

Washington DNR Timber Sales Program

Updated information is being provided for Crawford 17 Agreement #30-093508 timber sale documents as follows:

Documents amended:

Brief Description	DATE	Initials
Road Cost is revised to include corrected numbers.	12/01/2016	RM



TIMBER NOTICE OF SALE

SALE NAME: CRAWFORD 17

AGREEMENT NO: 30-093508

AUCTION: December 13, 2016 starting at 10:00 a.m., **COUNTY:** Thurston
South Puget Sound Region Office, Enumclaw, WA

SALE LOCATION: Sale located approximately 10 miles southeast of Tenino

PRODUCTS SOLD AND SALE AREA: All timber, except leave trees marked with blue paint or bounded out by yellow leave tree area tags and down timber existing more than 5 years from the day of sale bounded by the following: white "Timber Sale Boundary" tags and property line, marked with pvc pipe or white carsonite post in Units #1, #2 and #3; All right of way timber bounded by orange "Right of Way" tags on part(s) of Sections 12 all in Township 15 North, Range 1 West, W.M., containing 129 acres, more or less.

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

ESTIMATED SALE VOLUMES AND QUALITY:

Species	Avg DBH	Ring Count	Total MBF	MBF by Grade								
				1P	2P	3P	SM	1S	2S	3S	4S	UT
Douglas fir	15.2	6	2,929				23		870	1,307	673	56
Grand fir	28		13						12		1	
Maple	11		4								4	
Hemlock	21		2									2
Sale Total			2,948									

MINIMUM BID: \$788,000.00 **BID METHOD:** Sealed Bids

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

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

BID DEPOSIT: \$78,800.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: Forest products sold under this contract shall be harvested and removed using ground based equipment. Ground based equipment shall be limited to tracked ground based equipment on sustained slopes of 45% and less. Self-leveling equipment or cable tethered equipment are restricted to sustained slopes of 55% or less. Use of tracked skidders shall be allowed for pole yarding only, unless authority to use other equipment is granted in writing by the State. Yarding may be restricted during wet weather if rutting becomes excessive, per clause H-017.

Falling, yarding and timber haul within Unit #1 will not be permitted from October 1st to April 30th, nor weekdays from 7:00 PM to 7:00 AM or on weekends or state recognized holidays, unless authority to do so is granted in writing by the Contract Administrator. A Winter Operating Plan may be used, except for along the OLC-1321 and OLC-1321 Ext. roads. If permission is granted to operate from October 1st to April 30th, the purchaser shall comply with a Winter Operating Plan to include further protection of water, soil,



TIMBER NOTICE OF SALE

roads and other forest assets at the Purchaser's expense. Preventive measures required in the Winter Operating Plan must be put in place prior to commencing any winter operations.

Falling, yarding and timber haul within Units #2 and #3 will not be permitted from October 1st to April 30th, nor weekdays from 7:00 PM to 7:00 AM or on weekends or state recognized holidays, unless authorized in writing by the State. (NO WINTER OPERATING PLAN OPTION)

ROADS:

36.66 stations of optional construction. 49.68 stations of optional reconstruction. 155.73 stations of required pre-haul maintenance. 37.05 stations of required abandonment, if built, 38.23 stations of required decommissioning, if built. Purchaser maintenance on the OLC-900A, OLC-901, OLC-902, OLC-910, OLC-912, OLC-913, OLC-914 and OLC-1321 roads. Designated maintenance on all other roads used.

Rock for the proposal may be obtained from the State owned Crawford Mt. Pit, located in Section 16, Township 16 North, Range 01 West, W.M. or from any commercial source at the Purchaser's expense, as approved in writing by the Contract Administrator.

If built, construction and abandonment of the OLC-902 from station 0+00 to 15+90 and the OLC-1321 Ext. from station 0+00 to 12+78 must be completed in one operating season.

Operation of road construction equipment or rock haul will not be permitted from October 1st to April 30th, nor on weekdays from 7:00 P.M. to 7:00 A.M. or weekends or State recognized holidays, unless authority to do so is granted in writing by the Contract Administrator for all stations of the OLC-900, OLC-910, OLC-912, OLC-913, OLC-913 Ext., and OLC-914 roads. If permission is granted to operate from October 1st through April 30th, the Purchaser shall comply with a Winter Operating Plan to include further protection of water, soil, roads and other forest assets at the Purchaser's expense. Preventive measures required in the Winter Operating Plan must be put in place prior to commencing any winter operations.

Road construction will not be permitted from October 1st to April 30th on all stations of the OLC-900A, OLC-901 and OLC-1321 roads, unless authorized in writing by the State. The hauling of forest products will not be permitted from October 1 to April 30 unless authorized in writing by the Contract Administrator on the OLC-900A, OLC-901, OLC-902, OLC-1321 and the OLC-1321 Ext.

ACREAGE DETERMINATION

CRUISE METHOD: Unit acreage was determined by traversing the boundaries by GPS. Right of way acreage was determined by multiplying length times width. GPS data files are available upon request by emailing rachel.mason@dnr.wa.gov. See cruise narrative for cruise method.

FEES: \$52,327.00 is due on day of sale. \$9.00 per MBF is due upon removal. These are in addition to the bid price.

SPECIAL REMARKS: Hazard Abatement is required adjacent to the southeastern boundary of Unit #2, along Johnson Creek Rd. S. Purchaser must provide a written Extreme Hazard Abatement Plan, which meets the requirements of contract clause S-020. See timber sale map for locations.



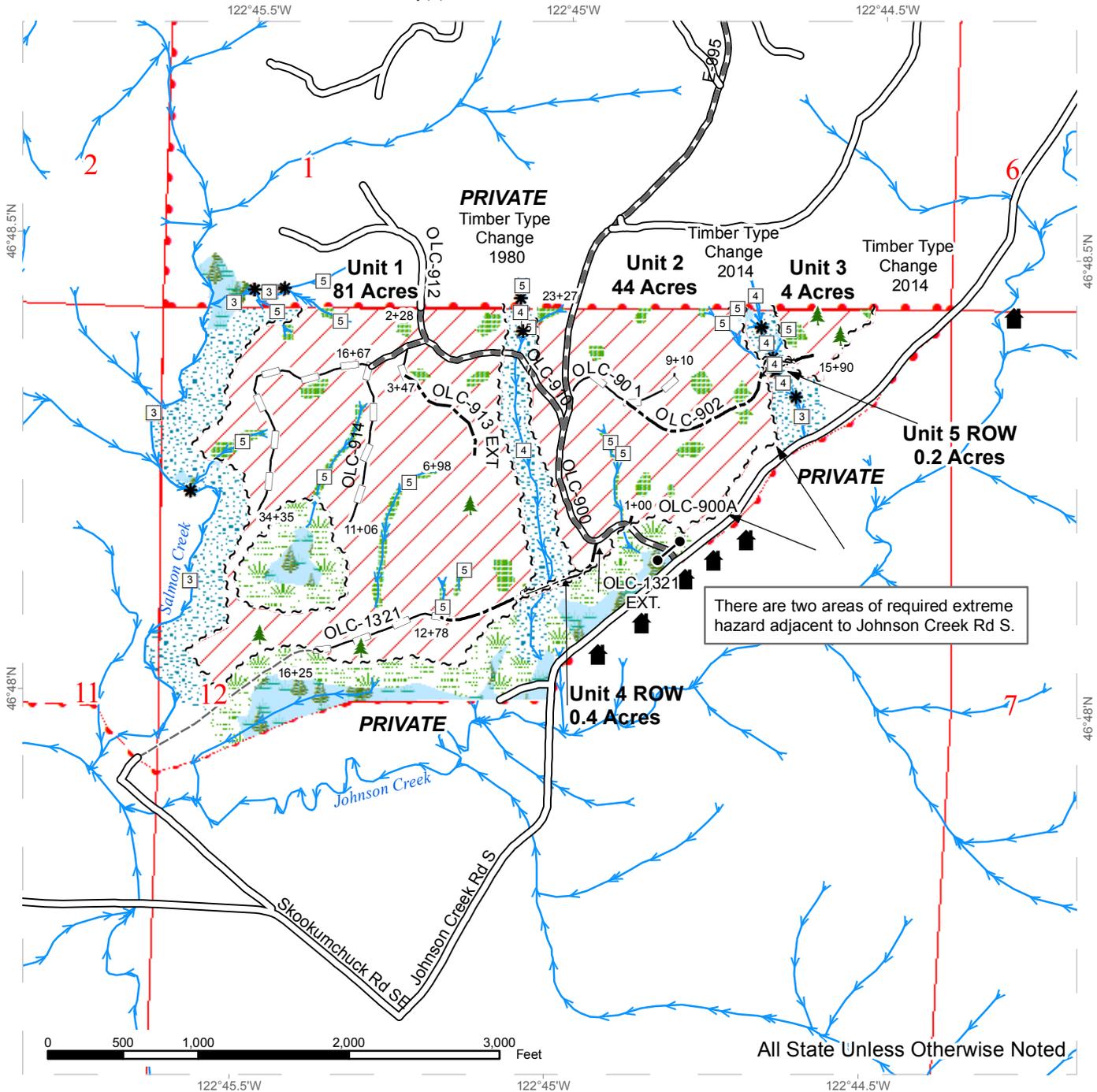
TIMBER NOTICE OF SALE

See map for gate locations. Gate keys may be obtained by contacting the South Puget Sound Region office at (360)825-1631 or by contacting the Tumwater work center at (360) 902-1447.

TIMBER SALE MAP

SALE NAME: CRAWFORD 17
AGREEMENT #: 93508
TOWNSHIP(S): T15R01W
TRUST(S): Common School and Indemnity(3)

REGION: South Puget Sound Region
COUNTY(S): THURSTON
ELEVATION RGE: 321-576



There are two areas of required extreme hazard adjacent to Johnson Creek Rd S.

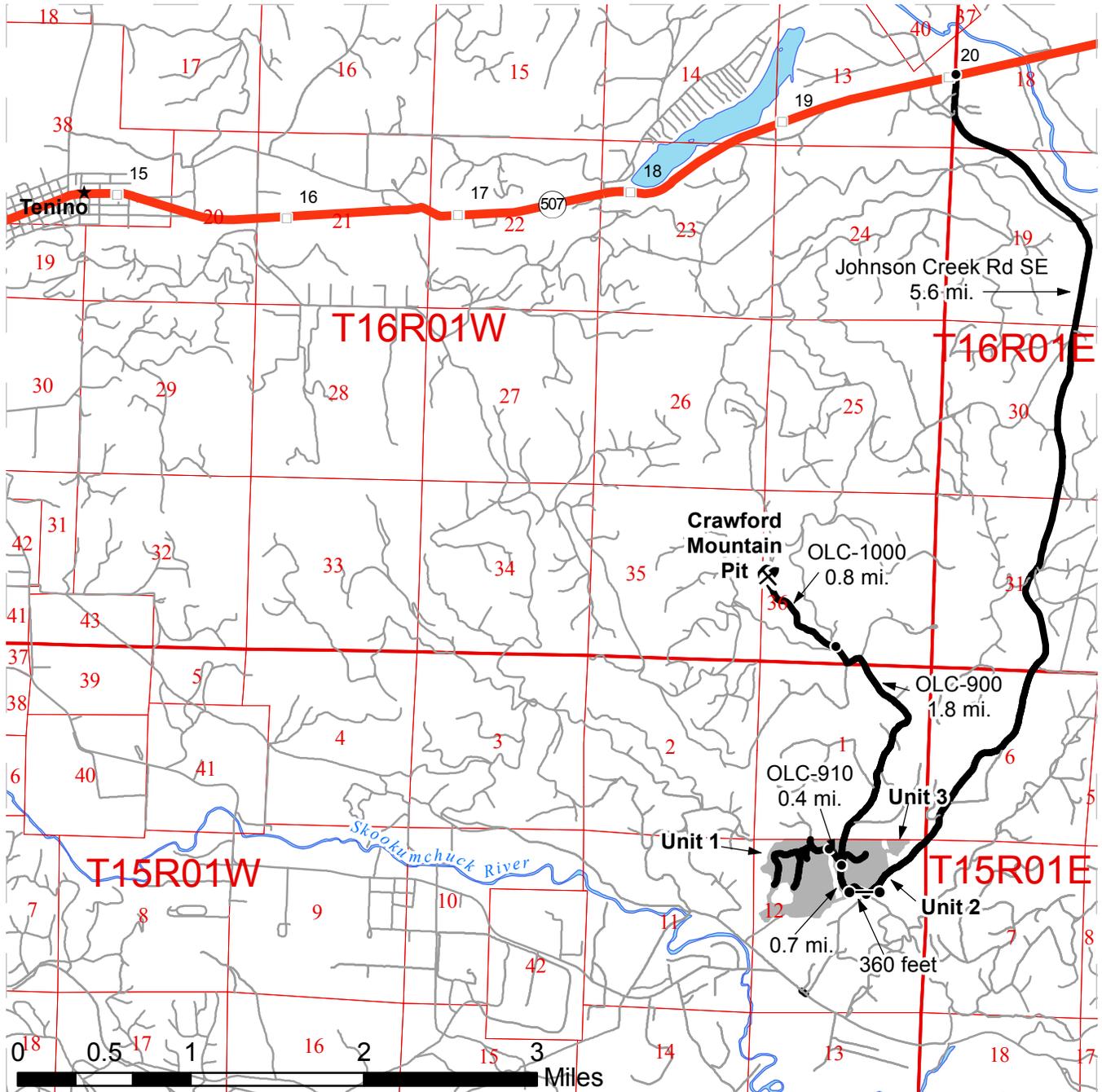
Sale Area	Existing Roads	Stream Type
Leave Tree Area - marked with yellow "Leave Tree Area" tags	Required Pre-Haul Maintenance	Stream Type Break
Riparian Mgt Zone	Optional Construction	Leave Tree Area - marked with blue paint
Forested Wetland	Optional Reconstruction	Structure
Wetland Mgt Zone	Old Grades/Trails	Gate (Master 957)
White Timber Sale Boundary tags	Streams	Public Land Survey Sections
Orange Right of Way tags		



DRIVING MAP

SALE NAME: CRAWFORD 17
AGREEMENT#: 30-093508
TOWNSHIP(S): T15R01W & T16R01W
TRUST(S): Common School and Indemnity(3)

REGION: South Puget Sound Region
COUNTY(S): THURSTON
ELEVATION RGE: 321-576



- Timber Sale Unit
- Highways
- Haul Route
- Other Route
- Milepost Markers
- Distance Indicator
- Town
- Rock Pit
- Gate (Master 957)

DRIVING DIRECTIONS:

From WA-507 milepost marker 20, turn south onto Johnson Creek Rd SE and follow for 5.6 miles. Turn west onto OLC-900 with a DNR gate.

Unit 1: Continue on OLC-900 for 0.8 miles and turn west onto OLC-910 for 0.4 miles.

Unit 2 and 3: Continue on OLC-900 for 360 feet to enter Unit 2.

Rock Pit: Continue on OLC-900 for 1.8 miles and turn right onto OLC-1000 for 0.8 miles.



**STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES**

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

Export Restricted Lump Sum AGREEMENT NO. 30-093508

SALE NAME: CRAWFORD 17

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

Section G: General Terms

G-001 Definitions

The following definitions apply throughout this contract;

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

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

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

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

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

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

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

G-011 Right to Remove Forest Products and Contract Area

Purchaser was the successful bidder on December 13, 2016 and the sale was confirmed on _____. The State, as owner, agrees to sell to Purchaser, and Purchaser agrees to purchase as much of the following forest products as can be cut and removed during the term of this contract: All timber, except leave trees marked with blue paint or bounded out by yellow leave tree area tags and down timber existing more than 5 years from the day of sale bounded by the following: white "Timber Sale Boundary" tags and property line, marked with pvc pipe or white carsonite post in Units #1, #2 and #3; All right of way timber bounded by orange "Right of Way" tags, located on approximately 129 acres on part(s) of Section 12 in Township 15 North, Range 1 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-031 Contract Term

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

G-040 Contract Term Adjustment - No Payment

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

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

G-051 Contract Term Extension - Payment

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

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

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

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

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

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

- e. Payment of \$641.00 per acre per annum for the acres on which an operating release has not been issued within harvest area.
- f. In no event will the extension charge be less than \$200.00.
- g. Extension payments are non-refundable.

G-053 Surveys - Sensitive, Threatened, Endangered Species

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

G-060 Exclusion of Warranties

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

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

threatened or endangered species, or the presence of their habitat, within the sale area.

- g. THAT THE FORESTRY OPERATIONS to be performed under this contract WILL BE FREE FROM REGULATORY ACTIONS by governmental agencies. The State is not responsible for actions to enforce regulatory laws, such as the Washington Forest Practices Act (chapter 76.09 RCW), taken by the Department of Natural Resources or any other agency that may affect the operability of this timber sale.
- h. Items contained in any other documents prepared for or by the State.

G-062 Habitat Conservation Plan

The State has entered into a Habitat Conservation Plan (HCP) with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service (the Services) to address state trust land management issues relating to compliance with the Federal Endangered Species Act. The activities to be carried out under this contract are located within the State's HCP area and are subject to the terms and conditions of the HCP, and the Services' Incidental Take Permit Nos. 812521 and 1168 (collectively referred to as ITP), or as amended hereafter by the Services. The ITP authorizes the incidental take of certain federally listed threatened and endangered species, as specified in the ITP conditions. All HCP materials, including the ITP, are available for review at the State's Regional Offices and the administrative headquarters in Olympia, Washington.

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

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

G-063 Incidental Take Permit Notification Requirements

- a. Purchaser shall immediately notify the Contract Administrator of new locations of permit species covered by the Incidental Take Permits (ITP) that are discovered within the area covered by the State's Habitat Conservation Plan (HCP), including, but not limited to: locations of occupied murrelet habitat; spotted owl nest sites; wolves; grizzly bears; nests, communal roosts, or feeding concentrations of bald eagles; peregrine falcon nests; Columbian white-tailed deer; Aleutian Canada geese; Oregon silverspot butterflies; and additional stream reaches found to contain bull trout. Purchaser is required to

notify the Contract Administrator upon discovery of any fish species found in streams or bodies of water classified as non-fish bearing. In all circumstances, notification must occur within a 24 hour time period.

- b. Upon locating any live, dead, injured, or sick specimens of any permit species covered by the ITP, Purchaser shall immediately notify the Contract Administrator. Purchaser shall notify the Contract Administrator if there is any doubt as to the identification of a discovered permit species. Purchaser may be required to take certain actions to help the Contract Administrator safeguard the well-being of any live, injured or sick specimens of any permit species discovered, until the proper disposition of such specimens can be determined by the Contract Administrator. Any such requirements will be explained to Purchaser by the Contract Administrator during the Pre-Work Conference. In all circumstances, notification must occur within a 24 hour time period.
- c. Purchaser shall refer to a specific ITP number, PRT-812521 or ITP 1168 (copies which are located in the region office) in all correspondence and reports concerning permit activities.
- d. Provisions and requirements of the ITP shall be clearly presented and explained to Purchaser by Contract Administrator during the Pre-Work Conference as per contract clause G-330. All applicable provisions of the ITP and this schedule must be presented and clearly explained by Purchaser to all authorized officers, employees, contractors, or agents of Purchaser conducting authorized activities in the timber sale area. Any questions Purchaser may have about the ITP should be directed to the Contract Administrator.

G-064 Permits

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

G-065 Regulatory Disclaimer

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

G-066 Governmental Regulatory Actions

a. Risk

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

Purchaser shall remain responsible for payment of the total contract price notwithstanding the impracticability or frustration.

b. Sale Area

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

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

c. Adjustment of Price

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

G-070 Limitation on Damage

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

G-080 Scope of State Advice

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

G-091 Sale Area Adjustment

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

G-101 Forest Products Not Designated

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

The pricing schedule has not been set for the sale.

G-106 Adding Naturally Damaged Forest Products

Any forest products not designated for removal that are seriously damaged by disease, insects or wind, or that may contribute seriously to the spread of insect or disease damage may be added to this sale by the State's Contract Administrator. Additions must be in unlogged areas of the sale and added volume shall not exceed an amount equal to 10 percent of the original advertised volume. Added forest products become a part of this contract and shall be paid for at the rate set forth in clause G-101, G-102 or G-103.

G-111 Title and Risk of Loss

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

G-116 Sustainable Forestry Initiative® (SFI) Certification

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

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

G-120 Responsibility for Work

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

G-121 Exceptions

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

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

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

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

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

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

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

G-140 Indemnity

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

G-150 Insurance

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

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

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

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

Before starting work, Purchaser shall furnish State of Washington, Department of Natural Resources with a certificate(s) of insurance, executed by a duly authorized

representative of each insurer, showing compliance with the insurance requirements specified in the contract. Insurance coverage shall be obtained by the Purchaser prior to operations commencing and continually maintained in full force until all contract obligations have been satisfied or an operating release has been signed by the State.

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

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

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

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

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

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

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

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

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

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

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

G-160 Agents

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

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

G-170 Assignment and Delegation

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

G-180 Modifications

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

G-190 Contract Complete

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

G-200 Notice

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

G-210 Violation of Contract

G-220 State Suspends Operations

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

G-210 Violation of Contract

- a. If Purchaser violates any provision of this contract, the Contract Administrator, by written notice, may suspend those operations in violation. If the violation is capable of being remedied, Purchaser has 30 days after receipt of a suspension notice to remedy the violation. If the violation cannot be remedied (such as a violation of WAC 240-15-015) or Purchaser fails to remedy the violation within 30 days after receipt of a suspension notice, the State may terminate the rights of Purchaser under this contract and collect damages.
- b. If the contract expires pursuant to clause G-030 or G-031 without Purchaser having performed all its duties under this contract, Purchaser's right to operate is terminated and Purchaser shall not have the right to remedy the breach. This provision shall not relieve Purchaser of any payment obligations.
- c. The State has the right to remedy the breach in the absence of any indicated attempt by Purchaser or if Purchaser is unable, as determined by the State, to

remedy the breach. Any expense incurred by the State shall be charged to Purchaser and shall be paid within 30 days of receipt of billing.

- d. If Purchaser's violation is a result of a failure to make a payment when due, in addition to a. and b. above, interest shall accrue on the unpaid balance at 12 percent per annum, beginning the date payment was due.

G-220 State Suspends Operation

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

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

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

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

G-230 Unauthorized Activity

Any cutting, removal, or damage of forest products by Purchaser, its employees, agents, or invitees, including independent contractors, in a manner inconsistent with the terms of this contract or State law, is unauthorized. Such activity may subject Purchaser to liability for triple the value of said forest products under RCW 79.02.320 or RCW 79.02.300 and may result in prosecution under RCW 79.02.330 or other applicable statutes.

G-240 Dispute Resolution

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

- a. In the event of a dispute, Purchaser must make a written request to the Region Manager for resolution prior to seeking other relief.
- b. The Region Manager will issue a written decision on Purchaser's request within ten business days.

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

G-250 Compliance with All Laws

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

G-260 Venue

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

G-270 Equipment Left on State Land

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

G-280 Operating Release

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

G-310 Road Use Authorization

Purchaser is authorized to use the following State roads and roads for which the State has acquired easements and road use permits; OLC-900, OLC-1000, OLC-900A, OLC-901, OLC-902, OLC-910, OLC-912, OLC-913, OLC-913 Ext., OLC-914, OLC-1321 and the OLC-1321 Ext. 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 OLC-900, OLC-910, OLC-912 and OLC-1000 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 No. 55-090942, entered into between State of Washington Department of Natural Resources and Weyerhaeuser Company, dated 6/17/2015.

G-430 Open Fires

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

G-450 Encumbrances

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

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

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 \$78,859.00. The total contract price consists of a \$0.00 contract bid price plus \$78,859.00 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 \$0.00. The Security provided shall guarantee

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

P-100 Performance Security Reduction

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

Section H: Harvesting Operations

H-013 Reserve Tree Damage Definition

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

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

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

If the Contract Administrator determines that a reserve tree has been cut or damaged, the Purchaser shall provide a replacement reserve tree of like condition, size, and species within the sale area, as approved by the Contract Administrator. Purchaser may be required to pay liquidated damages for Excessive Reserve Tree Damage as detailed in clause D-041.

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

H-017 Preventing Excessive Soil Disturbance

Operations may be suspended when soil rutting exceeds 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-018 Temporary Stream Crossings

A temporary stream crossing is required to access Unit #1 and Unit #3.

Purchaser shall comply with the following during the yarding operation:

- a. Adhere to the approved Hydraulic Permit Application (HPA) or Forest Practice Application (FPA) with approved hydraulic project work, if required, amend a current FPA or obtain a new FPA prior to commencing any new stream crossing construction.
- b. Location of the temporary stream crossing must be approved by the Contract Administrator.
- c. A temporary stream crossing shall not exceed 36 feet in width, including rub trees.
- d. Purchaser shall suspend operations during periods of wet weather when a high potential for sediment delivery into typed waters may occur.
- e. Temporary stream crossings shall be removed at the time of completion of yarding as required by the Contract Administrator.

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

H-035 Fall Trees Into Sale Area

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

H-040 Purchaser Harvest Plan

Purchaser shall, as part of the plan of operations, prepare an acceptable harvest plan for all units. The plan shall address the felling and yarding operations and logging debris, 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-060 Skid Trail Locations

Locations of skid trails must be marked by Purchaser and approved by the Contract Administrator prior to the felling of timber.

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 ground based equipment. Ground based equipment shall be limited to tracked ground based equipment on sustained slopes of 45% and less. Self-leveling equipment or cable tethered equipment are restricted to sustained slopes of 55% or less. Use of tracked skidders shall be allowed for pole yarding only, unless authority to use other equipment is granted in writing by the State.

H-125 Log Suspension Requirements

Lead-end suspension is required for all yarding activities.

H-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

- a. Falling and yarding within Unit #1 and timber haul on the OLC-900, OLC-910, OLC-912, OLC-913, OLC-913 Ext and OLC-914, will not be permitted from October 1st to April 30th, nor weekdays from 7:00 PM to 7:00 AM or on weekends or state recognized holidays, unless authority to do so is granted in writing by the Contract Administrator. A Winter Operating Plan may be used, except for along the OLC-1321 and OLC-1321 Ext. roads. If permission is granted to operate between October 1st to April 30th, the purchaser shall comply with a Winter Operating Plan to include further protection of water, soil, roads and other forest assets at the Purchaser's expense. Preventive measures required in the Winter Operating Plan must be put in place prior to commencing any winter operations.
- b. Any existing downed trees or logs yarded to the landing will be returned to their original locations.
- c. Equipment limitation zones are required within 30 feet of Type 5 streams.

- d. 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, or trees felled or damaged, outside the timber sale boundary.
- f. Purchaser shall cut all vine maple within the harvest units(s), leaving a stump no more than 12 inches in height.
- g. To facilitate proper reforestation in areas of high slash concentrations, purchaser shall, in concurrence with ground based yarding, clear plantable spots at a 10.5 foot by 10.5 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.

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. Felling and yarding operations will not be permitted in Unit #2 and Unit #3 from October 1st to April 30th, unless authorized in writing by the State.
- b. The hauling of forest products will not be permitted on the OLC-900A, OLC-901, OLC-902, OLC-1321 and the OLC-1321 Ext. from October 1st to April 30th, unless authorized in writing by the State.
- c. 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.

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 the harvest area, all live stems greater than 2 inches in diameter, except leave trees, shall be felled. Trees shall be severed at a stump height not to exceed 12 inches and cut completely free of the stump. Areas of young or immature timber may be excluded from this requirement by the Contract Administrator.

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

Road construction and associated work provisions of the Road Plan for this sale, dated 5/26/2016 are hereby made a part of this contract.

C-050 Purchaser Road Maintenance and Repair

Purchaser shall perform work at their own expense on the OLC-900A, OLC-901, OLC-902, OLC-910, OLC-912, OLC-913, OLC-913 Ext., OLC-914, OLC-1321 and OLC-1321 Ext. roads. All work shall be completed to the specifications detailed in the Road Plan.

C-060 Designated Road Maintainer

If required by the State, Purchaser shall perform maintenance and replacement work as directed by the Contract Administrator on the OLC-900 and OLC-1000 roads. Purchaser shall furnish a statement in a form satisfactory to the State showing the costs incurred while performing this work. Costs shall be based on the rates set forth in the State current Equipment Rate Schedule on file at the region and Olympia offices. The State shall reimburse Purchaser for said costs within 30 days of receipt and approval of the statement.

C-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-020 Extreme Hazard Abatement

Purchaser shall provide a written Extreme Hazard Abatement plan that meets the requirements of WAC 332-24 prior to the beginning of logging operations. The plan must be acceptable to the Contract Administrator. The plan will identify how Purchaser will accomplish abatement. Purchaser shall also provide, and keep current, a written timetable for completion of all specified work in the plan. The Contract Administrator's acceptance and approval of Purchaser's hazard abatement plan shall not be construed as any statement or warranty that the hazard abatement plan is adequate for Purchaser's purposes or complies with applicable laws.

S-030 Landing Debris Clean Up

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

S-050 Cessation of Operations for Low Humidity

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

S-060 Pump Truck or Pump Trailer

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

S-100 Stream Cleanout

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

S-110 Resource Protection

No yarding equipment may operate within the Riparian or Wetland Management Zones or within 30 feet of Type 5 streams unless authority is granted in writing by the Contract Administrator.

S-120 Stream Protection

No timber shall be felled into, across, or yarded through any wetlands, including those less than 1/4 acre in size or any stream, except Type 5 streams.

S-130 Hazardous Materials

a. Hazardous Materials and Waste - Regulatory Compliance

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

b. Hazardous Materials Spill Prevention

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

c. Hazardous Materials Spill Containment, Control and Cleanup

If safe to do so, Purchaser shall take immediate action to contain and control all hazardous material spills. Purchaser shall ensure that enough quick response spill kits capable of absorbing 4 to 6 gallons of oil, coolant, solvent or contaminated water are available on site to quickly address potential spills from any piece of equipment at all times throughout active operations. If large quantities of bulk fuel/other hazardous materials are stored on site, Purchaser must be able to effectively control a container leak and contain & recover a hazmat spill equal to the largest single on site storage container volume. (HAZWOPER reg. 29CFR 1910.120 (j) (1) (vii)).

d. Hazardous Material Release Reporting

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

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

DNR Contract Administrator

ECY - Northwest Region:

1-425-649-7000

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

ECY - Southwest Region:

1-360-407-6300

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

ECY - Central Region:

1-509-575-2490

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

ECY - Eastern Region:

1-509-329-3400

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

S-131 Refuse Disposal

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

Section D: Damages

D-013 Liquidated Damages or Failure to Perform

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

Clause P-020 governs Purchaser's liability in the event Purchaser fails to perform any of the contract requirements other than the below liquidated damage clauses without written approval by the State. Purchaser's failure to pay for all or part of the forest

products sold in this contract prior to expiration of the contract term results in substantial injury to the State. Therefore, Purchaser agrees to pay the State the full lump sum contract price in P-020 in the event of failure to perform.

D-041 Reserve Tree Excessive Damage

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

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

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

Purchaser

Art Tasker
South Puget Sound Region Manager

Date: _____
Address:

Date: _____

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

STATE OF _____)

COUNTY OF _____)

On this _____ day of _____, 20____, before me personally appeared _____

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

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

Notary Public in and for the State of

My appointment expires _____



WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOREST EXCISE TAX ROAD SUMMARY SHEET

Region:

Timber Sale Name:

Application Number:

EXCISE TAX APPLICABLE ACTIVITIES

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

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

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

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

Pre-Haul Maintenance: **linear feet**
Existing road to receive maintenance work (specifically required by the contract) prior to haul

EXCISE TAX EXEMPT ACTIVITIES

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

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

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

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

(Revised 6/13)

PRE-CRUISE NARRATIVE

Sale Name: Crawford 17	Region: South Puget Sound
Agreement #: 30-093508	District: Black Hills
Contact Forester: Dave Dalzotto	Phone/ Location: (360)-480-7921 Ext: /
Alternate Contact: Andy Ritter	Phone/ Location: (360)-791-5980 Ext: /

Type of Sale (lump sum, mbf scale, tonnage scale or contract harvest): Lump Sum
Required or Optional removal of utility as pulp: No
Evaluated for RFRS Implementation?: None of the units were considered, due to protection of geological features within RMZs.
Percentage cable (specify downhill vs uphill): 0%
Percentage ground based: 100%
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 checked="" type="checkbox"/> Other: Cottonwood and Cherry

UNIT ACREAGES AND METHOD OF DETERMINATION:

Unit # Harvest R/W or RMZ WMZ	Legal Description Sec/Twp/Rng	Grant	Gross Traversed Acres	Deductions from Gross Acres (No harvest acres)				Net Harvest Acres	Acreage Determination (List method and error of closure if applicable)
				RMZ/ WMZ Acres	Leave Tree Acres	Existing Road Acres	Other Acres (describe)		
1	Sec 12/ T 15N/ R 01 W	03	89.5	0	5.4	3.0	0	81.1	GPS
2	Sec 12/ T 15N/ R 01 W	03	48.4	0	2.8	1.9	0	43.7	GPS
3	Sec 12/ T 15N/ R 01 W	03	4.3	0	0.6	0	0	3.7	GPS
4 (ROW)	Sec 12/ T 15N/ R 01 W	03	0.4	0	0	0	0	0.4	Length*Width(36')
5 (ROW)	Sec 12/ T 15N/ R 01 W	03	0.2	0	0	0	0	0.2	Length*Width(40')
TOTAL ACRES			142.8	0	8.8	4.9	0	129.1	

HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription: (Mark leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
1	Variable Retention Harvest: Boundaries are marked with white "Timber Sale Boundary" tags and pink flagging, and property line to the North of the unit. Clumped leave trees are marked with yellow "Leave Tree Area" tags and pink flagging.	Some of the leave tree clumps were left in order to protect sensitive areas.	8 leave trees per acre.
2	Variable Retention Harvest: Boundaries are marked with white "Timber Sale Boundary" tags and pink flagging, and property line to the North of the unit. Clumped leave trees are marked with yellow "Leave Tree Area" tags and pink flagging.	Some of the leave tree clumps were left in order to protect sensitive areas.	8 leave trees per acre.
3	Variable Retention Harvest: Boundaries are marked with white "Timber Sale Boundary" tags and pink flagging, and property line to the North of the unit. Clumped leave trees are marked with yellow "Leave Tree Area" tags and pink flagging. There are an additional four leave trees marked with blue paint.	Some of the leave tree clumps were left in order to protect sensitive areas.	8 leave trees per acre.
4 (ROW)	Right of Way marked with orange "Right of Way" tags and orange flagging.	N/A	N/A
5 (ROW)	Right of Way marked with orange "Right of Way" tags and orange flagging.	N/A	N/A

OTHER PRE-CRUISE INFORMATION:

Unit #	Estimated Volume	Access information (Gates, locks, etc.)	Photos, traverse maps required
1	See Cruise	From WA-507 milepost marker 20, turn south onto Johnson Creek Rd SE and follow for 5.6 miles. Turn west onto OLC-900. Continue on OLC-900 for 0.8 miles and turn west onto OLC-910 for 0.4 miles.	
2		From WA-507 milepost marker 20, turn south onto Johnson Creek Rd SE and follow for 5.6 miles. Turn west onto OLC-900. Continue on OLC-900 for 360 feet.	
3		From WA-507 milepost marker 20, turn south onto Johnson Creek Rd SE and follow for 5.6 miles. Turn west onto OLC-900. Continue on OLC-900 for 360 feet.	
4 (ROW)		Between Units 1 and 2.	
5 (ROW)		Between Units 2 and 3.	

REMARKS:

There are three different timber types. Two in Unit 1, two in Unit 2, and one in Unit 3. You may want to walk the units and set up recon plots before the cruise is designed. Around 90% Douglas-Fir.

The gate on the OLC-900 uses a Master Lock 957 key.

Prepared By: Dave Dalzotto Date: 05/13/2016	Title: Forester 1	CC:
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Revised 2/23/2007 (PSLD)

Cruise Narrative

Sale Name: Crawford 17	Region: South Puget Sound
Agree. #: 30-093508	District: Black Hills
Lead cruiser: John Piety	Completion date: 6-13-2016
Other cruisers on sale: none	

Unit acreage specifications:

Unit #	Cruised acres	Cruised acres agree with sale acres? Yes/No	If acres do not agree explain why.
1	81.1	Yes	
2	43.7	Yes	
3	3.7	Yes	
RW 4	0.4	Yes	
RW 5	0.2	Yes	
Total	129.1		

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	33.61 BAF	4.5	295' X 295'	1:1	38
2	VP	33.61 BAF	4.5	295' X 295'	1:1	20
3	VP	46.91 BAF	4.5	225' X 225'	1:1	3
RW04	VP	33.61 BAF	4.5	200' along centerline	100%	2
RW05	VP	33.61 BAF	4.5	100' along centerline	100%	1

Sale/Cruise Description:

Minor species cruise intensity:	100% up to 5 trees per species
Minimum cruise spec:	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

	<p>multiples min TDIB 8". Max butt 27")</p> <p>HB - Logs meeting the following criteria: Surface characteristics for an Intermediate B sort will have sound tight knots not to exceed 1 1/2" in diameter. May include logs with not more than two larger knots up to 2 1/2" in diameter. Logs will have a growth ring count of 6 or more rings per inch in the outer third to end of the log. (Intermediate sort. Grades 2S, 3S. Lengths 16ft-40ft, 2ft multiples min TDIB 8". Max butt 27").</p> <p>D - Domestic quality logs that do not meet high quality or intermediate definitions. (Domestic sort. Grades 2S, 3S, 4S and utility. Lengths 16ft-40ft, min TDIB 2in.)</p> <p>O- Logs exceeding 27" on the large end. (Oversize sort. Grade 2S. Lengths 16ft-40ft, 2ft multiples butt diameter min dia. 27 in. +)</p> <p>R - Logs meeting the following criteria: Surface characteristics for a rough 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>				
Avg ring count by sp:	DF =	6	WH =	n/a	
Leave/take tree description:	Leave trees are tagged out with yellow leave tree tags.				
Other conditions					

Field observations:

There was RA, BLM, WH, and GF out in the units but not enough to make a truck load. There was cedar seen also, mostly in unit 3 with a couple sticks in the other units, 1 to 2 loads. The majority of units 1 and 2 are 40 year old DF. Unit #1 has about 17 acres that did not have any PCT activity so is a little heavier stocked with smaller diameters. Unit # 2 had an area of older 70 +/- timber looks to be 7 to 9 acres, this was not represented on the cruise very well due to plot placement. The majority of the DF is 3 and 4 saw domestic quality logs.

Grants: 03

Prepared by:

John Piety

Title:

Cruiser

CC:

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

T15N R01W S12 Ty0001 THRU T15N R01W S12 TyRW05	Project: CRAWFO17 Acres 129.10	Page 1 Date 6/13/2016 Time 1:43:44PM
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Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre	
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf		
									2-4	5-7	8-11	12+	12-20	21-30	31-35	36-99						
DF	HASM					85	85	11										40	18	530	2.45	.2
DF	HA2S			1		290	290	38										40	13	229	1.32	1.3
DF	HA3S				.0	72	72	9			100							40	11	180	0.94	.4
DF	HB2S			5	1.3	1,009	996	129					100					40	14	305	1.66	3.3
DF	HB3S			1		244	244	32			100							40	9	125	0.74	1.9
DF	D 2S			22	3.4	5,279	5,102	659					100		2	3	95	39	13	220	1.44	23.1
DF	D 3S			44	1.9	10,013	9,825	1,268			100				1	9	90	39	9	127	0.85	77.3
DF	D 4S			23	.4	5,235	5,213	673			98	2		5	23	11	61	32	5	40	0.37	131.4
DF	D UT			2	.0	431	431	56	65								35	28	3	10	0.16	43.7
DF	OS SM					90	90	12										40	21	760	3.34	.1
DF	OS 2S			2		342	342	44										40	19	584	3.03	.6
DF	Totals			99	1.7	23,090	22,690	2,929		1	23	45	31	1	7	7	85	34	7	80	0.63	283.2
GF	D 2S			24		25	25	3					100					40	13	240	1.55	.1
GF	D 4S			3		3	3	0		100			100					16	7	30	0.53	.1
GF	OS 2S			73		73	73	9					100					40	20	700	3.23	.1
GF	Totals			0		102	102	13		3		97		3		97		32	13	323	2.08	.3
WH	D UT			100		16	16	2		100								40	7	70	1.02	.2
WH	Totals			0		16	16	2		100								40	7	70	1.02	.2
BM	D 4S			100		27	27	4		100								36	5	40	0.34	.7
BM	Totals			0		27	27	4		100								36	5	40	0.34	.7
Totals					1.7	23,235	22,835	2,948		1	23	45	31	1	7	7	85	34	7	80	0.63	284.4

TC PSTATS		PROJECT STATISTICS							PAGE	1	
		PROJECT CRAWFO17							DATE	6/13/2016	
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt	
15N	01	12	CRAWFORD17	0001	THR	129.10	64	340	S	W	
15N	01W	12	CRAWFORD17	RW05							
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL			64	340	5.3						
CRUISE			35	173	4.9	18,410	.9				
DBH COUNT											
REFOREST											
COUNT			29	163	5.6						
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		170	141.6	15.2	68	45.8	178.8	23,090	22,690	6,086	6,086
GRAND F		1	.1	28.0	100	0.1	.4	102	102	21	21
BL MAPLE		1	.7	11.0	37	0.1	.4	27	27	8	8
WHEMLOCK		1	.2	21.0	52	0.1	.6	16	16	9	9
TOTAL		173	142.6	15.2	68	46.2	180.2	23,235	22,835	6,125	6,125
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		82.8	6.3	208	222	236					
GRAND F											
BL MAPLE											
WHEMLOCK											
TOTAL		85.5	6.5	210	225	239	292	149	73		
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		49.9	6.2	133	142	150					
GRAND F		800.0	99.9	0	0	0					
BL MAPLE		800.0	99.9	0	1	1					
WHEMLOCK		800.0	99.9	0	0	0					
TOTAL		48.4	6.0	134	143	151	94	48	23		
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		36.8	4.6	171	179	187					
GRAND F		800.0	99.9	0	0	1					
BL MAPLE		800.0	99.9	0	0	1					
WHEMLOCK		800.0	99.9	0	1	1					
TOTAL		35.6	4.4	172	180	188	51	26	13		
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		44.5	5.6	21,428	22,690	23,952					
GRAND F		800.0	99.9	0	102	203					
BL MAPLE		800.0	99.9	0	27	54					
WHEMLOCK		800.0	99.9	0	16	32					
TOTAL		44.6	5.6	21,562	22,835	24,108	80	41	20		

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT CRAWFO17				DATE	6/13/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
15N	01W	12	CRAWFORD17	0001	81.10	38	197	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	38		197	5.2						
CRUISE	19		95	5.0	13,150	.7				
DBH COUNT										
REFOREST										
COUNT	19		102	5.4						
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	94	161.8	14.0	64	46.3	173.4	20,686	20,364	5,564	5,564
WHEMLOCK	1	.4	21.0	52	0.2	.9	26	26	15	15
TOTAL	95	162.1	14.0	64	46.5	174.2	20,711	20,389	5,579	5,579
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	49.9	5.1	158	167	175					
WHEMLOCK										
TOTAL	50.3	5.2	157	166	174	101	51	25		
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	40.7	6.6	151	162	172					
WHEMLOCK	616.4	99.9	0	0	1					
TOTAL	40.2	6.5	152	162	173	65	33	16		
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	24.9	4.0	166	173	180					
WHEMLOCK	616.4	99.9	0	1	2					
TOTAL	24.1	3.9	167	174	181	23	12	6		
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	27.7	4.5	19,449	20,364	21,278					
WHEMLOCK	616.4	99.9	0	26	51					
TOTAL	27.5	4.5	19,482	20,389	21,297	30	15	8		

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT CRAWFO17				DATE	6/13/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
15N	01W	12	CRAWFORD17	0002	43.70	20	108	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	20	108	5.4	4,557		1.0				
CRUISE	10	46	4.6							
DBH COUNT										
REFOREST										
COUNT	10	61	6.1							
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	46	104.3	17.9	78	42.9	181.5	24,989	24,414	6,561	6,561
TOTAL	46	104.3	17.9	78	42.9	181.5	24,989	24,414	6,561	6,561
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	61.4	9.0	248	272	297					
TOTAL	61.4	9.0	248	272	297	151	77	38		
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	34.0	7.8	96	104	112					
TOTAL	34.0	7.8	96	104	112	49	25	12		
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	36.7	8.4	166	181	197					
TOTAL	36.7	8.4	166	181	197	57	29	14		
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	45.5	10.4	21,868	24,414	26,961					
TOTAL	45.5	10.4	21,868	24,414	26,961	87	44	22		

TC TSTATS		STATISTICS					PAGE	1		
		PROJECT CRAWFO17					DATE	6/13/2016		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
15N	01W	12	CRAWFORD17	0003	3.70	3	19	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		3	19	6.3						
CRUISE		3	16	5.3	549	2.9				
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	14	121.0	20.1	99	59.3	265.8	54,008	53,952	12,103	12,103
GRAND F	1	3.7	28.0	100	3.0	15.6	3,547	3,547	730	730
BL MAPLE	1	23.7	11.0	37	4.7	15.6	948	948	291	291
TOTAL	16	148.3	19.2	89	67.9	297.1	58,503	58,447	13,123	13,123
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		56.2	15.6	487	576	666				
GRAND F										
BL MAPLE										
TOTAL		61.1	15.8	478	568	657	159	81	40	
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		44.0	30.5	84	121	158				
GRAND F		173.2	119.8		4	8				
BL MAPLE		173.2	119.8		24	52				
TOTAL				148	148	148				
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		44.4	30.7	184	266	347				
GRAND F		173.2	119.8		16	34				
BL MAPLE		173.2	119.8		16	34				
TOTAL		18.2	12.6	260	297	335	19	10	5	
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		43.5	30.1	37,724	53,952	70,181				
GRAND F		173.2	119.8		3,547	7,798				
BL MAPLE		173.2	119.8		948	2,083				
TOTAL		37.3	25.8	43,364	58,447	73,531	80	41	20	

T15N R01W S12 TRW04										T15N R01W S12 TRW04			
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt				
15N	01W	12	CRAWFORD17	RW04	.40	2	13	S	W				

S T	So rt	Gr ad	%	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre					
								Net BdFt	Def%	Gross	Net	Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf	
												2-4	5-7	8-11	12+	12-20	21-30	31-35						36-99
DF	DM	3S	37	1.8	8,303	8,150	3	100				20	80	38	8	86	0.59	94.6						
DF	DM	4S	57		12,648	12,648	5	100				8	28	7	57	32	5	39	0.31	322.9				
DF	DM	UT	6		1,189	1,189	0	100								34	2	9	0.13	137.5				
DF	Totals		100	.7	22,140	21,987	9	5	58	37				4	16	12	68	33	5	40	0.32	554.9		
Type	Totals			.7	22,140	21,987	9	5	58	37				4	16	12	68	33	5	40	0.32	554.9		

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	CRAWFO17			DATE	6/13/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
15N	01W	12	CRAWFORD17	RW04	0.40	2	13	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	2	13	6.5							
CRUISE	2	13	6.5	141			9.2			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	13	352.1	10.7	53	66.9	218.5	22,140	21,987	5,849	5,849
TOTAL	<i>13</i>	<i>352.1</i>	<i>10.7</i>	<i>53</i>	<i>66.9</i>	<i>218.5</i>	<i>22,140</i>	<i>21,987</i>	<i>5,849</i>	<i>5,849</i>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF					# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR	52.4	15.1	63	75	86					
TOTAL	<i>52.4</i>	<i>15.1</i>	<i>63</i>	<i>75</i>	<i>86</i>	<i>118</i>	<i>60</i>	<i>30</i>		
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR	27.2	25.5	262	352	442					
TOTAL	<i>27.2</i>	<i>25.5</i>	<i>262</i>	<i>352</i>	<i>442</i>	<i>52</i>	<i>26</i>	<i>13</i>		
CL: 68.1 %	COEFF	BASAL AREA/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR	10.9	10.2	196	218	241					
TOTAL	<i>10.9</i>	<i>10.2</i>	<i>196</i>	<i>218</i>	<i>241</i>	<i>8</i>	<i>4</i>	<i>2</i>		
CL: 68.1 %	COEFF	NET BF/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR	22.1	20.7	17,430	21,987	26,544					
TOTAL	<i>22.1</i>	<i>20.7</i>	<i>17,430</i>	<i>21,987</i>	<i>26,544</i>	<i>34</i>	<i>18</i>	<i>9</i>		

T15N R01W S12 TRW05	T15N R01W S12 TRW05
Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt	BdFt
15N 01W 12 CRAWFORD17 RW05 .20 1 3 S	W

Spp	S T	So rt	Gr ad	%	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre				
									Net BdFt	Def%	Gross	Net	Log Scale Dia.				Log Length					Ln Ft	Dia In	Bd Ft	CF/ Lf
													2-4	5-7	8-11	12+	12-20	21-30	31-35	36-99					
DF		DM	3S	79	4.3	10,497	10,041	2	100				100				40	10	143	0.91	70.0				
DF		DM	4S	21	.0	2,562	2,562	1	100				28 34 38				34	5	37	0.34	70.0				
DF	Totals			100	3.5	13,059	12,603	3	20 80				6 7 87				37	8	90	0.65	140.0				
Type Totals					3.5	13,059	12,603	3	20 80				6 7 87				37	8	90	0.65	140.0				

TC TSTATS				STATISTICS				PAGE	1	
PROJECT				CRAWFO17				DATE	6/13/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
15N	01W	12	CRAWFORD17	RW05	0.20	1	3	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES				
TOTAL	1	3	3.0							
CRUISE	1	3	3.0	14	21.4					
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	3	70.0	16.3	76	25.0	100.8	13,059	12,603	3,367	3,367
TOTAL	3	70.0	16.3	76	25.0	100.8	13,059	12,603	3,367	3,367
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	5.6	3.8	173	180	187					
TOTAL	5.6	3.8	173	180	187	2	1	0		

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

T15N R01W S12 Ty0001	81.1
T15N R01W S12 Ty0002	43.7
T15N R01W S12 TyRW	.2

Project CRAWFO17
Acres 129.10

Page No 1
Date: 6/13/2016
Time 1:43:44PM

Species	Total Trees	Total Logs	Total Tons	Net Cubic Ft/		CF/ LF	Total CCF		Total MBF	
				Tree	Log		Gross	Net	Gross	Net
DOUG FIR	18,279	36,561	22,393	42.98	21.49	0.64	7,857	7,857	2,981	2,929
GRAND F	14	41		199.64	66.55	2.08	27	27	13	13
BL MAPLE	88	88	29	12.27	12.27	0.34	11	11	4	4
WHEMLOCK	30	30	39	40.69	40.69	1.02	12	12	2	2
Totals	18,410	36,719	22,460	42.95	21.53	0.64	7,907	7,907	3,000	2,948

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	18,323	36,631	22,432	43.10	21.56	0.64	7,896	7,896	2,996	2,945
H	88	88	29	12.27	12.27	0.34	11	11	4	4
Totals	18,410	36,719	22,460	42.95	21.53	0.64	7,907	7,907	3,000	2,948



FPA/N No: 2418821

Effective Date: 8/24/2016

Expiration Date: 8/24/2019

Shut Down Zone: 655

EARR Tax Credit: Eligible Non-eligible

Reference: Crawford 17

Forest Practices Application/Notification Notice of Decision

Decision

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

FPA/N Classification

Number of Years Granted on Multi-Year Request

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

Conditions on Approval / Reasons for Disapproval

Issued By: Kris Knutzen

Region: South Puget Sound

Title: Resource Protection Forester

Date: 8/24/2016

Copies to: Landowner, Timber Owner and Operator.

Issued in person: Landowner Timber Owner Operator By: *mi Jessens*

Appeal Information

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

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

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

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

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

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

And

Department Of Natural Resources
South Puget Sound Region
950 Farman Ave. 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.

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

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

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

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

Use the "Notice of Transfer of Approved Forest Practices Application/Notification" form. This form is available at region offices and on the Forest Practices website: : http://file.dnr.wa.gov/publications/fp_form_fpantransfer.pdf. 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.

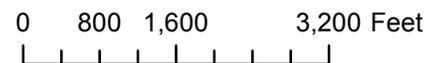
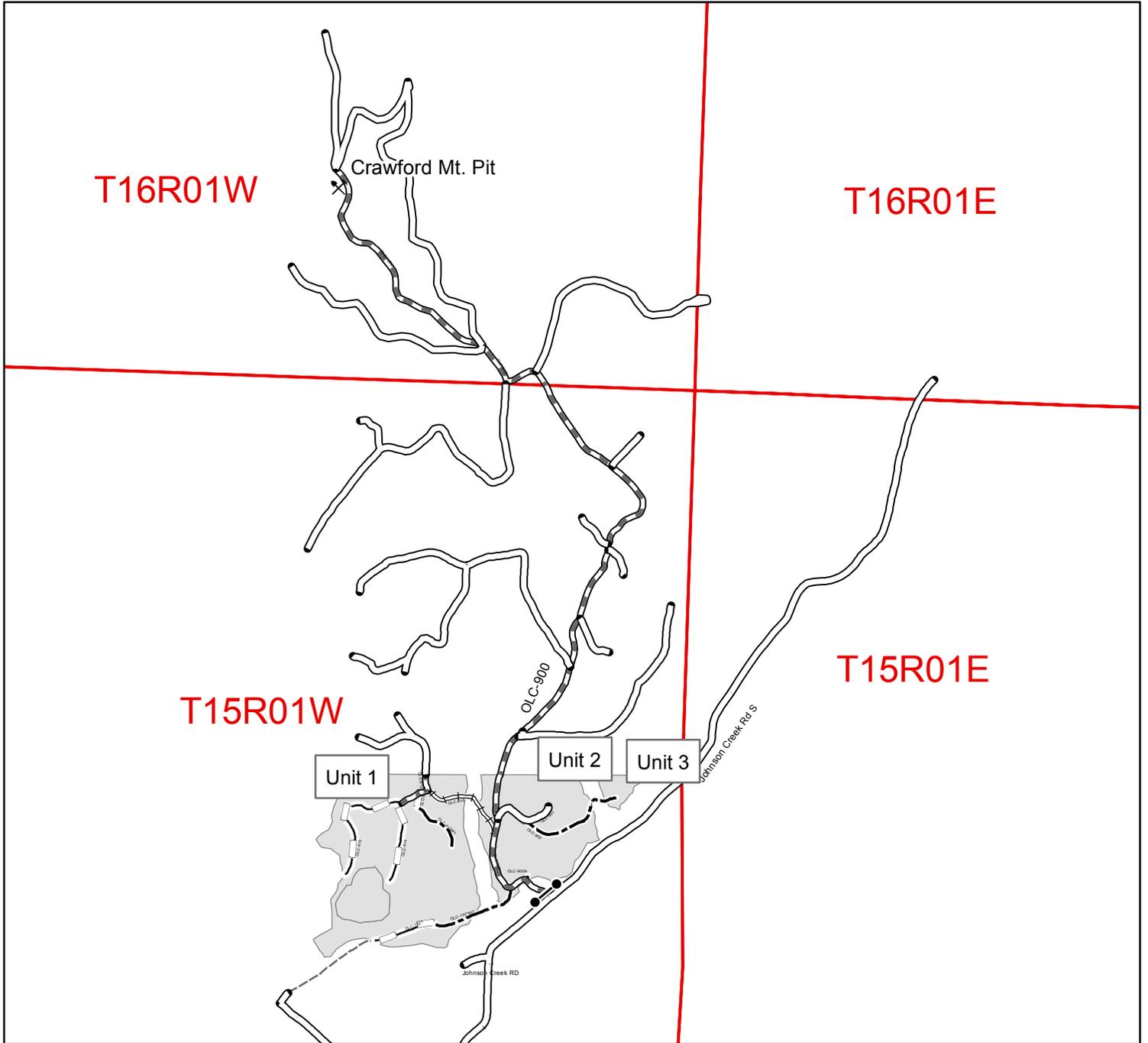
DNR affidavit of mailing:

On this day <u>8/24/2016</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>2418821</u>	
<u>Meredith Dessens</u>	_____
(Printed name)	(Signature)

Road Plan Vicinity Map

Crawford 17 Timber Sale

Page 1 of 3



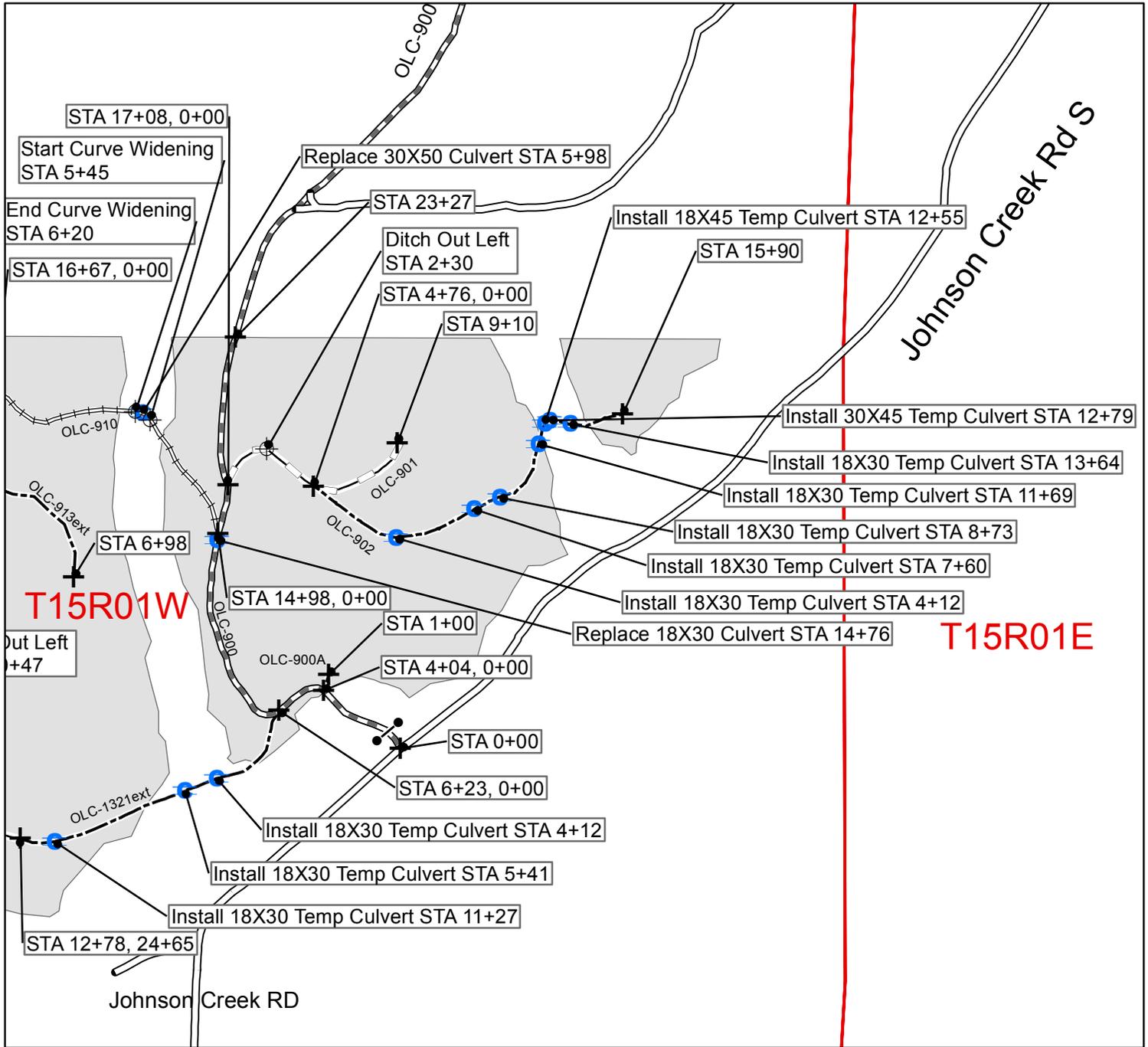
Legend

- | | |
|---|---|
|  Rockpit |  Required Reconstruction |
|  Crawford_17_boundary |  Optional Construction |
|  Existing Roads |  Optional Reconstruction |
|  Required Pre-Haul Maintenance |  Old Grades/Trails |

Road Plan Detail Map

Crawford 17 Timber Sale

Page 3 of 3



Legend

- Road Work
- Stationing
- culvert
- Crawford_17_Sale_Area
- Existing Roads
- Required Pre-Haul Maintenance
- Required Reconstruction
- Optional Construction
- Optional Reconstruction

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

CRAWFORD 17 TIMBER SALE ROAD PLAN
THURSTON COUNTY
DELPHI UNIT, BLACK HILLS DISTRICT

AGREEMENT NO.: 30-093508

STAFF ENGINEER: JIM CRAWFORD

DATE: MAY 26 2016

DRAWN & COMPILED BY: ERIC BAUER

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>
OLC-900	0+00 to 23+27	Prehaul Maintenance
OLC-900	23+27 to 101+84	Prehaul Maintenance
OLC-910	0+00 to 16+67 16+67 to 34+35	Prehaul Maintenance Decommission, If Built
OLC-912	0+00 to 2+28	Prehaul Maintenance
OLC-1000	256+85 to 291+79	Prehaul Maintenance
OLC-900A	0+00 to 1+00	Decommission, If Built
OLC-1321	16+25 to 24+62	Abandonment, If Built
OLC-1321ext	0+00 to 12+78	Abandonment, If Built
OLC-902	0+00 to 15+90	Abandonment, If Built
OLC-901	0+00 to 9+10	Decommission, If Built
OLC-913	0+00 to 3+47	Decommission, If Built
OLC-913ext	0+00 to 6+98	Decommission, If Built

0-3 OPTIONAL ROADS

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

<u>Road</u>	<u>Stations</u>	<u>Type</u>
OLC-900A	0+00 to 1+00	Construction
OLC-1321	16+25 to 24+62	Reconstruction
OLC-910	16+67 to 34+35	Reconstruction

OLC-1321ext	0+00 to 12+78	Construction
OLC-902	0+00 to 15+90	Construction
OLC-901	0+00 to 9+10	Reconstruction
OLC-913	0+00 to 3+47	Reconstruction
OLC-913ext	0+00 to 6+98	Construction
OLC-914	0+00 to 11+06	Reconstruction

0-4 CONSTRUCTION

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

- Clearing
- Grubbing
- Right-of-way debris disposal
- Excavation and/or embankment to subgrade
- Abandonment and decommissioning of roads
- Turnout and turnaround construction
- Landing construction
- Acquisition and installation of drainage structures
- Acquisition, manufacture, and application of rock

0-5 RECONSTRUCTION

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

- Clearing
- Grubbing
- Right-of-way debris disposal
- Excavation and/or embankment to subgrade
- Ditch construction
- Acquisition and installation of drainage structures
- Acquisition, manufacture, and application of rock

0-6 PRE-HAUL MAINTENANCE

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

- Grading existing roads
- Cleaning ditches
- Cleaning culverts, and catchbasins
- Reconstructing headwalls
- Constructing catchbasin and headwall
- Acquisition and application of rock
- Acquisition and installation of additional drainage structures

0-7 POST-HAUL MAINTENANCE

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

0-9 DECOMMISSIONING

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

0-10 ABANDONMENT

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

0-12 DEVELOP ROCK SOURCE

Purchaser shall 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.

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.

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 5 calendar days before the closure of any road. Construction may not close the following roads for more than the specified number of days.

<u>Road</u>	<u>Number of Allowable Closed Days</u>
OLC-900	1
OLC-910	1
OLC-912	1

1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS

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

1-9 DAMAGED METALLIC COATING

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

1-15 ROAD MARKING

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

- 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.

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

On the following roads, Purchaser shall notify the Contract Administrator a minimum of 14 calendar days before work begins.

<u>Road</u>	<u>Stations</u>
OLC-902	12+28 to 14+30
OLC-1321ext	3+35 to 7+28

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

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>
Operation of road construction equipment or rock haul	October 1 to April 30

The specified activities are only allowed during the listed period(s) unless authorized in writing by the Contract Administrator.

<u>Road</u>	<u>Stations</u>	<u>Activity</u>	<u>Operating Period</u>
-------------	-----------------	-----------------	-------------------------

OLC-902	0+00 to 15+90	Construct and abandon road in one operating period.	May 1 to September 30
OLC-1321ext	0+00 to 12+78	Construct and abandon road in one operating period.	May 1 to September 30

1-26 OPERATING DURING CLOSURE PERIOD

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

1-29 SEDIMENT RESTRICTION

Purchaser shall not allow silt-bearing runoff to enter any streams. 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 Contract Administrator upon request. Purchaser shall request a SNOW PLOWING AGREEMENT each time plowing occurs. If damage occurs while plowing, further permission to plow may be revoked by the Contract Administrator.

1-40 ROAD APPROACHES TO COUNTY ROADS AND STATE HIGHWAYS

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

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

SECTION 2 – MAINTENANCE

2-1 GENERAL ROAD MAINTENANCE

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

2-2 ROAD MAINTENANCE – PURCHASER MAINTENANCE

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

2-3 ROAD MAINTENANCE – DESIGNATED MAINTAINER

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

2-5 MAINTENANCE GRADING – EXISTING ROAD

On the following road(s), Purchaser shall use a grader to shape the existing surface before rock application, if rock application is required. Purchaser shall accomplish all grading using a motor grader.

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
OLC-900	0+00 to 23+57	Desod, grade, apply rock per ROCK LIST, grade and shape rock lift, compact per COMPACTION LIST
OLC-910	0+00 to 16+67	Desod, grade, apply rock per ROCK LIST, grade and shape rock lift, compact per COMPACTION LIST

OLC-912	0+00 to 2+28	Desod, grade, apply rock per ROCK LIST, grade and shape rock lift, compact per COMPACTION LIST
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2-6 CLEANING CULVERTS

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

<u>Road</u>	<u>Stations</u>
OLC-900	0+00 to 23+57
OLC-910	0+00 to 16+67

2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS

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

<u>Road</u>	<u>Stations</u>	<u>Comment</u>
OLC-900	0+00 to 23+57	Clean Ditches, Headwalls, and Catch Basins
OLC-910	0+00 to 16+67	Clean Ditches, Headwalls, and Catch Basins

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

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.

3-7 RIGHT-OF-WAY DECKING

On the following roads, Purchaser shall deck all right-of-way timber. Decks must be parallel to the road centerline and placed within the cleared right-of-way. Decks must be free of dirt, limbs, and other right-of-way debris, and removable by standard log loading equipment from the roadbed.

<u>Road</u>	<u>Stations</u>
OLC-902	12+28 to 14+30
OLC-1321	3+35 to 7+28

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.

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.

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 State owned 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.

4-5 CUT SLOPE RATIO

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

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

4-6 EMBANKMENT SLOPE RATIO

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

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

4-7 SHAPING CUT AND FILL SLOPE

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

4-8 CURVE WIDENING

The minimum widening placed on the inside of curves is:

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

<u>Road</u>	<u>Stations</u>	<u>Curve Widening (ft)</u>
OLC-910	5+45 to 6+20	4

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.

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

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

4-27 DITCH WORK – MATERIAL USE PROHIBITED

On the following road(s), Purchaser shall construct ditches and reconstruct excavation slopes to provide sufficient width for ditches and road surface. Excavation slopes shall be consistent with Clause 4-5. 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 or end hauled to designated waste areas.

<u>Road</u>	<u>Stations</u>
OLC-900A	0+00 to 1+00
OLC-901	0+00 to 9+10
OLC-902	0+00 to 12+28
OLC-910	0+00 to 34+35
OLC-913	0+00 to 3+47
OLC-913ext	0+00 to 6+98
OLC-914	0+00 to 11+06
OLC-1321	16+25 to 24+65
OLC-1321ext	0+00 to 12+78

4-28 DITCH DRAINAGE

Ditches shall be constructed concurrently with construction of the subgrade. 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.

4-35 WASTE MATERIAL DEFINITION

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

4-36 DISPOSAL OF WASTE MATERIAL

Purchaser may sidecast waste material on side slopes up to 45% if the waste material is compacted and free of organic debris.

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 45%.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Within the operational area for cable landings.
- Against State owned standing timber.

4-47 NATIVE MATERIAL

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

4-55 ROAD SHAPING

Purchaser shall shape 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.

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.

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 meet the specifications in Clauses 10-15 through 10-23.

5-6 USED CULVERT MATERIAL

Purchaser may install used culverts on the following roads. All other roads must have new culverts installed.

<u>Road</u>	<u>Stations</u>
OLC-902	0+00 to 15+90
OLC-1321ext	0+00 to 12+78

5-7 TEMPORARY STREAM CULVERT INSTALLATION

Purchaser shall install temporary culverts as shown in the Culvert and Drainage List. Temporary stream culverts must be located in the natural channel of the stream. Temporary diversion culverts must be provided when designed culverts are elevated above natural ground within embankments. Temporary culverts must be removed upon completion of road use.

<u>Road</u>	<u>Stations</u>
OLC-902	12+55, 12+79
OLC-1321ext	5+41

5-9 CULVERT MARKER INSTALLATION

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

5-10 STATE SUPPLIED 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	<ul style="list-style-type: none"> • 18"x30' culvert • 18" culvert band • 18" culvert band

5-15 CULVERT INSTALLATION

Culvert, downspout, flume and energy dissipator 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".

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.

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.

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 CROSS DRAIN CULVERTS

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

5-27 ARMORING FOR STREAM CROSSING CULVERTS

At the following culvert(s), Purchaser shall place armoring in conjunction with or immediately following construction of the embankment. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets as designated on the ROCK LIST. Rock may not restrict the flow of water into culvert inlets or catch basins. LIGHT, LOOSE RIP RAP must meet the specifications in Clause 6-50.

<u>Road</u>	<u>Stations</u>
OLC-910	5+98

5-33 NATIVE SURFACE ROADS

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

SECTION 6 – ROCK AND SURFACING

6-2 ROCK SOURCE ON STATE LAND

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

<u>Source</u>	<u>Location</u>
Crawford Mt. Pit	SW ¼ NW ¼ Sect. 16 T16R01W

6-3 ROCK SOURCE STATE LAND, EXISTING STOCKPILE

Rock used in accordance with the quantities on the ROCK LIST may be obtained from the following existing stockpile(s) on state land at no charge to the Purchaser. Purchaser shall not remove more than 1600 cubic yards of 3 INCH MINUS rock. Purchaser shall not remove additional yardage without prior

written approval from the Contract Administrator. Other stockpiles may not be used without prior written approval from the Contract Administrator.

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>	<u>Quantity</u>
Crawford Mt. Pit	SW ¼ NW ¼ Sect. 16 T16R01W	3 INCH MINUS	1600 C.Y.

6-5 ROCK FROM COMMERCIAL SOURCE

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

6-10 ROCK SOURCE DEVELOPMENT PLAN BY STATE

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

<u>Source</u>	<u>Rock Type</u>
Crawford Mt Pit	4 Inch In-Place, 3 Inch Minus, Quarry Spalls, 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 AND RECLAMATION PLAN>:

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

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

- Pit walls must be maintained in a condition to minimize the possibility of the walls sliding or failing.

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

6-14 DRILL AND SHOOT

Rock drilling and shooting must meet the following specifications:

- 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.

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.

6-22 FRACTURE REQUIREMENT FOR ROCK

A minimum of 50% by visual inspection of coarse aggregate must have at least one fractured face. Coarse aggregate is the material greater than 1/4-inch in size.

6-23 ROCK CRUSHING OPERATIONS

Rock crushing operations must conform to the following specifications:

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

6-33 3-INCH MINUS CRUSHED ROCK

% Passing 3" square sieve	100%
% Passing 2" square sieve	65 - 95%
% Passing ¾" square sieve	28 – 70%
% Passing U.S. #4 sieve	10 - 35%
% Passing U.S. #200 sieve	0 – 10%

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

6-38 4-INCH IN-PLACE ROCK

4-inch in-place rock must have a minimum of 90 percent of the top 4 inches of the running surface pass a 4-inch square opening.

6-43 QUARRY SPALLS

% Passing 8" square sieve	100%
% Passing 3" square sieve	40% maximum
% Passing ¾" 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"

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.

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.

SECTION 8 – EROSION CONTROL

8-1 SEDIMENT CONTROL STRUCTURES

Purchaser shall install sediment traps in accordance with the SEDIMENT TRAP DETAIL.

8-2 PROTECTION FOR EXPOSED SOIL

Purchaser shall provide and evenly spread a layer of straw to all exposed soils. Soils may not sit exposed during any rain event.

8-15 REVEGETATION

On the following road(s), Purchaser shall spread grass seed on all exposed soils resulting from road work activities. Cover all exposed soils using hand method. Other methods of covering must be approved in writing by the Contract Administrator.

<u>Road</u>	<u>Location</u>
OLC-900A	0+00 to 1+00
OLC-901	0+00 to 9+10
OLC-902	0+00 to 12+28
OLC-910	16+67 to 34+35
OLC-913	0+00 to 3+47
OLC-913ext	0+00 to 6+98
OLC-914	0+00 to 11+06
OLC-1321	16+25 to 24+65
OLC-1321ext	0+00 to 12+78

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.

8-18 PROTECTION FOR SEED

Purchaser shall provide a protective cover for seed if revegetation occurs between July 1 and March 31. The protective cover may consist of an even layer of straw or Contract Administrator approved alternative. Seed may not be allowed to sit exposed during any rain event.

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 exposed soil <inside the grubbing limits> at a rate of <00> pounds per acre of exposed soil. Grass seed must meet the following specifications:

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

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

SECTION 9 – POST-HAUL ROAD WORK

9-1 EARTHEN BARRICADES

Purchaser shall construct barricades in accordance with the BARRICADE DETAIL.

<u>Road</u>	<u>Stations</u>	<u>Comments</u>
OLC-910	17+40	Install
OLC-913	0+50	Install
OLC-901	0+50	Install
OLC-900A	0+50	Install
OLC-1321ext	0+50	Install

9-2 CULVERT REMOVAL FROM LIVE STREAM

On the following road(s), Purchaser shall remove existing culvert(s) and bridge(s) from live streams and leave the resulting channel open with excavation slope and excavated channel width as specified. Place excavated material as approved in writing by the Contract Administrator. Temporary diversions must be utilized when performing any instream work, including equipment crossings.

<u>Road</u>	<u>Stations</u>	<u>Excavated Channel Width</u>	<u>Slope Ratio</u>	<u>Comments</u>
OLC-902	12+28 to 14+30	Match to conditions at time of culvert installation	Match to conditions at time of culvert installation	Remove all fill within stations specified and place on road before STA 12+28
OLC-1321	3+35 to 7+28	Match to conditions at time of culvert installation	Match to conditions at time of culvert installation	Remove all fill within stations specified and place on road before STA 3+35

9-3 CULVERT MATERIAL REMOVED FROM STATE LAND

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

9-5 POST-HAUL MAINTENANCE

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

9-10 LANDING DRAINAGE

Purchaser shall provide for drainage of the landing surface.

9-20 ROAD DECOMMISSIONING

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

<u>Road</u>	<u>Stations</u>	<u>Type</u>
OLC-900A	0+00 to 1+00	Light Decommission
OLC-901	0+00 to 9+10	Medium Decommission
OLC-910	16+67 to 34+35	Light Decommission
OLC-913	0+00 to 3+47	Light Decommission
OLC-913ext	0+00 to 6+98	Light Decommission

9-21 ROAD ABANDONMENT

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

<u>Road</u>	<u>Location</u>	<u>Type</u>
OLC-902	0+00 to 15+90	Medium Abandonment
OLC-1321	16+25 to 24+65	Medium Abandonment
OLC-1321ext	0+00 to 12+78	Medium Abandonment

9-22 LIGHT DECOMMISSIONING AND ABANDONMENT

- Construct non-drivable waterbars according to the attached NON-DRIVABLE WATERBAR DETAIL at a maximum spacing that will produce a vertical drop of no more than 10 feet between waterbars or between natural drainage paths and with a maximum spacing of 100 feet, or as marked in the field.
- 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 before crossdrains to intercept the ditch. Waterbars must be outsloped to provide positive drainage. Outlets must be on stable locations.
- 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.

9-23 MEDIUM DECOMMISSIONING AND ABANDONMENT

- Construct non-drivable waterbars according to the attached NON-DRIVABLE WATERBAR DETAIL at a maximum spacing that will produce a vertical drop of no more than 10 feet between waterbars or between natural drainage paths and with a maximum spacing of 100 feet, or as marked in the field.
- 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 ditch cross drain culverts and leave the resulting trench open.
- Remove culverts from State Land.
- 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.

SECTION 10 MATERIALS

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

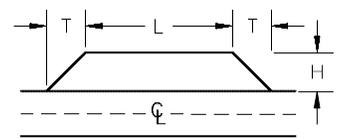
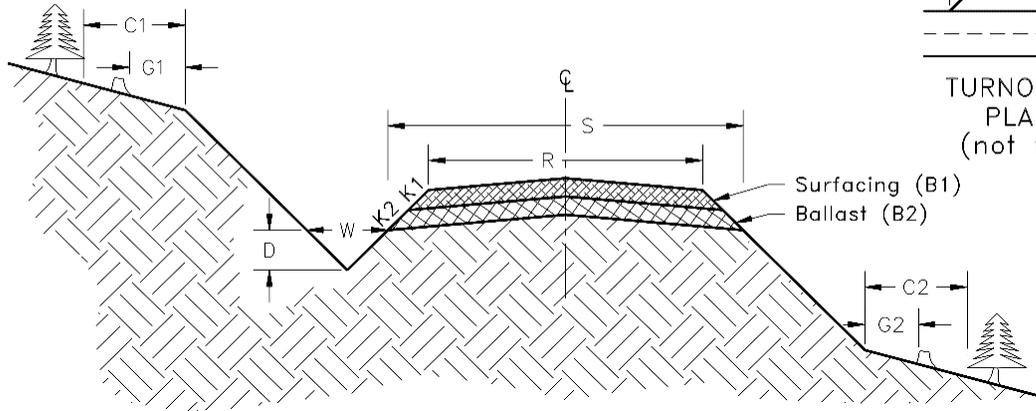
Plastic coupling and end bands must meet the AASHTO specification designated for the culvert. Only fittings supplied or recommended by the culvert manufacturer may be used. Couplings must be split coupling band. Split coupling bands must have a minimum of four corrugations, two on each side of the pipe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

SECTION 11 SPECIAL NOTES

11-1 DIVERSION REQUIREMENTS FOR TYPE 3 AND TYPE 4 STREAMS

Purchase shall utilize temporary diversions when performing work in any live type 3 or 4 stream. Performing work shall include equipment crossings.

ROAD CROSS-SECTION
(not to scale)



TURNOUT DETAIL
PLAN VIEW
(not to scale)

TYPICAL SECTION SHEET (pg 1 of 1)

Road Number	From Station	To Station	Tolerance Class	Subgrade Width (feet)	Road Width (feet)	Ditch		Crown in. @ CL	Grubbing Limits (feet)		Clearing Limits (feet)		Cut Slope Ratio	Fill Slope Ratio
						Width (feet)	Depth (feet)		G1	G2	C1	C2		
				S	R	W	D		G1	G2	C1	C2	Clause	Clause
OLC-900	0+00	101+84			12	3	1	4					4-5	4-6
OLC-900A	0+00	1+00	C	16	12	3	1	4	2	2	5	5	4-5	4-6
OLC-901	0+00	9+10	C	16	12	3	1	4	2	2	5	5	4-5	4-6
OLC-902	0+00	12+28	C	16	12	3	1	4	2	2	5/Tag	5/Tag	4-5	4-6
OLC-910	0+00	34+35	C	16	12	3	1	4	2	2	5	5	4-5	4-6
OLC-912	0+00	2+28			12	3	1	4	2	2	5	5	4-5	4-6
OLC-913	0+00	3+47	C	16	12	3	1	4	2	2	5	5	4-5	4-6
OLC-913ext	0+00	6+98	C	16	12	3	1	4	2	2	5	5	4-5	4-6
OLC-914	0+00	11+06	C	16	12	3	1	4	2	2	5	5	4-5	4-6
OLC-1000	256+85	291+79			12	3	1	4					4-5	4-6
OLC-1321	16+25	24+65	C	16	12	3	1	4	2	2	5	5	4-5	4-6
OLC-1321ext	0+00	12+78	C	16	12	3	1	4	2	2	5/Tag	5/Tag	4-5	4-6

ROCK LIST

BALLAST

Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth	C.Y./ Station	# of Stations	C.Y. Subtotal	Rock Source	Turnout		
									Length	Width	Taper
			K2	B2	4 Inch In-Place				L	H	T
OLC-900A*	0+00	1+00	1½ : 1	9"	39	1	39	Crawford Mt. Pit or Commercial			
OLC-1321ext*	0+00	3+35	1½ : 1	9"	39	3.35	130				
OLC-1321ext*	7+28	12+78	1½ : 1	9"	39	5.5	215				
OLC-901*	0+00	9+10	1½ : 1	9"	39	9.1	355				
OLC-902*	0+00	12+28	1½ : 1	9"	39	12.28	480				
OLC-902*	14+30	15+90	1½ : 1	9"	39	1.6	63				
OLC-910*	16+67	34+35	1½ : 1	9"	39	17.7	690				
OLC-913*	0+00	3+47	1½ : 1	9"	39	3.47	135				
OLC-913ext*	0+00	6+98	1½ : 1	9"	39	6.98	272				
OLC-914	0+00	11+06	1½ : 1	9"	39	11.06	431				
					3 Inch Minus						
OLC-902	12+28	14+30	1½ : 1	9"	39	2.02	79				
OLC-910 Curve Widening	5+45	6+20	1½ : 1				150				
OLC-1321ext	3+35	7+28	1½ : 1	9"	39	3.93	153				
Live Stream Replacements					20 Per Culvert	1 Culverts	20				
					Spot Rock (3 Inch Minus)						
OLC-900	23+27	101+84					60				
OLC-1000	256+85	291+79					40				
					Light loose Riprap						
Live Stream Culverts: OLC-910					10 Per Culvert	1 Culverts	10				
					Quarry Spalls						
All Culverts Except Live Stream					2.5 per culvert	6 culverts	15				

4 Inch In-Place Total__2810 Cubic Yards
 3 Inch Minus Total 502__Cubic Yards
 Light Loose Riprap Total 10__Cubic Yards
 Quarry Spalls Total__15__Cubic Yards
 Ballast Total 3337__Cubic Yards

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

SURFACE

Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth	C.Y./ Station	# of Stations	C.Y. Subtotal	Rock Source	Turnout		
									Length	Width	Taper
			K1	B1	3 inch minus				L	H	T
OLC-900	0+00	23+27	1½ : 1	6"	26	23.27	605	Crawford Mt. Pit or Commercial			
OLC-910	0+00	16+67	1½ : 1	6"	26	12.5	325				
OLC-912	0+00	2+28	1½ : 1	6"	26	2.28	60				

3 Inch Minus Total 990____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.

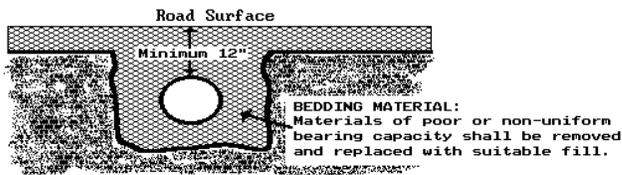
CULVERT AND DRAINAGE LIST, PG 1 OF 1

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				
OLC-900	14+76	18	PD	30			1	1.5	QS	NT		Replace Existing	
OLC-1321ext	4+12	18	TEMP	30						NT		Install	
	5+41	18	TEMP	30						NT		Install, Live Seasonal	
	11+27	18	TEMP	30						NT		Install	
OLC-901	2+30											Ditch Out Left	
OLC-902	4+12	18	TEMP	30						NT		Install	
	7+60	18	TEMP	30						NT		Install	
	8+73	18	TEMP	30						NT		Install, Wet area	
	11+69	18	TEMP	30						NT		Install	
	12+55	18	TEMP	45						NT		Install, Live Seasonal	
	12+79	30	TEMP	45						NT		Install, Live Water	
	13+64	18	TEMP	30						NT		Install	
	OLC-910	5+98	30	PD	50		5	5	LL	SL		Install, Live Water	
	17+87	18	PD	30			1	1.5	QS	NT		Install	
	24+16	18	PD	40			1	1.5	QS	NT		Install	
	26+60	18	PD	30			1	1.5	QS	NT		Install	
	29+24	18	PD	30			1	1.5	QS	NT		Install	
	32+18											Ditch Out Left	
OLC-914	3+78	18	PD	30			1	1.5	QS	NT		Replace, No Skew	
	10+47											Ditch out Left	
As Directed By C.A.		18	PD	30			1	1.5	QS	NT		Contingency	
		18	PD	30			1	1.5	QS	NT		Contingency	
		18	PD	30			1	1.5	QS	NT		Contingency	
		18	PD	30			1	1.5	QS	NT		Contingency	
		18	PD	30			1	1.5	QS	NT		Contingency	
		18	Poly	Band									Contingency
	18	Poly	Band									Contingency	

* SEE CULVERT AND DRAINAGE SPECIFICATION DETAIL

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

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



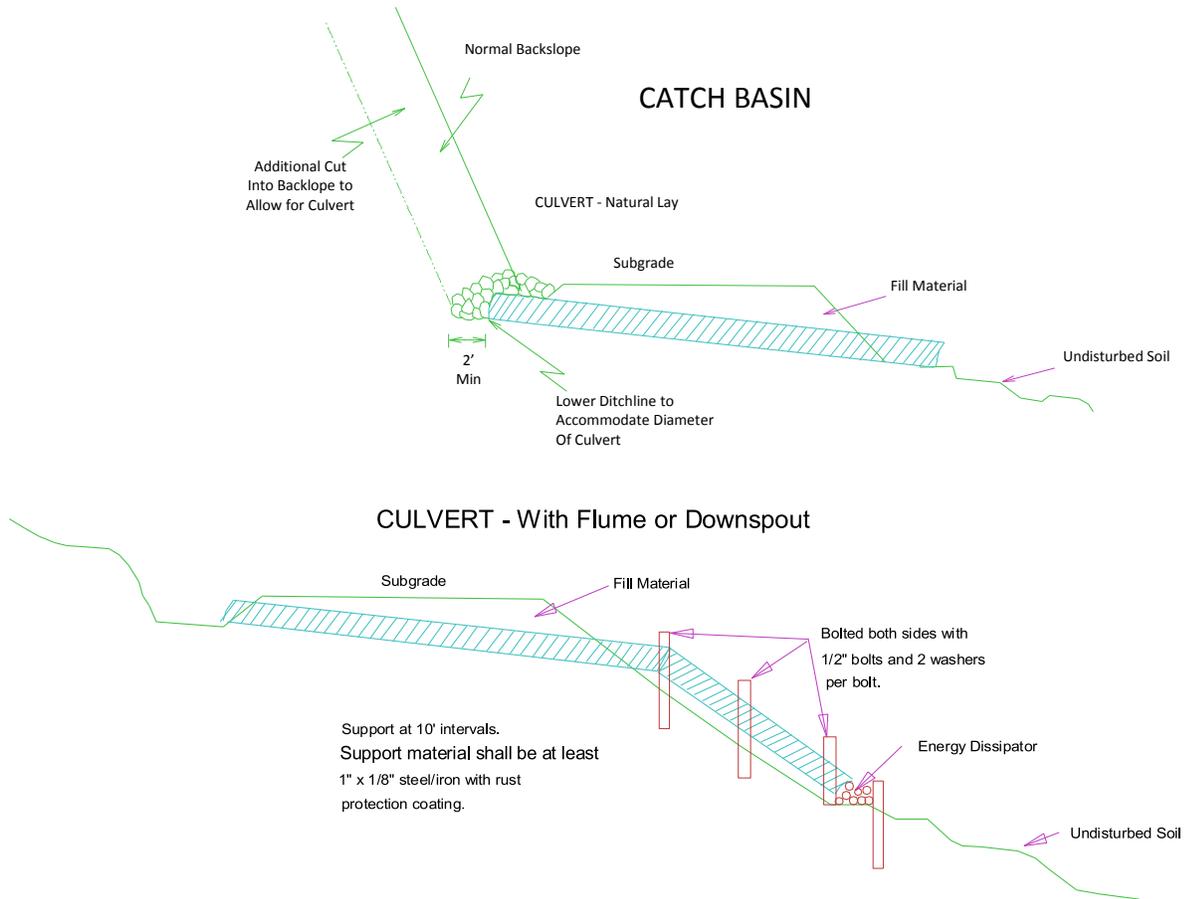
Key:

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

Crawford 17 Timber Sale
 Contract No. 30-093508

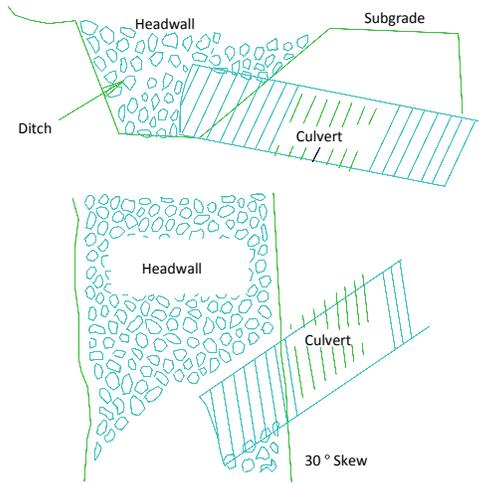
CULVERT AND DRAINAGE SPECIFICATION DETAIL

(PAGE 1 OF 2)



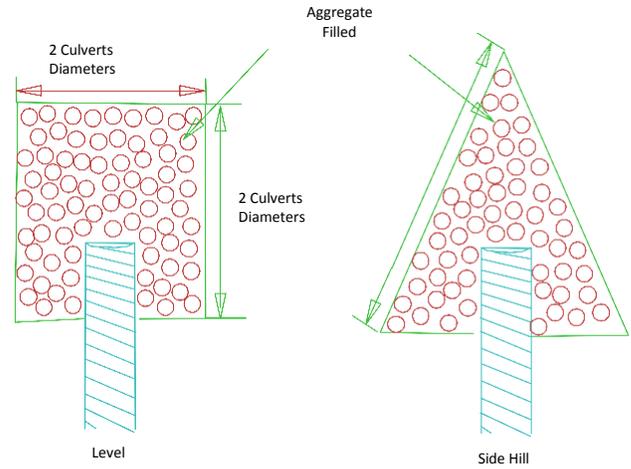
Proper preparation of foundation and placement of bedding material shall precede the installation of all culvert pipe. This includes necessary leveling of the native trench bottom and compaction of required bedding material to form a uniform dense unyielding base. The backfill material shall be placed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

HEADWALLS



Headwalls to be constructed of material that will resist erosion.

ENERGY



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

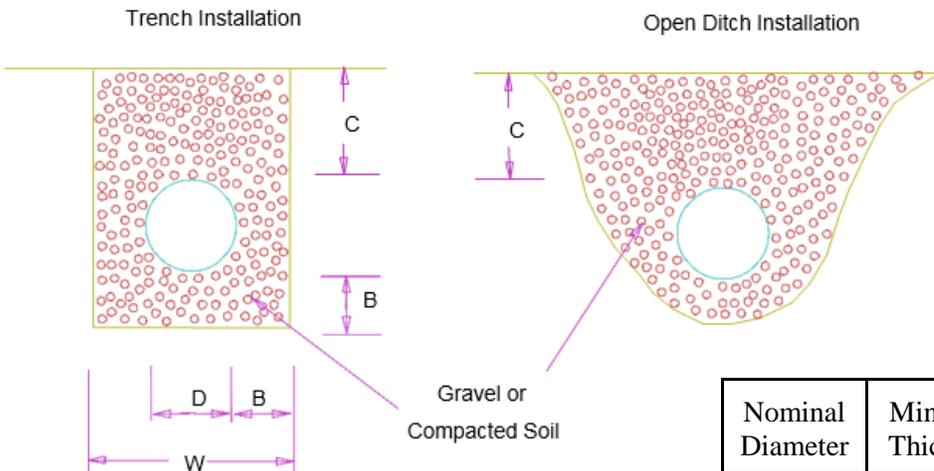
CULVERT AND DRAINAGE SPECIFICATION DETAIL

(PAGE 2 OF 2)

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% of that material is required. This minimum compaction can be achieved by either hand or mechanical tamping. Purchaser shall test the compaction level and bare all associated costs.



MINIMUM DIMENSIONS

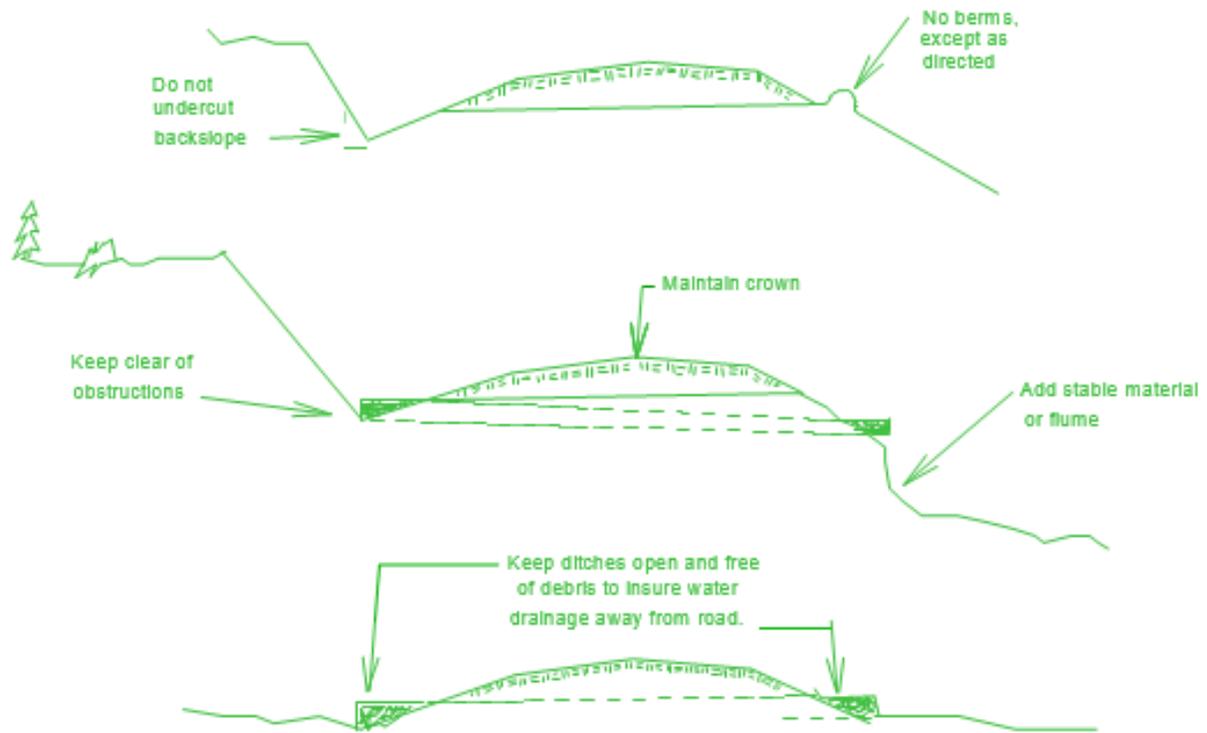
Nominal Diameter	Minimum Thickness	Minimum Cover	Min. Trench Width
D	B	C	W
18"	6"	12"	36"
24"	6"	12"	42"
30"	6"	12"	48"
36"	6"	12"	54"

Crawford 17 Timber Sale
Contract No. 30-093508

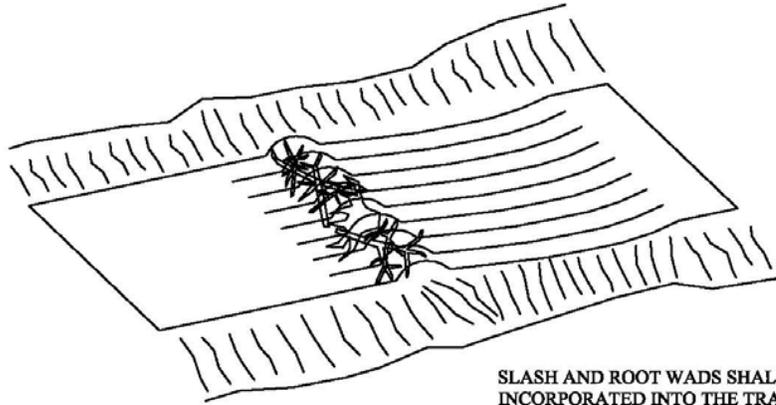
STATE OF WASHINGTON DEPARTMENT OF NATURAL RESOURCES

FOREST ACCESS ROAD
MAINTENANCE SPECIFICATIONS

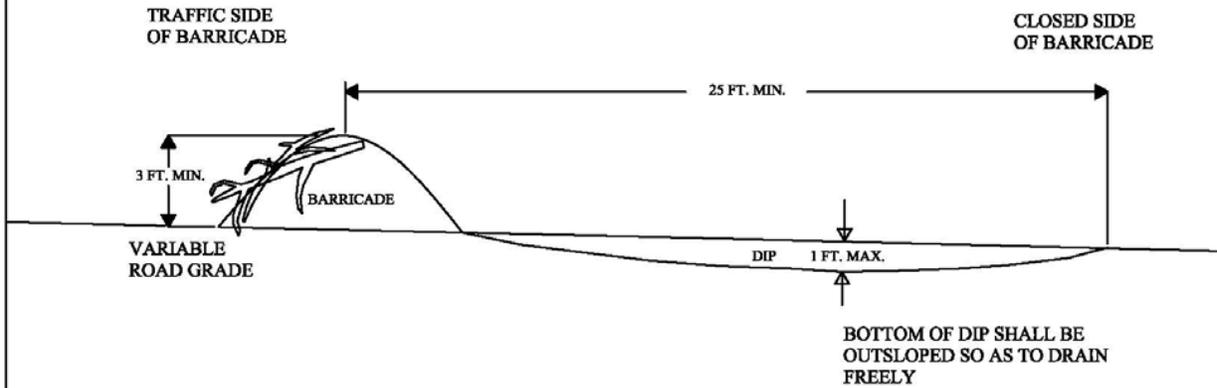
1. CONSTRUCTION AND RECONSTRUCTION (Prior to acceptance to the contract or acceptance on a timber sale).
 - A. Cuts and Fills
 1. Maintain slope lines as constructed. Remove slides from the ditches and roadway. Replace fills to 1/2:1 slopes with selected material or as directed. Remove overhanging material from the cut slopes.
 2. Material from slides or other sources requiring removal shall not be deposited in streams or at locations where it will erode into streams or water courses.
 3. Undesirable slide materials and debris shall not be mixed into the surface material.
 - B. Surface
 1. Grade and shape the road surface, turnouts, and shoulders to the original crown, inslope or outslope as directed to provide suitable traveled surface and surface water runoff in an even, unconcentrated manner.
 2. Blading must not undercut the backslope at the bottom of the ditchline or cut geotextile at centerline.
 3. Watering may be required to control dust and to retain fine surface rock.
 4. Desirable surface material shall not be bladed off the roadway.
 5. Replace surface material lost or worn away.
 6. Remove berms except as directed by the State.
 7. Barrel spread soft spots to prevent degradation of geotextile.
 - C. Drainage
 1. Keep ditches and drainage channels at outlets and inlets of culverts clear of obstructions and functioning as intended.
 2. Inspect and clean culverts at least monthly, with additional inspections during storms and periods of high runoff. This must be done even during periods of inactivity.
 3. Add stable material at the outlet end of the culvert as needed to stabilize the stream bed.
 4. Headwalls: maintain to the road shoulder level with material that will resist erosion.
 5. Keep silt bearing surface runoff from getting into live streams.
 - D. Structures
Repair bridges, culverts, cattleguards, fences, and other road structures to the condition required by the construction specifications.
 - E. Termination of Use or End of Season
Do maintenance work to minimize damage from the elements such as blading to insure correct runoff, ditch, and culvert cleaning and water bars.
 - F. Debris
Remove fallen timber, limbs, and stumps from the slopes or roadway.



BARRICADE DETAIL



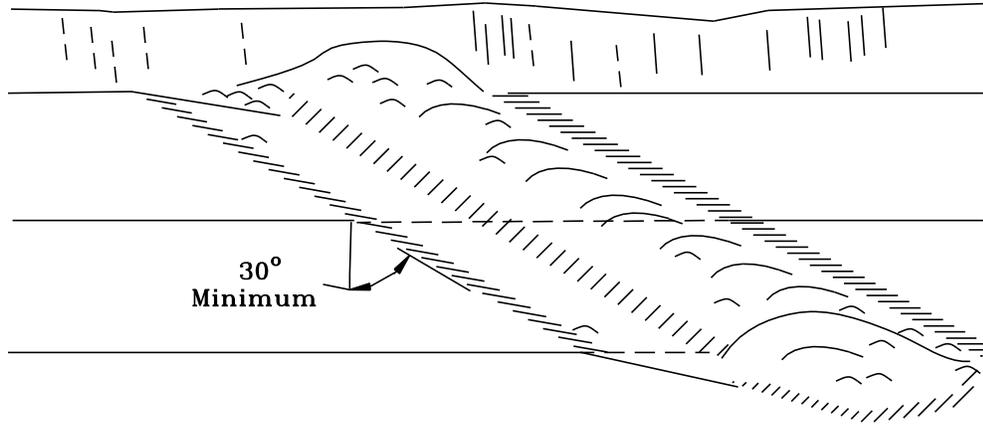
PLAN VIEW



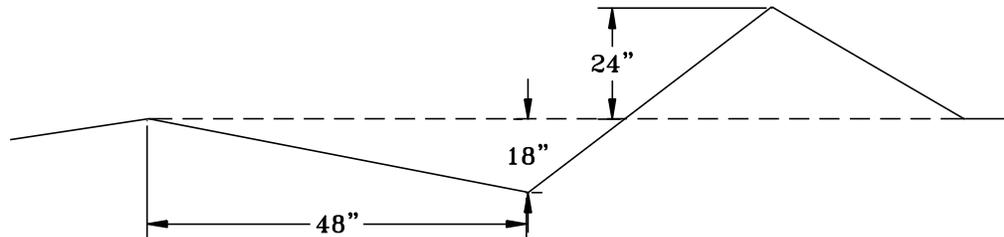
PROFILE VIEW

Non-Drivable Water Bar Detail

Cross Ditch



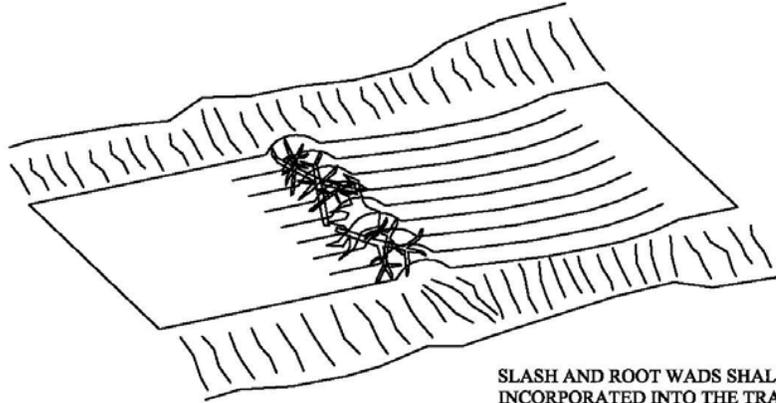
Cross Section at Centerline



Date:
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App#
Drawn by: M.A.D.

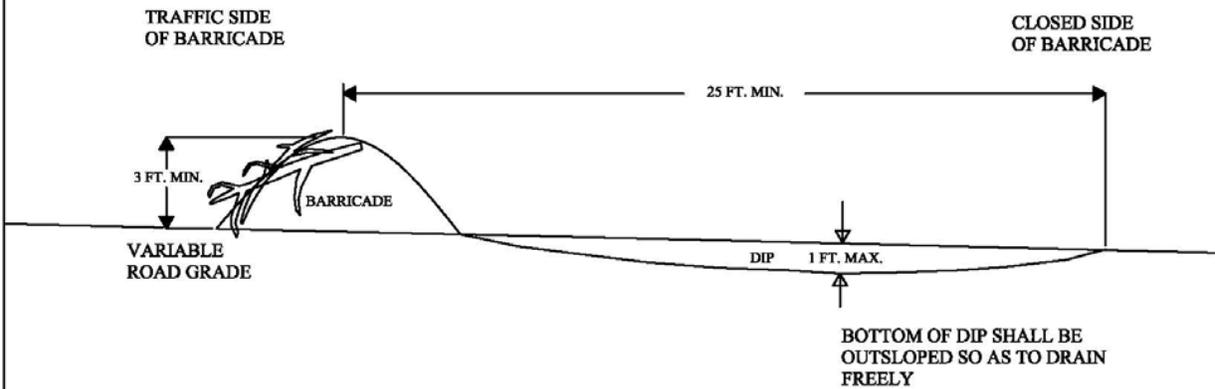
Water Bar Detail	
	WASHINGTON STATE DEPARTMENT OF
	Natural Resources
<small>SPS Region</small>	

BARRICADE DETAIL



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

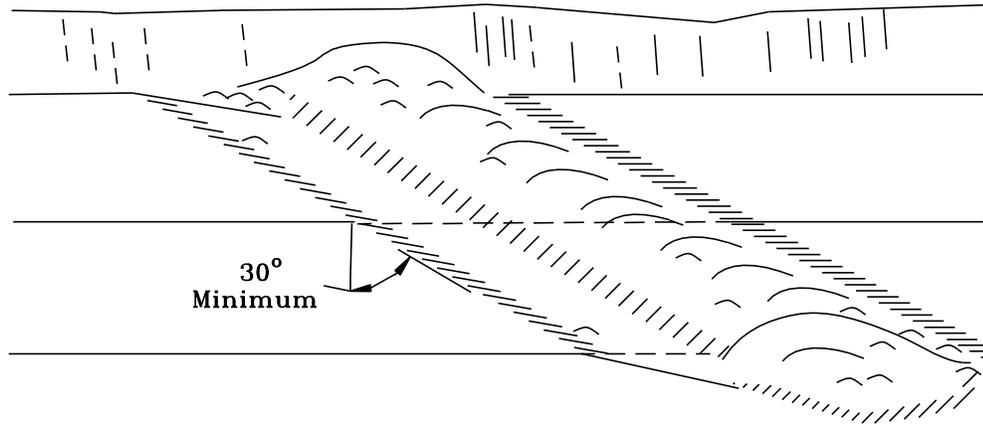
PLAN VIEW



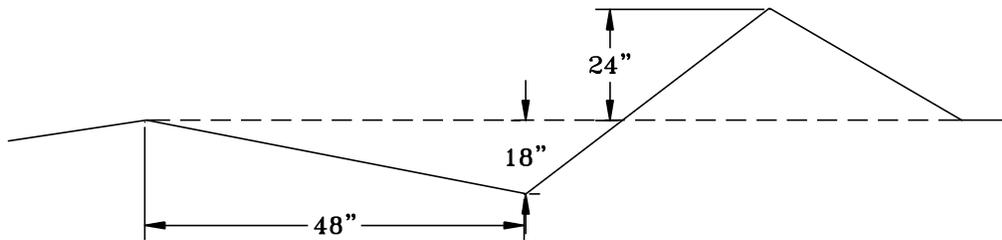
PROFILE VIEW

Non-Drivable Water Bar Detail

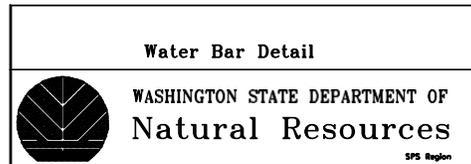
Cross Ditch



Cross Section at Centerline



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



Typical Plan

Place inlet marker
on right side of
inlet, in culvert
corrugation if
possible

Edge of fill

Edge of road

Culvert Barrel

Typical Section

Inlet marker: 1 inch I.D.
Schedule 40
PVC Pipe, white

24 inches min.

Road Surface

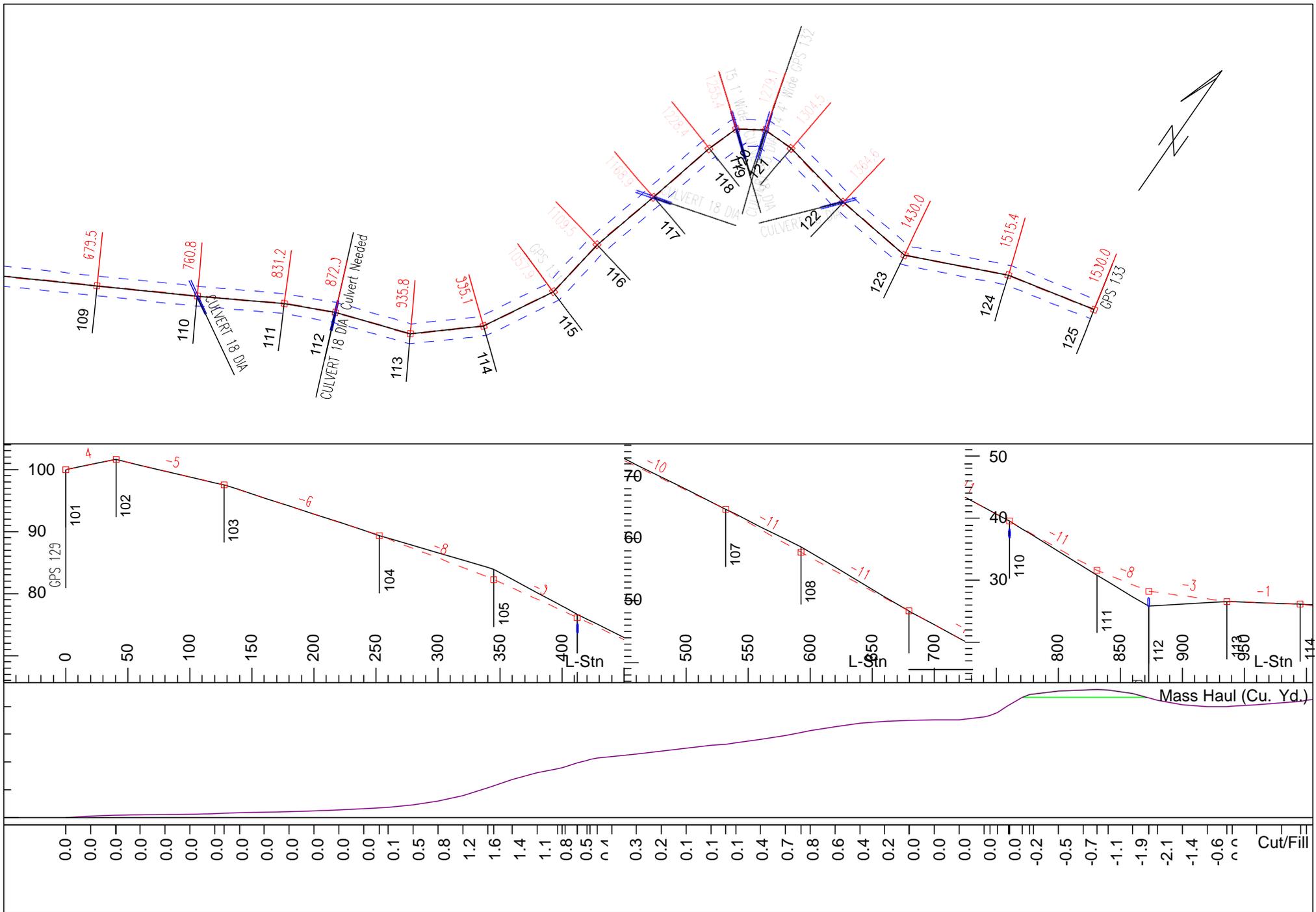
Catch Basin

Culvert Barrel

6 inches min.

CULVERT MARKER DETAIL
(Inlet shown)

Drawn by: WP Hoskins

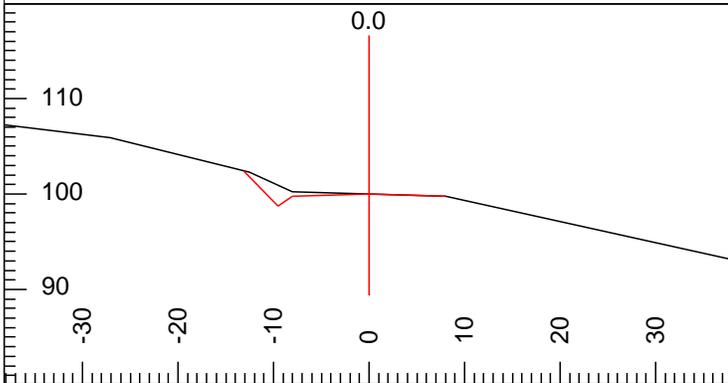


Timber Sale Crawford 17
 RD OLC-902
 Contract #: 30-93508

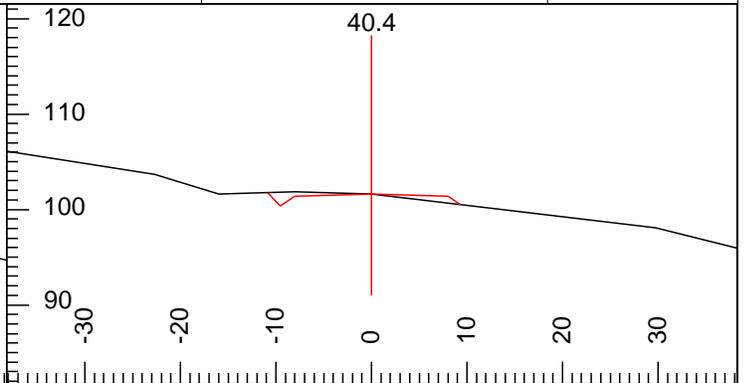
Washington State Department of Natural Resources
 South Puget Sound Region

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

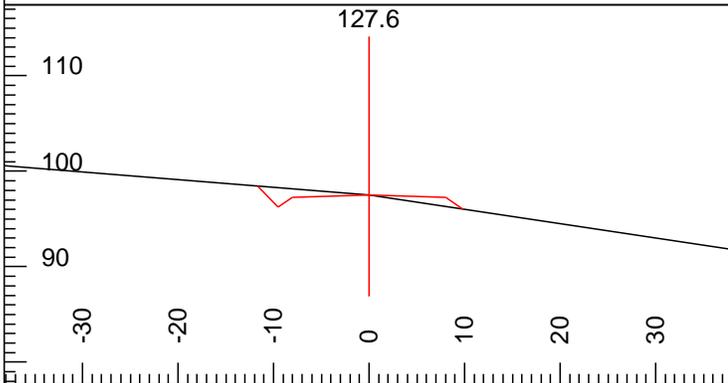
Engineer: E.Bauer
 16/05/26
 Page 2 of 2



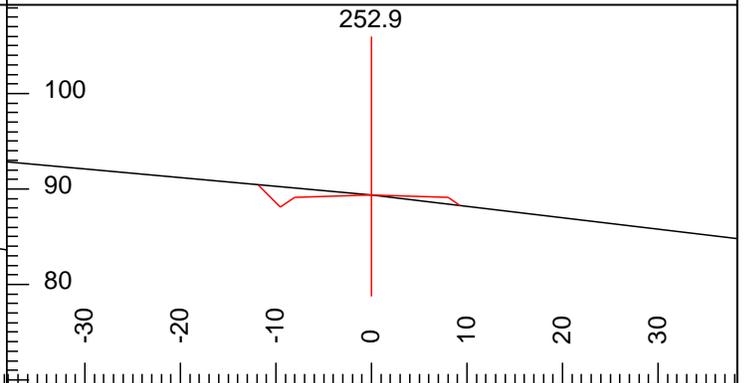
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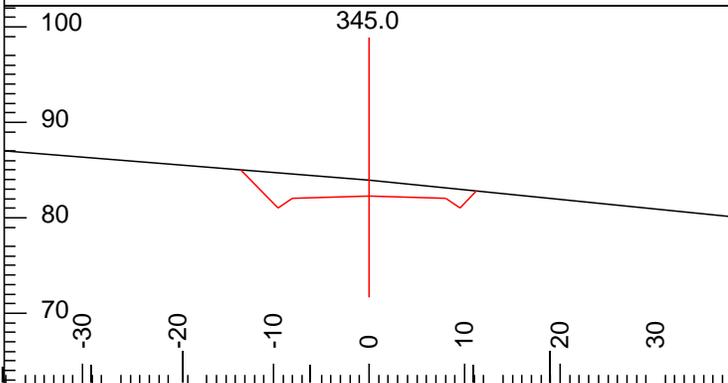
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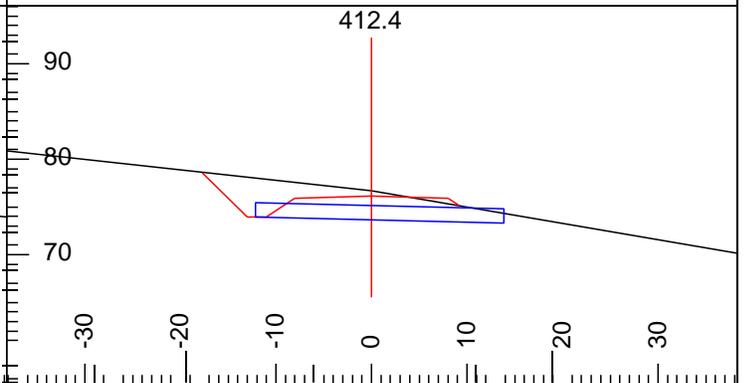
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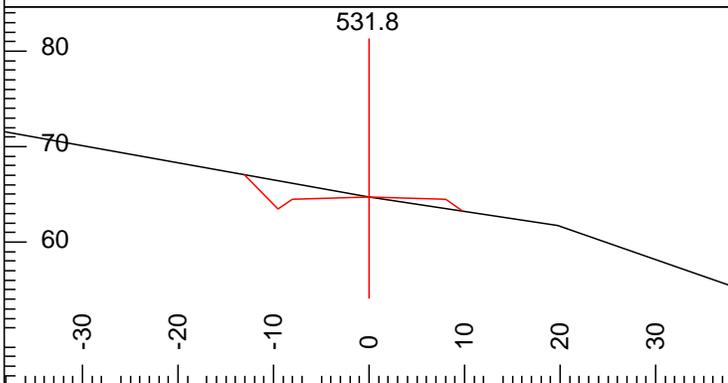
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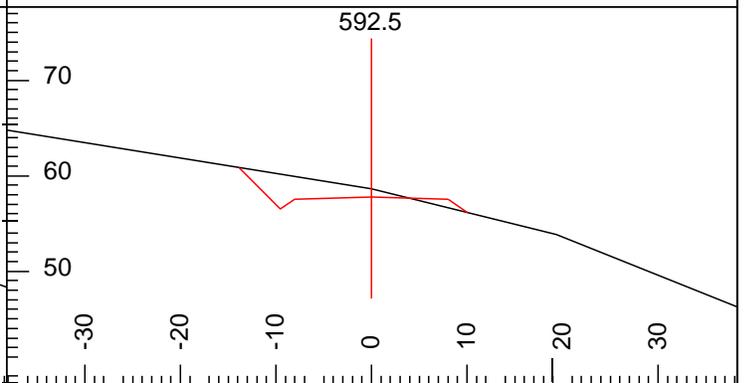
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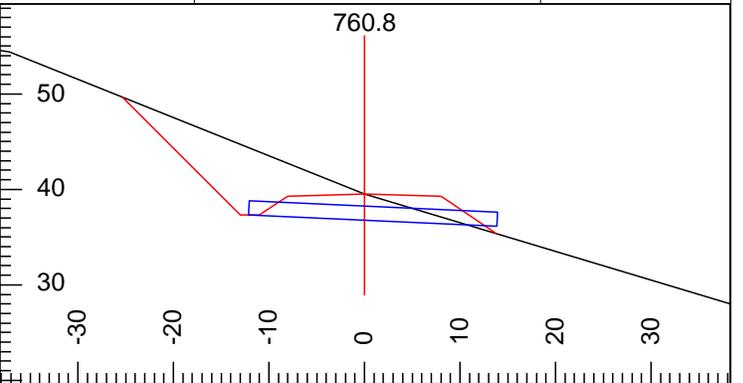
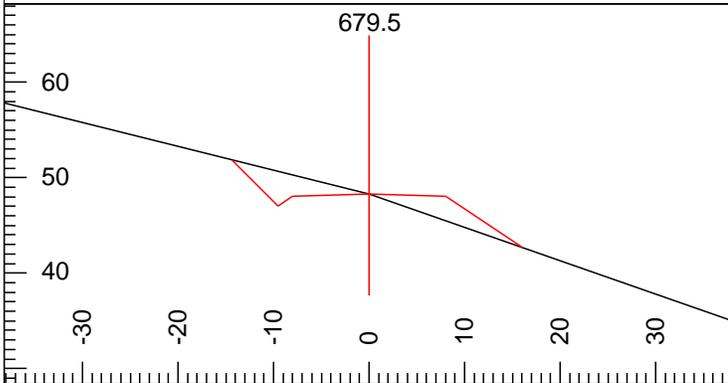
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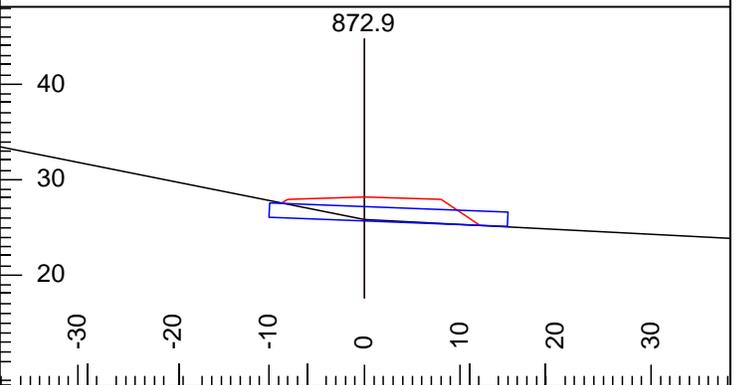
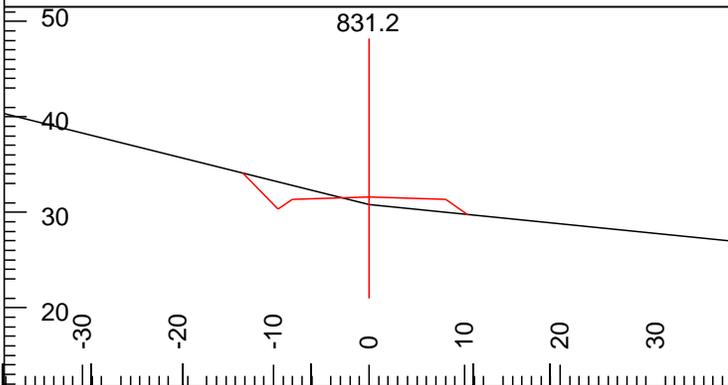


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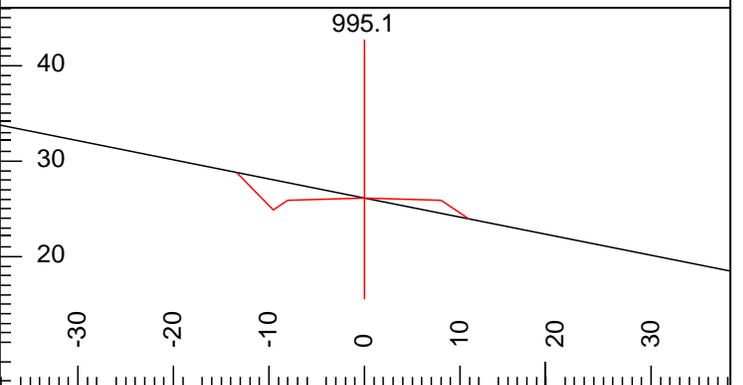
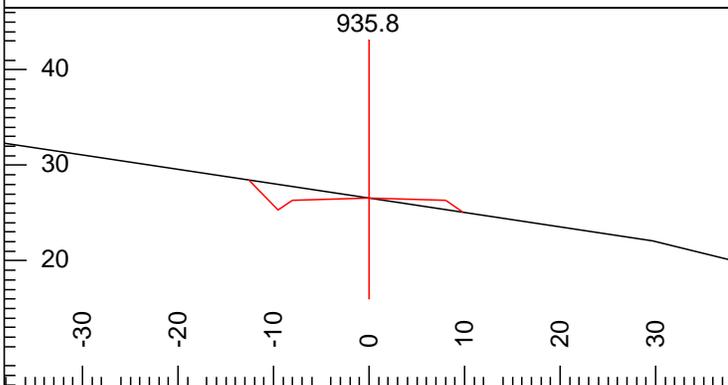
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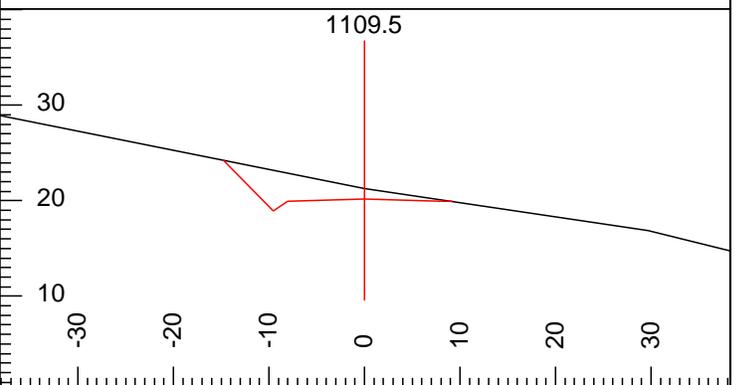
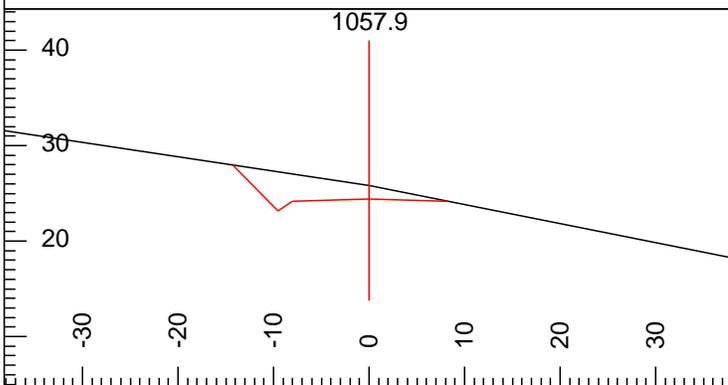
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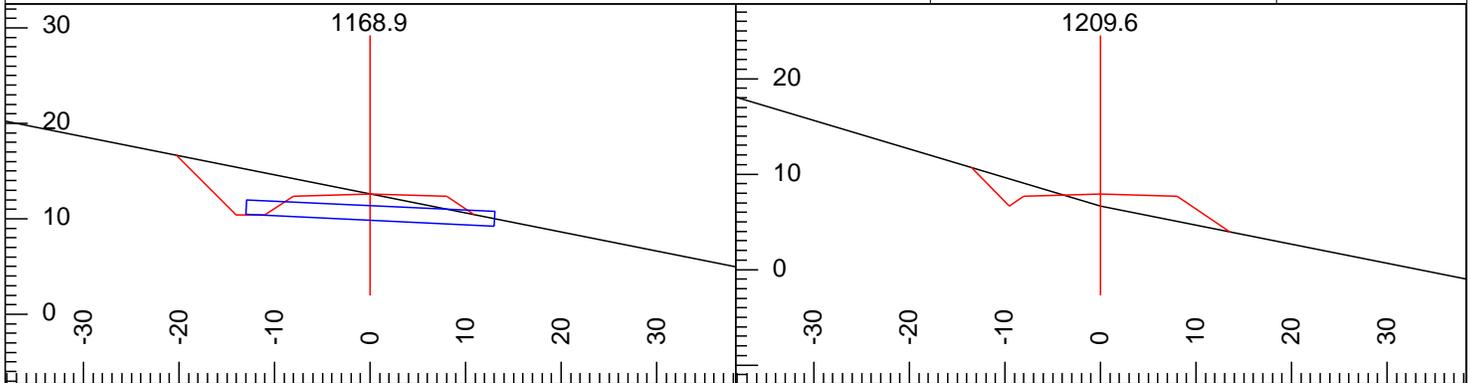
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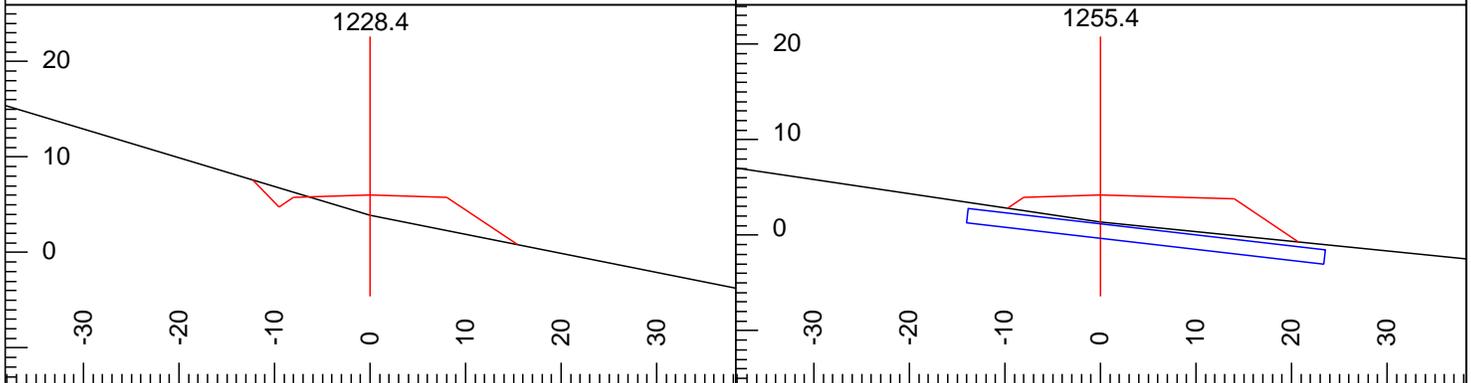
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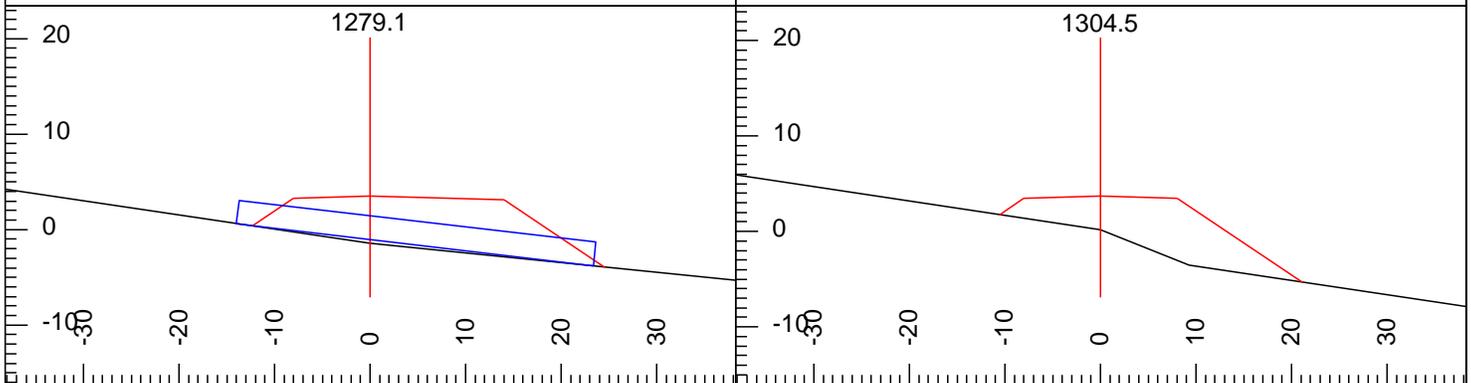
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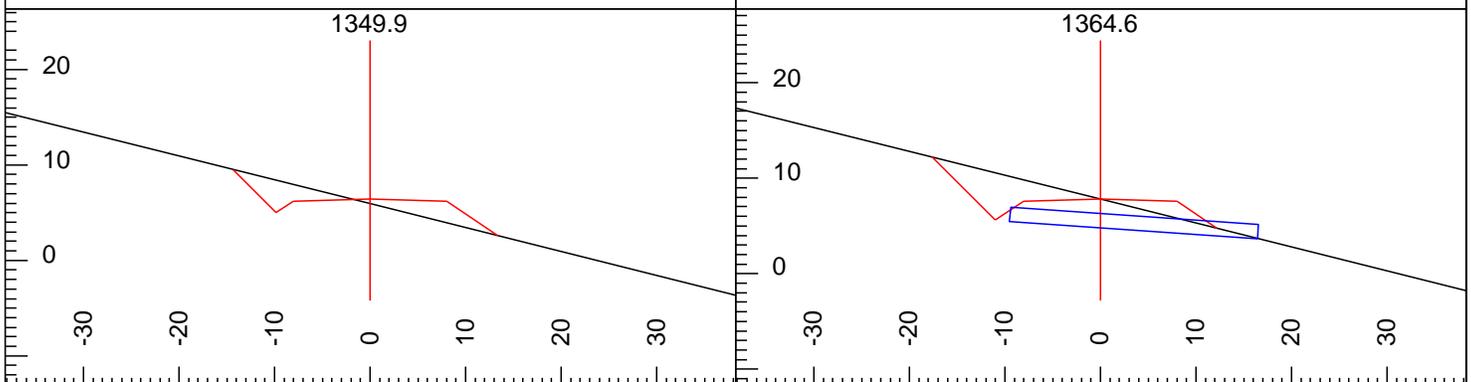
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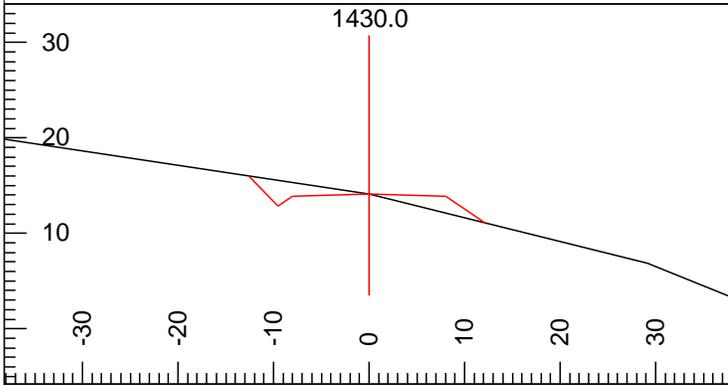
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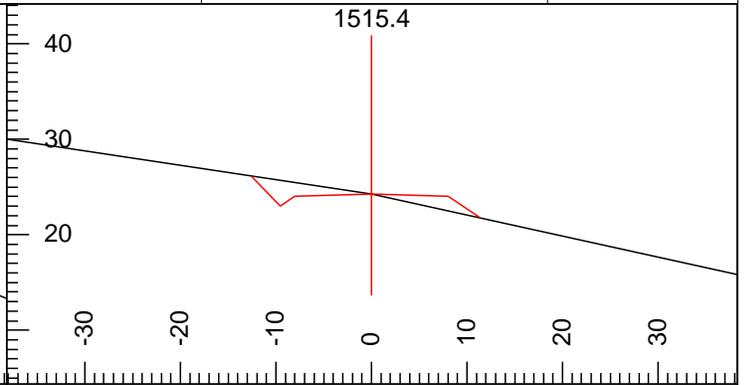


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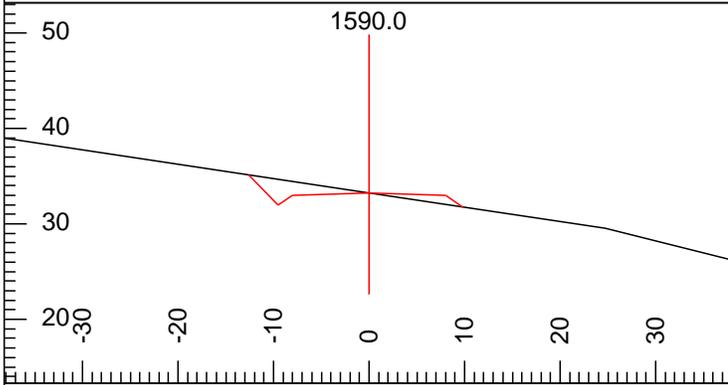
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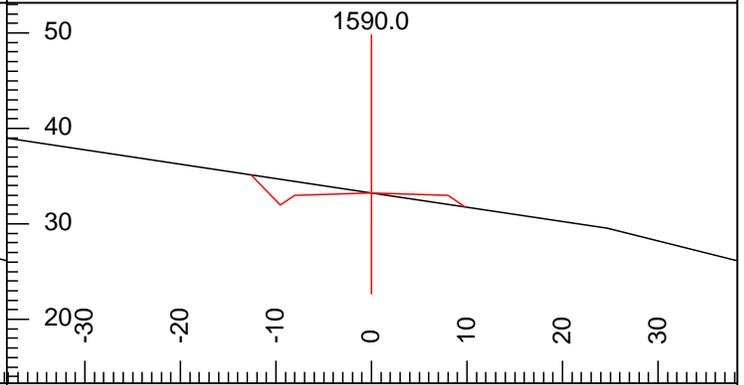
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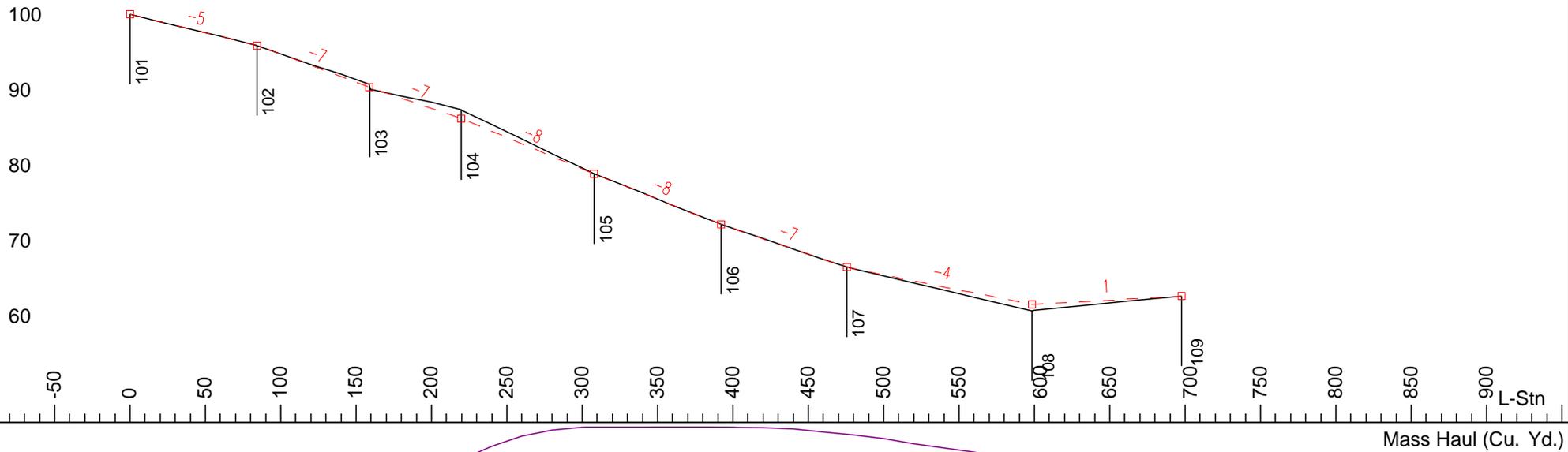
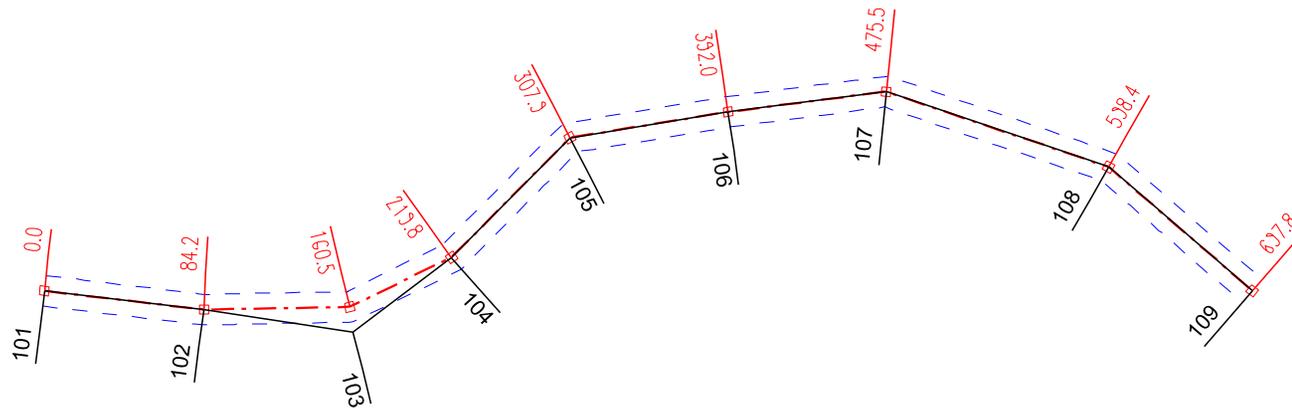
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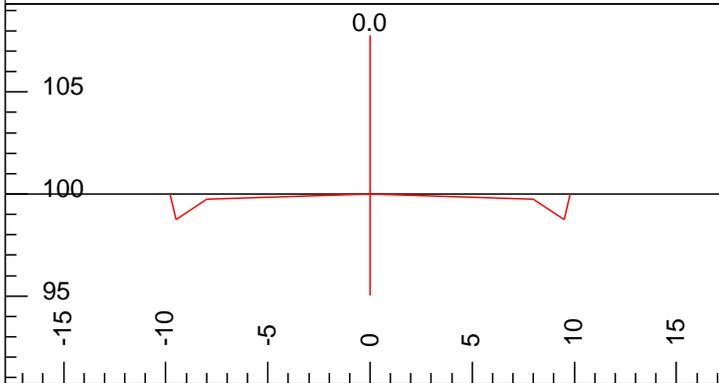


Timber Sale Crawford 17
 RD OLC-913ext
 Contract #: 30-93508

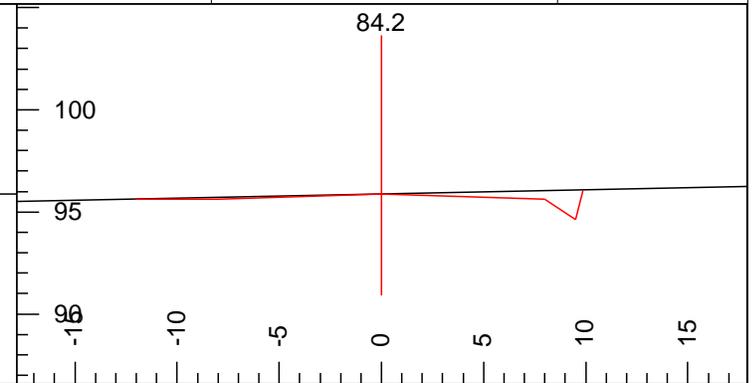
Washington State Department of Natural Resources
 South Puget Sound Region

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

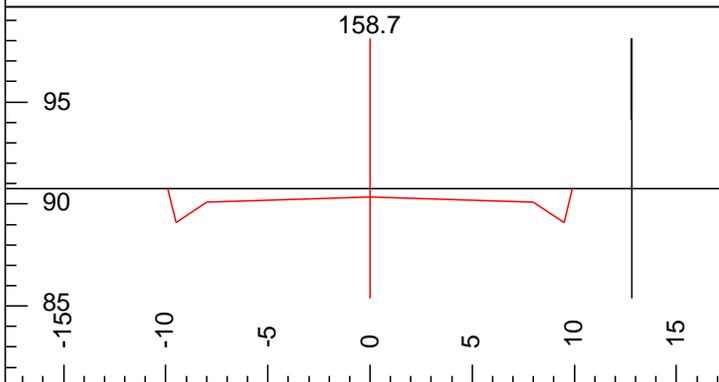
Engineer: E. Bauer
 16/05/26
 Page 1 of 1



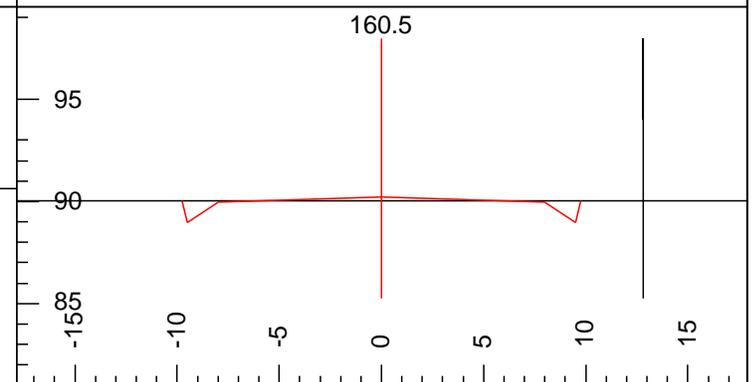
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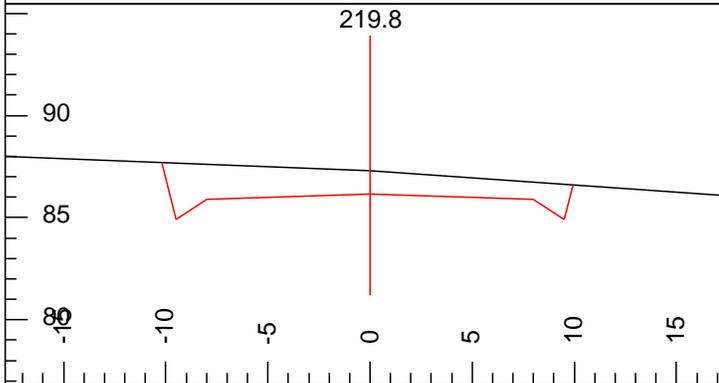
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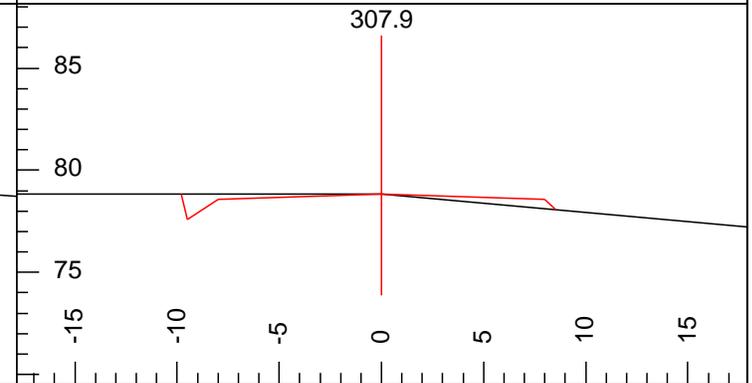
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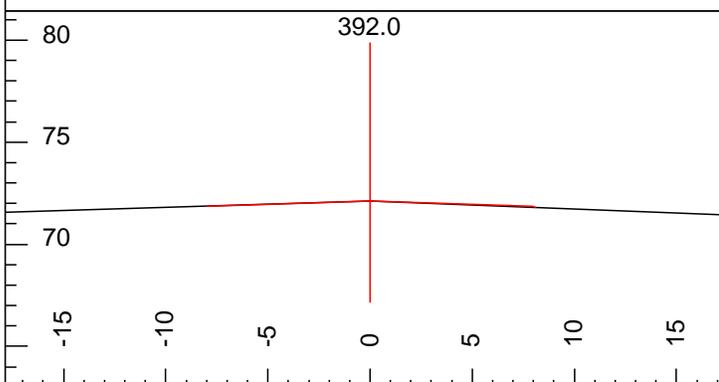
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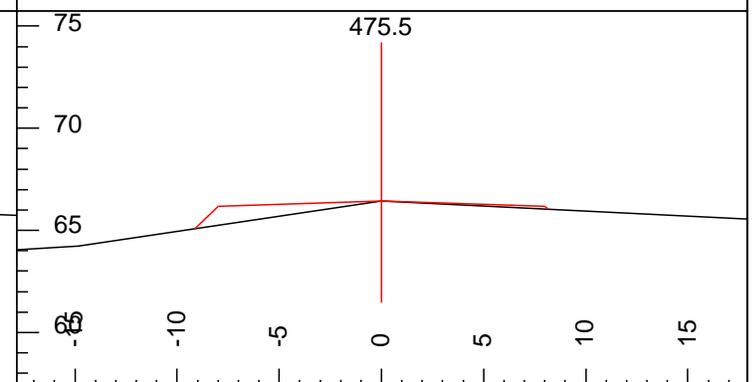
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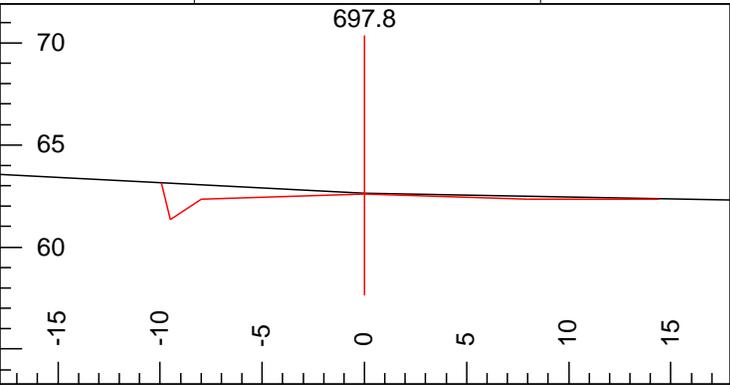
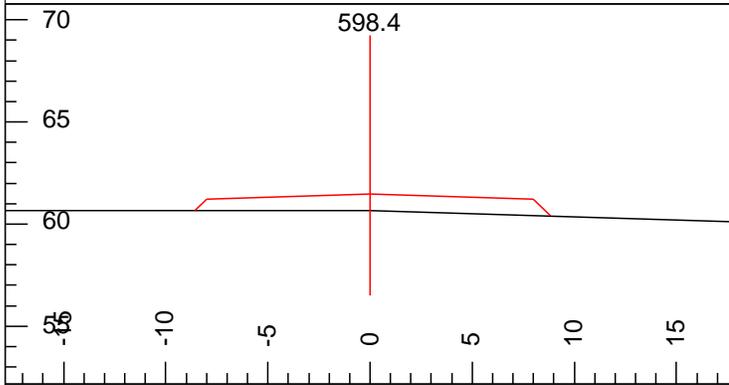
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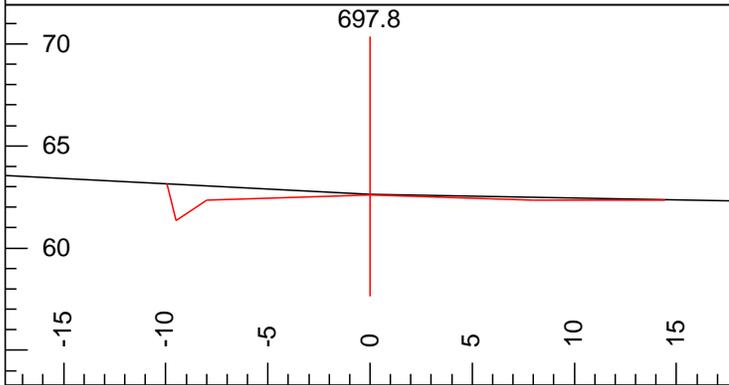


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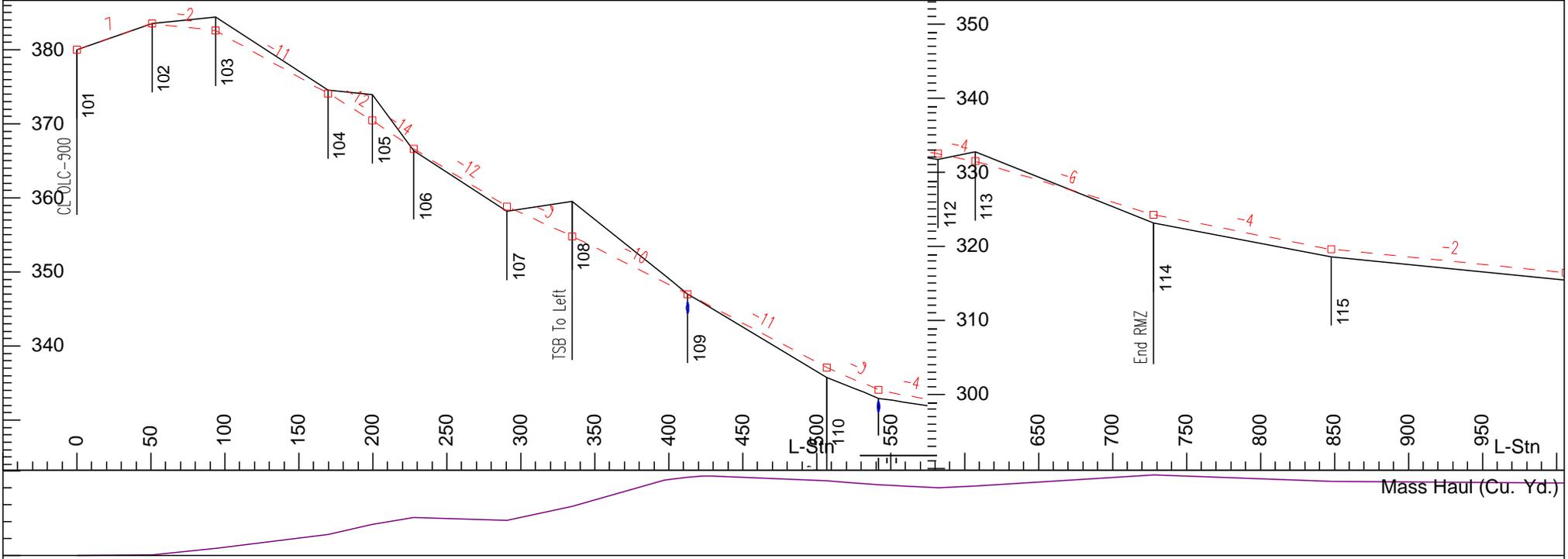
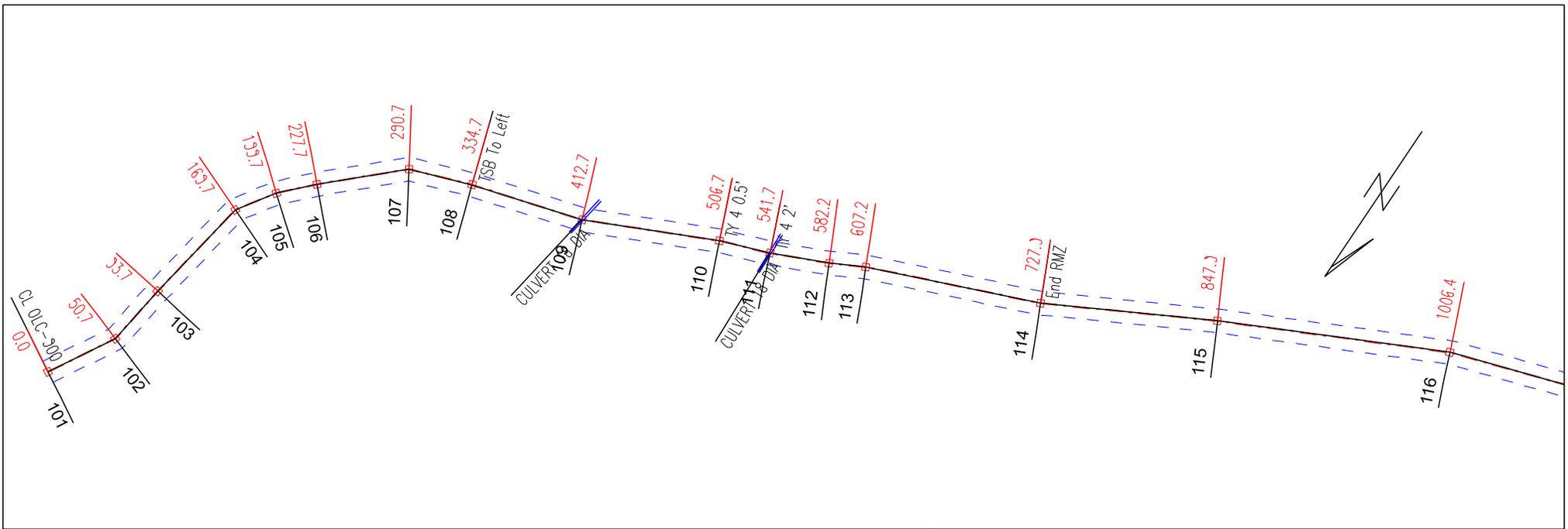


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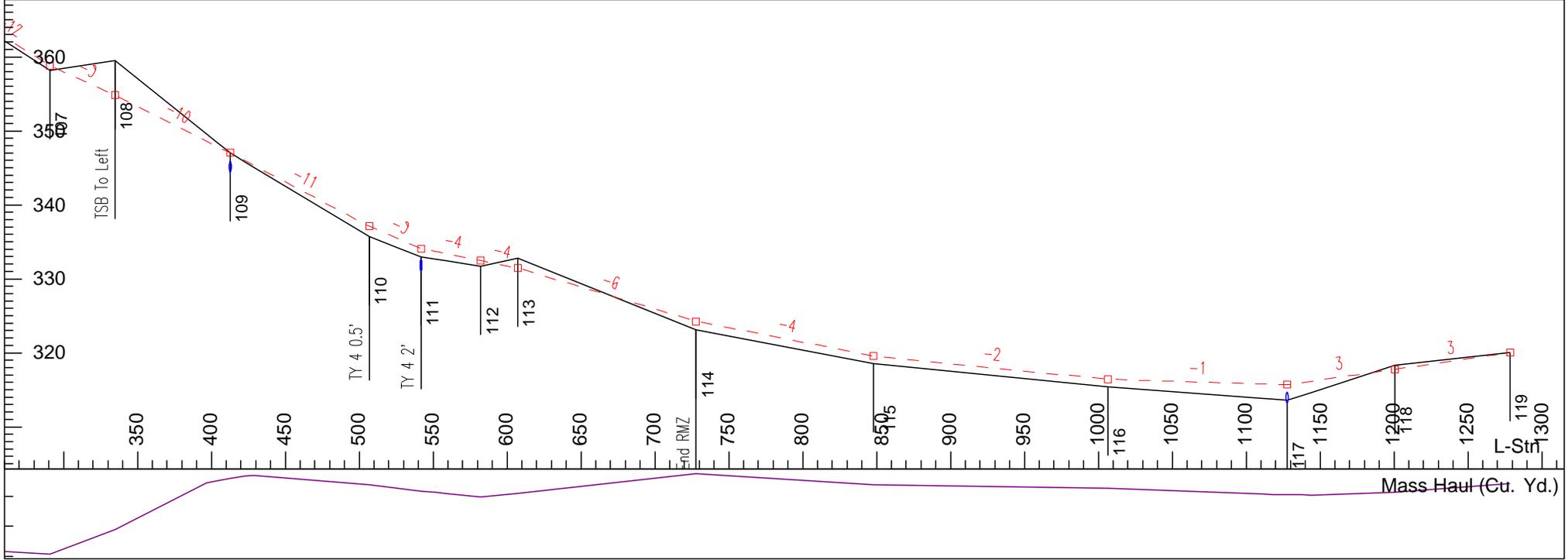
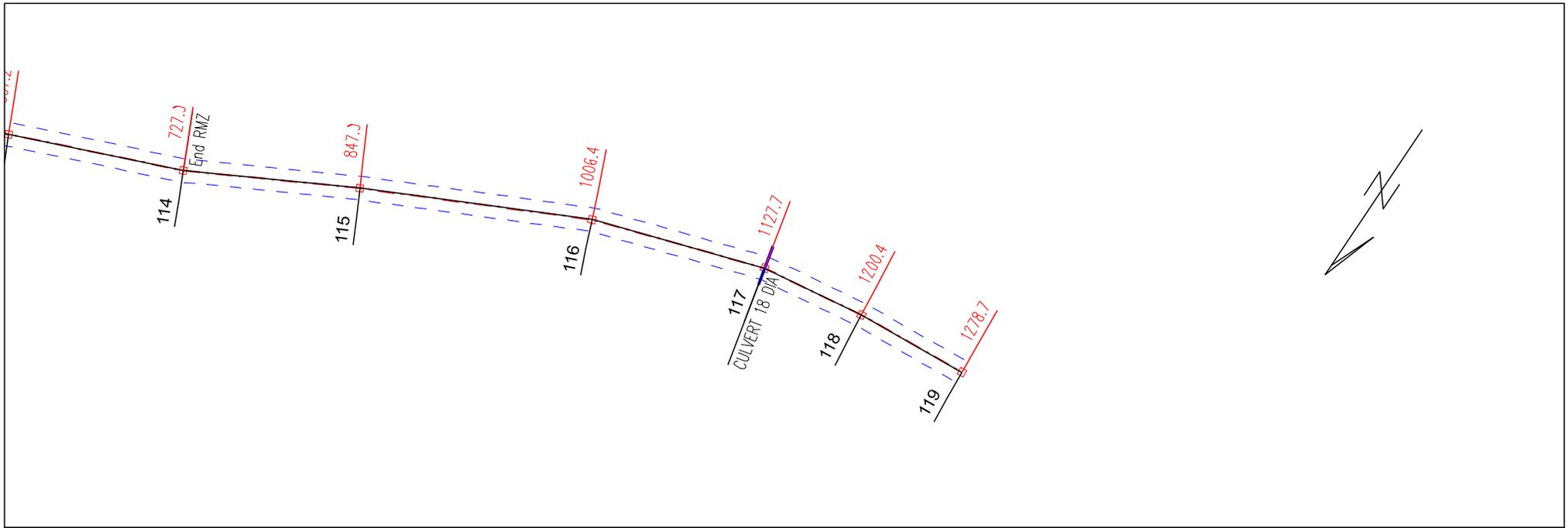


Timber Sale Crawford 17
RD OLC-1321ext
Contract #: 30-07

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: E. Bauer
16/05/26
Page 1 of 2

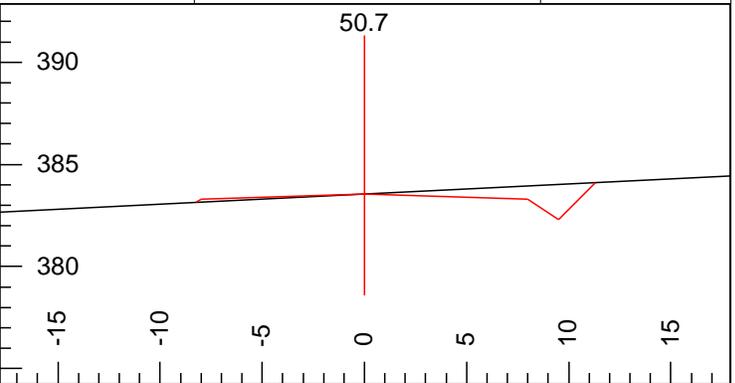
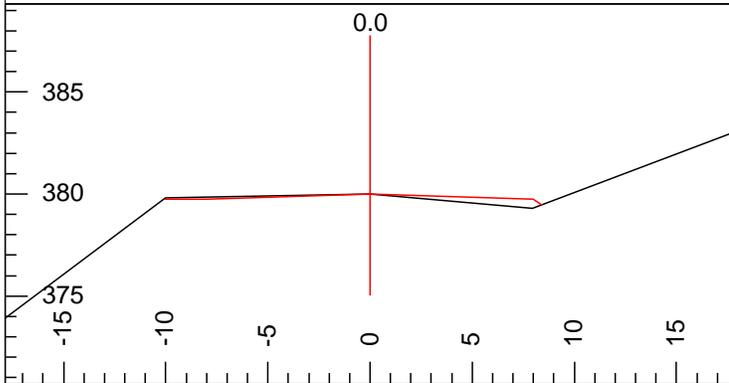


Timber Sale Crawford 17
RD OLC-1321ext
Contract #: 30-07

Washington State Department of Natural Resources
South Puget Sound Region

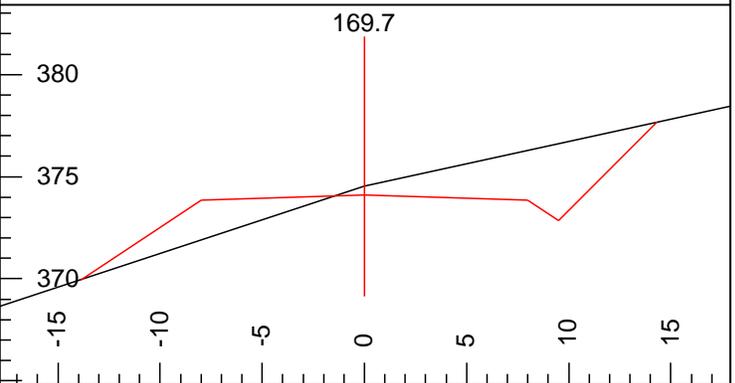
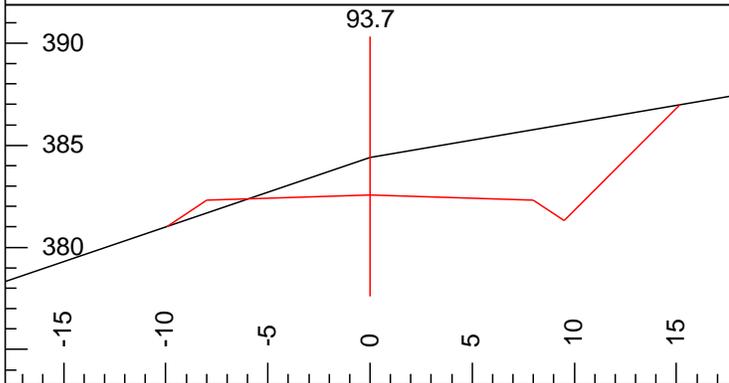
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Engineer: E. Bauer
16/05/26
Page 2 of 2



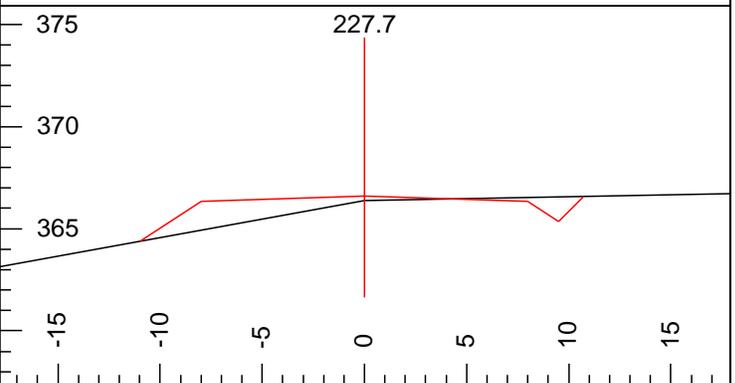
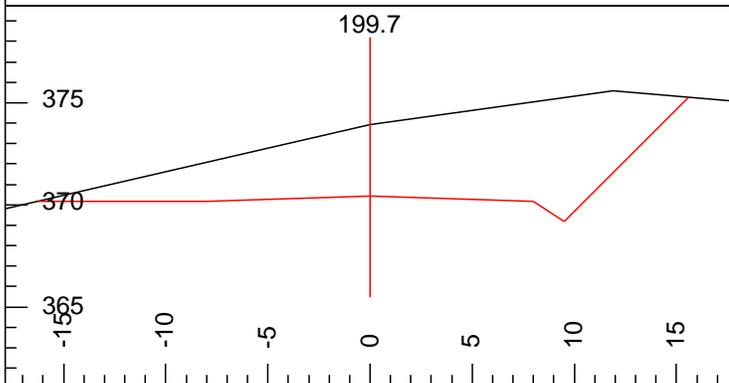
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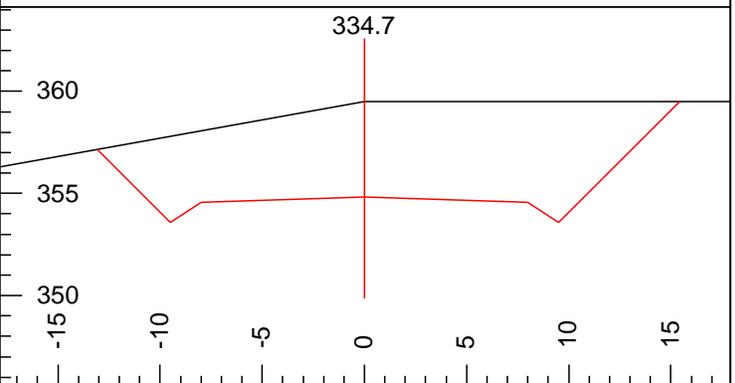
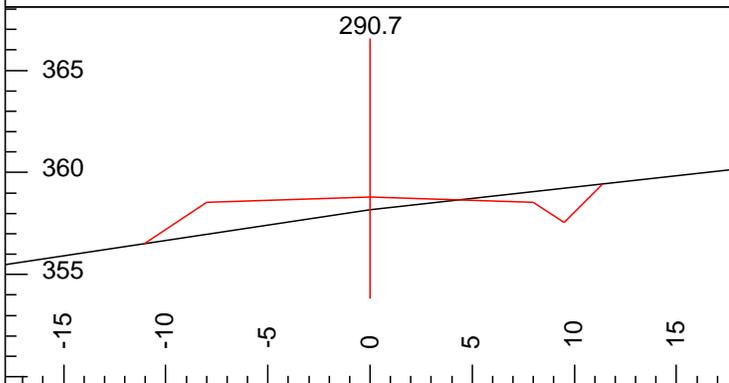
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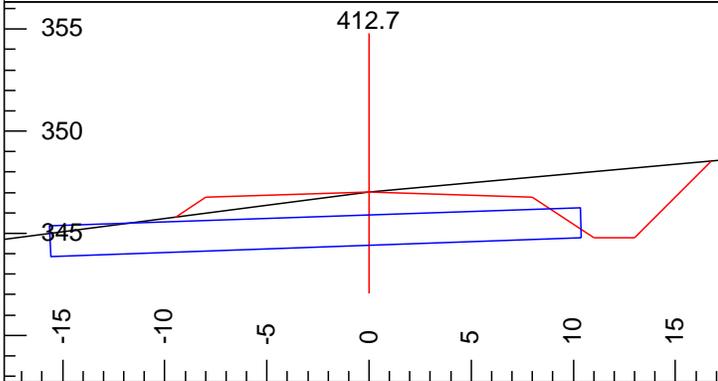
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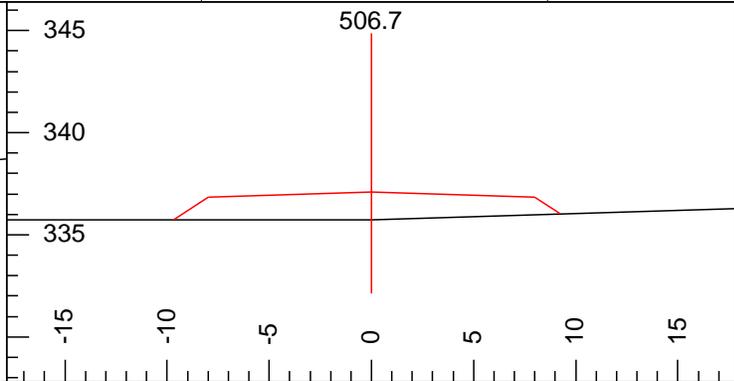


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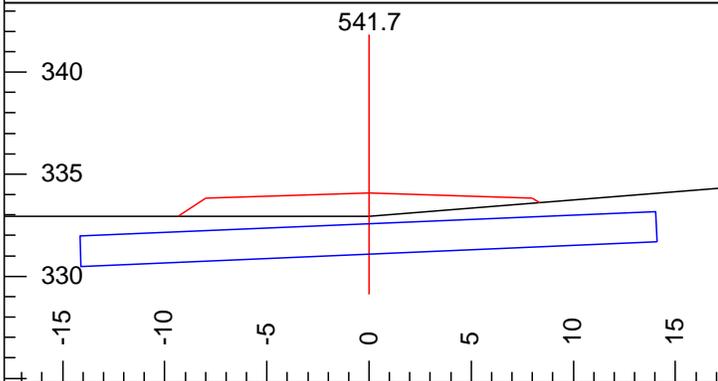
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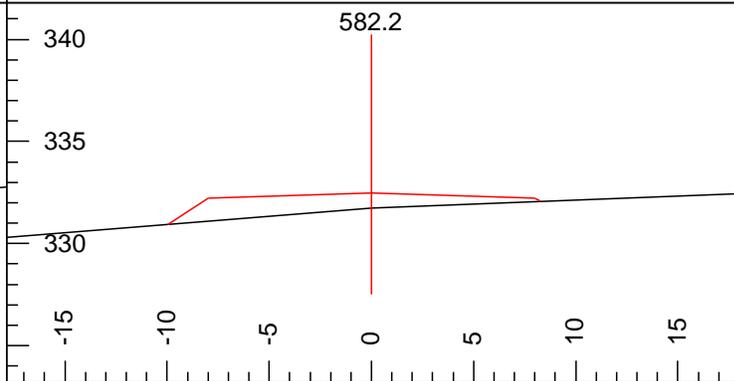
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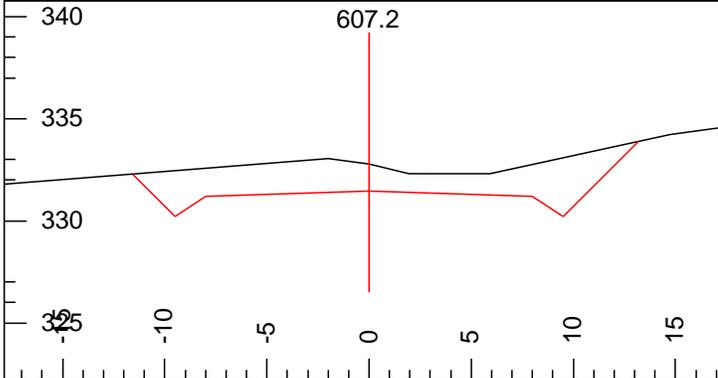
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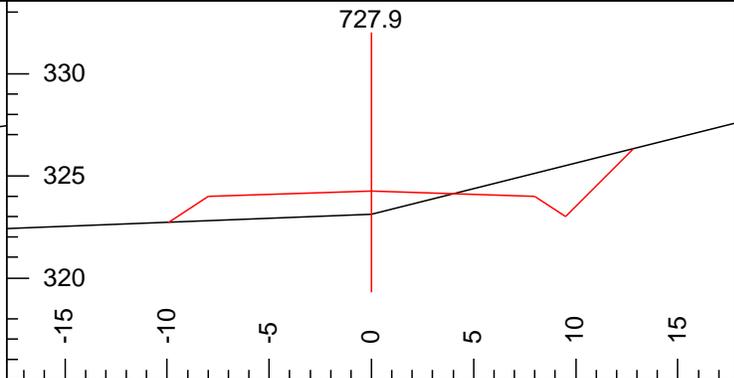
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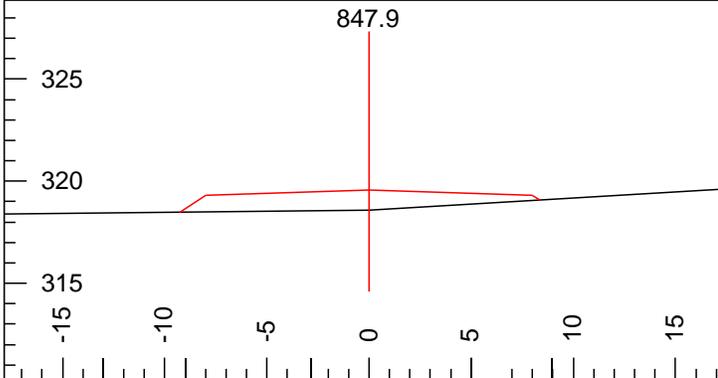
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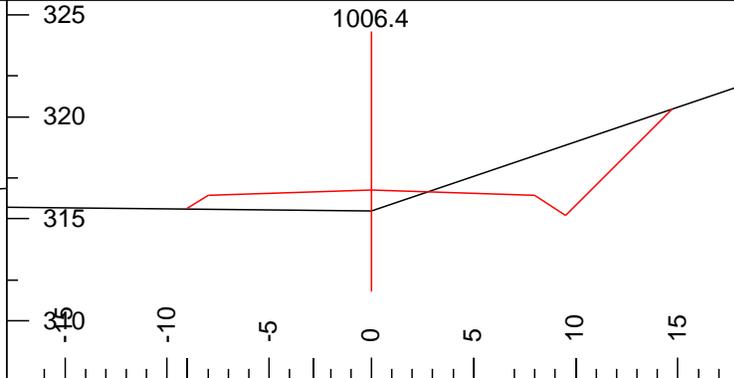
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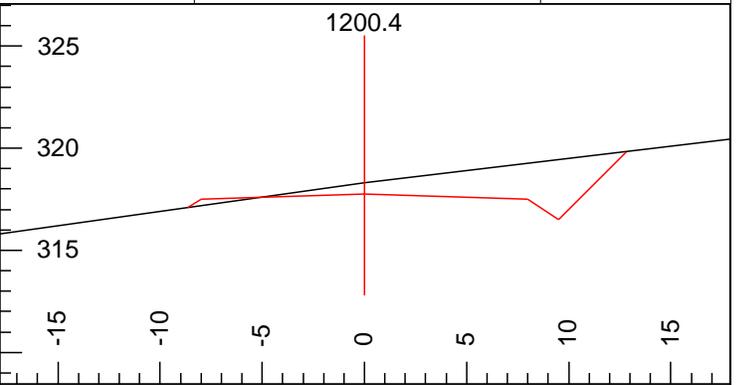
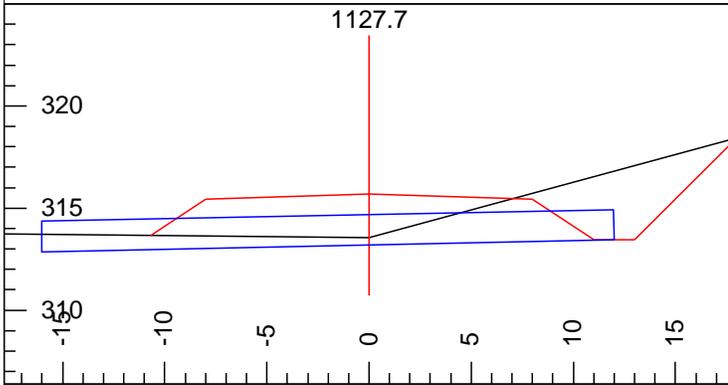
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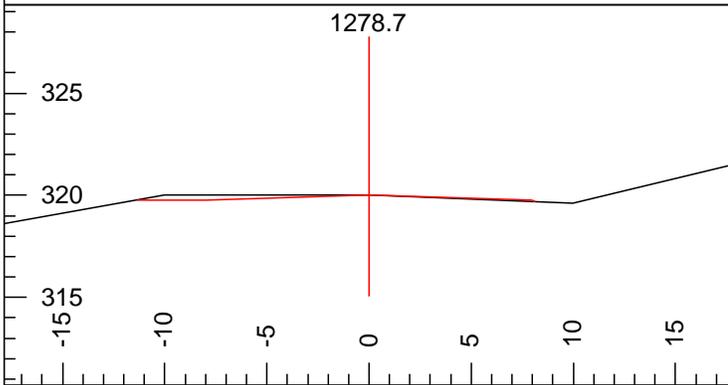


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STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES
SOUTH PUGET SOUND REGION

CRAWFORD MTN. PIT DEVELOPMENT PLAN
NW ¼, SW ¼, Section 36, Township 16 North, Range 01 West, W.M.
Page 1 of 3

1. Mining for 4 Inch In-place shall take place in area shown on map. Access to pit floor after mining must be approved by Contract Administrator. 3 inch minus stockpile can be used for areas shown on road plan. Development in any other area shall be approved in writing by the Contract Administrator.
2. All vegetation including stumps shall be cleared a minimum of 10 feet beyond the top of all working faces. Trees shall be cleared to a minimum of ¾ of the height of the tallest tree adjacent to the pit.
3. Overburden shall be end hauled or end pushed to the designated waste area and compacted. Minimal acceptable compaction is achieved by placing waste material in 2 foot or shallower lifts and routing excavation equipment over entire width of the lifts. Final placement of waste material shall be approved in writing by the Contract Administrator.
4. Root wads and organic debris larger than one cubic foot in volume shall be separated from overburden material and piled in the designated waste area.
5. Quarry faces shall not exceed 15 feet in height and shall have a slope no steeper than ½ (H):1 (V).
6. The width of pit benches shall be a minimum of 1.5 times the maximum length of the largest machine used..
7. The surface of pit floors and benches shall be uniform and free-draining at a minimum 2% outslope gradient.
8. No oversize material shall remain in the rock source at the termination of this timber sale. Oversize material is defined as rock fragments larger than two feet in any direction.
9. At the end of operations, pit faces and walls shall be scaled and cleared of loose and overhanging material, benches shall have safety berms constructed and access blocked to highway vehicles.
10. At the end of operations, all stockpiles remaining shall be located as follows:
 - a. Before placing aggregates upon the stockpile site, the site shall be cleared of vegetation, trees, stumps, brush, rocks or other debris and the ground leveled to a smooth, firm, uniform surface. The stockpile, when completed, shall be neat and regular in shape.
 - b. Stockpiles of different types or sizes of aggregates shall be spaced far enough apart, or separated by suitable walls or partitions, to prevent the mixing of the aggregates.
 - c. Final placement of stockpiles shall be approved in writing by the Contract Administrator.

CRAWFORD MTN. PIT DEVELOPMENT PLAN

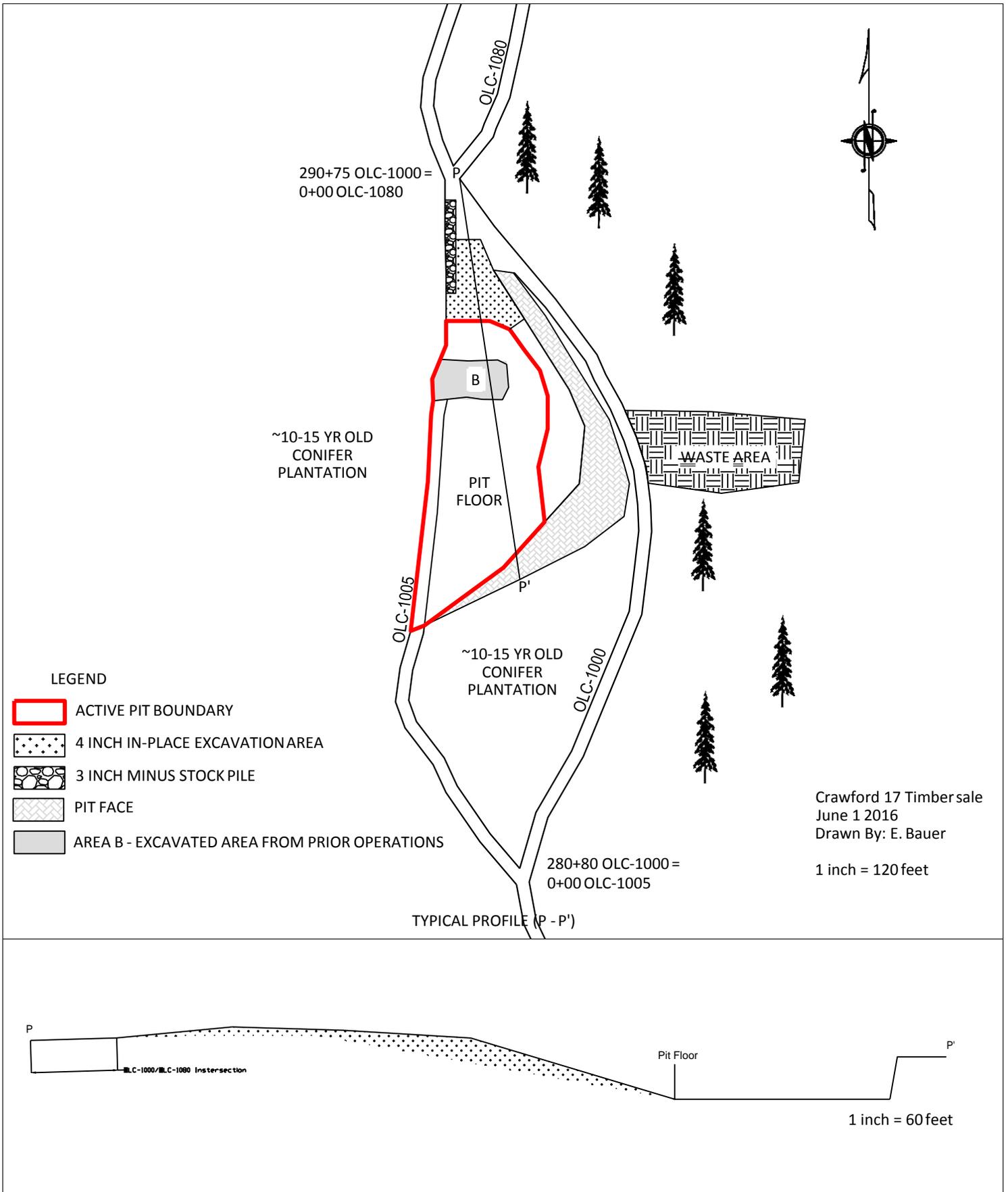
Page 2 of 3

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

12. The Purchaser shall submit an informational drilling and shooting plan to the Contract Administrator 5 working days prior to any drilling (Form #M-126PAC). This form is available at the South Puget Sound Region office.

13. At the completion of rock source operations, Purchaser shall ask Contract Administrator for written approval of final rock source condition and compliance with the terms of this plan.

Crawford Mt. Pit Development Plan: Plan View Page 3 of 3



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: Delphi

SALE/PROJECT NAME: Crawford 17

CONTRACT NUMBER: 30-93508

LEGAL DESCRIPTION: 0

ROAD NUMBER:	OLC-900A, OLC-1321ext*, OLC-902*, OLC-913ext	OLC-1321, OLC-901, OLC-910, OLC-913, OLC-914	OLC-900, OLC-910, OLC-912, OLC-1000
ROAD STANDARD:	Construction	Reconstruction	Pre-haul maintenance
NUMBER OF STATIONS:	36.66	49.66	42.22
SIDESLOPE:	10-40%	0-20%	0
CLEARING AND GRUBBING:	\$6,295	\$3,668	
EXCAVATION AND FILL:	\$33,639	\$6,631	
MISC. MAINTENANCE:			\$2,090
ROCK TOTALS (Cu. Yds.):			
3" Minus:	1492	\$2,384	\$18,000
4" in-place	2809	\$12,637	\$0
Quarry Spalls	15	\$0	\$0
Light Loose rip r	10	\$0	\$0
CULVERTS AND FLUMES:	\$8,501	\$3,194	\$2,614
STRUCTURES:	\$0	\$0	\$0
GENERAL EXPENSES:	\$5,711	\$2,834	\$1,612
MOBILIZATION:	\$2,260	\$2,260	\$2,260
TOTAL COSTS:	\$71,427	\$36,587	\$20,088
COST PER STATION:	\$1,948	\$737	\$476

ROAD DEACTIVATION AND ABANDONMENT COSTS: \$15,859

NOTE¹: This appraisal has no allowance for profit and risk.

TOTAL (All Roads) = \$143,961

SALE VOLUME MBF = 3,100

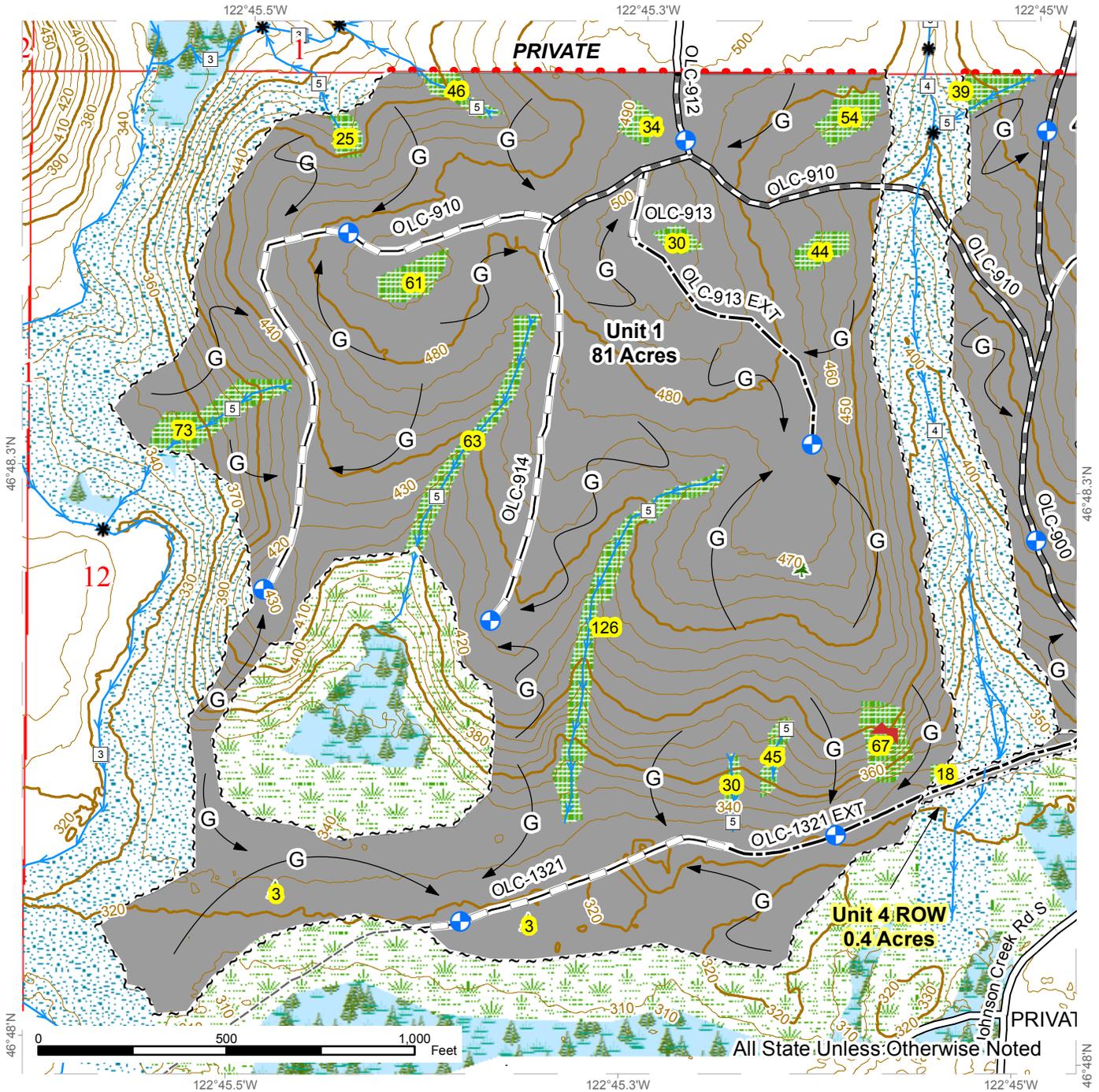
TOTAL COST PER MBF = \$46.44

Date: 05/24/16

LOGGING PLAN MAP

SALE NAME: CRAWFORD 17
AGREEMENT#: 93508
TOWNSHIP(S): T15R01W
TRUST(S): Common School and Indemnity(3)

REGION: South Puget Sound Region
COUNTY(S): THURSTON
ELEVATION RGE: 321-576



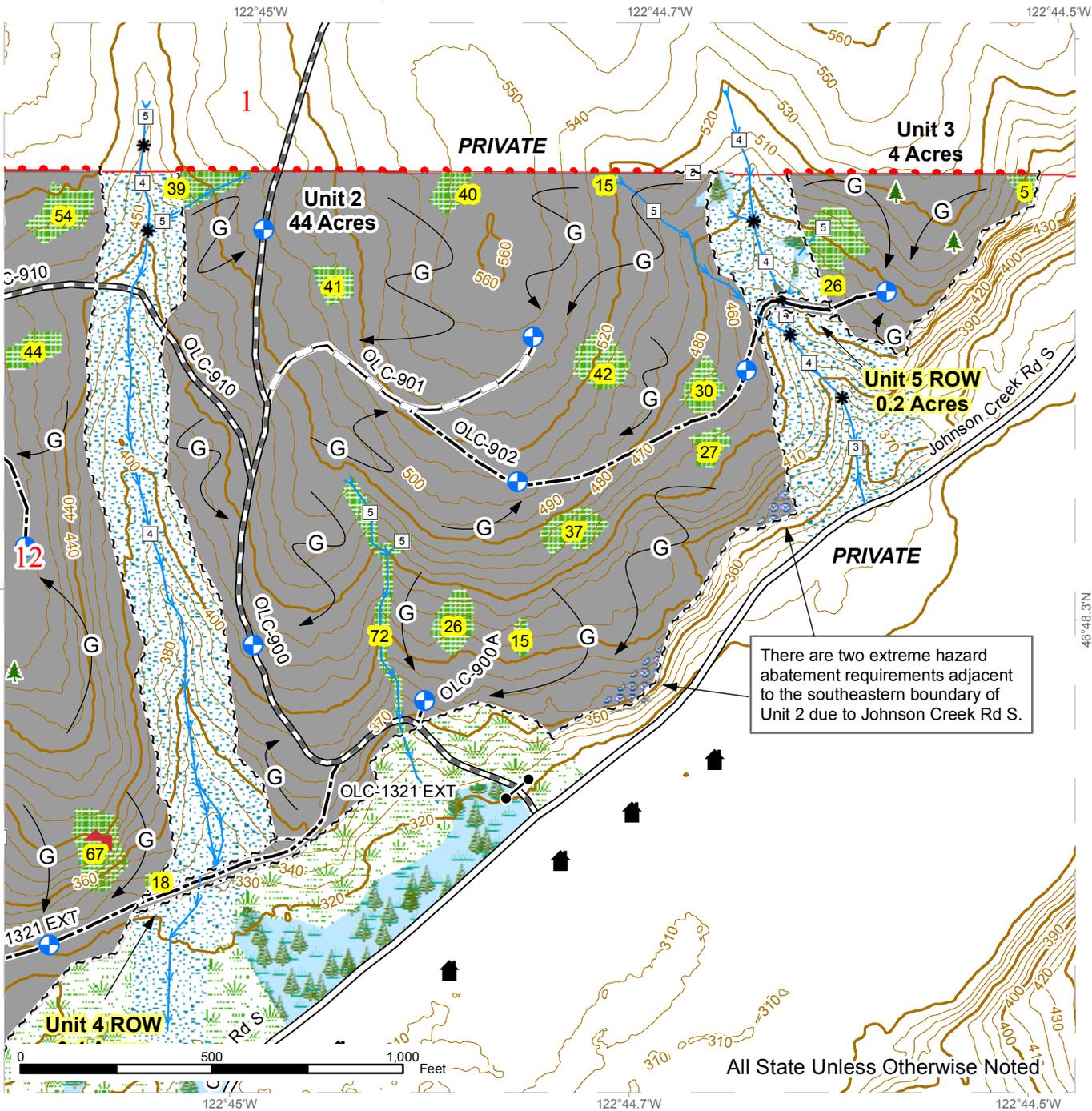
~ ~ ~ Sale Boundary Tags White	Existing Roads	Streams
~ ~ ~ Orange "Right of Way" Tags	Required Pre-Haul Maintenance	Stream Type
• • • Property Line	Optional Construction	* Stream Type Break
Forested Wetland	Optional Reconstruction	Contours 40 ft
Leave Tree Area - Marked w/ Yellow "Leave Tree Area" Tags	Old Grades/Trails	Leave Trees
Wetland Mgt Zone	Ground Harvest	Landing - Proposed
Riparian Mgt Zone		Bald
General		



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There are two extreme hazard abatement requirements adjacent to the southeastern boundary of Unit 2 due to Johnson Creek Rd S.

All State Unless Otherwise Noted

~ ~ ~ Sale Boundary Tags White	Existing Roads	Streams
~ ~ ~ Orange "Right of Way" Tags	Required Pre-Haul Maintenance	Stream Type
• • • Property Line	Optional Construction	* Stream Type Break
Forested Wetland	Optional Reconstruction	Contours 40 ft
Extreme Hazard Abatement	Ground Harvest	Leave Trees
Leave Tree Area - Marked w/ Yellow "Leave Tree Area" Tags		Structure
Wetland Mgt Zone		Landing - Proposed
Riparian Mgt Zone		Bald
General		

