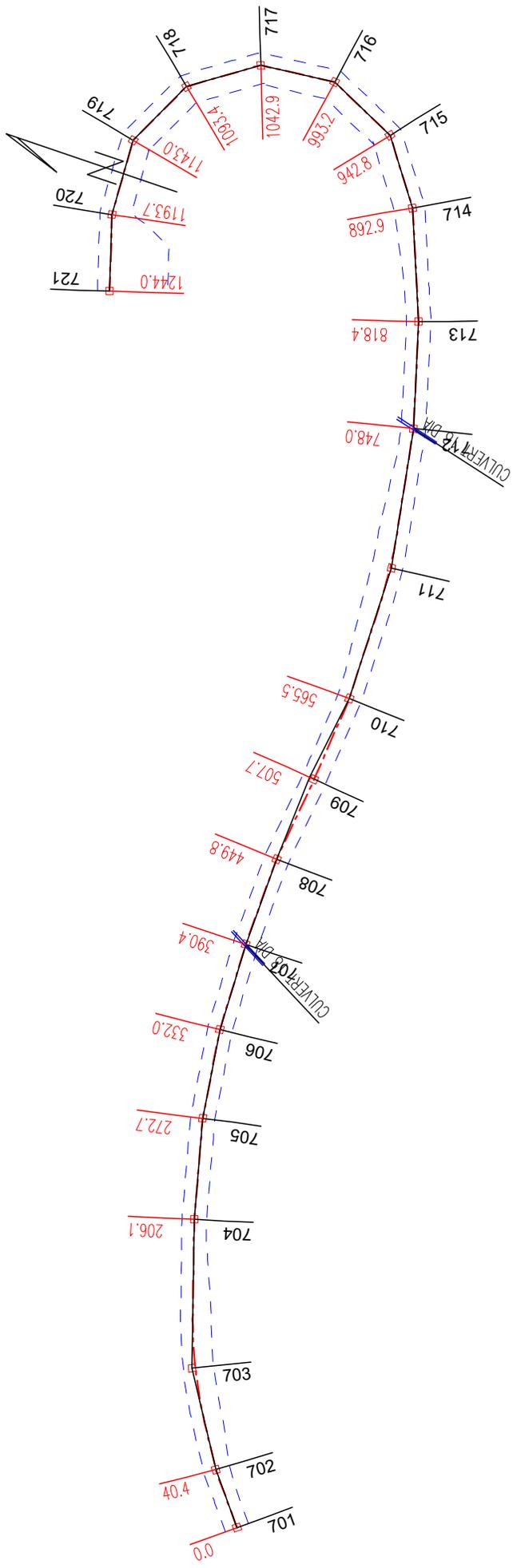
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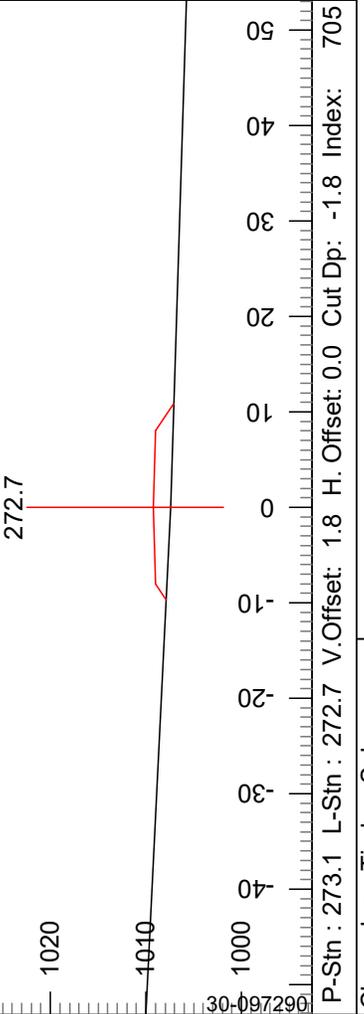
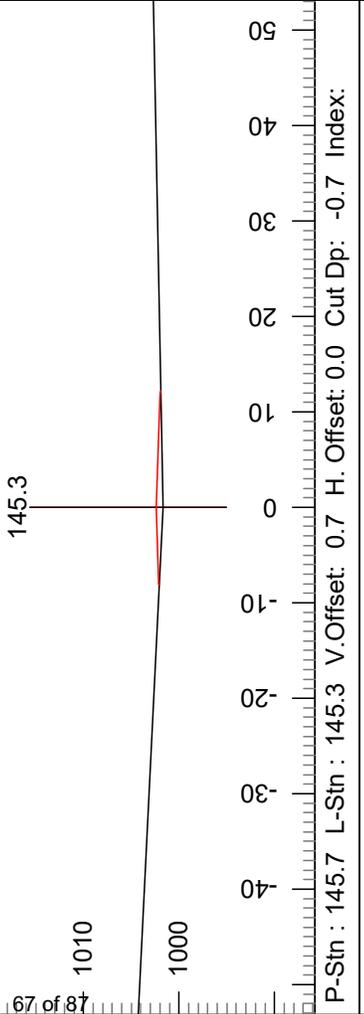
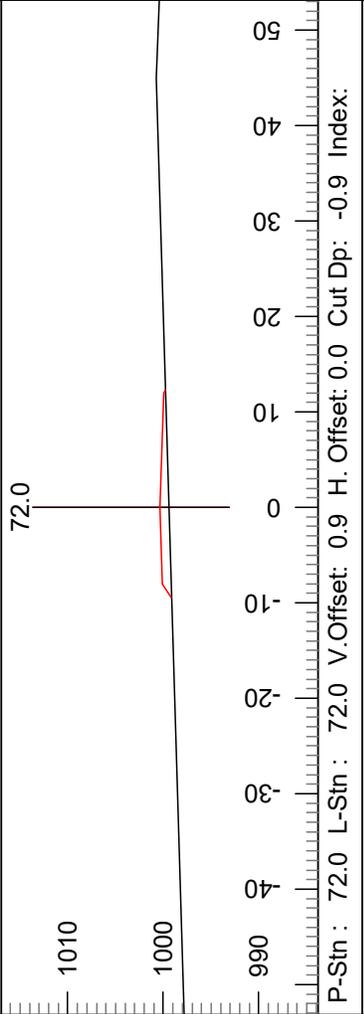
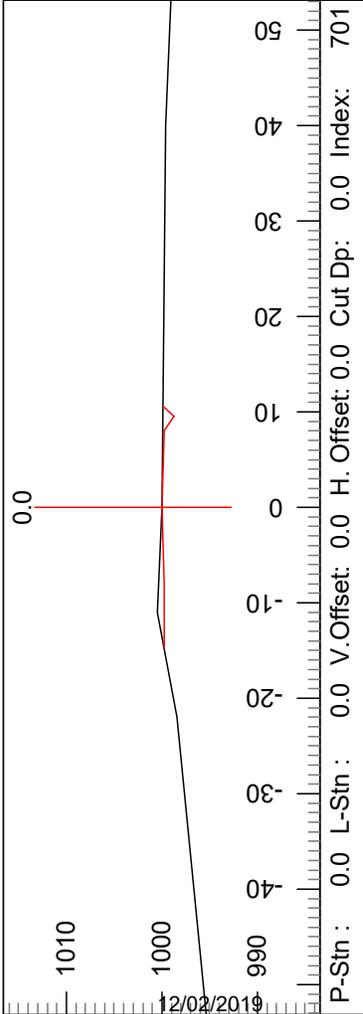
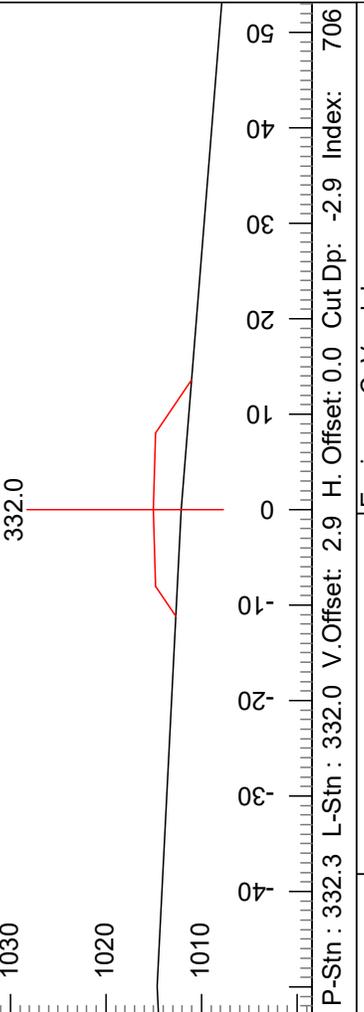
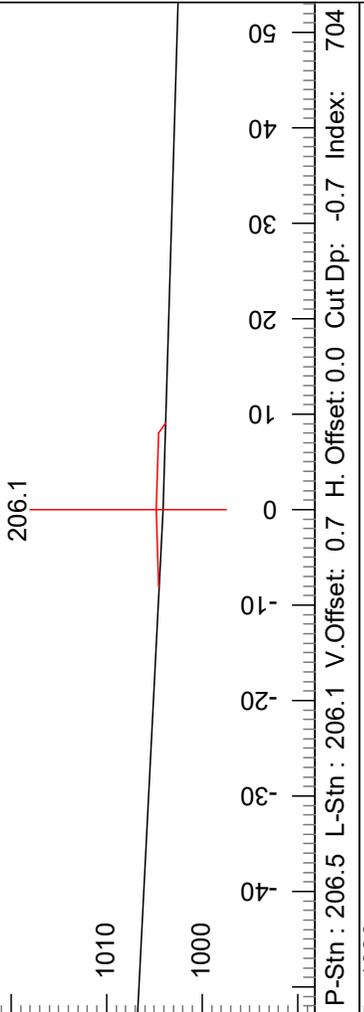
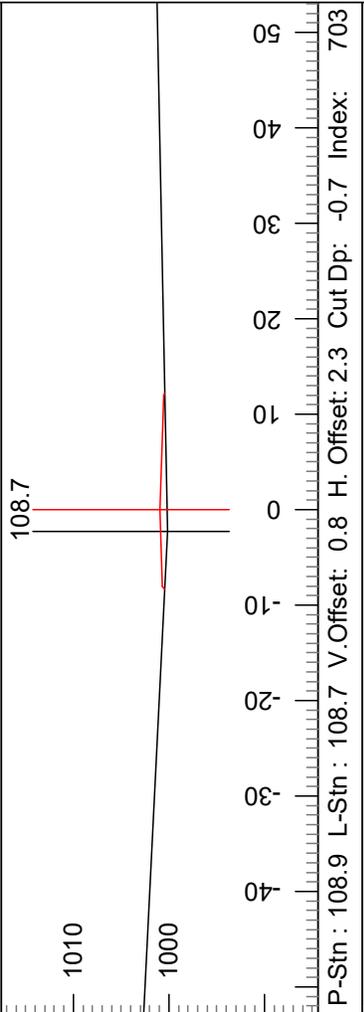
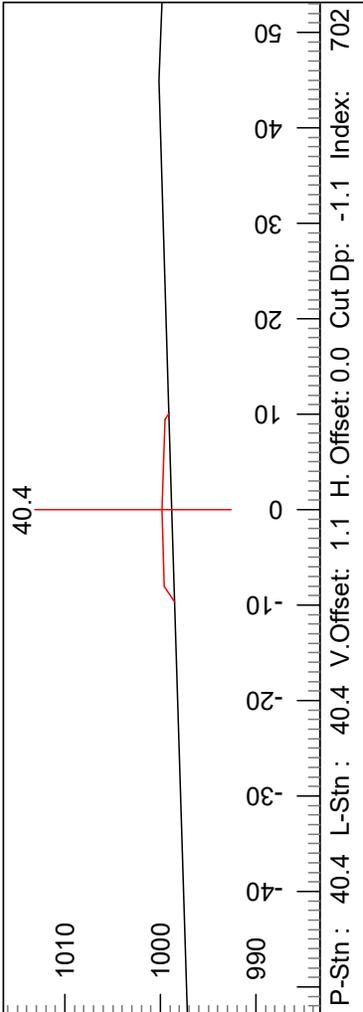
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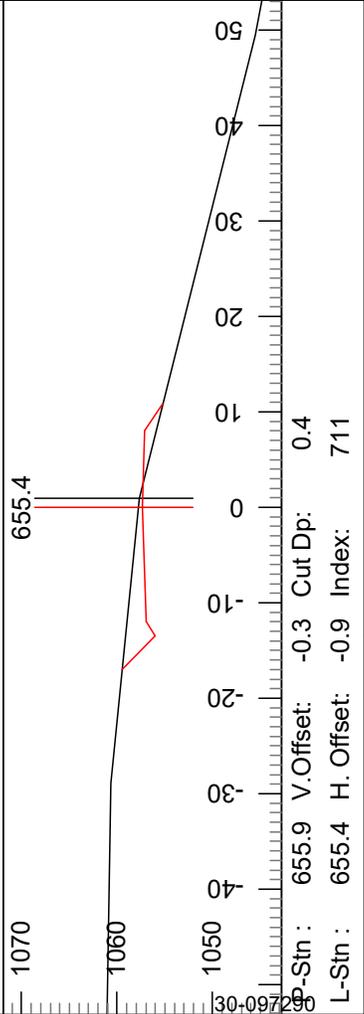
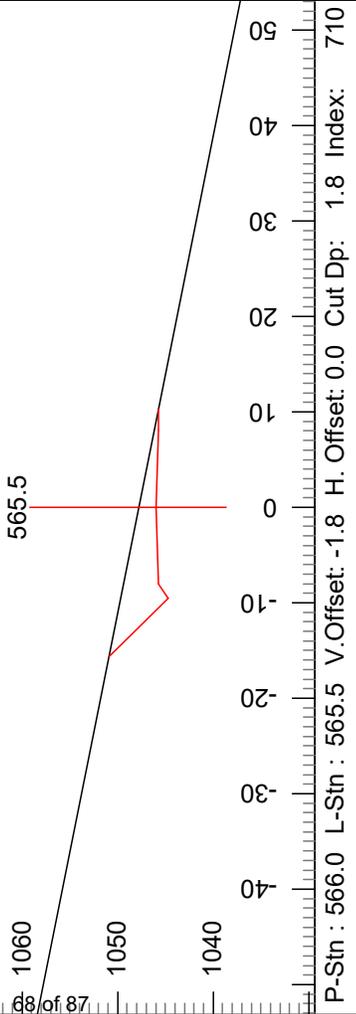
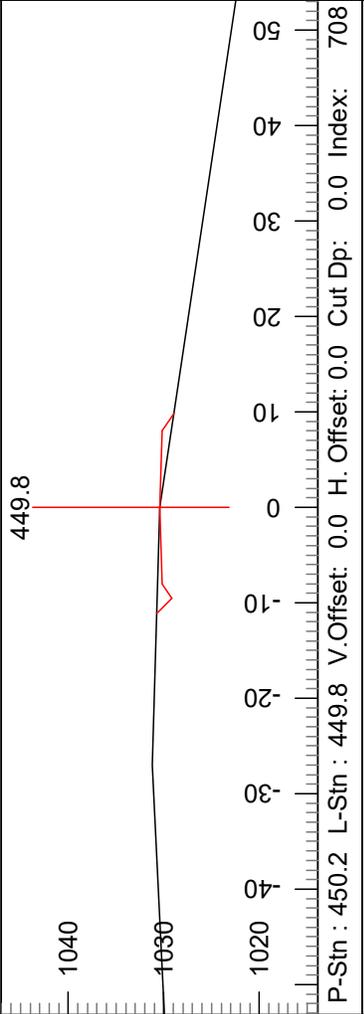
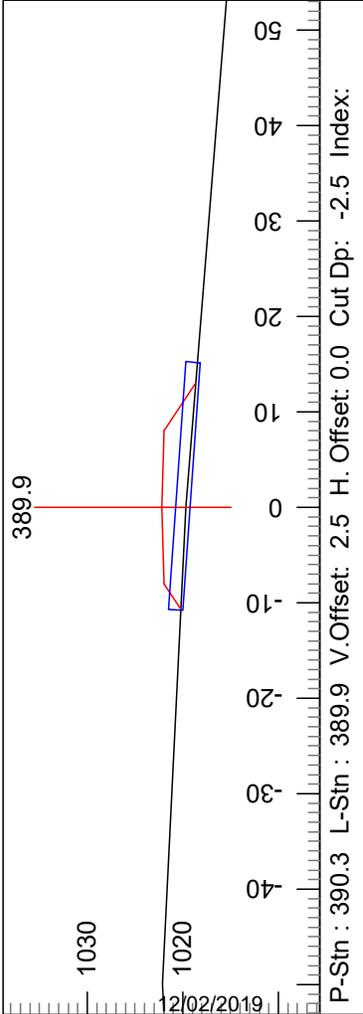
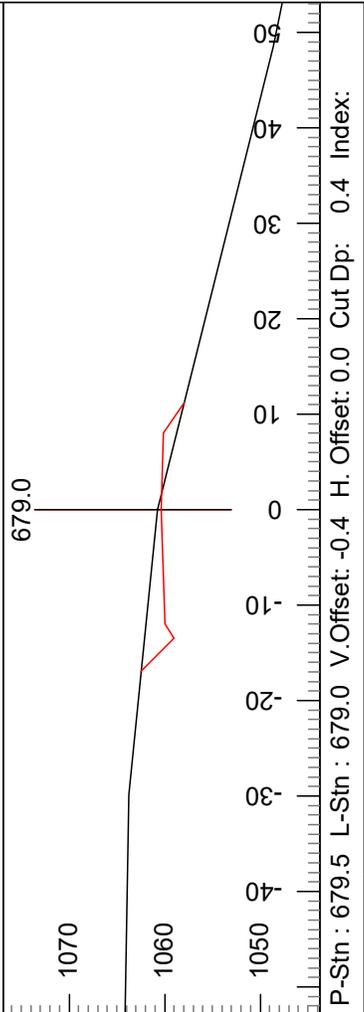
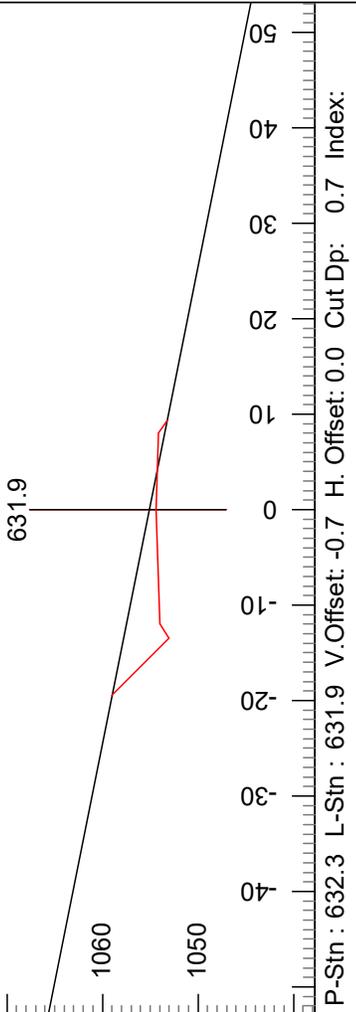
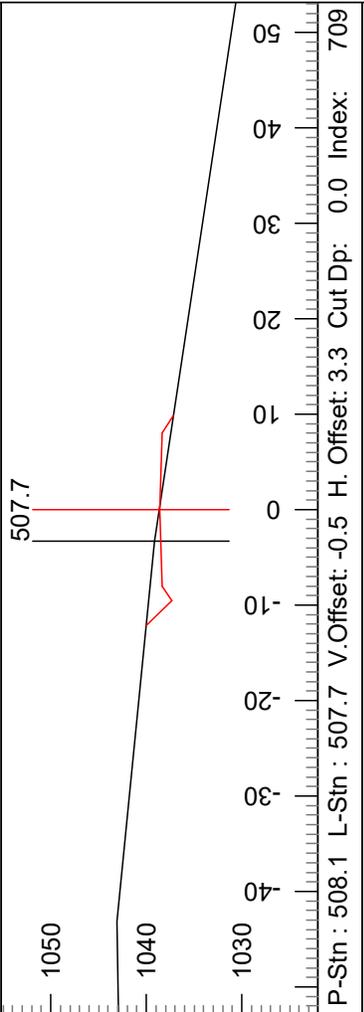
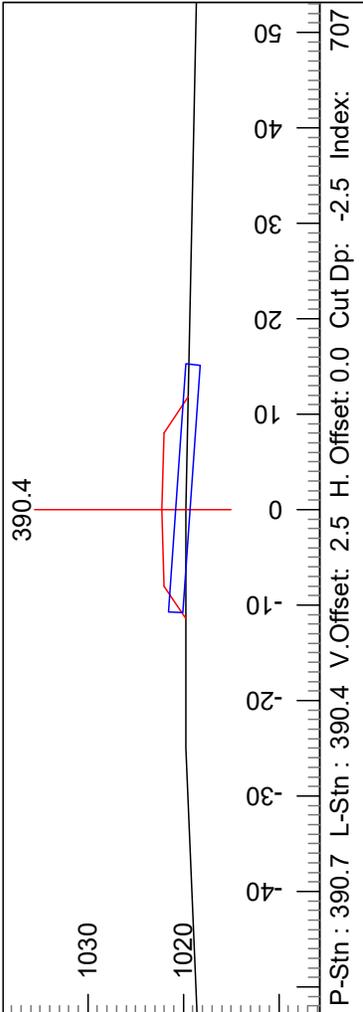
Engineer: C. Vandehey

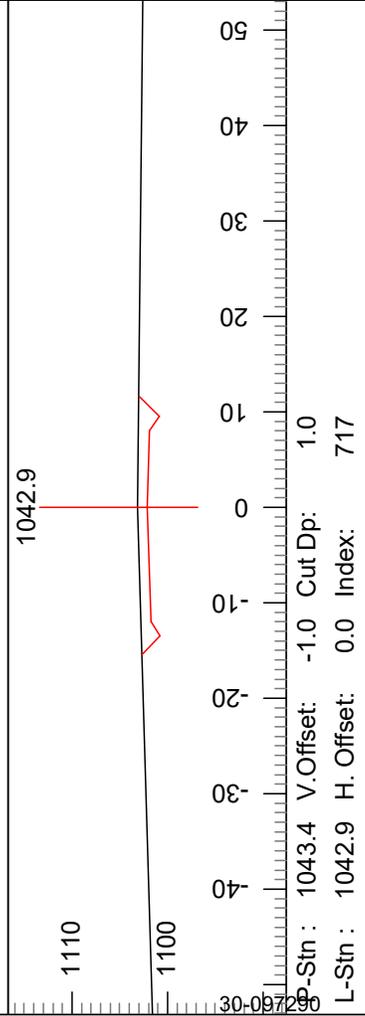
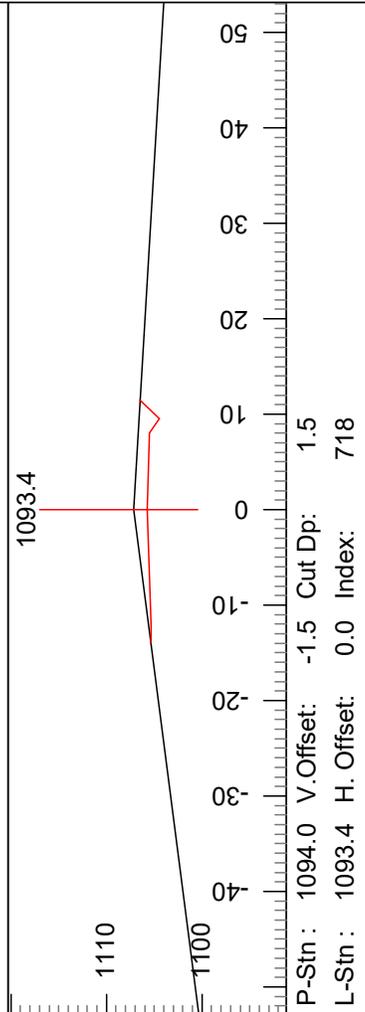
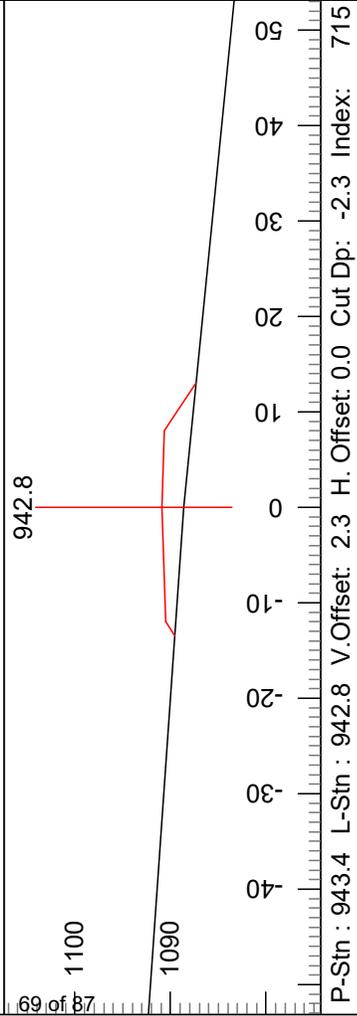
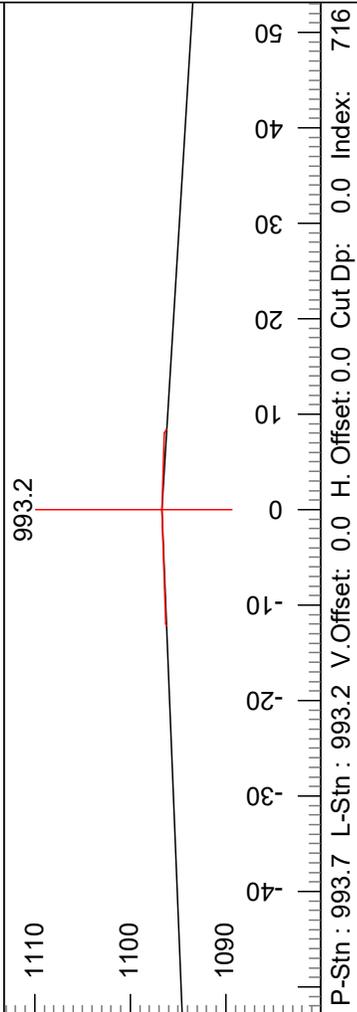
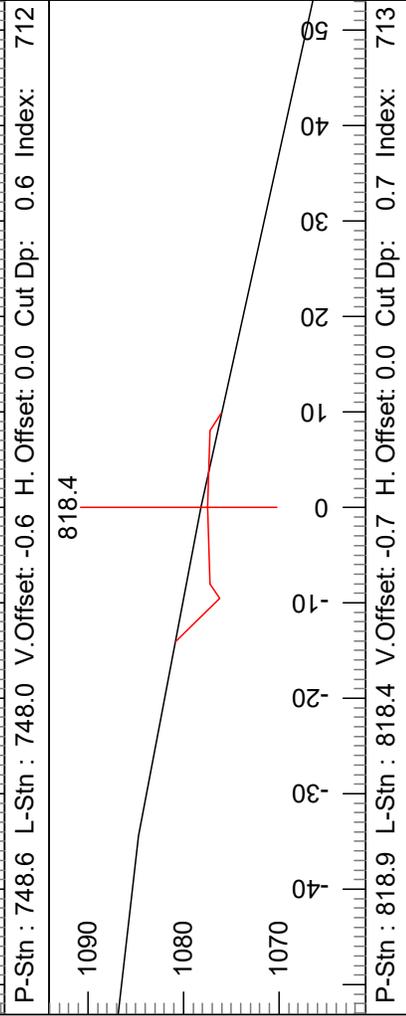
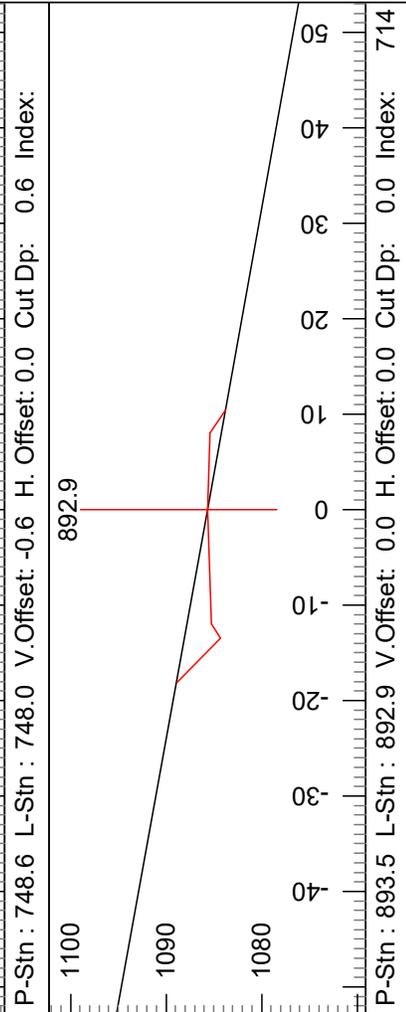
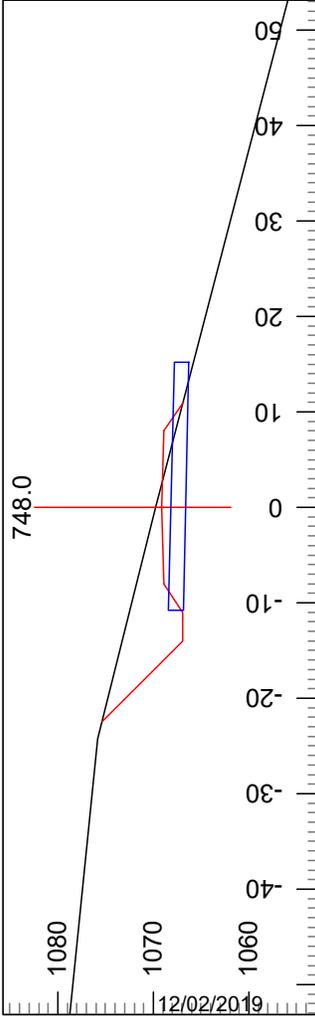
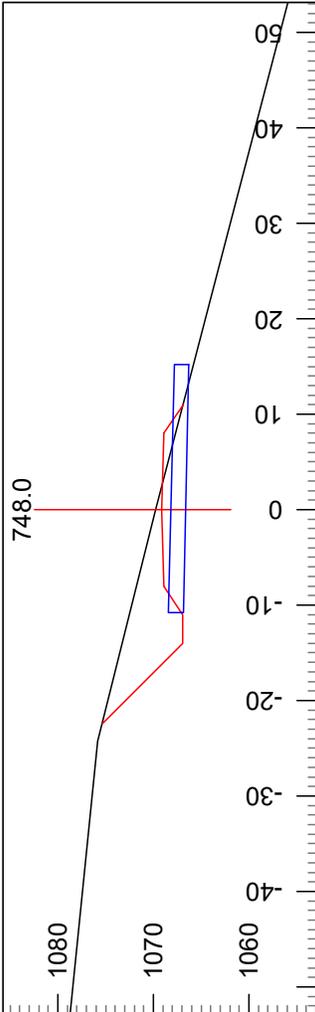
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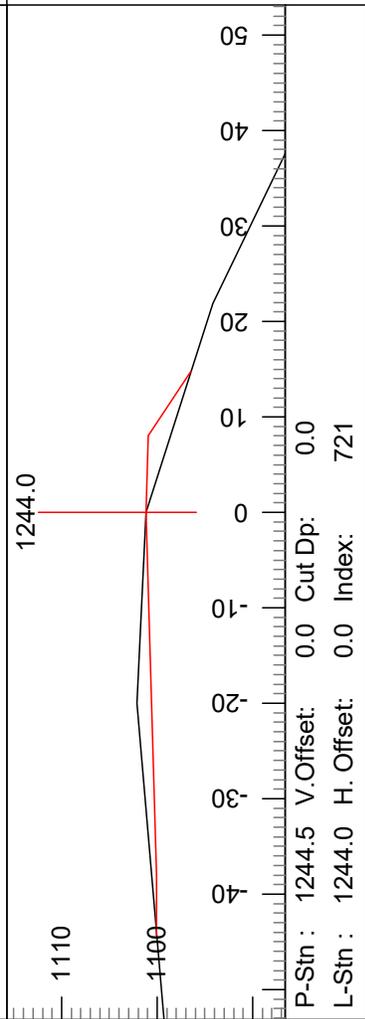
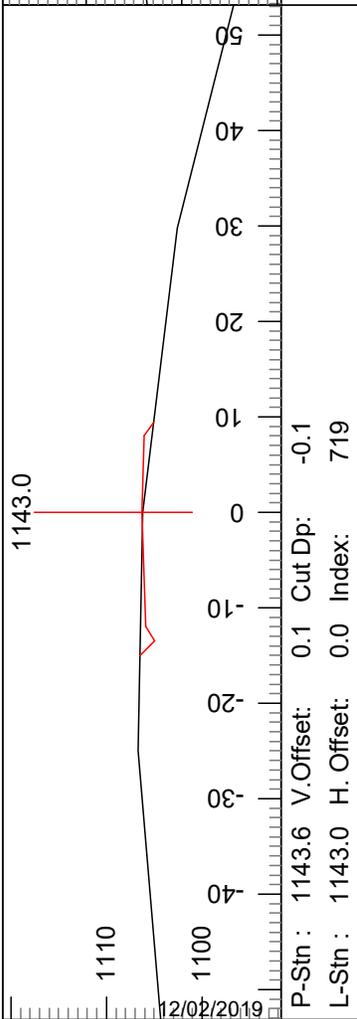
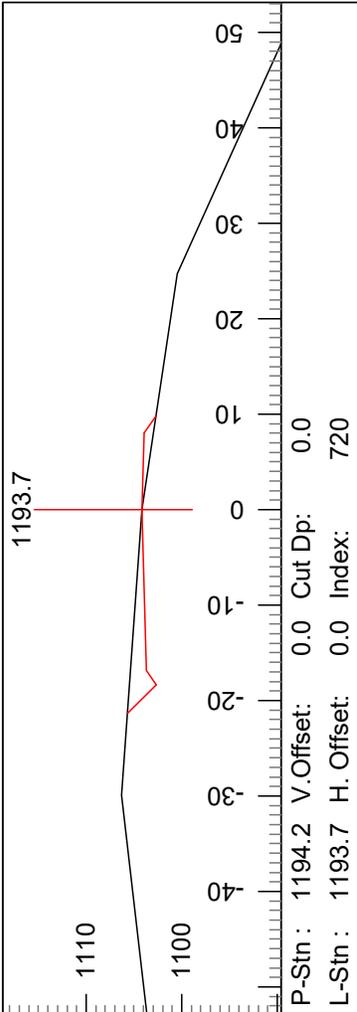


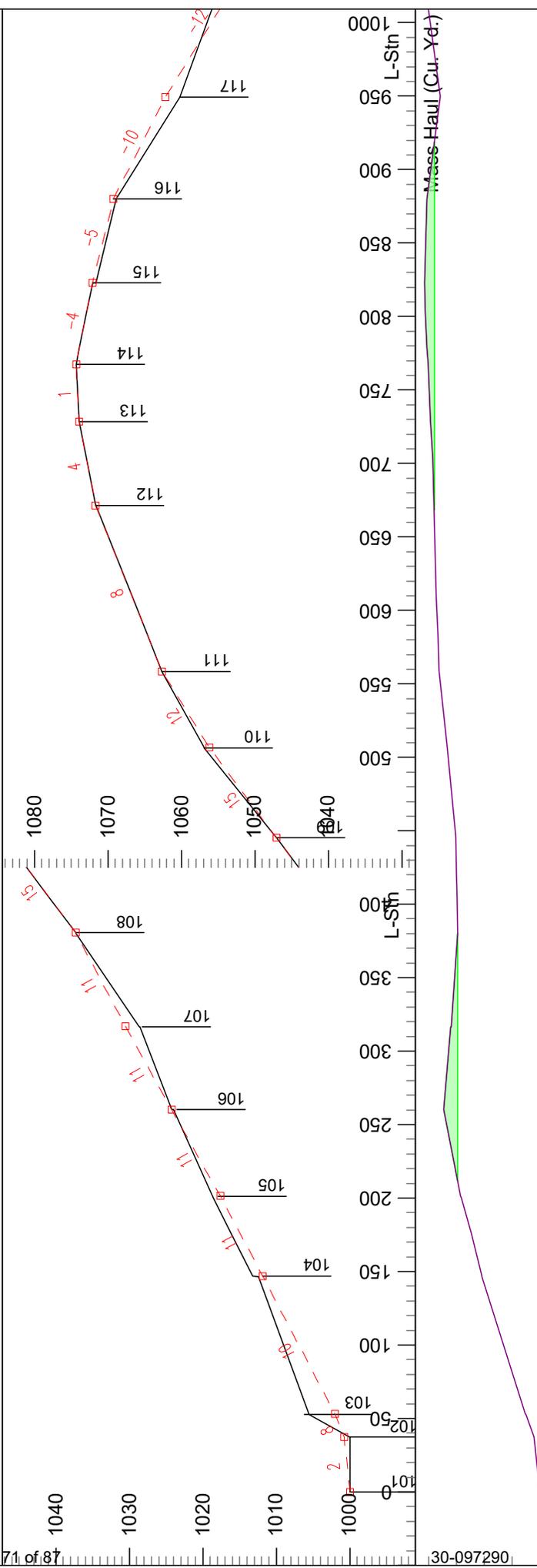
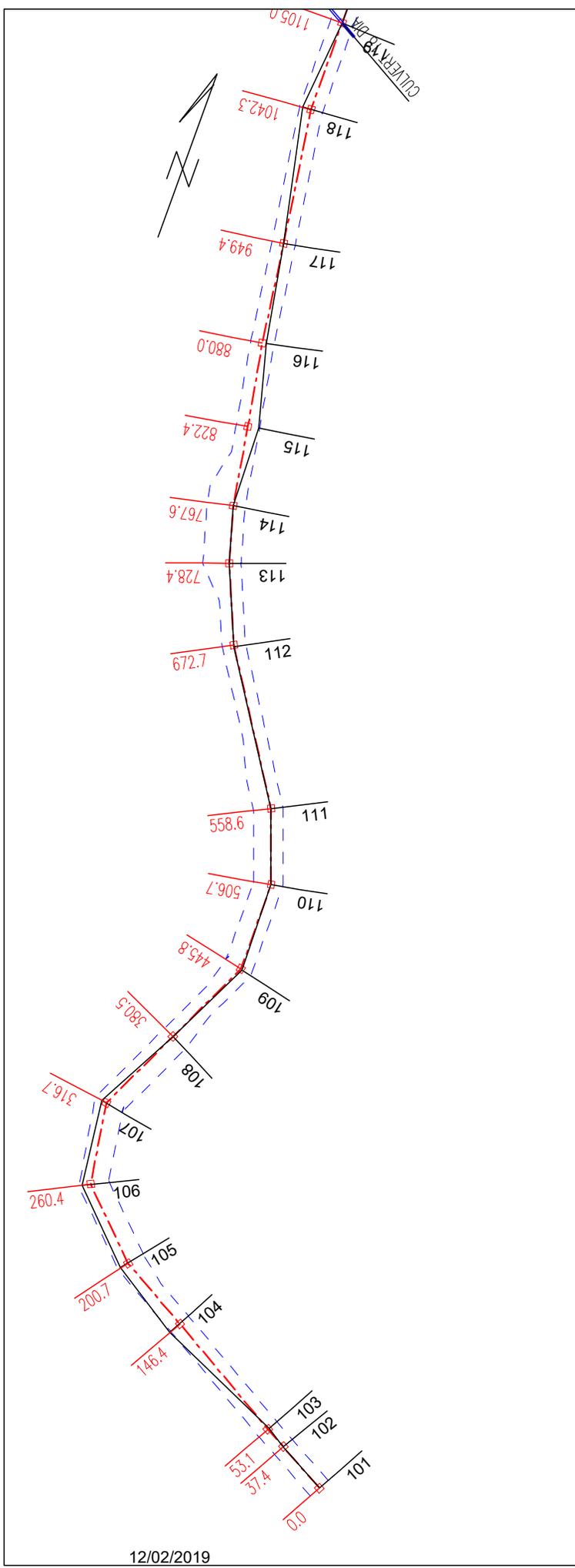




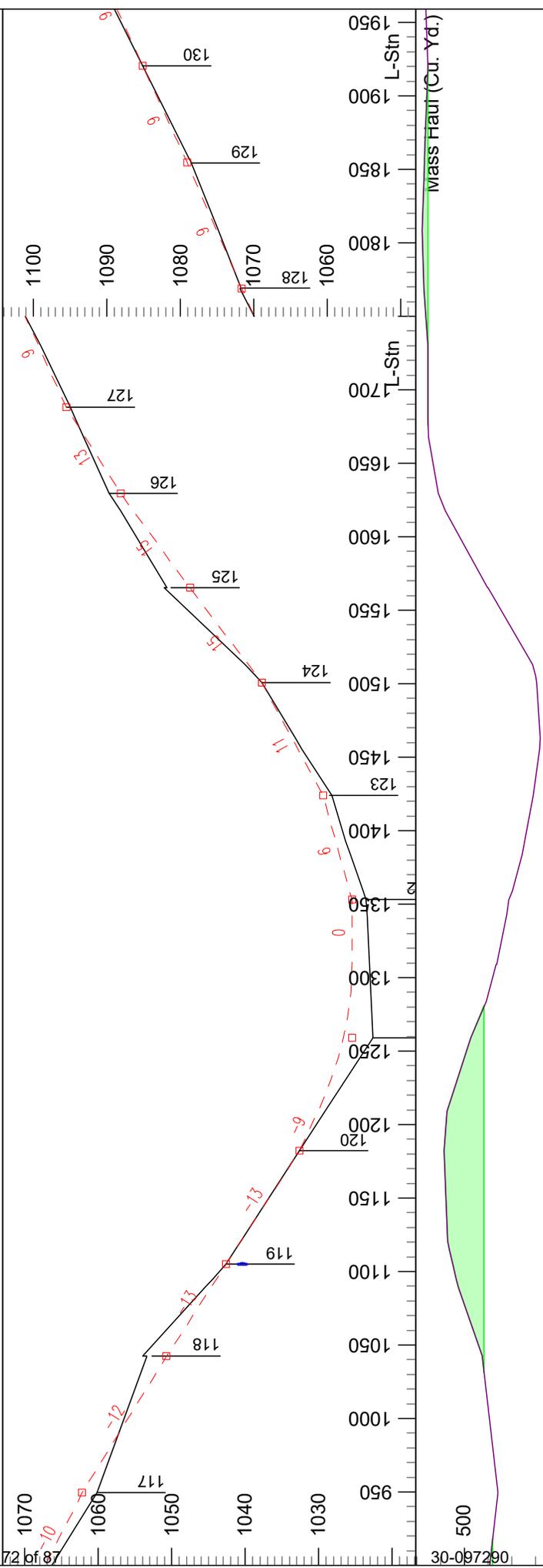
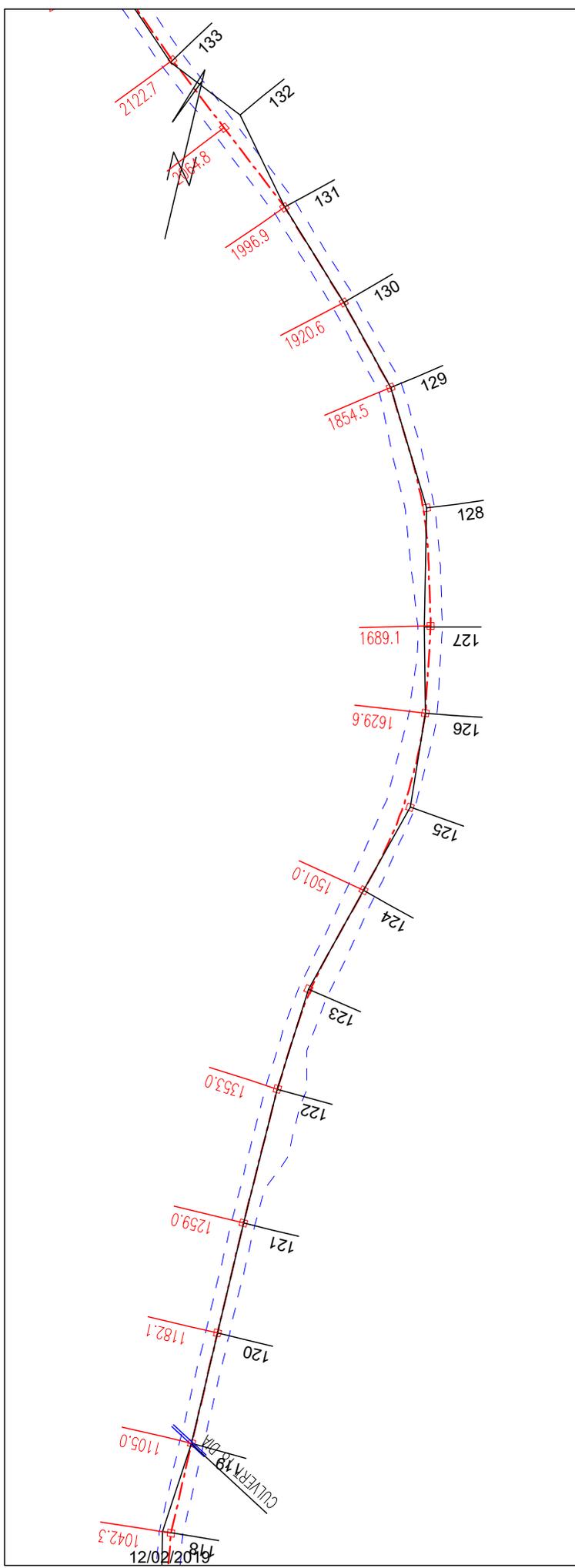


		Engineer: C. Vandehey 19/02/13	
Chameleon Timber Sale D-4951 Contract#: 30-097290		Section Scale 1:240	
Washington State Department of Natural Resources South Puget Sound Region		Page 5 of 6	

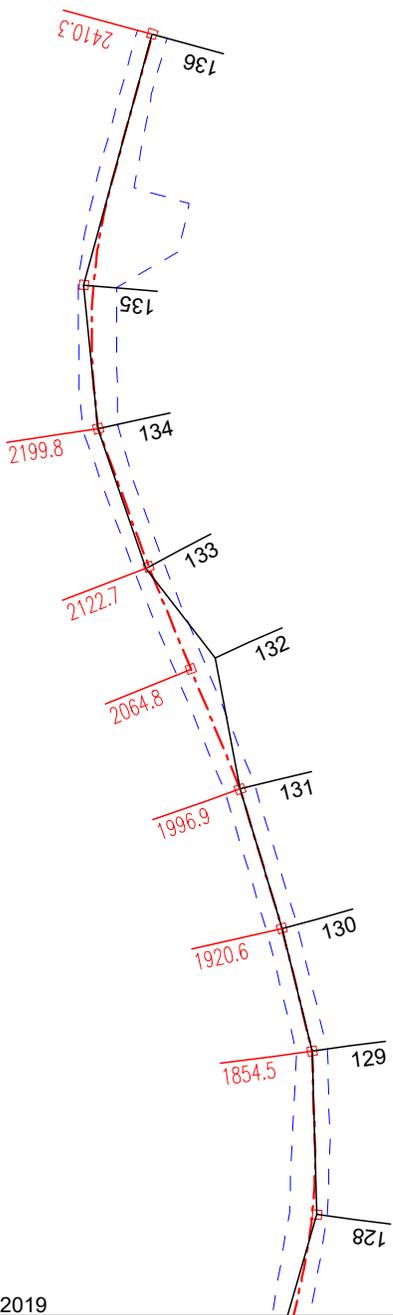




Chameleon Timber Sale E-9625 Contract#: 30-097290	 Washington State Department of Natural Resources South Puget Sound Region	Plan Scale 1:1200 Profile Vert Scale 1:240 Profile Horz Scale 1:1200	Engineer: C. Vandehey 19/02/13	Page 1 of 9
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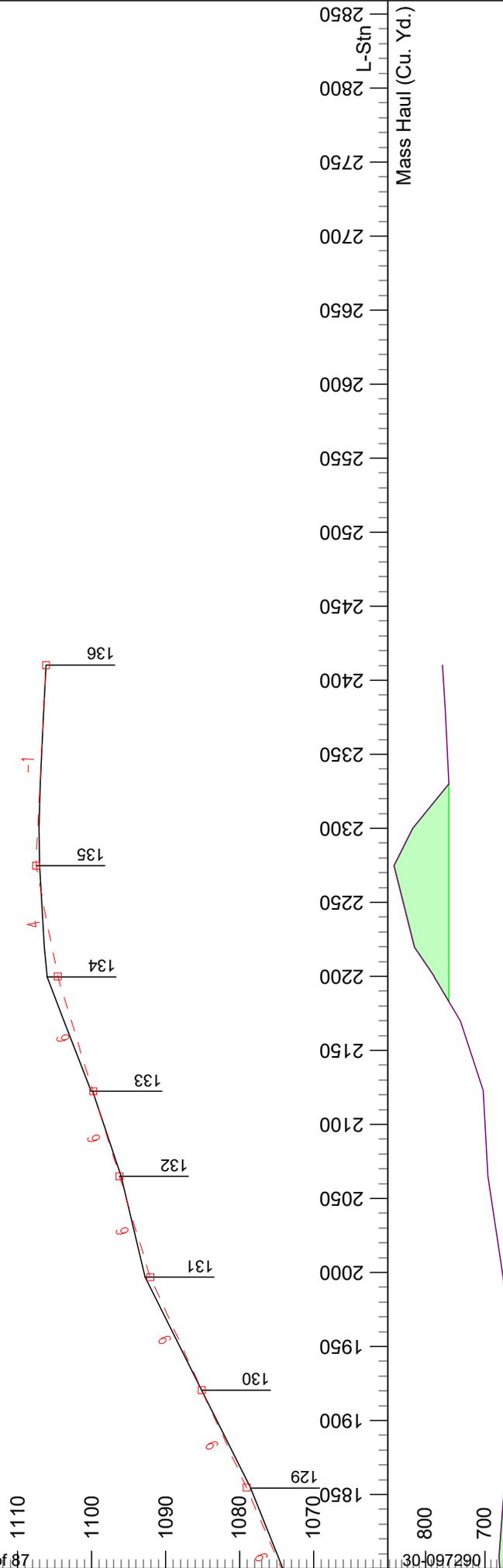


Chameleon Timber Sale E-9625 Contract#: 30-097290	 Washington State Department of Natural Resources South Puget Sound Region	Plan Scale 1:1200 Profile Vert Scale 1:240 Profile Horz Scale 1:1200	Engineer: C. Vandehey 19/02/13	Page 2 of 9

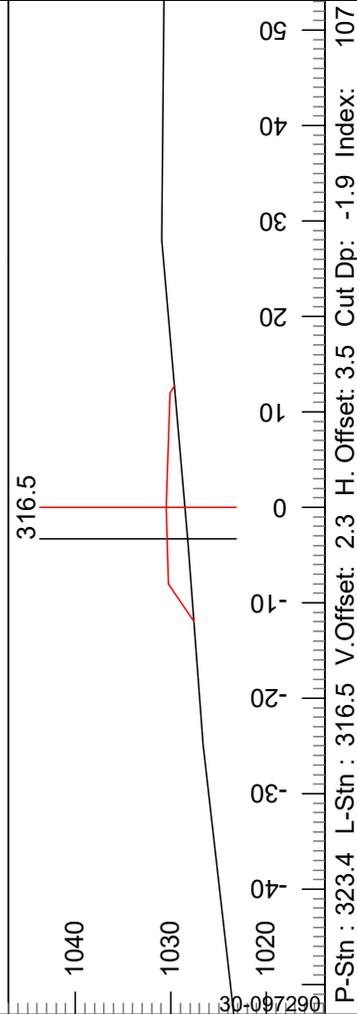
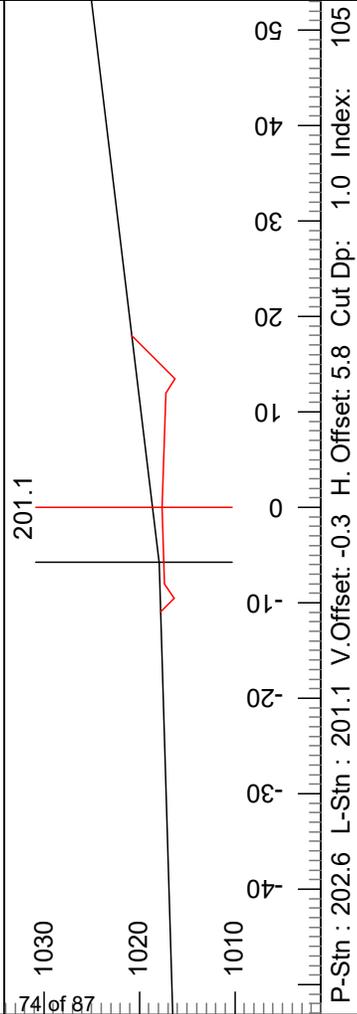
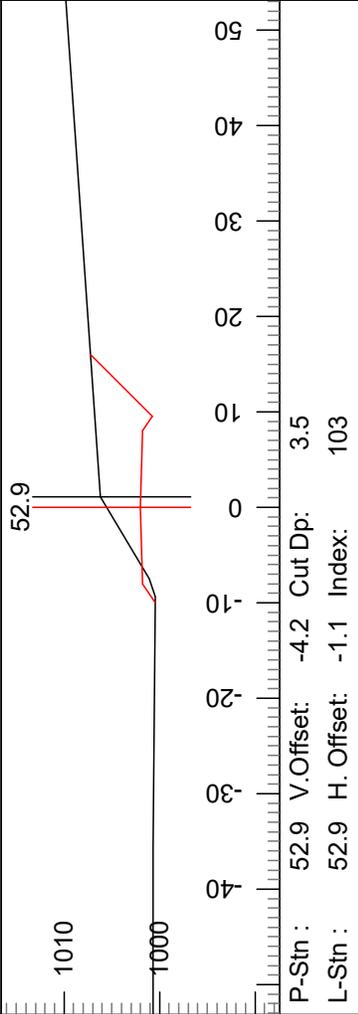
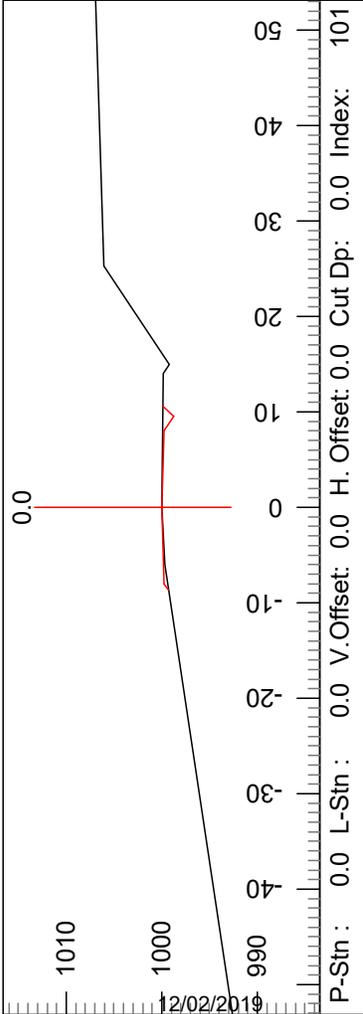
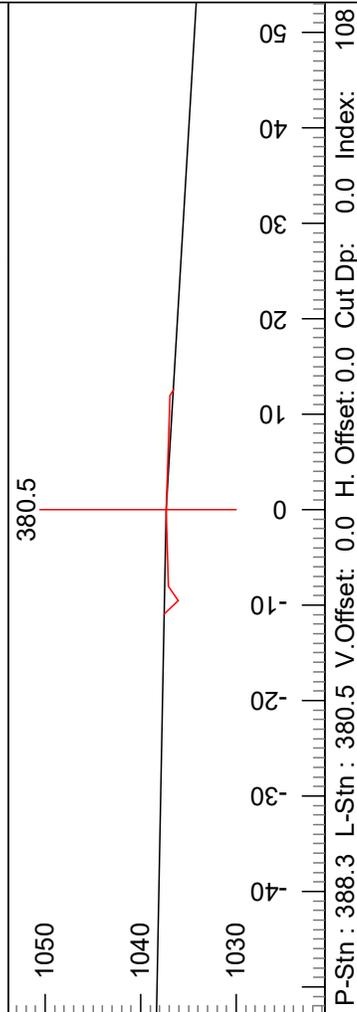
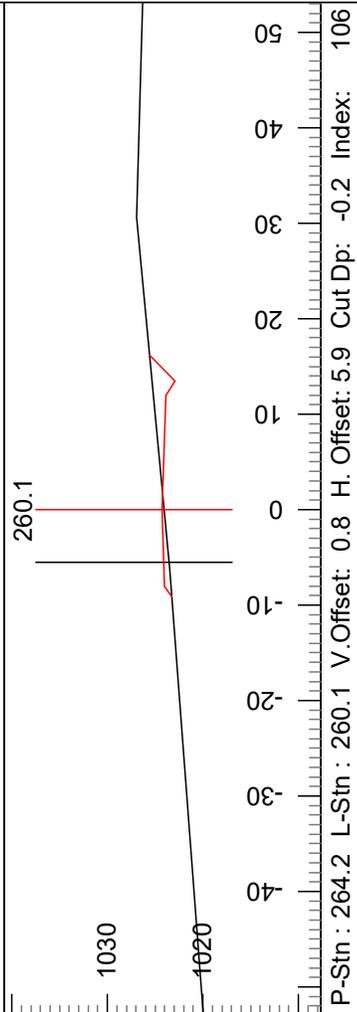
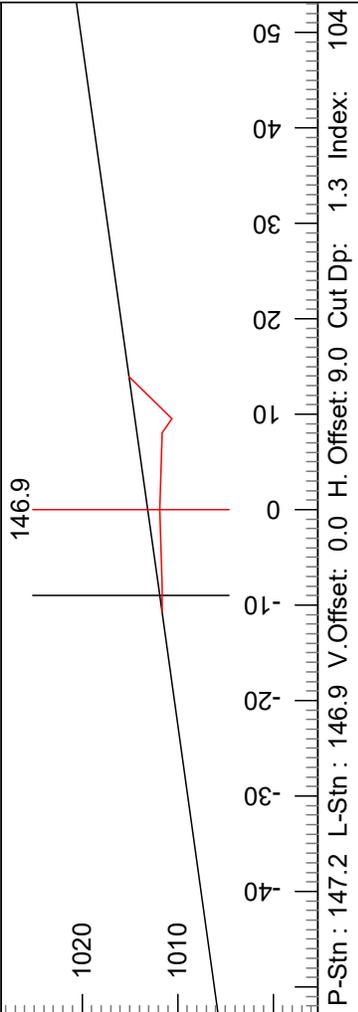
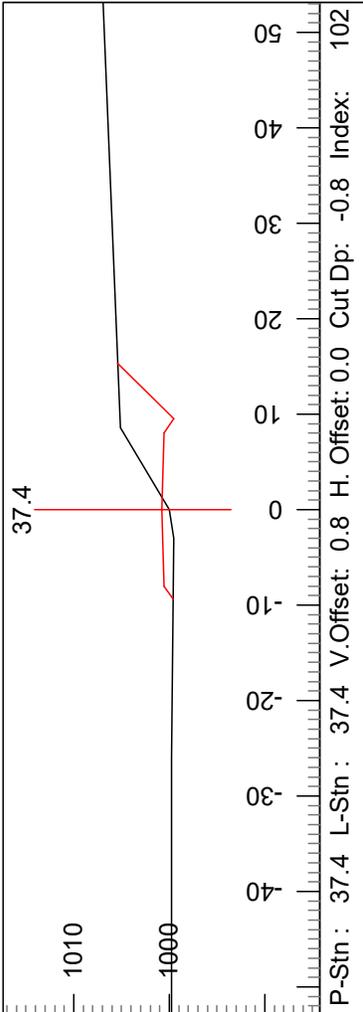


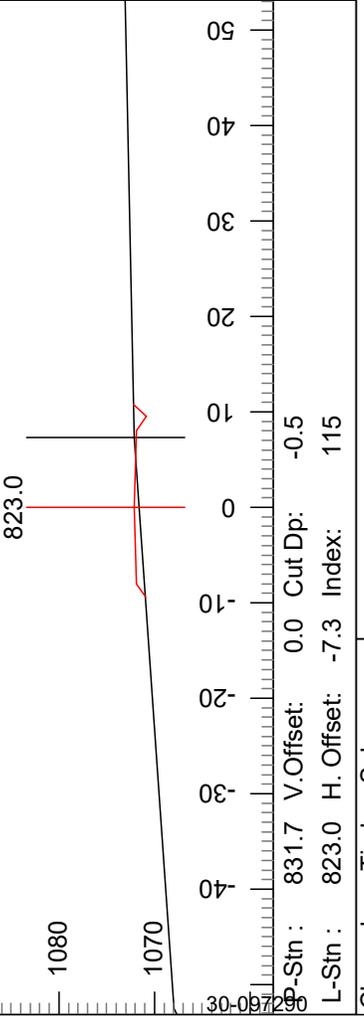
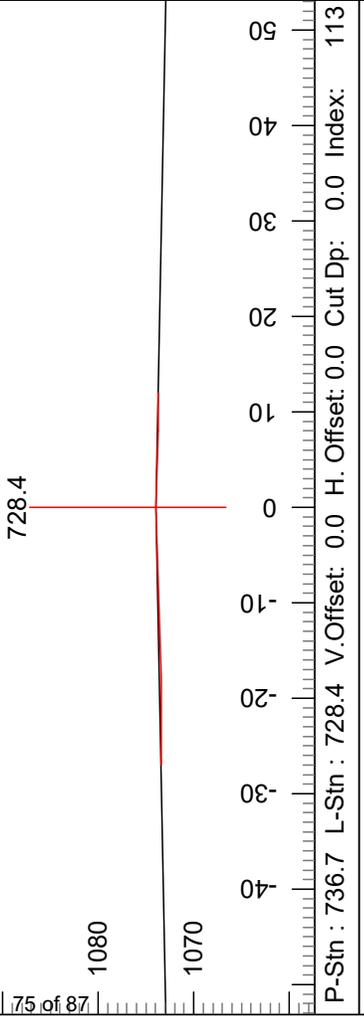
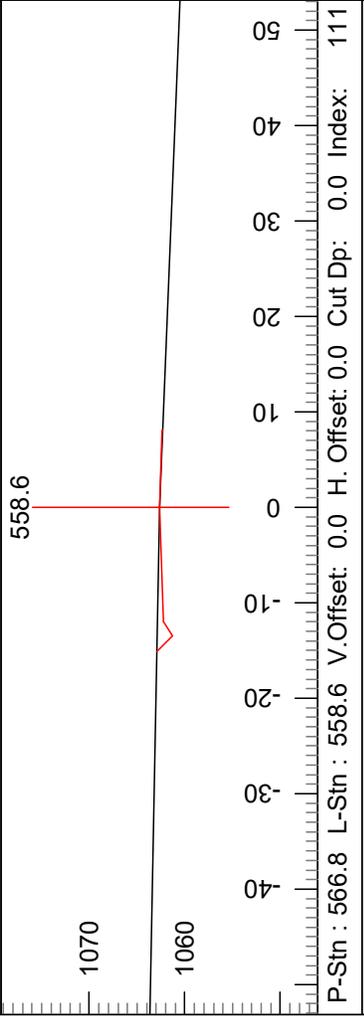
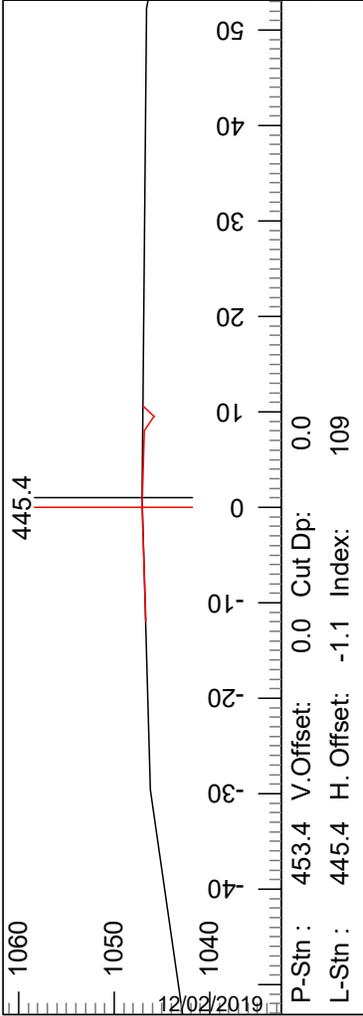
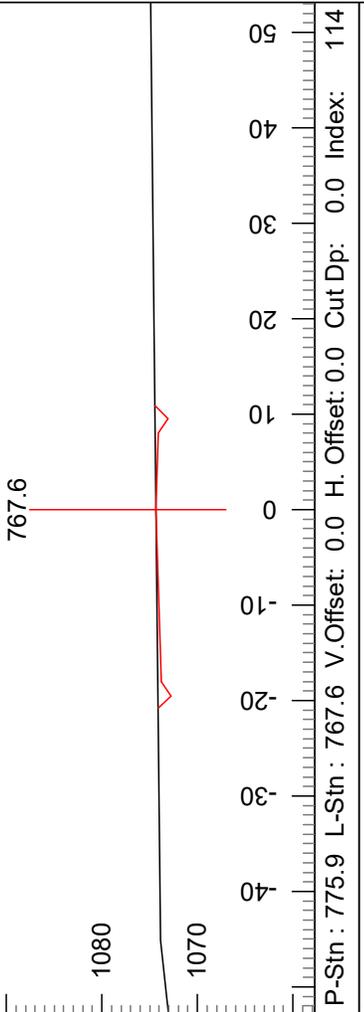
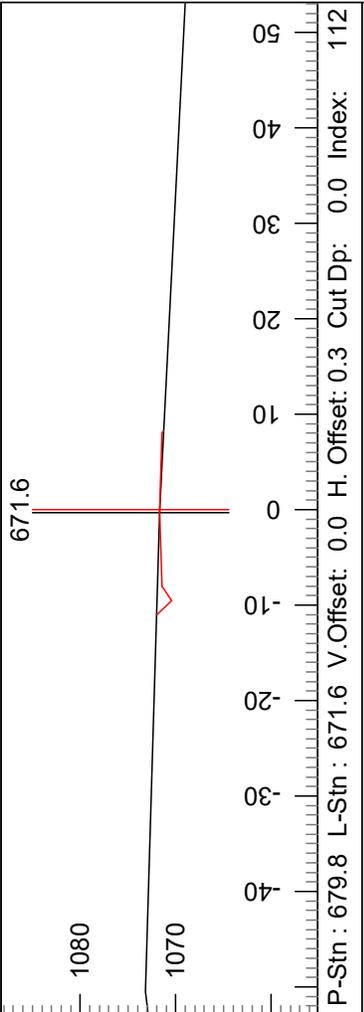
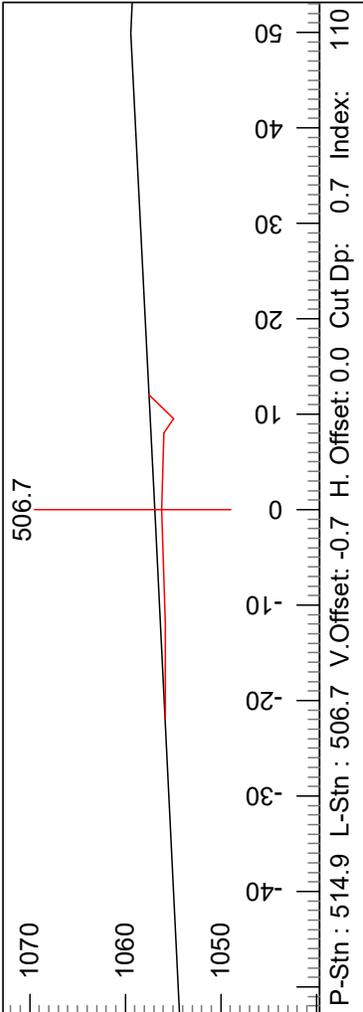
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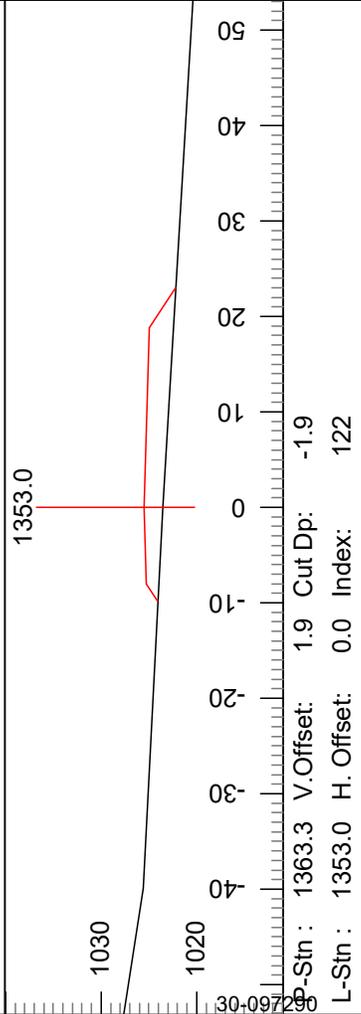
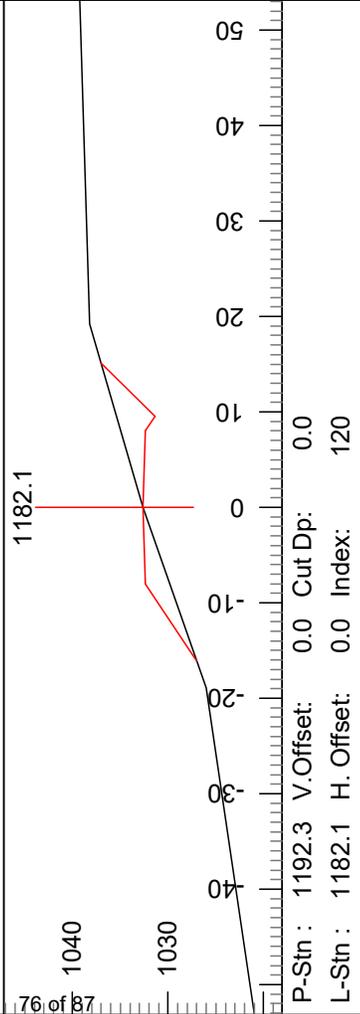
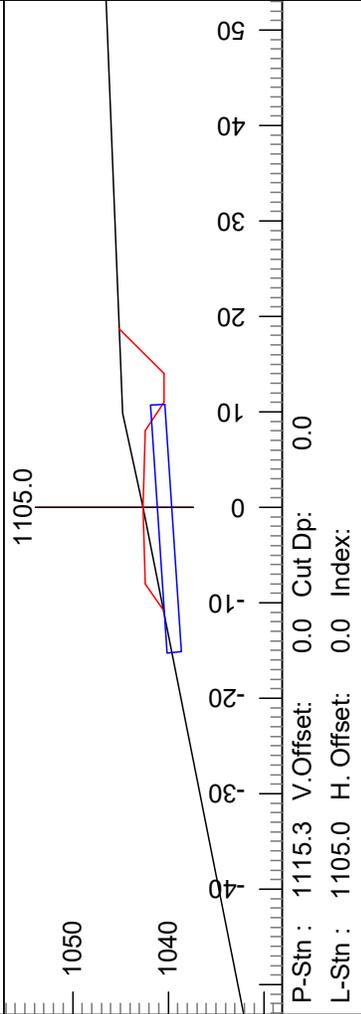
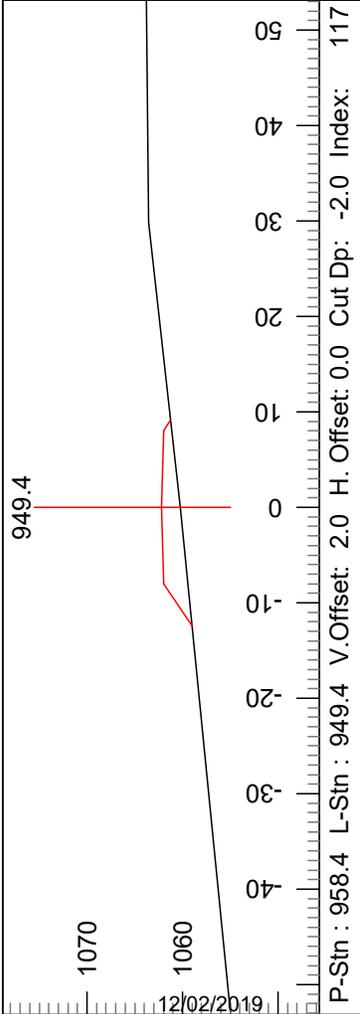
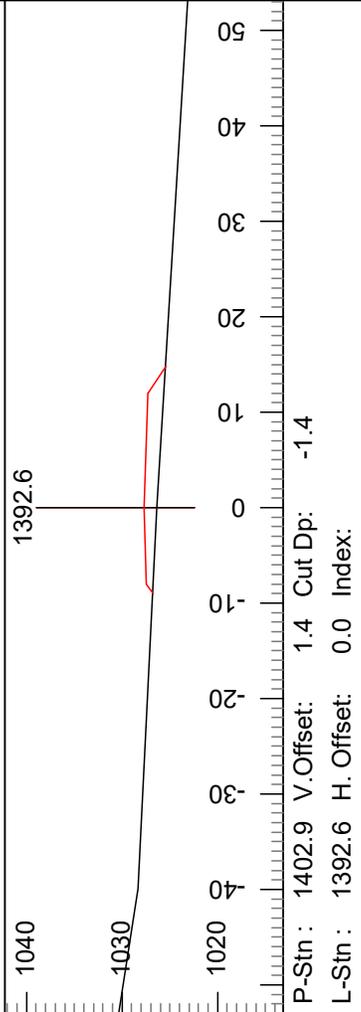
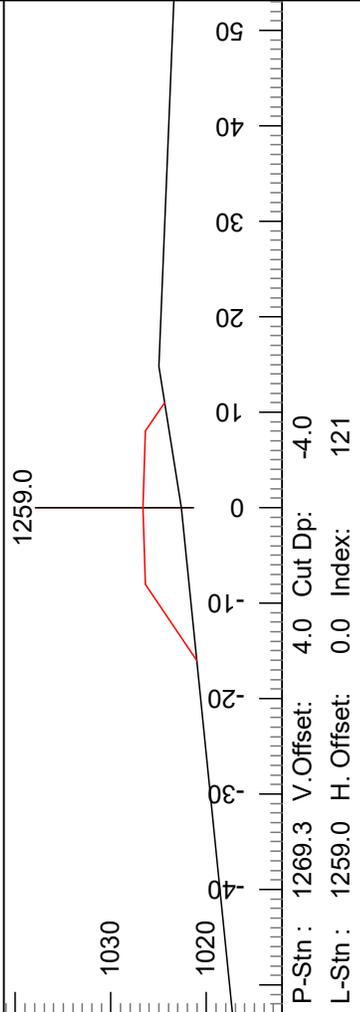
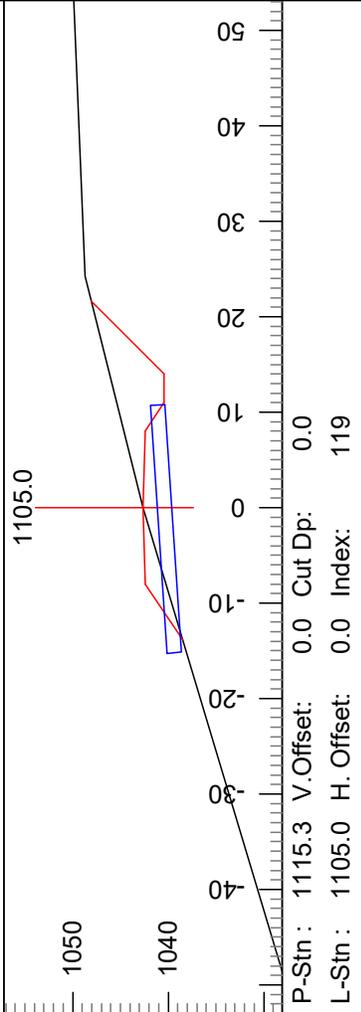
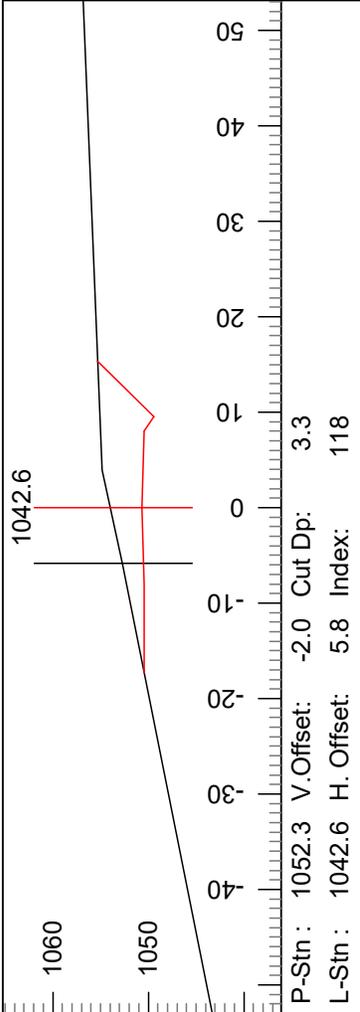


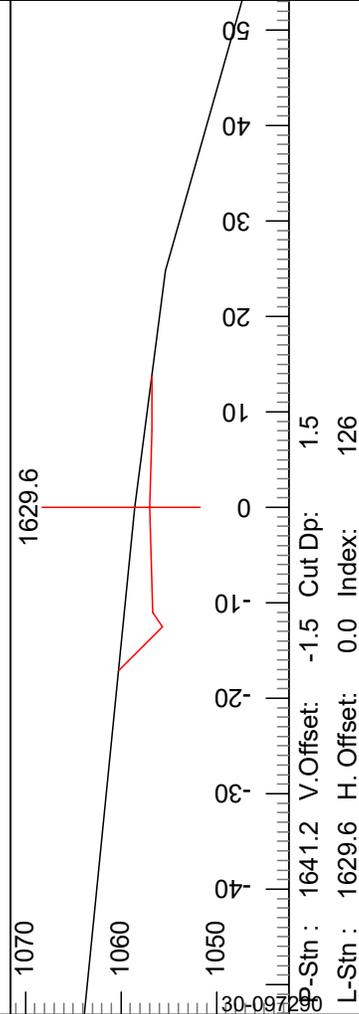
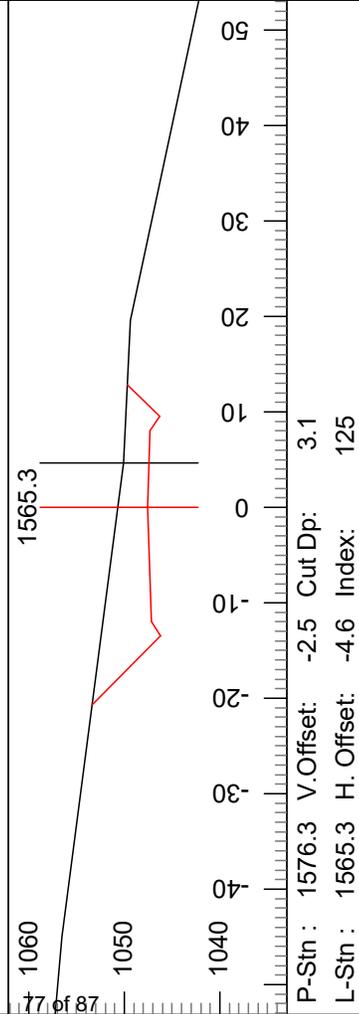
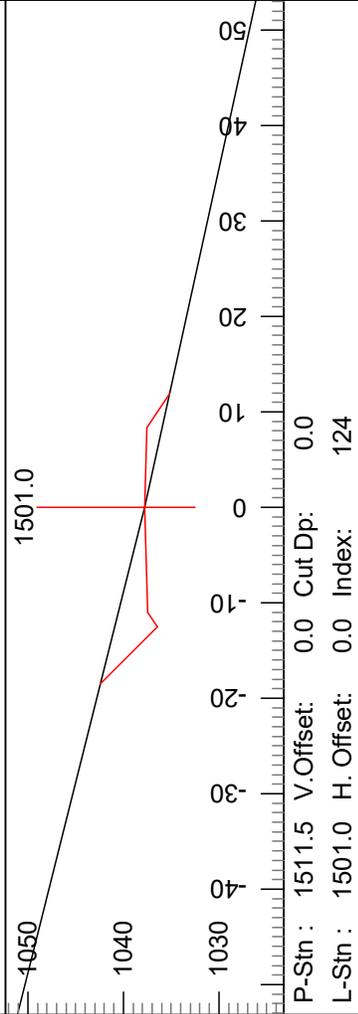
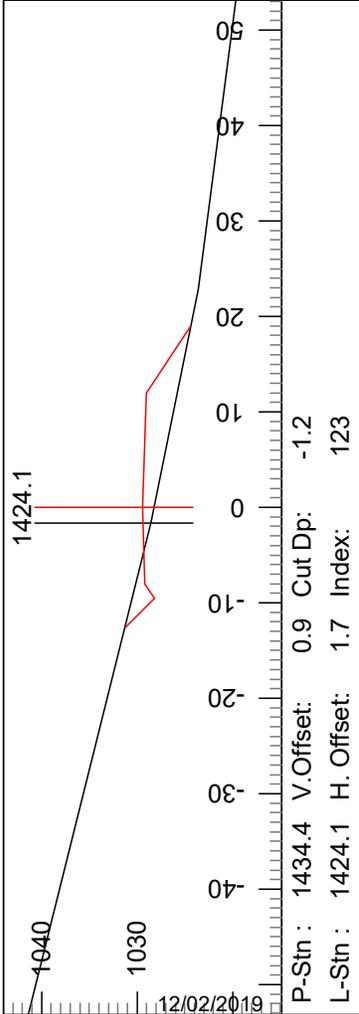
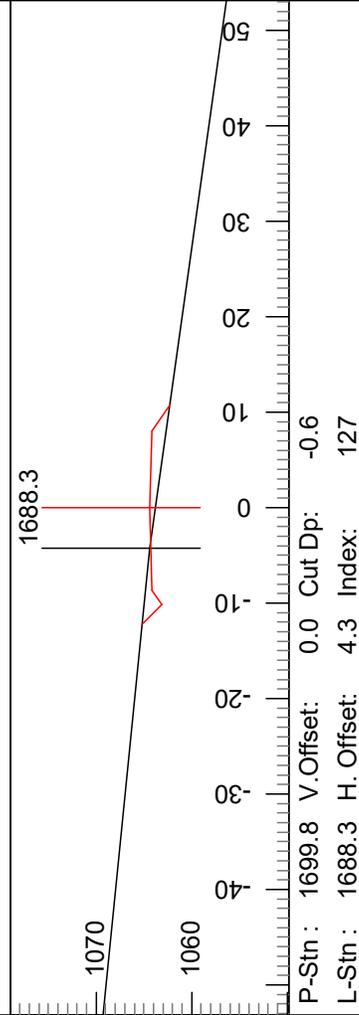
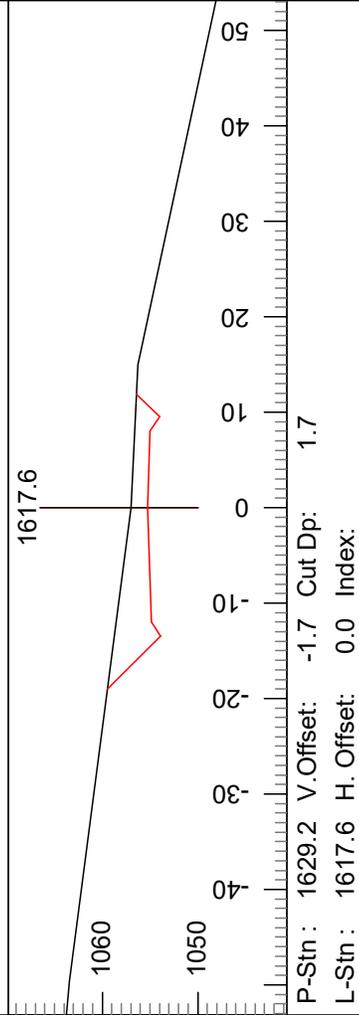
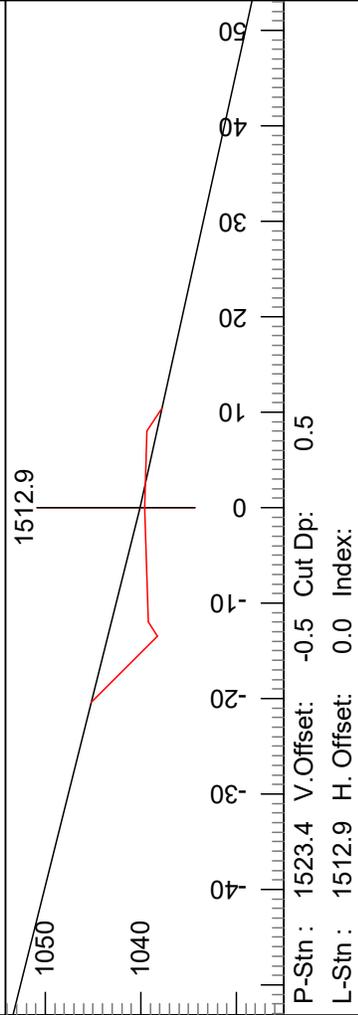
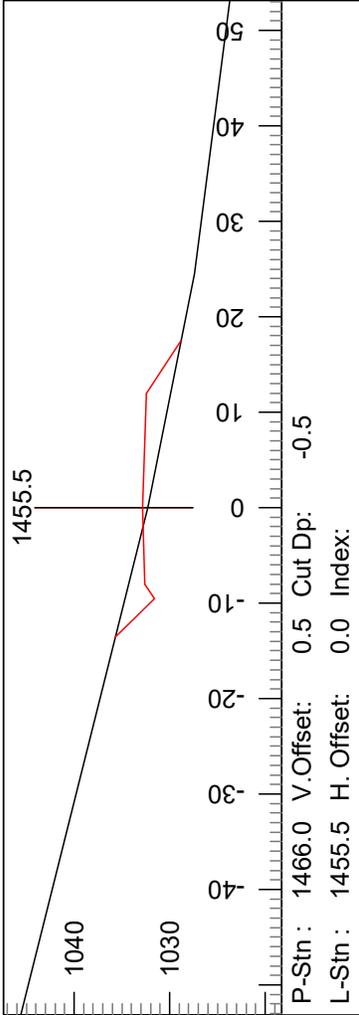
 Washington State Department of Natural Resources South Puget Sound Region	Engineer: C. Vandehey 19/02/13	Page 3 of 9
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Chameleon Timber Sale E-9625 Contract#: 30-097290		

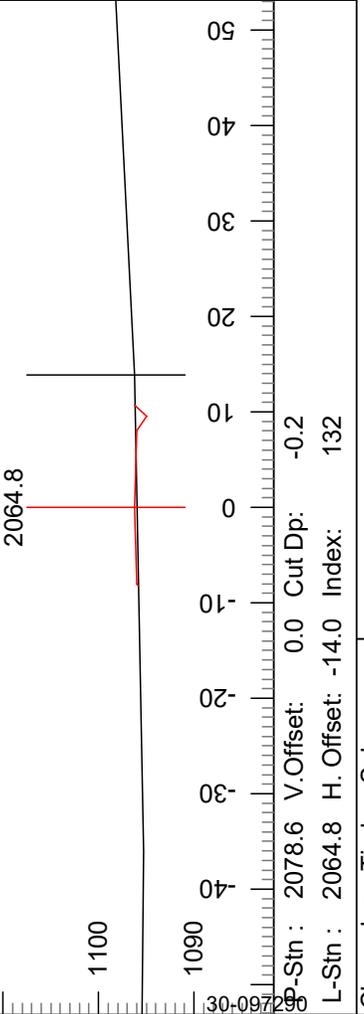
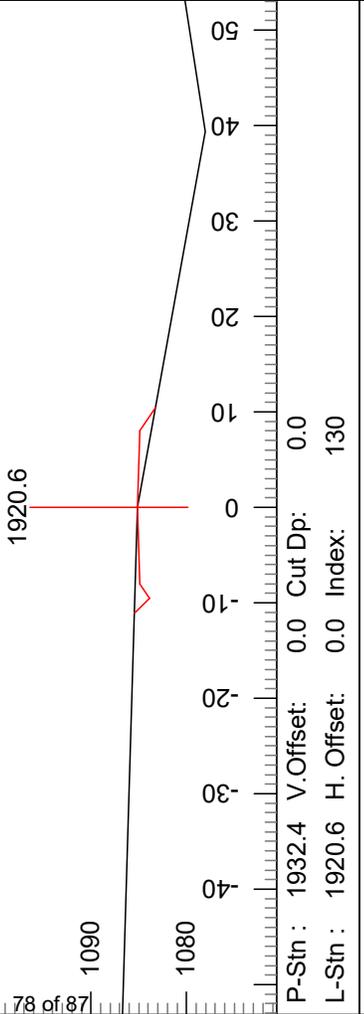
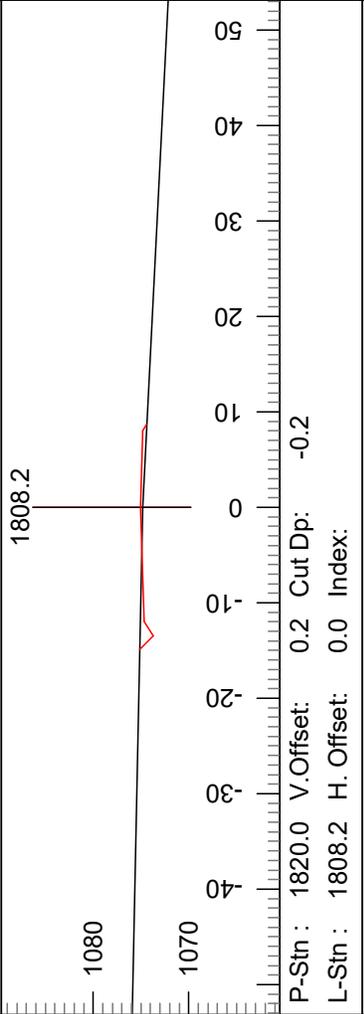
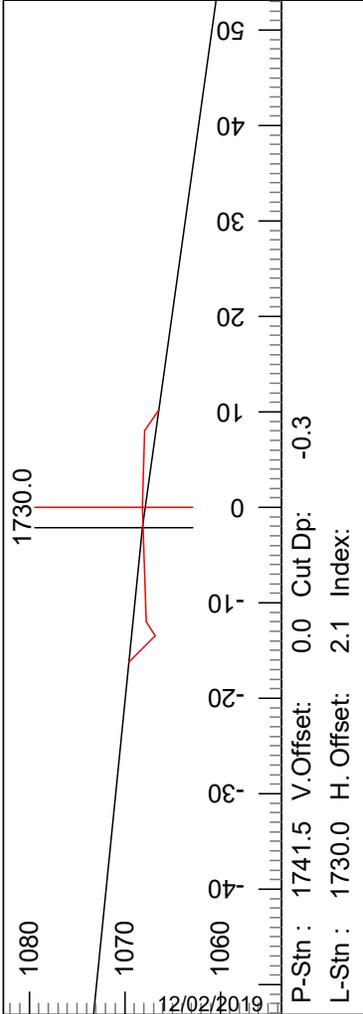
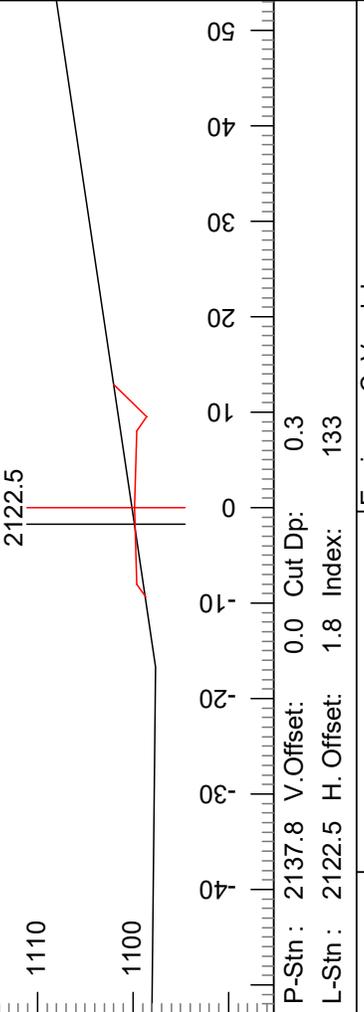
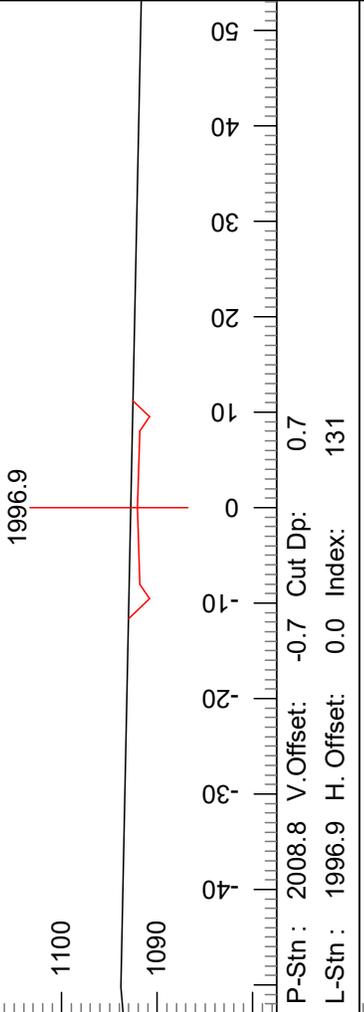
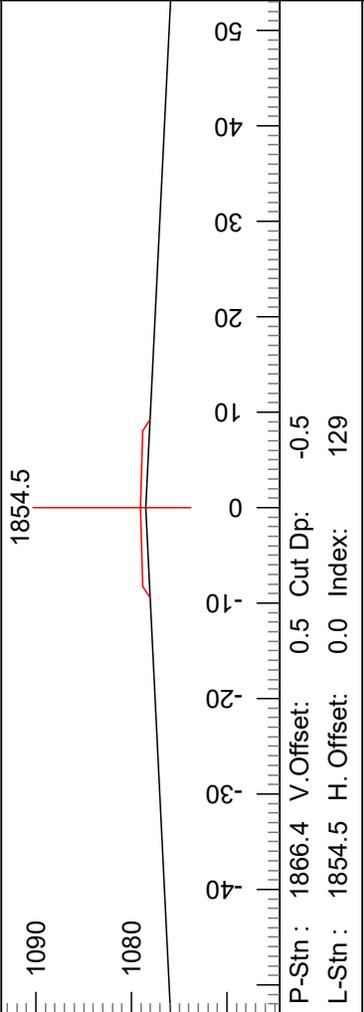
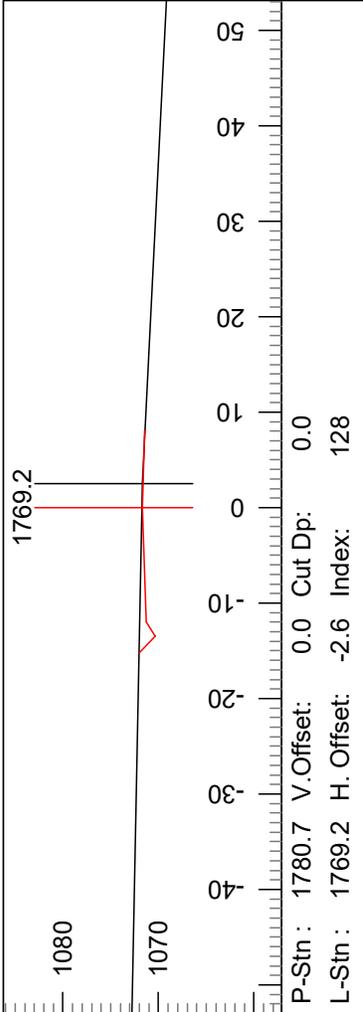


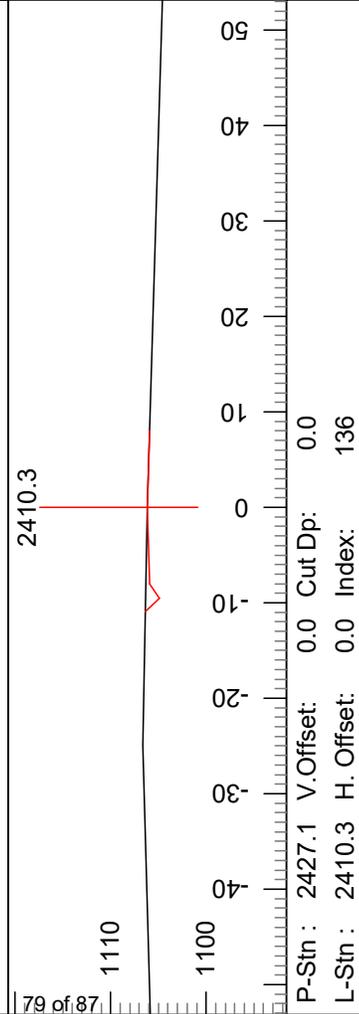
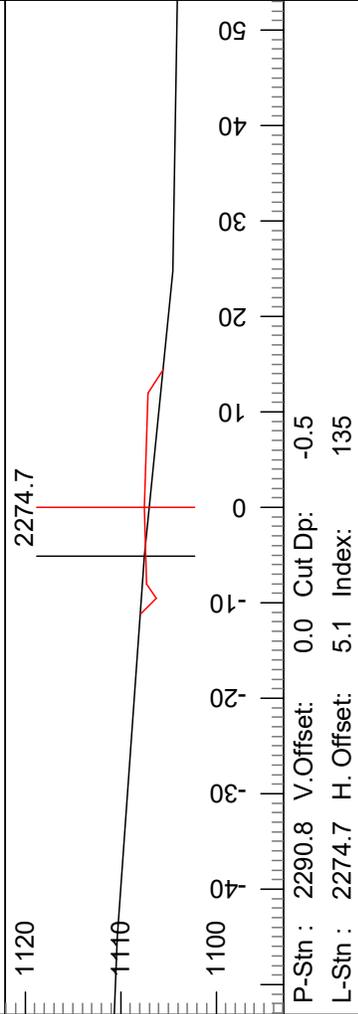
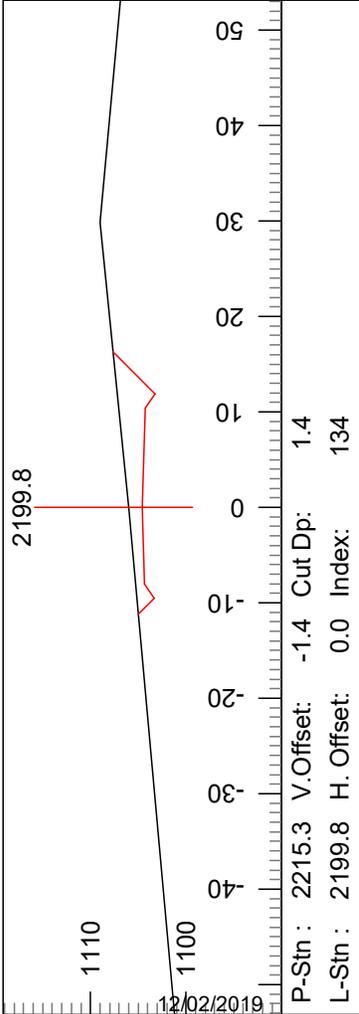
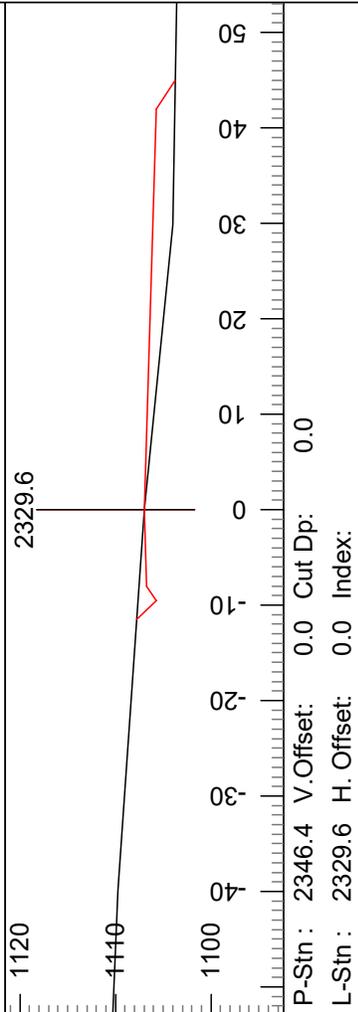
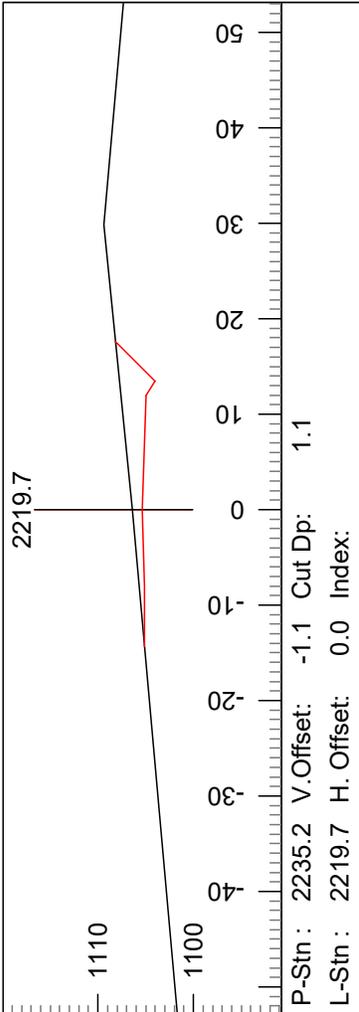


Chameleon Timber Sale E-9625 Contract#: 30-097290	 Washington State Department of Natural Resources South Puget Sound Region	Section Scale 1:240	Engineer: C. Vandehey 19/02/13
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Chameleon Timber Sale  
E-9625  
Contract#: 30-097290

Washington State Department of Natural Resources  
South Puget Sound Region

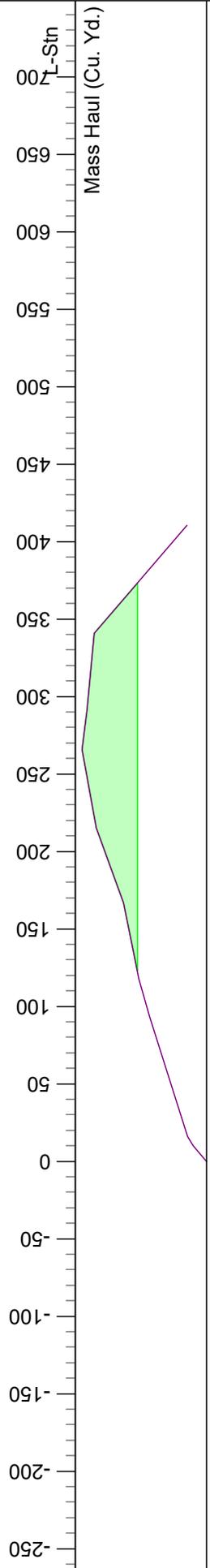
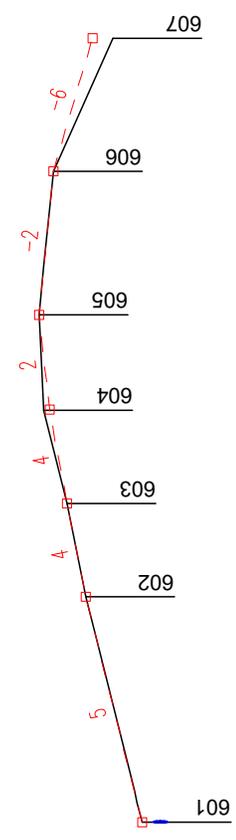
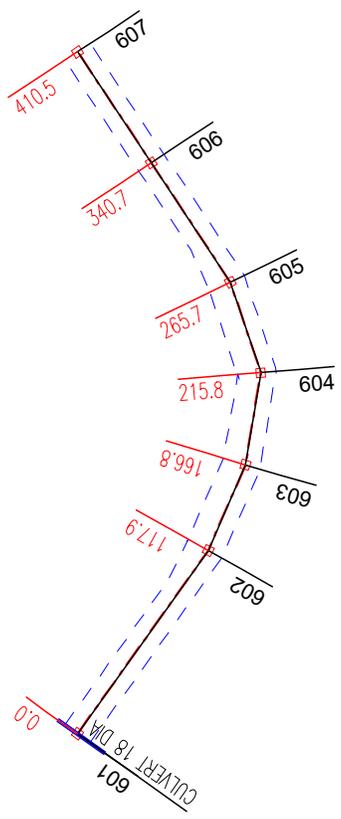
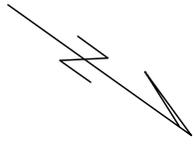


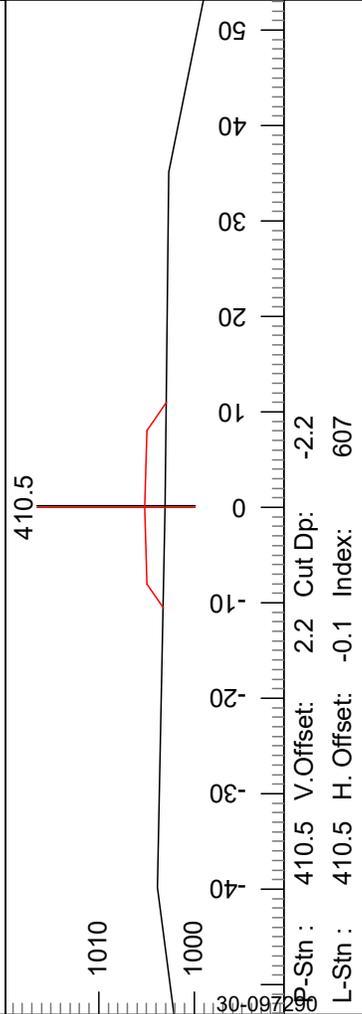
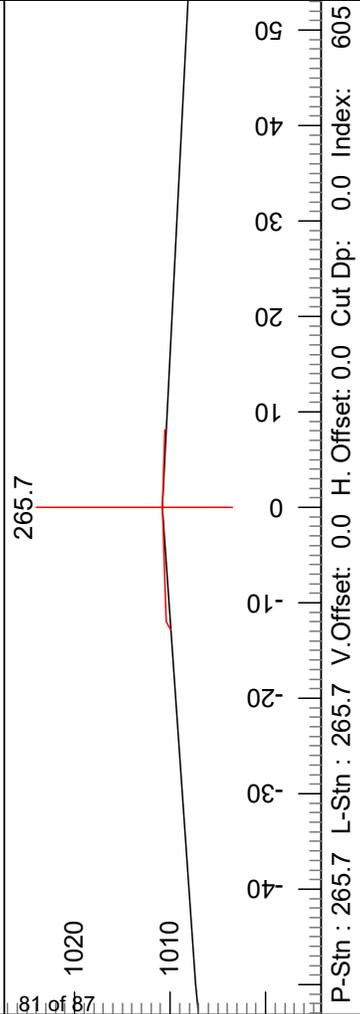
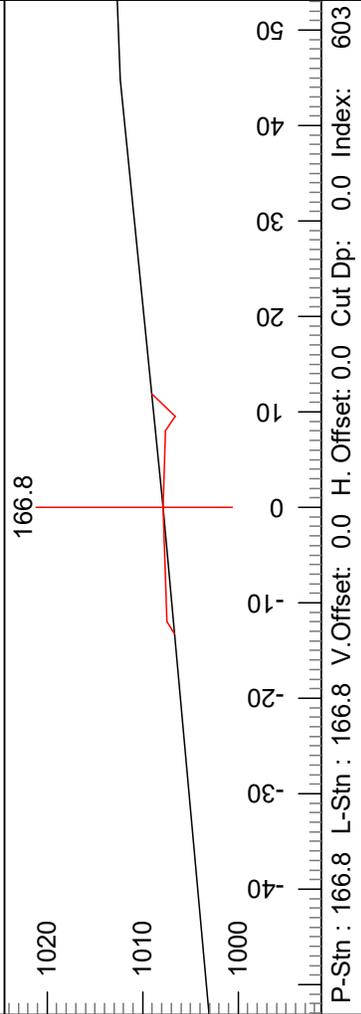
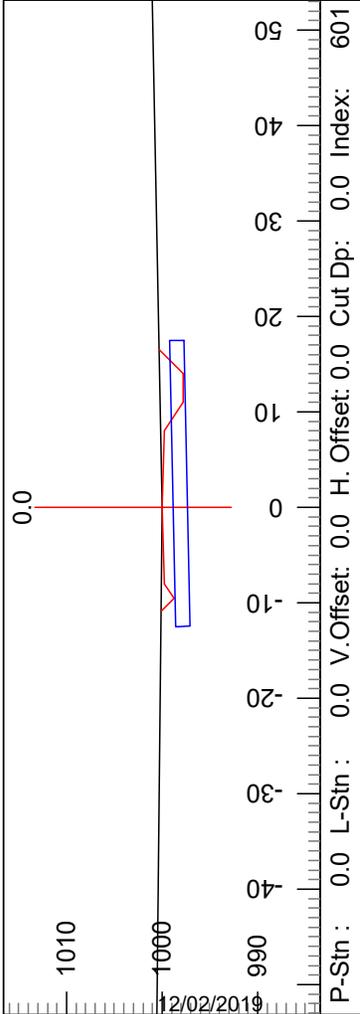
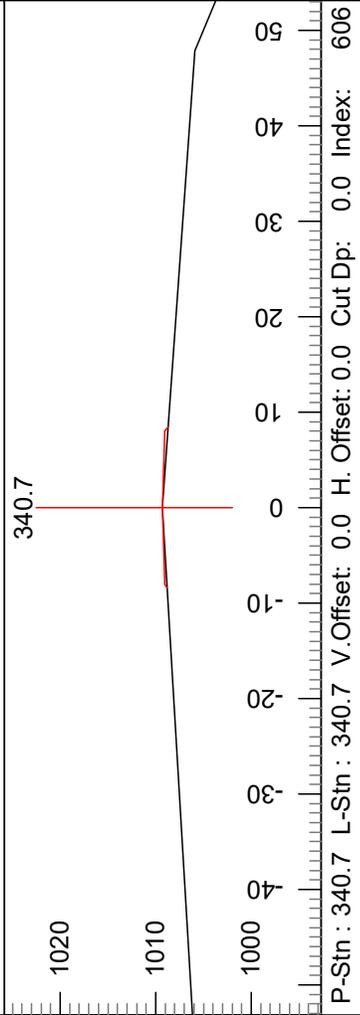
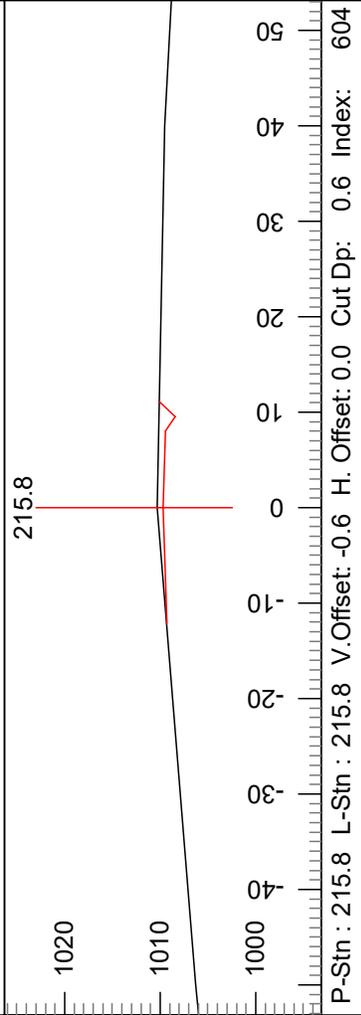
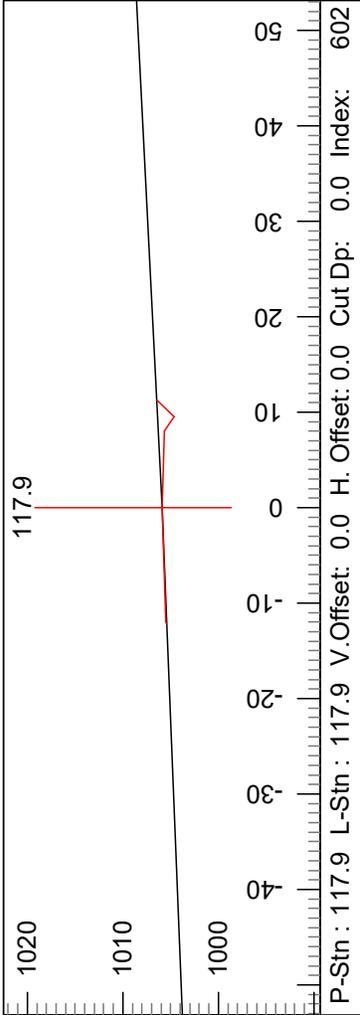
Engineer: C. Vandehey

Section Scale 1:240

19/02/13

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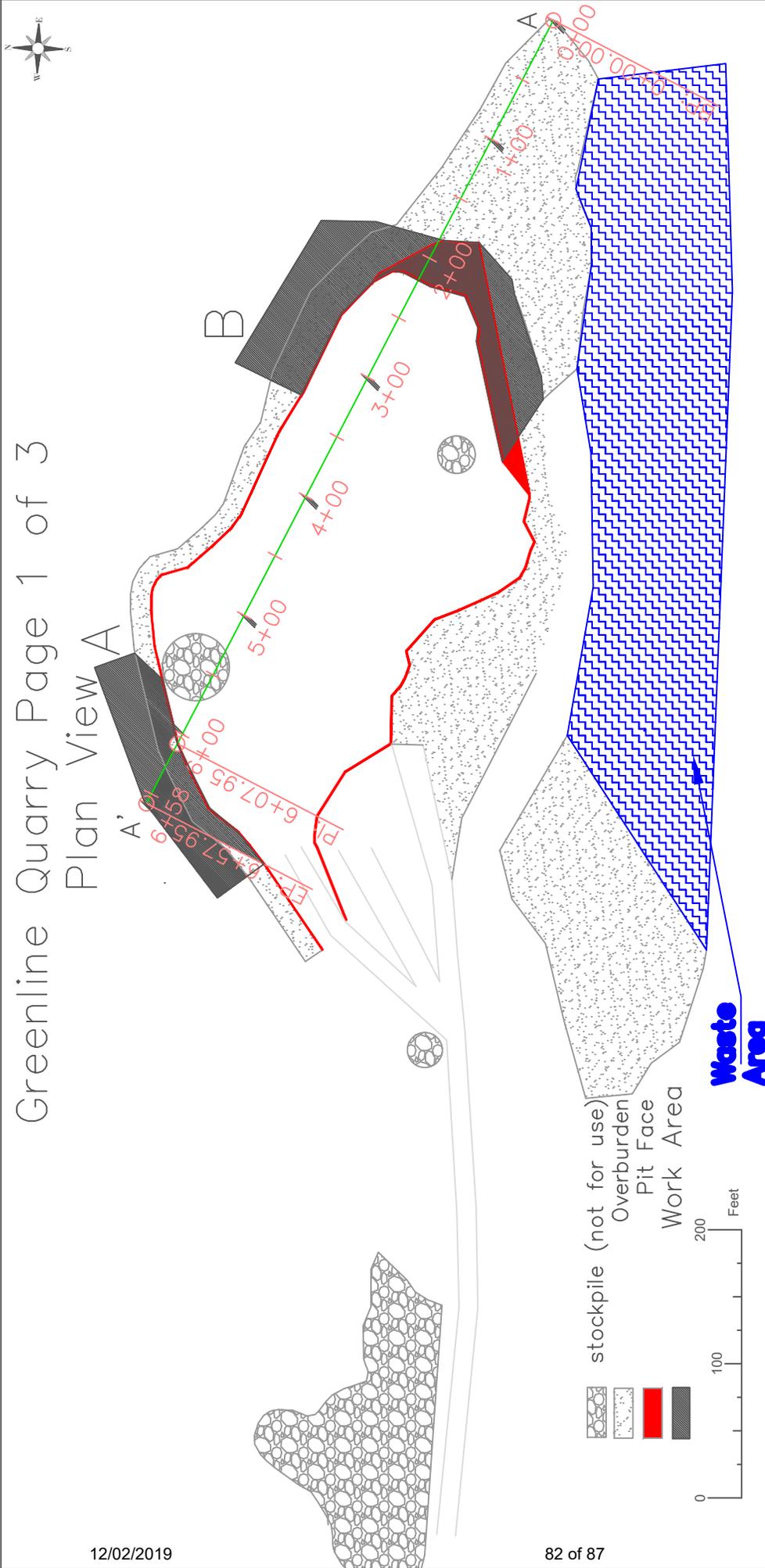




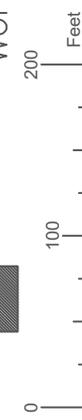
Chameleon Timber Sale E-9626 Contract#: 30-097290	 Washington State Department of Natural Resources South Puget Sound Region	Section Scale 1:240	Engineer: C. Vandehey
		19/02/13	Page 2 of 2

# Greenline Quarry Page 1 of 3

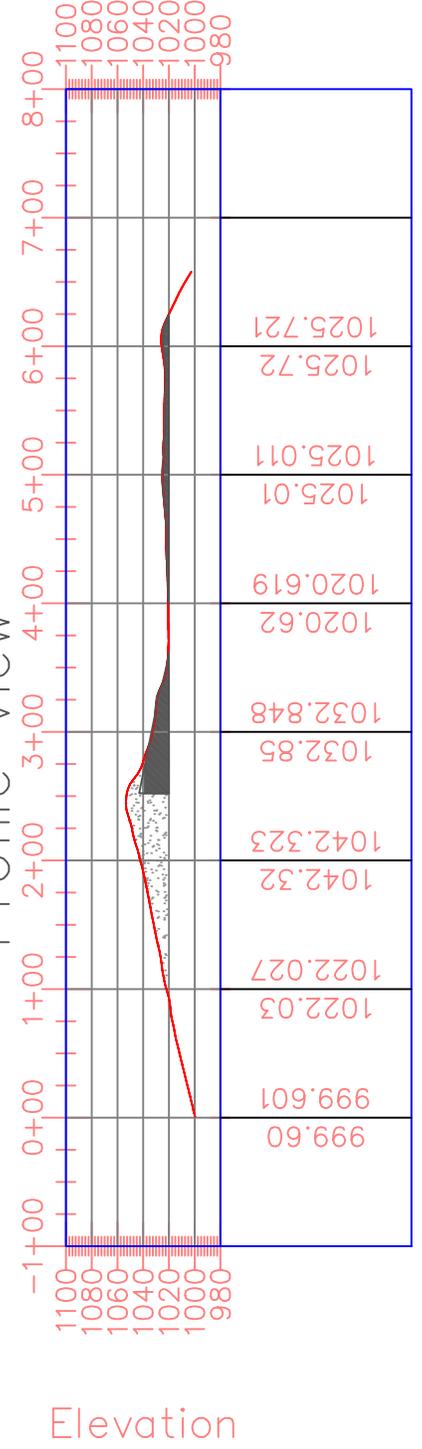
## Plan View A



- stockpile (not for use)
- Overburden
- Pit Face
- Work Area
- Waste Area



## Profile View



STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES  
SOUTH PUGET SOUND REGION

GREENLINE QUARRY DEVELOPMENT PLAN

SE 1/4, NW 1/4, Section 29, Township 17 North, Range 03 West, W.M.  
(Page 2 of 3)

1. Purchaser shall move overburden in Area A and Area B to established waste area.
2. Development for crushed surfacing rock shall begin in Area A. Development for jaw run and riprap shall occur in Area A. Once Area A is depleted and developed, purchaser shall work in Area B. Once Area B is depleted, Purchaser shall work in Area C, which will be at the discretion of the Contract Administrator.
3. Existing oversize material may be utilized for crushing.
  - a. Oversize material is defined as rock fragments larger than two feet in any direction. At the conclusion of the operation, oversize material left in the quarry shall be placed as directed by the contract administrator.
4. Quarry development shall proceed by extending the pit floor at a suitable elevation to not create a working face over 35ft, as shown on the quarry development map.
5. All vegetation including stumps shall be cleared a minimum of 20 feet beyond the top of all working faces. Trees shall be cleared to a minimum of  $\frac{3}{4}$  of the height of the tallest tree adjacent to the pit.
6. All exposed soil and waste areas shall be treated for erosion control in accordance to the road plan clauses listed under Section 8 – Erosion Control.
7. The quarry floor shall have continuity of slope, providing drainage to the ditch-out located on the north side of the quarry area at a minimum of 2%, as shown on the quarry development map.
8. The working face shall not exceed 35 feet in height with a back slope no steeper than  $\frac{1}{2}$ :1.
9. The working bench width shall be a minimum of 35 feet.
10. Any access roads shall be berm'd or blocked with oversize rock to keep traffic a minimum of 10 feet from the face.
11. Faces and walls shall be scaled and cleared of loose and overhanging material.
12. 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"

## GREENLINE QUARRY DEVELOPMENT PLAN

SE 1/4, NW 1/4, Section 29, Township 17 North, Range 03 West, W.M.

(Page 3 of 3)

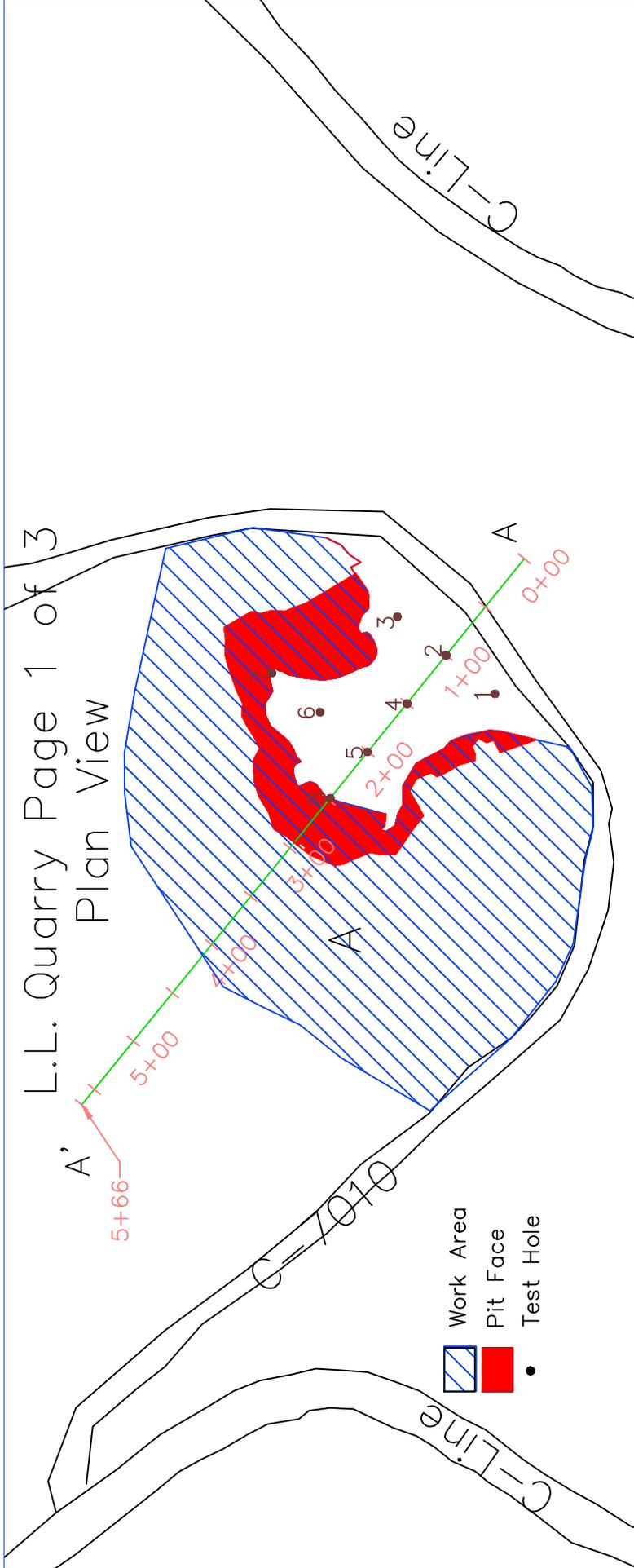
- b. (30 CFR) U. S. Department of Labor, Mine Safety and Health Administration.
- c. "Safety Standards for Construction Work" (296-155 WAC), Washington Department of Labor and Industries.

- 13. The Operator shall submit an informational drilling and shooting plan to the Contract Administrator five (3) working days prior to any drilling (Form #M-126PAC).
- 14. The pit area shall be left in a condition that allows future operations to proceed in an orderly manner.
- 15. The site shall be cleared of all temporary structures, equipment and rubbish, and shall be left in a neat and presentable condition at completion of operations.
- 16. Contract Administrator shall provide written approval of final rock source condition.

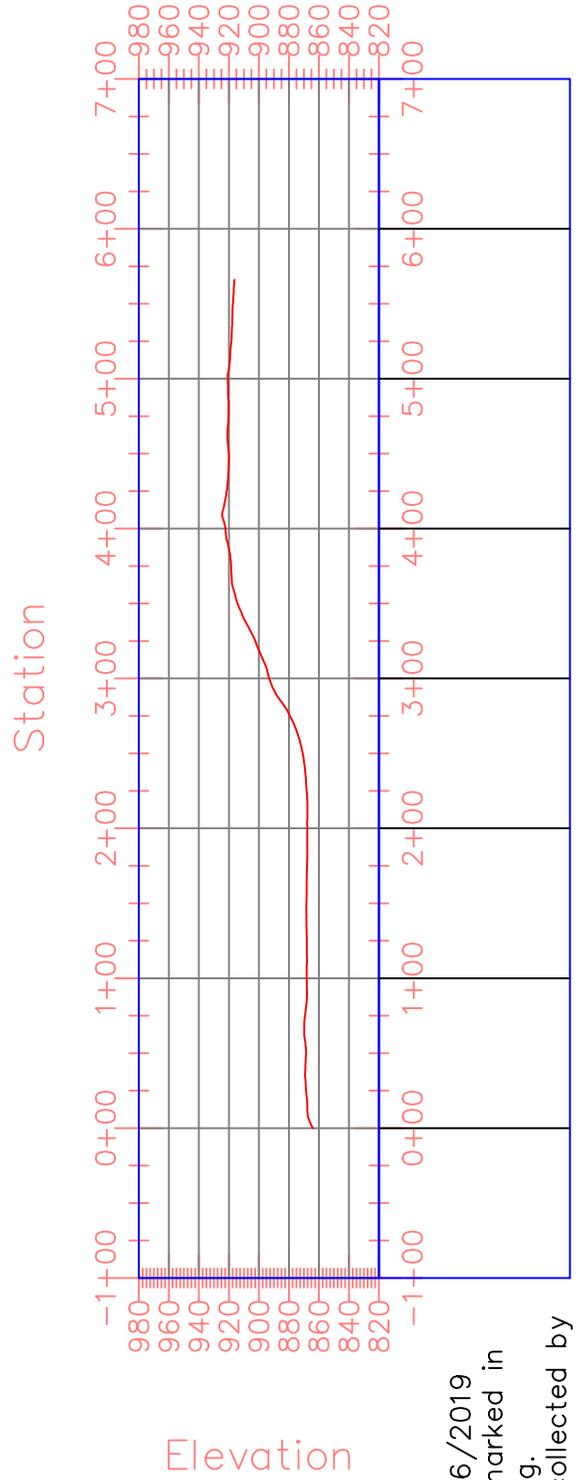
Updated 02/07/2019 by C. Vandehey

# L.L. Quarry Page 1 of 3

## Plan View



## Profile View



30-09  
 Drawn by C. Vandehey 02/06/2019  
 Test hole locations will be marked in the field with orange flagging.  
 test hole drill data will be collected by the Contract Administrator.  
 Waste area TBD by Contract Administrator  
 Chameleon Timber Sale

STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES  
SOUTH PUGET SOUND REGION

L.L. QUARRY DEVELOPMENT PLAN

Section 18, Township 17 North, Range 03 West, W.M.  
(Page 2 of 3)

1. Development for crushed surfacing rock shall begin in Area A. Development for jaw run and riprap shall occur in Area A.
2. Existing oversize material may be utilized for crushing.
  - a. Oversize material is defined as rock fragments larger than two feet in any direction. At the conclusion of the operation, oversize material left in the quarry shall be placed as directed by the contract administrator.
3. Quarry development shall proceed by extending the pit floor in a northern direction at a suitable elevation to not create a working face over 35ft.
4. All vegetation including stumps shall be cleared a minimum of 20 feet beyond the top of all working faces. Trees shall be cleared to a minimum of  $\frac{3}{4}$  of the height of the tallest tree adjacent to the pit.
5. All exposed soil and waste areas shall be treated for erosion control in accordance to the road plan clauses listed under Section 8 – Erosion Control.
6. The quarry floor shall have continuity of slope, providing drainage to the culvert located on the southern side of the quarry area at a minimum of 2%, as shown on the quarry development map.
7. The working face shall not exceed 35 feet in height with a back slope no steeper than  $\frac{1}{2}$ :1.
8. The working bench width shall be a minimum of 35 feet.
9. Any access roads shall be berm'd or blocked with oversize rock to keep traffic a minimum of 10 feet from the face.
10. Faces and walls shall be scaled and cleared of loose and overhanging material.
11. All operations shall be carried out in compliance with all regulations of:
  - a. "Regulations and Standards Applicable to Metal and Nonmetal Mining and Milling Operations"
  - b. (30 CFR) U. S. Department of Labor, Mine Safety and Health Administration.
  - c. "Safety Standards for Construction Work" (296-155 WAC), Washington Department of Labor and Industries.
12. The Operator shall submit an informational drilling and shooting plan to the Contract Administrator five (3) working days prior to any drilling (Form #M-126PAC).

L.L. QUARRY DEVELOPMENT PLAN

Section 18, Township 17 North, Range 03 West, W.M.  
(Page 3 of 3)

13. The pit area shall be left in a condition that allows future operations to proceed in an orderly manner.
14. The site shall be cleared of all temporary structures, equipment and rubbish, and shall be left in a neat and presentable condition at completion of operations.
15. See Specific Rock Source Work Requirements for additional information.
16. Contract Administrator shall provide written approval of final rock source condition.

**Specific Rock Source Work Requirements:**

Points are shown on L.L. quarry plan view, pg. 1 of 3

Exploratory Drilling point	Depth
1	40
2	40
3	40
4	40
5	40
6	40
7	40
8	40

Updated 02/06/2019 by C. Vandehey

DEPARTMENT OF NATURAL RESOURCES - SOUTH PUGET SOUND REGION

FORM 9-87(Rev. 01-09)

Road Development Cost Estimate

(For internal DNR use only. Costs are estimates only & are not guaranteed by the State or part of the Road Plan.)

REGION: SPS

UNIT: Littlerock

SALE/PROJECT NAME: Chameleon

CONTRACT NUMBER: 30-097290

LEGAL DESCRIPTION: 0

ROAD NUMBER:	C-7010 Tie, C-7010.3, C-7010.5, D-4098, D-4951, E-9625, E-9626	C-7010, D-4950	C-Line, D-4900, E-9000, E-9600
ROAD STANDARD:	Construction	Reconstruction	Pre-haul Maintenance
NUMBER OF STATIONS:	48.58	32.01	249.08
SIDESLOPE:	0-70%	0	0-60%
CLEARING AND GRUBBING:	\$11,106	\$4,264	
EXCAVATION AND FILL:	\$42,640	\$6,338	
MISC. MAINTENANCE:			\$5,715
ROCK TOTALS (Cu. Yds.):			
2" Minus: 2420	\$9,844	\$383	\$44,003
Light Loose 22	\$161	\$26	\$225
Quarry Spalls 35	\$294	\$59	\$152
4" Jaw 4,971	\$ 63,097	\$ 23,928	\$16,569
Pit Run 1,300	\$ 20,872	\$ -	0
Pavement 0	\$ -		0
CULVERTS AND FLUMES:	\$5,389	\$1,408	\$1,008
STRUCTURES:	\$1,500	\$0	\$0
GENERAL EXPENSES:	\$12,392	\$3,276	\$6,090
MOBILIZATION:	\$5,667	\$5,667	\$5,667
TOTAL COSTS:	\$172,962	\$45,348	\$79,429
COST PER STATION:	\$3,560	\$1,417	\$319

ROAD DEACTIVATION AND ABANDONMENT COSTS: \$4,505

NOTE<sup>1</sup>: This appraisal has no allowance for profit and risk.

NOTE<sup>2</sup>: This appraisal does not account for all optional rock.

TOTAL (All Roads) = \$302,244

SALE VOLUME MBF = 9,473

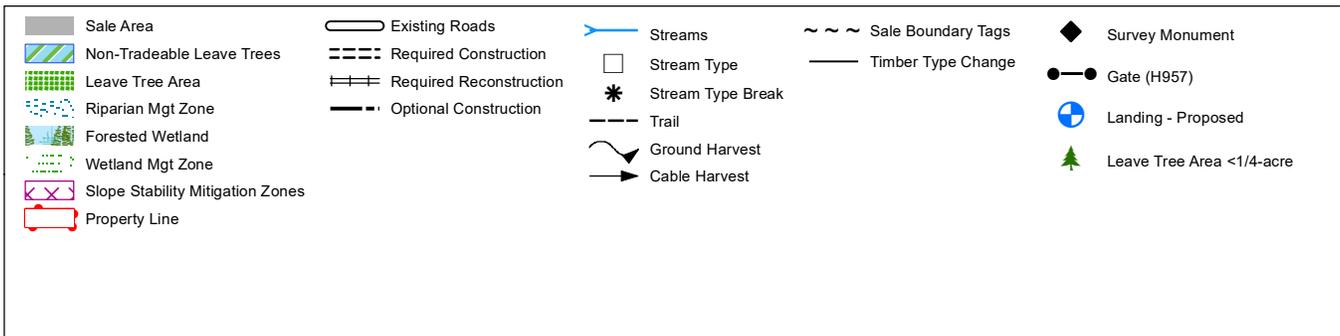
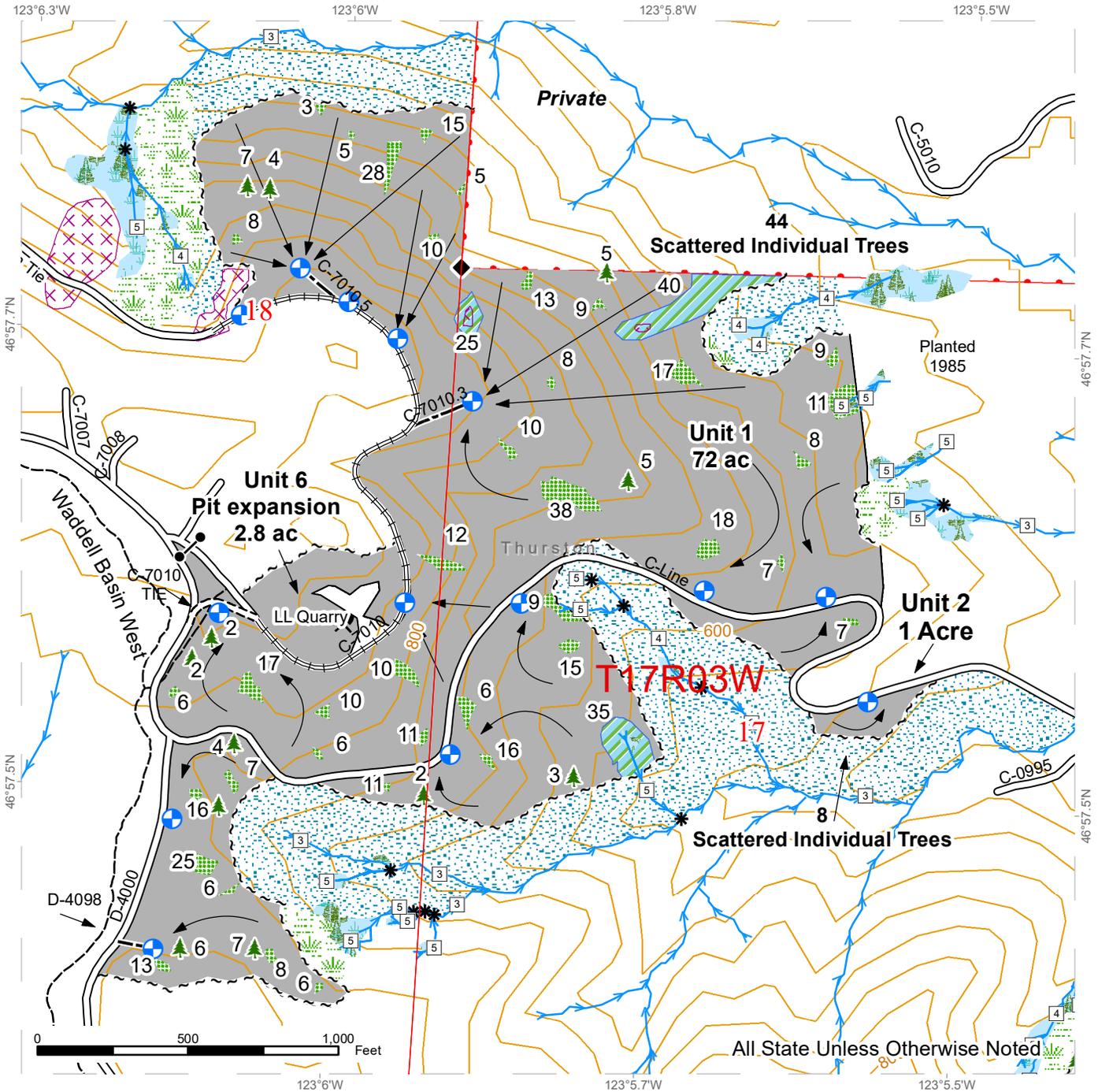
TOTAL COST PER MBF = \$31.91

Date: 02/05/19

# LOGGING PLAN MAP

**SALE NAME:** CHAMELEON  
**AGREEMENT#:** 30-097290  
**TOWNSHIP(S):** T17R3W  
**TRUST(S):** Forest Board Repayment (42), State Forest Purchase (2)

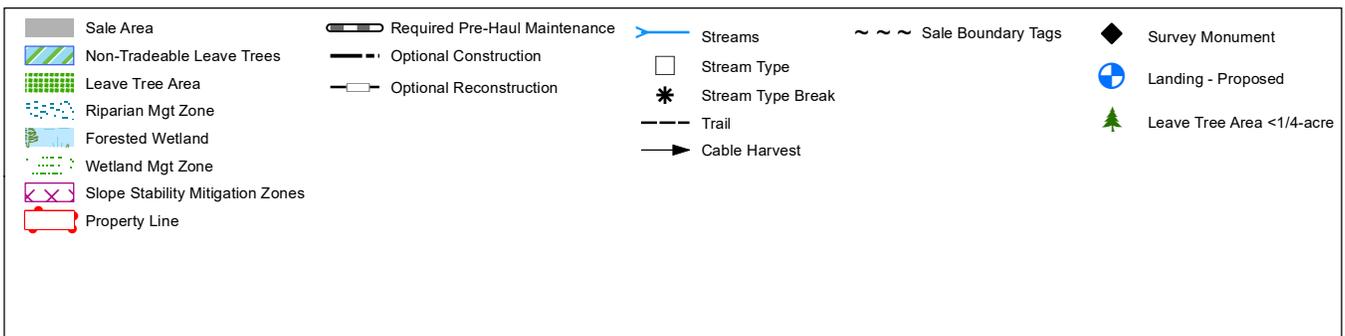
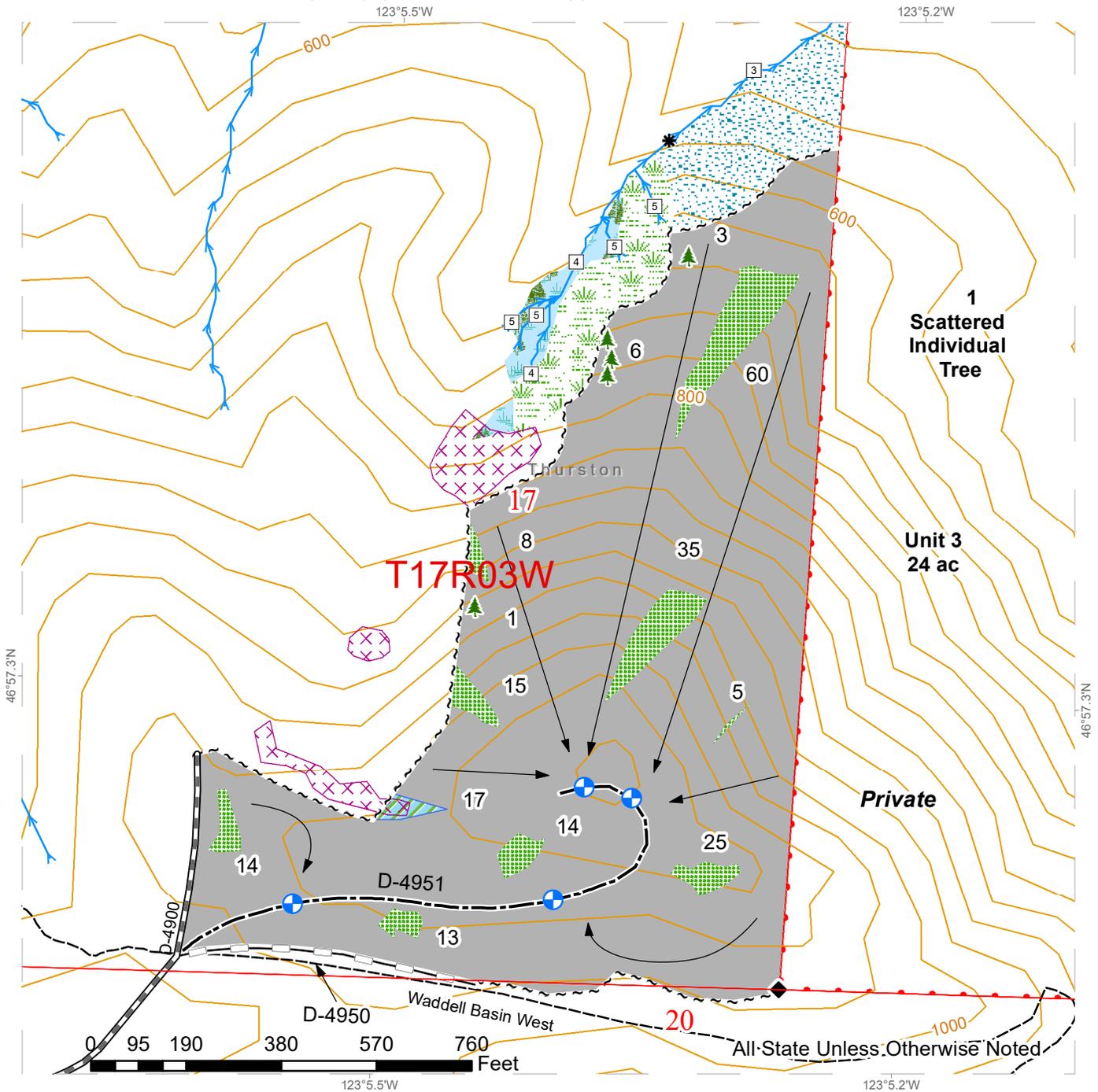
**REGION:** South Puget Sound Region  
**COUNTY(S):** Thurston  
**ELEVATION RGE:** 440-1160



# LOGGING PLAN MAP

**SALE NAME:** CHAMELEON  
**AGREEMENT#:** 30-097290  
**TOWNSHIP(S):** T17R3W  
**TRUST(S):** Forest Board Repayment (42), State Forest Purchase (2)

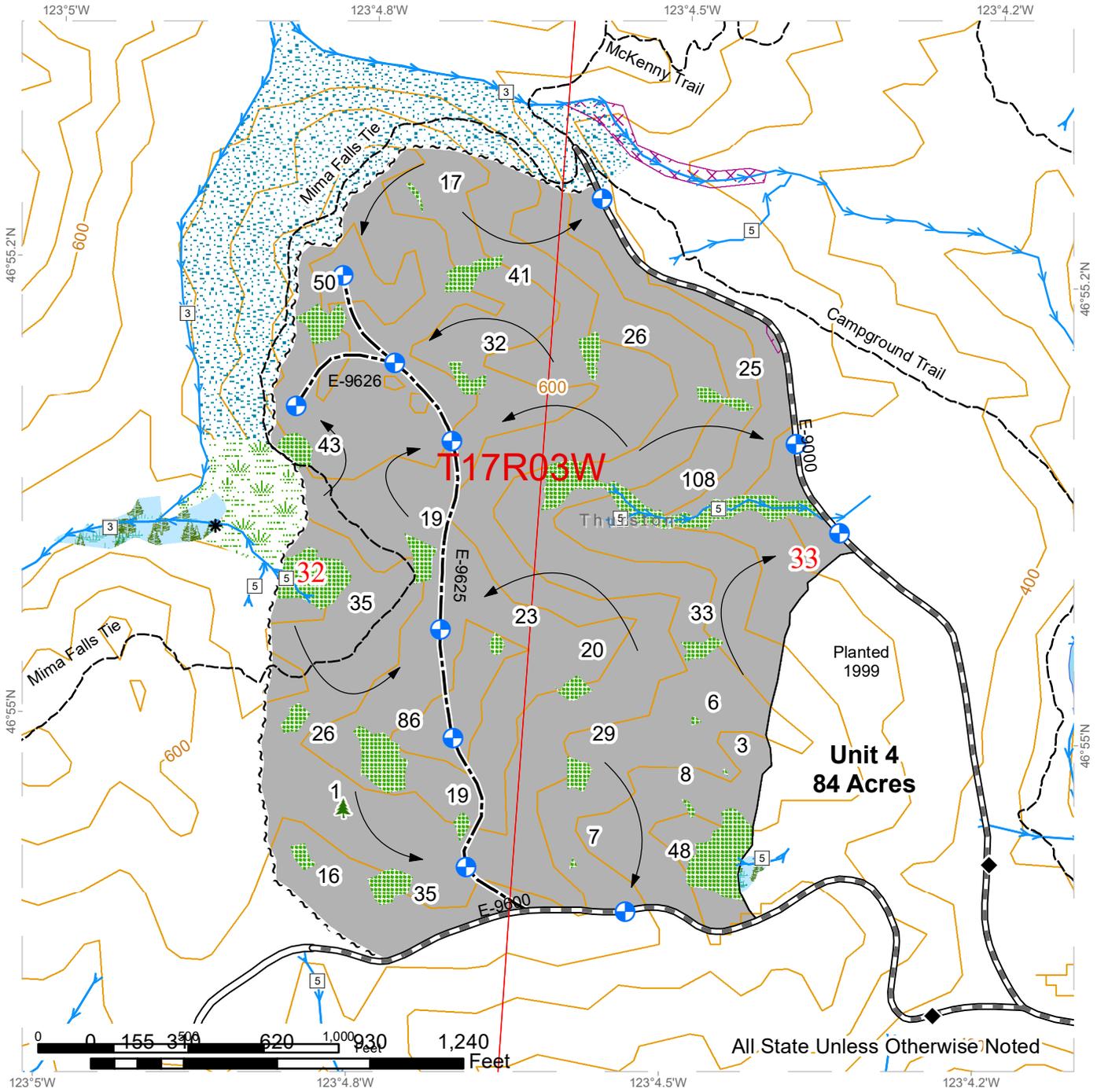
**REGION:** South Puget Sound Region  
**COUNTY(S):** Thurston  
**ELEVATION RGE:** 440-1160



# LOGGING PLAN MAP

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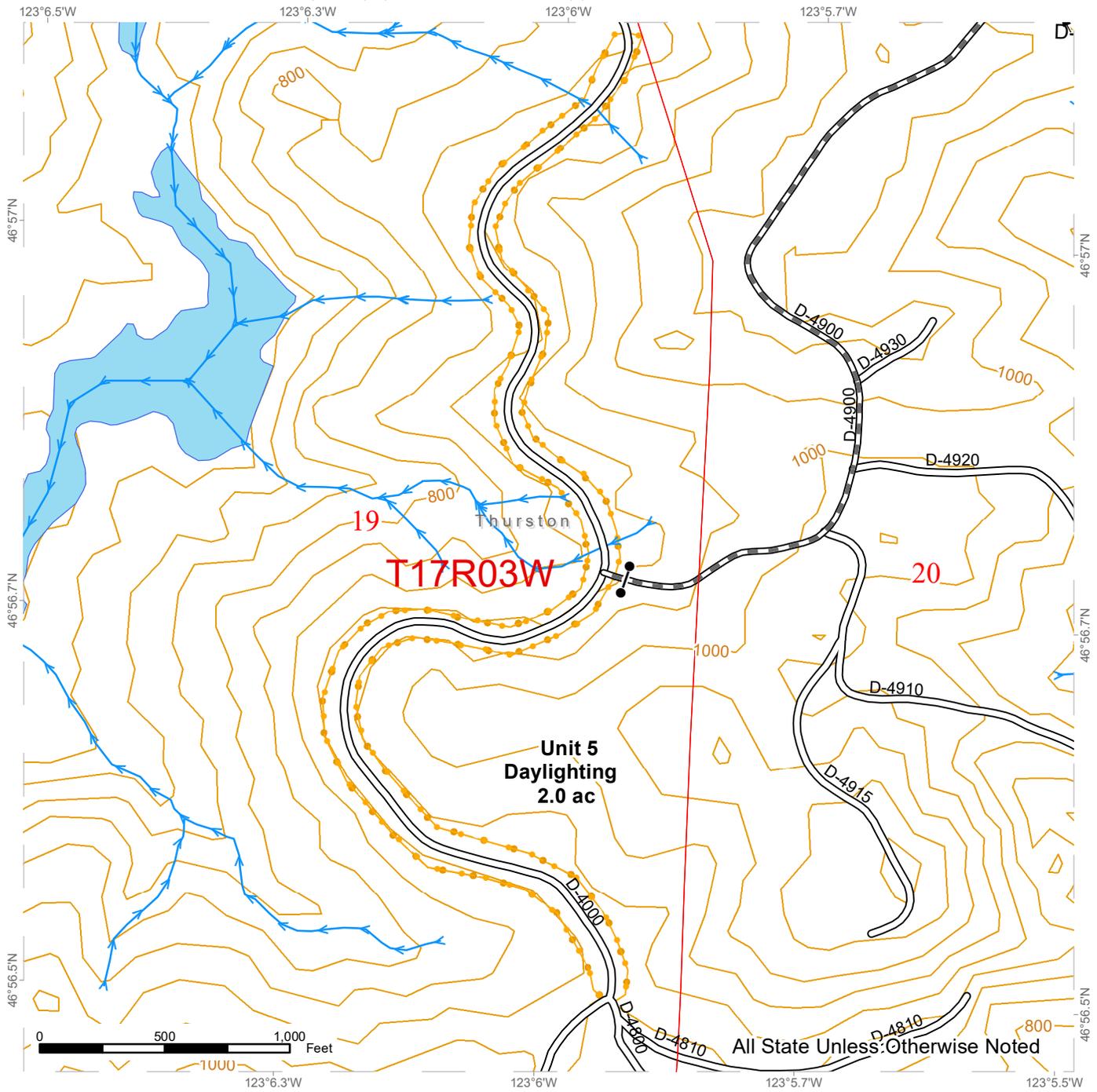


Sale Area	Existing Roads	Streams	Sale Boundary Tags	Landing - Proposed
Leave Tree Area	Required Pre-Haul Maintenance	Stream Type	Timber Type Change	Leave Tree Area <1/4-acre
Riparian Mgt Zone	Optional Construction	Stream Type Break	Trail	
Forested Wetland		Survey Monument		
Wetland Mgt Zone				
Slope Stability Mitigation Zones				
Property Line				

# LOGGING PLAN MAP

**SALE NAME:** CHAMELEON  
**AGREEMENT#:** 30-097290  
**TOWNSHIP(S):** T17R3W  
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Property Line	Existing Roads	Streams	Take / Removal Trees	Gate (H957)
Required Pre-Haul Maintenance	Stream Type	Stream Type Break		

N