



TIMBER NOTICE OF SALE

SALE NAME: TRIBUTE

AGREEMENT NO: 30-093218

AUCTION: August 23, 2016 starting at 10:00 a.m., COUNTY: Grays Harbor South Puget Sound Region Office, Enumclaw, WA

SALE LOCATION: Sale located approximately 7 miles northeast of Oakville

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 timber type change, in Unit #1; white "Timber Sale Boundary" tags, timber type change, and the E-3000 Road, in Unit #2 on part(s) of Sections 15, 16 and 17 all in Township 16 North, Range 4 West, W.M., containing 188 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:

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

MINIMUM BID: \$3,070,000.00 BID METHOD: Sealed Bids

PERFORMANCE SECURITY: \$150,000.00 SALE TYPE: Lump Sum

EXPIRATION DATE: October 31, 2019 ALLOCATION: Export Restricted

BID DEPOSIT: \$307,000.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: Harvesting activities are estimated to be 80% ground-based and 20% cable. Forest products sold under this contract shall be harvested and removed using ground based equipment on sustained slopes less than or equal to 45%, except shovels with self-leveling capabilities may be allowed on sustained slopes up to 55% with written approval from Contract Administrator. No rubber tired skidders will be authorized, 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.

Cutting, yarding and timber haul will not be permitted from November 1st to April 30th, unless authority to do so is granted in writing by the Contract Administrator. If permission is granted to operate from November 1st to April 30th, the Purchaser shall be required to operate under a Winter Operating Plan to include further protection of water, soil, roads and other forest assets at the Purchaser's expense. Preventive measures



TIMBER NOTICE OF SALE

required in the Winter Operating Plan must be put in place prior to commencing any winter operations.

ROADS:

4.69 stations of required construction. 10.90 stations of required reconstruction. 96.45 stations of optional construction. 388.77 stations of required pre-haul maintenance .Purchaser maintenance on the E-2040, E-2048, E-3000, E-3000c, E-3010c, E-3100, E-3120, E-3300 and E-3310 roads. Designated maintenance on all other roads used.

Rock for the proposal may be obtained from the State owned Vantage Quarry located in Section 22, Township 16 North, Range 04 West, W.M. or from any commercial source at the Purchaser's expense, as approved in writing by the Contract Administrator.

Road construction and rock haul will not be permitted from October 1st through April 30th, unless authority to do so is granted in writing by the Contract Administrator. If permission is granted to operate from October 1st through April 30th, the Purchaser shall be required to operate under 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.

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:

\$184,263.00 is due on day of sale. \$9.00 per MBF is due upon removal. These are in addition to the bid price.

SPECIAL REMARKS: This sale contains some high quality Douglas fir.

Purchaser shall design, provide and construct a 16 foot by 50 foot bridge on the E-2040 road at station 12+55. See the road plan for additional details.

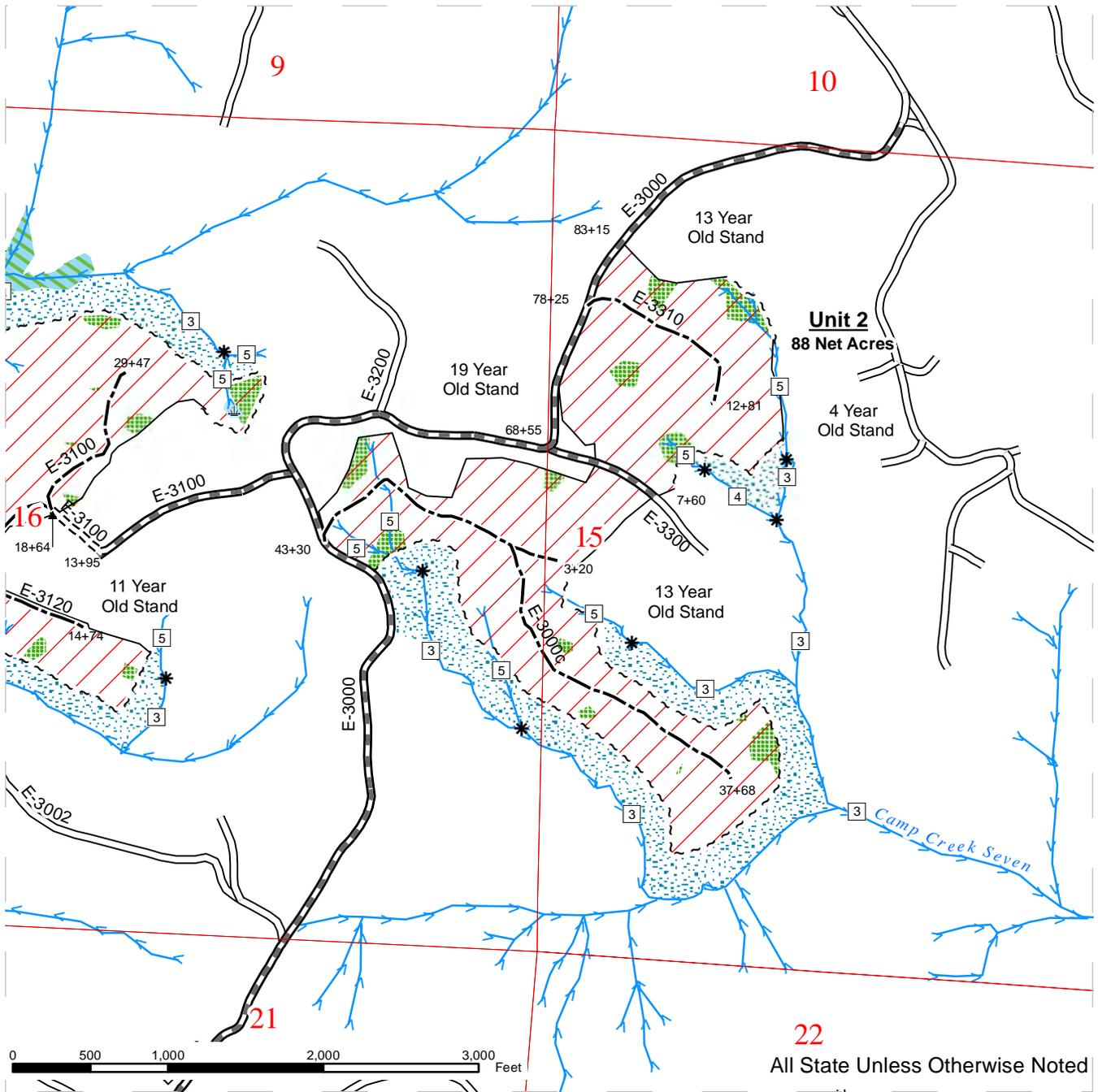
Existing oversize, shot rock material, and stockpiles are not available for use without approval from the Contract Administrator. See Vantage Quarry Development Plan for details.

Road work associated with this project includes manufacture of 4,000 cubic yard stockpile of 1-1/2 inch minus crushed, 3,000 cubic yard stockpile of 4 inch jaw run, and 3,000 cubic yards of 3 inch minus crushed. See Road Plan for details.

TIMBER SALE MAP

SALE NAME: Tribute
AGREEMENT#: 30-093218
TOWNSHIP(S): T16N R4W S15, S16
TRUST(S): Common School (3), State Forest Purchase (2), Forest Board Repayment (42)

REGION: South Puget Sound Region
COUNTY(S): Grays Harbor
ELEVATION RGE: 772' - 1211'

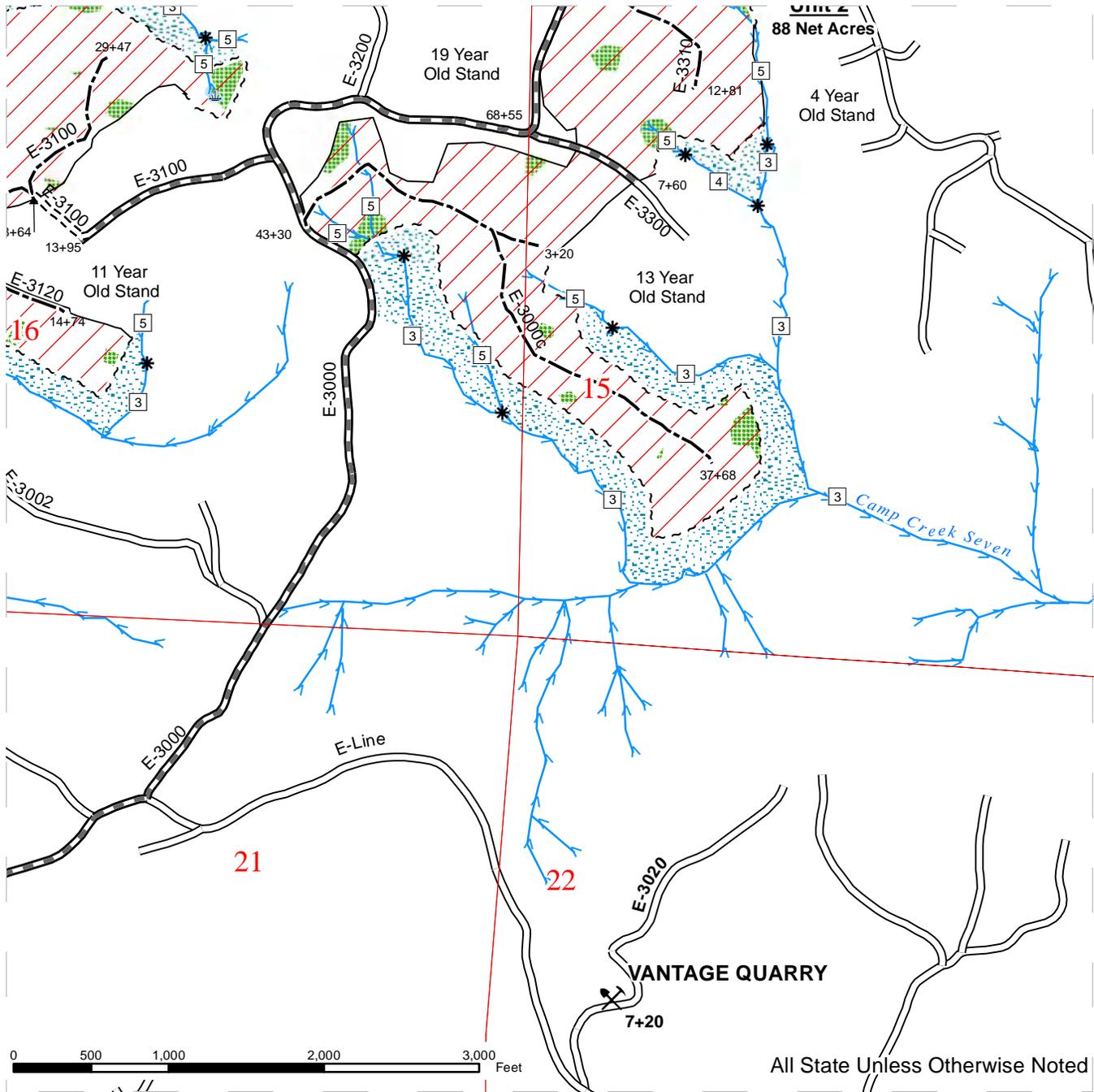


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|--|-----------------------------------|--|----------------------|--|-----------------------------|
| | Timber Sale Unit | | Stream Break | | Monumented Survey Points |
| | White "Timber Sale Boundary" Tags | | Stream Type | | Public Land Survey Sections |
| | Timber Type Change | | Streams | | Bridge Installation |
| | Yellow Tagged Leave Tree Clumps | | Forested Wetland | | |
| | Required Reconstruction | | Non-Forested Wetland | | |
| | Optional Construction | | RMZ Area | | |
| | Required Construction | | | | |
| | Required Pre-haul Maintenance | | | | |

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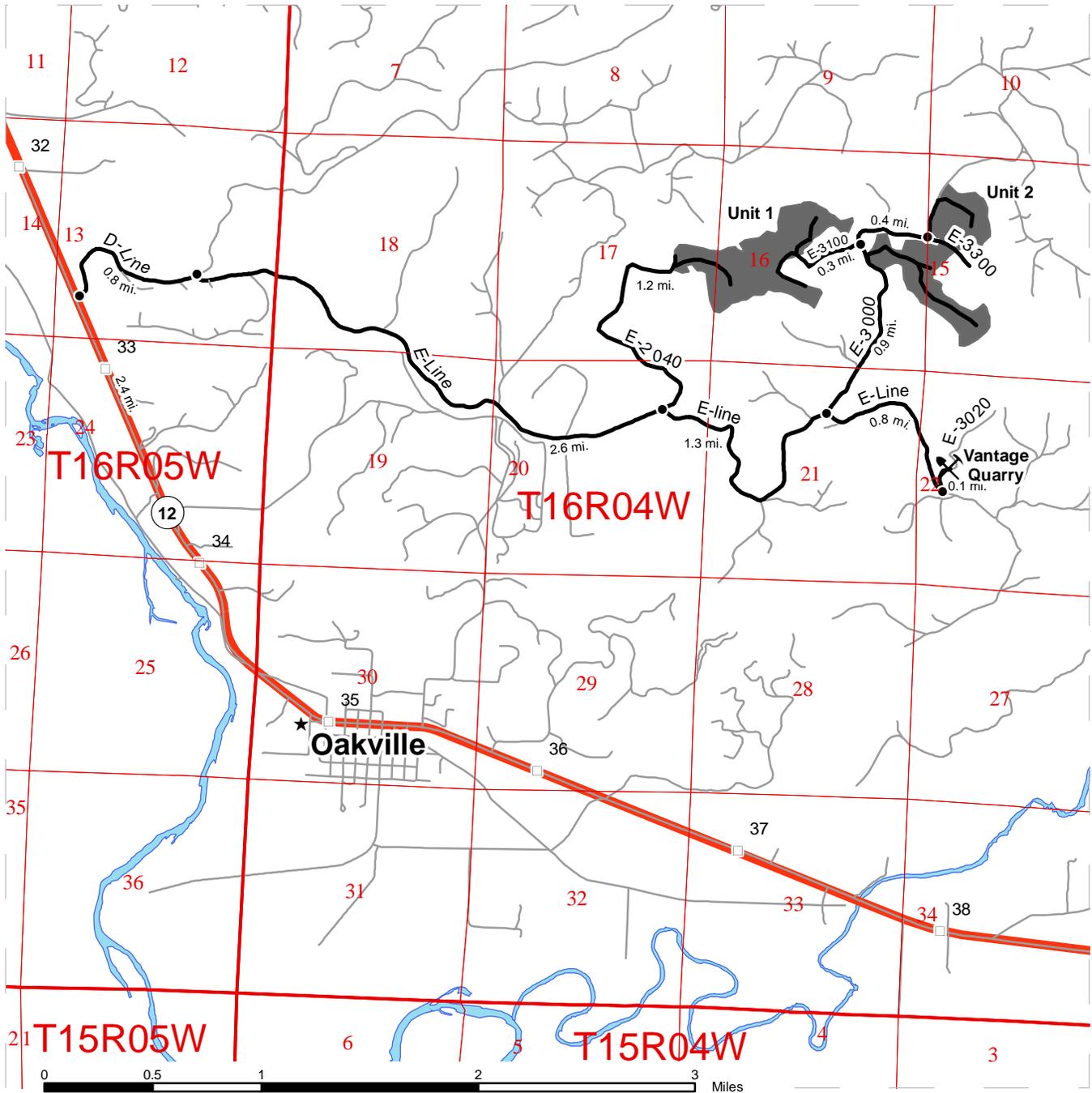


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| Required Reconstruction | Non-Forested Wetland | |
| Optional Construction | RMZ Area | |
| Required Construction | | |
| Required Pre-haul Maintenance | | |

DRIVING MAP

SALE NAME: Tribute
AGREEMENT#: 30-093218
TOWNSHIP(S): T16N R04W S17, S16, S15
TRUST(S): State Forest Board Purchase (02); Common Schools (03)

REGION: South Puget Sound
COUNTY(S): Grays Harbor
ELEVATION RGE: 772 - 1,211 ft.



| | |
|--|--------------------|
| | Timber Sale Unit |
| | Highways |
| | Haul Route |
| | Other Route |
| | Distance Indicator |
| | Town |
| | Quarry |

DRIVING DIRECTIONS:

From Oakville, drive approximately 2.4 miles west on US-12. Turn right onto the D-Line at the 'Capitol Forest' sign. After 0.8 miles, turn right onto the E-Line. Continue for 3.9 miles. Turn left onto E-3000. After 0.9 miles, turn left onto E-3100 and follow for 0.3 mi to Unit 1.

From the E-3000/E-3100 junction continue on E-3000 for another 0.4 miles and and turn right onto the E-3300 to enter Unit 2.

To get to Vantage Quarry at 3.9 miles on the E-line continue for another 0.8 miles then turn left (north) onto E-3020 for 0.1 miles. Quarry will be on left.



**STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES**

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

Export Restricted Lump Sum AGREEMENT NO. 30-093218

SALE NAME: TRIBUTE

**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 August 23, 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 timber type change, in Unit #1; white "Timber Sale Boundary" tags, timber type change, and the E-3000 Road, in Unit #2, located on approximately 188 acres on part(s) of Sections 15, 16, and 17 all in Township 16 North, Range 4 West W.M. in Grays Harbor 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, 2019.

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 \$1,041.00 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; the E-Line, D-Line, E-2040, E-2048, E-3000, E-3000c, E-3020, E-3100, E-3010c, E-3120, E-3300 and E-3310 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 D-Line, E-Line, E-3000 and E-3020 roads, unless authority is granted in writing by the Contract Administrator.

G-380 Road Easement and Road Use Permit Requirements

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

Easement #55-0002582 entered into between the State of Washington Department of Natural Resources and "Busby" Taylor United, Inc., dated August 15, 1995.

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:

Lease, including the terms and provisions thereof,
For: Minor Forest Products
In Favor of: DNR – PC Region

Disclosed by Application No.: 35-CP00011
Granted: 1/1/2010
Expires: Indefinite

Lease, including the terms and provisions thereof,
For: Minor Forest Products
In Favor of: DNR – SPS Region
Disclosed by Application No.: 35-SPSGH02
Granted: 1/01/2015
Expires: Indef.

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 \$277,692.00. The total contract price consists of a \$0.00 contract bid price plus \$277,692.00 in fees. Fees collected shall be retained by the state unless the contract is adjusted via the G-066 clause. Purchaser shall be liable for the entire purchase price, and will not be entitled to any refunds or offsets unless expressly stated in this contract.

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

P-045 Guarantee of Payment

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

P-050 Billing Procedure

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

P-080 Payment Account Refund

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

P-090 Performance Security

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

P-100 Performance Security Reduction

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

Section H: Harvesting Operations

H-013 Reserve Tree Damage Definition

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

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

- a. A reserve tree has one or more scars on its trunk exposing the cambium layer, which in total exceeds 100 square inches.

b. A reserve tree top is broken or the live crown ratio is reduced below 30 percent.

c. A reserve tree has more than 1/3 of the circumference of its root system injured such that the cambium layer is exposed.

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

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

H-017 Preventing Excessive Soil Disturbance

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

H-035 Fall Trees Into Sale Area

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

H-040 Purchaser Harvest Plan

Purchaser shall, as part of the plan of operations, prepare an acceptable harvest plan for entire sale area. The plan shall address the felling, yarding, slash operations for all units and the H-140 Clause, 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 cable and ground based equipment. Ground based equipment shall be limited to tracked ground based equipment on sustained slopes of 45% and less. Self-leveling shovels are restricted to sustained slopes of 55% or less. Use of tracked skidders shall be allowed for pole yarding only. No rubber tired skidders will be authorized unless authority to use other equipment is granted in writing by the State.

H-125 Log Suspension Requirements

Lead-end suspension is required for all yarding activities.

H-126 Tailholds on State Land

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

H-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

- a. Falling, yarding, and timber haul will not be permitted from November 1 to April 30, unless authority to do so is granted in writing by the Contract Administrator. If permission is granted to operate from November 1 to April 30, the Purchaser shall comply with a "Winter Operating Plan" to include further protection of water, soil, roads, designated skid trails and other forest assets at the Purchaser's expense. All preventative measures shall be in place prior to commencing any winter operations.
- b. Equipment limitation zones are required within 30 feet of Type 5 streams.
- c. Crossings of Type 5 streams may be allowed at locations approved in writing by the Contract Administrator. Purchaser must protect the stream bank and prevent sedimentation. All materials placed in and/or over the stream at these crossings shall be removed immediately upon completion of yarding.
- d. No equipment may operate within, nor logs yarded through or over, leave tree clumps marked with yellow leave tree area tags unless authorized by the Contract Administrator.

- e. 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.
- f. Within shovel logging areas, the shovel operator shall break up concentrations of logging debris greater than 10.5 feet by 10.5 feet to allow exposure of natural forest soils to ensure proper reforestation.
- g. No equipment shall operate, or trees felled or damaged, outside the timber sale boundary.
- h. Purchaser shall cut all vine maple within the harvest unit(s), leaving a stump no more than 12 inches in height.
- i. 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.
- j. Within shovel logging areas, and when yarding and loading operations are occurring simultaneously, an additional shovel will be required for loading to avoid extra trips to the landing. No more than one round trip shovel road is allowed.

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

H-141 Additional Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

- a. Purchaser shall leave 2 down logs per acre. A log is defined as having a minimum diameter of 12 inches on the small end of the log and a minimum length of 20 feet or at least 100 board feet.

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.

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

Road construction and associated work provisions of the Road Plan for this sale, dated 1/12/2016 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 E-2040, E-2048, E-3000, E-3000c, E-3010c, E-3100, E-3120, E-3300 and E-3310 roads. All work shall be completed to the specifications detailed in the Road Plan.

C-060 Designated Road Maintainer

If required by the State, Purchaser shall perform maintenance and replacement work as directed by the Contract Administrator on all other roads used not covered in clause C-050. Purchaser shall furnish a statement in a form satisfactory to the State showing the costs incurred while performing this work. Costs shall be based on the rates set forth in the 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-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 typed stream as a result of operations under this contract and which is identified by the Contract Administrator shall be removed and deposited in a stable position. Removal of slash or debris shall be accomplished in a manner that avoids damage to the natural stream bed and bank vegetation.

S-110 Resource Protection

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

S-120 Stream Protection

No timber shall be felled into, across, or yarded through Type 3 or Type 4 waters, except for road construction.

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 the harvest area.

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

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

Purchaser

Art Tasker
South Puget Sound Region Manager

Date: _____
Address: _____

Date: _____

CORPORATE ACKNOWLEDGEMENT

STATE OF _____)

COUNTY OF _____)

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

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

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

Notary Public in and for the State of

My appointment expires _____

FOREST EXCISE TAX -- ROAD SUMMARY SHEET

Region: South Puget Sound

Timber Sale Name: Tribute

Application Number: 30-093218

Excise Tax Applicable Activities

Construction: 10,114 linear feet
Road to be constructed (optional and required) but not abandoned

Reconstruction: 1,090 linear feet
Road to be reconstructed (optional and required) but not abandoned

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

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

Pre-Haul Maintenance: 38,877 linear feet
Existing road to receive maintenance work (specifically required by the contract) prior to haul

Excise Tax Exempt Activities

Temporary Optional Construction: 0 linear feet
Optional roads to be constructed and then abandoned

Temporary Optional Reconstruction: 0 linear feet
Optional roads to be reconstructed and then abandoned

New Abandonment: 0 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 7/04)

PRE-CRUISE NARRATIVE

| | |
|--|---|
| Sale Name: Tribute | Region: South Puget Sound |
| Agreement #: 30-093218 | District: Black Hills |
| Contact Forester: Brandon Mohler | Phone/ Location: (360)-918-1115 Ext: / |
| Alternate Contact: Kevin Carlsen | Phone/ Location: (306)-870-0409 Ext: / |

Type of Sale (lump sum, mbf scale, tonnage scale or contract harvest):
 Required or Optional removal of utility as pulp:
 Evaluated for RFRS Implementation?: We chose not to implement RFRS
 Percentage cable (specify downhill vs uphill): 20% uphill
 Percentage ground based: 80%
 Species Onsite: RC, DF, WH, RA, BC, BLM, NF, SF, SS, Other:(Please List)

UNIT ACREAGES AND METHOD OF DETERMINATION:

| Unit # | Harvest R/W or RMZ WMZ | Legal Description Sec/Twp/Rng | Grant | Gross Traversed Acres | Deductions from Gross Acres (No harvest acres) | | | | Net Harvest Acres | Acreage Determination (List method and error of closure if applicable) |
|--------------------|------------------------|-------------------------------|------------------|-----------------------|--|------------------|---------------------|------------------------|-------------------|--|
| | | | | | RMZ/WMZ Acres | Leave Tree Acres | Existing Road Acres | Other Acres (describe) | | |
| 1 | | Sec17/16/ T16N/ R04W | 03=100% | 106.2 | | 6.4 | | | 99.8 | Garmin 64s |
| 2 | | Sec16/15/ T16N/ R04W | 02=70% 03=30% | 95.1 | | 6.4 | .4 | | 88.3 | Garmin 64s |
| | | Sec / T N/R E | | | | | | | | |
| | | Sec / T N/R E | | | | | | | | |
| | | Sec / T N/R E | | | | | | | | |
| | | Sec / T N/R E | | | | | | | | |
| TOTAL ACRES | | | | | | | | | 188.1 | |

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: Unit boundaries marked with white "Timber Sale Boundary" tags and pink flashers. Eastern boundary edge along plantation is marked with pink flagging. Tagged leave tree clumps marked with yellow "Leave Tree Area" tags and pink flashers. Scattered leave trees marked with a single band of blue paint. | N/A | 8 Leave Trees per acre |
| 2 | Variable Retention Harvest: Unit boundaries marked with white "Timber Sale Boundary" tags and pink flashers. Northern unit boundary along plantation marked with pink flagging. Tagged leave tree clumps marked with yellow "Leave Tree Area" tags and pink flashers. Scattered leave trees marked with a single band of blue paint. | N/A | 8 Leave Trees per acre |
| | | | |
| | | | |
| | | | |

OTHER PRE-CRUISE INFORMATION:

| Unit # | Estimated Volume | Access information (Gates, locks, etc.) | Photos, traverse maps required |
|--------|------------------|---|--------------------------------|
| 1 | See Cruise | Access of US-12 to the D-line, turn right onto the E-line, turn left onto E-3000. left turn E-3100 walk into unit | See attached maps |
| 2 | See Cruise | Access of US-12 to the D-line, turn right onto the E-line, turn left onto E-3000 unit is on the right. | See attached maps |
| | | | |
| | | | |
| | | | |

REMARKS:

| |
|--|
| |
|--|

Prepared By: Kevin Carlsen
Date: 12/8/2015

Title: NRS 1 Forester

CC: Brandon Mohler, Audrey
Mainwaring, John Piety

Revised 2/23/2007 (PSLD)

Cruise Narrative

| | |
|-------------------------------------|---------------------------------------|
| Sale Name: Tribute | Region: South Puget Sound |
| Agree. #: 30-093218 | District: Black Hills |
| Lead cruiser: John Piety | Completion date: 12-31-2015 |
| 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 | 99.8 | Yes | |
| 2 | 88.3 | Yes | |
| Total | 188.1 | | |

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 | 54.4 BAF | 4.5 | 330' X 330' | 1:1 | 38 |
| 2 | VP | 54.4 BAF | 4.5 | 330' X 330' | 1:1 | 38 |

Sale/Cruise Description:

| | |
|--|---|
| Minor species cruise intensity: | 100% up to 5 trees per species |
| Minimum cruise spec: | <p>HA - Logs meeting the following criteria: Surface characteristics for a high quality A sort will have sound tight knots not to exceed 1 1/2" in diameter, numbering not more than an average of one per foot of log length. May include logs with not more than two larger knots. Knots and knot indicators 1/2" in diameter and smaller shall not be a determining factor. Logs will have a growth ring count of 6 or more rings per inch in the outer third top end of the log. (High Quality sort. Grades SM, 2S, 3S. Lengths 16ft-40ft, 2ft multiples min TDIB 8". Max butt 27")</p> <p>HB - Logs meeting the following criteria: Surface characteristics for an Intermediate B sort will have sound tight knots not to exceed 1 1/2" in diameter. May include logs with not more than two larger knots up to 2 1/2" in diameter. Logs will have a growth ring count of 6 or more rings per inch in the outer third to end of the log. (Intermediate sort. Grades 2S, 3S. Lengths 16ft-40ft, 2ft multiples min TDIB 8". Max butt 27").</p> <p>D - Domestic quality logs that do not meet high quality or intermediate definitions. (Domestic sort. Grades 2S, 3S, 4S and utility. Lengths 16ft-40ft, min TDIB 2in.)</p> <p>O- Logs exceeding 27" on the large end. (Oversize sort. Grade 2S. Lengths</p> |

| | | | | | |
|-------------------------------------|---|---|-------------|----|--|
| | 16ft-40ft, 2ft multiples butt diameter min dia. 27 in. +) 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"+) | | | | |
| Avg ring count by sp: | DF = | 9 | WH = | 10 | |
| Leave/take tree description: | Leave trees are banded with blue paint and tagged out with yellow leave tree tags. | | | | |
| Other conditions | | | | | |

Field observations:

Big wood, lots of oversized 27" on the butt +. Unit 1 has a couple snag and alder pockets. Some open areas, but mostly well stocked. Unit 2 has quite a bit more variability in the stocking levels, and more open areas. Lots of hand falling, pretty soft ground, I did not see much rock. Not much defect, some spike knots and old snow breaks. Upper logs have heavy limbs on some trees. Root rot and beetles. Cedar has some old bear damage and butt rot.

Grants: 03,07

Prepared by:

John Piety

Title:

Cruiser

CC:

| TC PSPCSTGR | | Species, Sort Grade - Board Foot Volumes (Project) | | | | | | | | | | | | | | | | | | | | | |
|----------------------------|--------|--|----------|------------------------|------------------|--------|--------|------------------|----------------------------------|-----|------|-----|------------|-------|-------|-------|-------------|-----------|----------|-----------|----------------------|-------|------|
| T16N R04W S15 Ty0002 88.30 | | Project: TRIBUTE | | Page 1 | | | | | | | | | | | | | | | | | | | |
| T16N R04W S16 Ty0001 99.80 | | Acres 188.10 | | Date 12/31/2015 | | | | | | | | | | | | | | | | | | | |
| | | Time 9:16:22AM | | | | | | | | | | | | | | | | | | | | | |
| Spp | S T | So rt | Gr ad | % Net BdFt | Bd. Ft. per Acre | | | Total Net MBF | Percent of Net Board Foot Volume | | | | | | | | Average Log | | | | Logs Per /Acre | | |
| | | | | | Def% | Gross | Net | | Log Scale Dia. | | | | Log Length | | | | Ln Ft | Dia In | Bd Ft | CF/ Lf | | | |
| | | | | | | | | | 2-4 | 5-7 | 8-11 | 12+ | 12-20 | 21-30 | 31-35 | 36-99 | | | | | | | |
| DF | HA | 2S | 2 | .7 | 1,061 | 1,054 | 198 | | | | | | | | | | | 40 | 17 | 444 | 2.14 | 2.4 | |
| DF | HB | 2S | 2 | 1.8 | 1,250 | 1,228 | 231 | | | | | | | | | | | 40 | 16 | 390 | 1.97 | 3.2 | |
| DF | HB | 3S | 1 | | 359 | 359 | 67 | | | 100 | | | | | | | | 40 | 11 | 166 | 0.92 | 2.2 | |
| DF | D | 2S | 32 | 3.5 | 15,615 | 15,064 | 2,834 | | | | 100 | 0 | 3 | 0 | 96 | | | 39 | 16 | 386 | 1.97 | 39.0 | |
| DF | D | 3S | 6 | 1.9 | 2,723 | 2,671 | 502 | | | 100 | | 1 | 4 | 9 | 86 | | | 37 | 10 | 123 | 0.94 | 21.7 | |
| DF | D | 4S | 1 | | 513 | 513 | 96 | | | | 82 | 13 | 6 | | | | | 29 | 6 | 38 | 0.43 | 13.4 | |
| DF | D | UT | | | 105 | 105 | 20 | | | | 22 | 78 | | | 78 | 22 | | 23 | 7 | 37 | 0.45 | 2.8 | |
| DF | OS | SM | 5 | 1.0 | 2,116 | 2,096 | 394 | | | | | | | | 100 | | | 40 | 22 | 883 | 4.01 | 2.4 | |
| DF | OS | 2S | 48 | 4.6 | 23,881 | 22,794 | 4,287 | | | | | | | 3 | 1 | 97 | | | 40 | 24 | 1029 | 4.84 | 22.2 |
| DF | OS | UT | 1 | | 157 | 157 | 30 | | | | | | | 100 | | | | 26 | 22 | 540 | 3.77 | .3 | |
| DF | RO | 2S | 2 | 8.3 | 1,018 | 934 | 176 | | | | | | | | | | | 39 | 16 | 358 | 2.33 | 2.6 | |
| DF Totals | | | | 85 | 3.7 | 48,800 | 46,974 | 8,836 | | | 1 | 7 | 92 | 1 | 3 | 1 | 95 | 37 | 15 | 419 | 2.25 | 112.1 | |
| WH | D | 2S | 55 | .8 | 2,132 | 2,115 | 398 | | | | | | | 4 | 4 | 5 | 87 | 38 | 15 | 319 | 1.64 | 6.6 | |
| WH | D | 3S | 16 | 2.2 | 625 | 611 | 115 | | | 100 | | | | | 4 | 23 | 73 | 37 | 9 | 101 | 0.77 | 6.1 | |
| WH | D | 4S | 6 | 12.3 | 251 | 220 | 41 | | | 90 | | 10 | | 12 | 43 | | 45 | 27 | 6 | 33 | 0.53 | 6.6 | |
| WH | OS | 2S | 23 | 1.5 | 889 | 876 | 165 | | | | | | | 12 | | 20 | 67 | 35 | 22 | 725 | 3.81 | 1.2 | |
| WH Totals | | | | 7 | 1.9 | 3,898 | 3,823 | 719 | | | 5 | 16 | 79 | 6 | 6 | 11 | 78 | 34 | 10 | 186 | 1.21 | 20.5 | |
| RC | D | 3S | 47 | 9.2 | 906 | 823 | 155 | | | | 90 | 10 | | | | 31 | 69 | 35 | 10 | 117 | 1.18 | 7.1 | |
| RC | D | 4S | 27 | | 464 | 464 | 87 | | | 100 | | | 21 | 16 | 10 | 53 | | 28 | 5 | 35 | 0.46 | 13.3 | |
| RC | OS | 3S | 26 | 9.9 | 487 | 439 | 83 | | | | | 100 | | | | 100 | | 39 | 19 | 579 | 4.82 | .8 | |
| RC Totals | | | | 3 | 7.1 | 1,857 | 1,725 | 325 | | | 27 | 43 | 30 | 6 | 4 | 18 | 72 | 31 | 7 | 82 | 0.93 | 21.1 | |
| SF | D | 2S | 65 | 2.9 | 288 | 280 | 53 | | | | | 100 | | | | 100 | | 40 | 16 | 433 | 2.12 | .6 | |
| SF | D | 3S | 5 | | 20 | 20 | 4 | | | | 100 | | | | | 100 | | 40 | 8 | 90 | 0.71 | .2 | |
| SF | OS | 2S | 30 | | 126 | 126 | 24 | | | | | 100 | | | | 100 | | 40 | 26 | 1250 | 5.18 | .1 | |
| SF Totals | | | | 1 | 2.0 | 434 | 426 | 80 | | | 5 | 95 | | | | | 100 | 40 | 16 | 439 | 2.12 | 1.0 | |
| RA | D | 2S | 31 | 2.8 | 731 | 711 | 134 | | | | | 100 | | | 21 | 31 | 48 | 31 | 14 | 212 | 1.53 | 3.4 | |
| RA | D | 3S | 22 | 1.6 | 491 | 483 | 91 | | | | | 100 | | | | 35 | 17 | 48 | 33 | 10 | 123 | 0.85 | 3.9 |
| RA | D | 4S | 41 | | 916 | 916 | 172 | | | 46 | 54 | | 2 | 16 | 50 | 33 | | 29 | 7 | 55 | 0.51 | 16.6 | |
| RA | D | UT | 6 | | 130 | 130 | 24 | | | 13 | 87 | | 13 | 87 | | | | 25 | 8 | 75 | 0.66 | 1.7 | |
| RA Totals | | | | 4 | 1.2 | 2,269 | 2,241 | 421 | | | 19 | 49 | 32 | 1 | 26 | 34 | 39 | 30 | 8 | 88 | 0.71 | 25.6 | |
| Totals | | | | | 3.6 | 57,257 | 55,188 | 10,381 | | | 3 | 10 | 87 | 1 | 4 | 4 | 91 | 35 | 13 | 306 | 1.81 | 180.3 | |

| TC PSTATS | | PROJECT STATISTICS | | | | | | | PAGE | 1 | |
|--|--------------|--------------------|-------------------|----------------|-----------------------|----------------------|---------------|---------------|---------------|---------------|--|
| | | PROJECT | | | TRIBUTE | | | | DATE | 12/31/2015 | |
| TWP | RGE | SC | TRACT | TYPE | ACRES | PLOTS | TREES | CuFt | BdFt | | |
| 16N | 04 | 15 | TRIBUTE | 0002 | 188.10 | 76 | 330 | S | W | | |
| 16N | 04W | 16 | TRIBUTE | 0001 | | | | | | | |
| | | PLOTS | TREES | TREES PER PLOT | ESTIMATED TOTAL TREES | PERCENT SAMPLE TREES | | | | | |
| TOTAL | | 76 | 330 | 4.3 | | | | | | | |
| CRUISE | | 40 | 170 | 4.3 | 14,097 | 1.2 | | | | | |
| DBH COUNT | | | | | | | | | | | |
| REFOREST | | | | | | | | | | | |
| COUNT | | 34 | 153 | 4.5 | | | | | | | |
| BLANKS | | 2 | | | | | | | | | |
| 100 % | | | | | | | | | | | |
| STAND SUMMARY | | | | | | | | | | | |
| | SAMPLE TREES | TREES /ACRE | AVG DBH | BOLE LEN | REL DEN | BASAL AREA | GROSS BF/AC | NET BF/AC | GROSS CF/AC | NET CF/AC | |
| DOUG FIR | 128 | 38.9 | 29.1 | 113 | 33.3 | 179.7 | 48,800 | 46,974 | 9,352 | 9,352 | |
| WR CEDAR | 17 | 14.1 | 16.5 | 50 | 5.1 | 20.9 | 1,857 | 1,725 | 608 | 608 | |
| WHEMLOCK | 13 | 8.5 | 20.5 | 87 | 4.3 | 19.4 | 3,898 | 3,823 | 838 | 838 | |
| R ALDER | 10 | 13.2 | 15.1 | 63 | 4.2 | 16.3 | 2,269 | 2,241 | 540 | 540 | |
| PS FIR | 2 | .3 | 28.5 | 128 | 0.3 | 1.4 | 434 | 426 | 82 | 82 | |
| TOTAL | <i>170</i> | <i>74.9</i> | <i>24.1</i> | <i>89</i> | <i>48.4</i> | <i>237.7</i> | <i>57,257</i> | <i>55,188</i> | <i>11,421</i> | <i>11,420</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 | 51.8 | 4.6 | | 1,602 | 1,679 | 1,756 | | | | | |
| WR CEDAR | 145.7 | 36.4 | | 198 | 312 | 425 | | | | | |
| WHEMLOCK | 77.2 | 22.2 | | 550 | 708 | 865 | | | | | |
| R ALDER | 59.4 | 19.8 | | 168 | 210 | 252 | | | | | |
| PS FIR | 61.5 | 57.6 | | 668 | 1,575 | 2,482 | | | | | |
| TOTAL | <i>69.3</i> | <i>5.3</i> | | <i>1,307</i> | <i>1,381</i> | <i>1,454</i> | <i>192</i> | <i>98</i> | <i>48</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 | 76.4 | 8.8 | | 35 | 39 | 42 | | | | | |
| WR CEDAR | 245.8 | 28.2 | | 10 | 14 | 18 | | | | | |
| WHEMLOCK | 246.2 | 28.2 | | 6 | 8 | 11 | | | | | |
| R ALDER | 226.2 | 25.9 | | 10 | 13 | 17 | | | | | |
| PS FIR | 655.7 | 75.1 | | 0 | 0 | 1 | | | | | |
| TOTAL | <i>72.8</i> | <i>8.3</i> | | <i>69</i> | <i>75</i> | <i>81</i> | <i>212</i> | <i>108</i> | <i>53</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 | 58.4 | 6.7 | | 168 | 180 | 192 | | | | | |
| WR CEDAR | 249.2 | 28.6 | | 15 | 21 | 27 | | | | | |
| WHEMLOCK | 225.0 | 25.8 | | 14 | 19 | 24 | | | | | |
| R ALDER | 218.5 | 25.0 | | 12 | 16 | 20 | | | | | |
| PS FIR | 613.5 | 70.3 | | 0 | 1 | 2 | | | | | |
| TOTAL | <i>50.4</i> | <i>5.8</i> | | <i>224</i> | <i>238</i> | <i>251</i> | <i>101</i> | <i>52</i> | <i>25</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 | 59.8 | 6.9 | | 43,752 | 46,974 | 50,196 | | | | | |
| WR CEDAR | 277.6 | 31.8 | | 1,176 | 1,725 | 2,274 | | | | | |
| WHEMLOCK | 237.3 | 27.2 | | 2,783 | 3,823 | 4,862 | | | | | |
| R ALDER | 220.6 | 25.3 | | 1,674 | 2,241 | 2,807 | | | | | |
| PS FIR | 613.8 | 70.3 | | 126 | 426 | 725 | | | | | |
| TOTAL | <i>53.1</i> | <i>6.1</i> | | <i>51,831</i> | <i>55,188</i> | <i>58,546</i> | <i>113</i> | <i>57</i> | <i>28</i> | | |

PROJECT STATISTICS
PROJECT TRIBUTE

| TWP | RGE | SC | TRACT | TYPE | ACRES | PLOTS | TREES | CuFt | BdFt |
|-----|-----|----|---------|------|--------|-------|-------|------|------|
| 16N | 04 | 15 | TRIBUTE | 0002 | 188.10 | 76 | 330 | S | W |
| 16N | 04W | 16 | TRIBUTE | 0001 | | | | | |

| TC TSTATS | | | | STATISTICS | | | | PAGE | 1 | |
|--|-------------|-------------|--------------------------|---------------|---------------|---------------|------------------------|---------------|------------------|---------------|
| | | | | PROJECT | TRIBUTE | | DATE | 12/31/2015 | | |
| TWP | RGE | SECT | TRACT | TYPE | ACRES | PLOTS | TREES | CuFt | BdFt | |
| 16N | 04W | 16 | TRIBUTE | 0001 | 99.80 | 38 | 182 | S | W | |
| | | | | TREES | ESTIMATED | PERCENT | | | | |
| | | | | PER PLOT | TOTAL | SAMPLE | | | | |
| | | | | PLOTS | TREES | TREES | TREES | | | |
| TOTAL | 38 | 182 | 4.8 | | | | | | | |
| CRUISE | 20 | 95 | 4.8 | 9,243 | | 1.0 | | | | |
| DBH COUNT | | | | | | | | | | |
| REFOREST | | | | | | | | | | |
| COUNT | 18 | 84 | 4.7 | | | | | | | |
| 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 | 67 | 42.5 | 27.9 | 116 | 34.2 | 180.4 | 48,981 | 47,494 | 9,440 | 9,440 |
| WR CEDAR | 14 | 23.5 | 16.4 | 48 | 8.5 | 34.4 | 2,854 | 2,676 | 971 | 971 |
| R ALDER | 7 | 17.5 | 16.0 | 68 | 6.1 | 24.3 | 3,513 | 3,484 | 827 | 827 |
| WHEMLOCK | 6 | 8.7 | 20.6 | 91 | 4.4 | 20.0 | 4,158 | 4,057 | 914 | 914 |
| PS FIR | 1 | .4 | 25.0 | 125 | 0.3 | 1.4 | 382 | 374 | 79 | 79 |
| TOTAL | 95 | 92.6 | 22.7 | 87 | 54.7 | 260.5 | 59,889 | 58,084 | 12,230 | 12,231 |
| 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 | 55.4 | 6.8 | | 1,414 | 1,516 | 1,619 | | | | |
| WR CEDAR | 129.2 | 35.8 | | 159 | 247 | 336 | | | | |
| R ALDER | 55.4 | 22.5 | | 183 | 236 | 289 | | | | |
| WHEMLOCK | 74.8 | 33.3 | | 390 | 585 | 780 | | | | |
| PS FIR | | | | | | | | | | |
| TOTAL | 77.5 | 7.9 | | 1,077 | 1,169 | 1,262 | 240 | 122 | 60 | |
| 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 | 71.9 | 11.7 | | 38 | 43 | 47 | | | | |
| WR CEDAR | 182.4 | 29.6 | | 17 | 23 | 30 | | | | |
| R ALDER | 173.8 | 28.2 | | 13 | 18 | 22 | | | | |
| WHEMLOCK | 256.3 | 41.5 | | 5 | 9 | 12 | | | | |
| PS FIR | 616.4 | 99.9 | | 0 | 0 | 1 | | | | |
| TOTAL | 58.8 | 9.5 | | 84 | 93 | 101 | 138 | 71 | 35 | |
| 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 | 53.9 | 8.7 | | 165 | 180 | 196 | | | | |
| WR CEDAR | 189.2 | 30.7 | | 24 | 34 | 45 | | | | |
| R ALDER | 170.0 | 27.6 | | 18 | 24 | 31 | | | | |
| WHEMLOCK | 255.7 | 41.4 | | 12 | 20 | 28 | | | | |
| PS FIR | 616.4 | 99.9 | | 0 | 1 | 3 | | | | |
| TOTAL | 44.3 | 7.2 | | 242 | 261 | 279 | 78 | 40 | 20 | |
| 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 | 55.5 | 9.0 | | 43,220 | 47,494 | 51,767 | | | | |
| WR CEDAR | 222.9 | 36.1 | | 1,709 | 2,676 | 3,642 | | | | |
| R ALDER | 168.1 | 27.2 | | 2,534 | 3,484 | 4,433 | | | | |
| WHEMLOCK | 269.6 | 43.7 | | 2,284 | 4,057 | 5,830 | | | | |
| PS FIR | 616.4 | 99.9 | | 0 | 374 | 747 | | | | |
| TOTAL | 47.9 | 7.8 | | 53,573 | 58,084 | 62,595 | 92 | 47 | 23 | |

| T TSPCSTGR | | Species, Sort Grade - Board Foot Volumes (Type) | | | | | | | | Page 1 | | | | | | | | | | | |
|---------------------|---------------|---|---------|------------|------------------|--------|--------------|---------------|-------------------------------|---------------------|------------|-------|------------|-------|-------|-----|-------------|-----|------|----------------|-------|
| | | Project: TRIBUTE | | | | | | | | Date | 12/31/2015 | | | | | | | | | | |
| | | | | | | | | | | Time | 9:16:23AM | | | | | | | | | | |
| T16N R04W S15 T0002 | | | | | | | | | | T16N R04W S15 T0002 | | | | | | | | | | | |
| Twp | Rge | Sec | Tract | Type | Acres | Plots | Sample Trees | CuFt | BdFt | | | | | | | | | | | | |
| 16N | 04W | 15 | TRIBUTE | 0002 | 88.30 | 38 | 75 | S | W | | | | | | | | | | | | |
| Spp | S | So | Gr | % Net BdFt | Bd. Ft. per Acre | | | Total Net MBF | Percent Net Board Foot Volume | | | | | | | | Average Log | | | Logs Per /Acre | |
| | | | | | Def% | Gross | Net | | Log Scale Dia. | | | | Log Length | | | | Ln | Dia | Bd | | CF/Lf |
| | | | | | | | | 2-4 | 5-7 | 8-11 | 12+ | 12-20 | 21-30 | 31-35 | 36-99 | Ft | In | Ft | Lf | | |
| DF | HA | 2S | | | 443 | 443 | 39 | | | | | 100 | | | | 40 | 15 | 360 | 1.70 | 1.2 | |
| DF | HB | 2S | 2 | | 693 | 693 | 61 | | | | | 100 | | | | 40 | 16 | 422 | 2.03 | 1.6 | |
| DF | HB | 3S | | | 222 | 222 | 20 | | 100 | | | | | | | 40 | 11 | 180 | 0.94 | 1.2 | |
| DF | DM | 2S | 29 | 3.3 | 13,818 | 13,365 | 1,180 | | | | | 100 | 1 | 1 | 0 | 98 | 39 | 16 | 399 | 2.07 | 33.5 |
| DF | DM | 3S | 5 | .6 | 2,217 | 2,204 | 195 | | 100 | | | | 1 | 5 | 17 | 77 | 36 | 10 | 127 | 0.99 | 17.4 |
| DF | DM | 4S | 1 | | 510 | 510 | 45 | | 82 | 6 | 12 | | 15 | 53 | 32 | | 28 | 6 | 41 | 0.46 | 12.5 |
| DF | OS | SM | 1 | | 502 | 502 | 44 | | | | | | | | | | 40 | 22 | 840 | 3.77 | .6 |
| DF | OS | 2S | 59 | 5.5 | 28,797 | 27,211 | 2,403 | | | | | | | 2 | 1 | 97 | 40 | 25 | 1094 | 5.15 | 24.9 |
| DF | RO | 2S | 3 | 11.1 | 1,393 | 1,238 | 109 | | | | | | | | | | 39 | 16 | 376 | 2.45 | 3.3 |
| DF | Totals | | | 89 | 4.5 | 48,594 | 46,387 | 4,096 | | 1 | 5 | 94 | 0 | 2 | 2 | 95 | 37 | 16 | 482 | 2.57 | 96.3 |
| WH | DM | 2S | 35 | 2.8 | 1,297 | 1,261 | 111 | | | | | 100 | 14 | 16 | 17 | 53 | 33 | 15 | 273 | 1.72 | 4.6 |
| WH | DM | 3S | 22 | .0 | 782 | 782 | 69 | | | 100 | | | | 7 | 30 | 64 | 36 | 9 | 98 | 0.73 | 7.9 |
| WH | DM | 4S | 6 | | 199 | 199 | 18 | | 77 | | 23 | | | | 100 | | 23 | 5 | 31 | 0.35 | 6.4 |
| WH | OS | 2S | 37 | .7 | 1,325 | 1,315 | 116 | | | | | 100 | 17 | | 29 | 54 | 33 | 24 | 810 | 4.40 | 1.6 |
| WH | Totals | | 7 | 1.3 | 3,603 | 3,557 | 314 | | 4 | 22 | 74 | | 11 | 13 | 23 | 53 | 31 | 10 | 173 | 1.18 | 20.6 |
| RA | DM | 2S | 26 | 11.1 | 246 | 218 | 19 | | | | | 100 | | | | 100 | 36 | 12 | 160 | 1.28 | 1.4 |
| RA | DM | 4S | 40 | | 340 | 340 | 30 | | 57 | 43 | | | | 45 | 12 | 43 | 28 | 6 | 41 | 0.40 | 8.3 |
| RA | DM | UT | 34 | | 277 | 277 | 24 | | 13 | 87 | | | 13 | 87 | | | 25 | 8 | 75 | 0.66 | 3.7 |
| RA | Totals | | 2 | 3.2 | 863 | 835 | 74 | | 27 | 46 | 26 | | 4 | 47 | 5 | 44 | 28 | 7 | 63 | 0.58 | 13.3 |
| RC | DM | 3S | 50 | 19.4 | 405 | 326 | 29 | | | 64 | 36 | | | | | 100 | 36 | 9 | 96 | 0.98 | 3.4 |
| RC | DM | 4S | 12 | | 80 | 80 | 7 | | 100 | | | | 41 | 59 | | | 25 | 5 | 25 | 0.27 | 3.2 |
| RC | OS | 3S | 38 | | 245 | 245 | 22 | | | | | 100 | | | | | 36 | 26 | 1120 | 7.12 | .2 |
| RC | Totals | | 1 | 10.8 | 730 | 651 | 57 | | 12 | 32 | 56 | | 5 | 7 | | 88 | 31 | 8 | 95 | 0.94 | 6.8 |
| SF | DM | 2S | 44 | 3.8 | 225 | 216 | 19 | | | | | 100 | | | | 100 | 40 | 18 | 505 | 2.39 | .4 |
| SF | OS | 2S | 56 | | 268 | 268 | 24 | | | | | 100 | | | | 100 | 40 | 26 | 1250 | 5.18 | .2 |
| SF | Totals | | 1 | 1.7 | 493 | 484 | 43 | | | | | 100 | | | | 100 | 40 | 20 | 753 | 3.32 | .6 |
| Type Totals | | | | | 4.4 | 54,283 | 51,916 | 4,584 | | 2 | 7 | 91 | 1 | 4 | 4 | 92 | 35 | 14 | 377 | 2.17 | 137.6 |

| TC TSTATS | | | | STATISTICS | | | | PAGE | 1 | |
|--|-----------------|-------------------|---------------|-------------------|-----------------------------|----------------------------|-----------------|---------------|----------------|---------------|
| | | | | PROJECT | TRIBUTE | | DATE | 12/31/2015 | | |
| TWP | RGE | SECT | TRACT | TYPE | ACRES | PLOTS | TREES | CuFt | BdFt | |
| 16N | 04W | 15 | TRIBUTE | 0002 | 88.30 | 38 | 148 | S | W | |
| | | PLOTS | TREES | TREES PER PLOT | ESTIMATED TOTAL TREES | PERCENT SAMPLE TREES | | | | |
| TOTAL | | 38 | 148 | 3.9 | | | | | | |
| CRUISE | | 20 | 75 | 3.8 | 4,854 | 1.5 | | | | |
| DBH COUNT | | | | | | | | | | |
| REFOREST | | | | | | | | | | |
| COUNT | | 16 | 69 | 4.3 | | | | | | |
| BLANKS | | 2 | | | | | | | | |
| 100 % | | | | | | | | | | |
| STAND SUMMARY | | | | | | | | | | |
| | SAMPLE TREES | TREES /ACRE | AVG DBH | BOLE LEN | REL DEN | BASAL AREA | GROSS BF/AC | NET BF/AC | GROSS CF/AC | NET CF/AC |
| DOUG FIR | 61 | 34.8 | 30.7 | 108 | 32.3 | 178.9 | 48,594 | 46,387 | 9,254 | 9,254 |
| WHEMLOCK | 7 | 8.3 | 20.3 | 82 | 4.1 | 18.6 | 3,603 | 3,557 | 752 | 752 |
| R ALDER | 3 | 8.3 | 12.6 | 50 | 2.0 | 7.2 | 863 | 835 | 216 | 216 |
| WR CEDAR | 3 | 3.4 | 17.5 | 63 | 1.4 | 5.7 | 730 | 651 | 198 | 198 |
| PS FIR | 1 | .2 | 35.0 | 135 | 0.2 | 1.4 | 493 | 484 | 85 | 85 |
| TOTAL | <i>75</i> | <i>55.0</i> | <i>26.6</i> | <i>93</i> | <i>41.1</i> | <i>211.9</i> | <i>54,283</i> | <i>51,916</i> | <i>10,505</i> | <i>10,505</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 | 47.1 | 6.0 | 1,746 | 1,858 | 1,970 | | | | | |
| WHEMLOCK | 78.7 | 32.0 | 553 | 813 | 1,073 | | | | | |
| R ALDER | 70.6 | 48.8 | 77 | 150 | 223 | | | | | |
| WR CEDAR | 147.8 | 102.3 | | 613 | 1,240 | | | | | |
| PS FIR | | | | | | | | | | |
| TOTAL | <i>58.1</i> | <i>6.7</i> | <i>1,537</i> | <i>1,648</i> | <i>1,758</i> | <i>135</i> | <i>69</i> | <i>34</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 | 78.5 | 12.7 | 30 | 35 | 39 | | | | | |
| WHEMLOCK | 233.0 | 37.8 | 5 | 8 | 11 | | | | | |
| R ALDER | 340.0 | 55.1 | 4 | 8 | 13 | | | | | |
| WR CEDAR | 333.5 | 54.0 | 2 | 3 | 5 | | | | | |
| PS FIR | 616.4 | 99.9 | 0 | 0 | 0 | | | | | |
| TOTAL | <i>76.8</i> | <i>12.4</i> | <i>48</i> | <i>55</i> | <i>62</i> | <i>235</i> | <i>120</i> | <i>59</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 | 63.6 | 10.3 | 161 | 179 | 197 | | | | | |
| WHEMLOCK | 170.3 | 27.6 | 13 | 19 | 24 | | | | | |
| R ALDER | 314.7 | 51.0 | 4 | 7 | 11 | | | | | |
| WR CEDAR | 295.5 | 47.9 | 3 | 6 | 8 | | | | | |
| PS FIR | 616.4 | 99.9 | 0 | 1 | 3 | | | | | |
| TOTAL | <i>52.6</i> | <i>8.5</i> | <i>194</i> | <i>212</i> | <i>230</i> | <i>111</i> | <i>56</i> | <i>28</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 | 64.8 | 10.5 | 41,519 | 46,387 | 51,256 | | | | | |
| WHEMLOCK | 168.4 | 27.3 | 2,587 | 3,557 | 4,528 | | | | | |
| R ALDER | 326.5 | 52.9 | 393 | 835 | 1,277 | | | | | |
| WR CEDAR | 322.8 | 52.3 | 310 | 651 | 992 | | | | | |
| PS FIR | 616.4 | 99.9 | 0 | 484 | 968 | | | | | |
| TOTAL | <i>57.4</i> | <i>9.3</i> | <i>47,088</i> | <i>51,916</i> | <i>56,743</i> | <i>131</i> | <i>67</i> | <i>33</i> | | |

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

| | |
|----------------------|------|
| T16N R04W S15 Ty0002 | 88.3 |
| T16N R04W S16 Ty0001 | 99.8 |

Project TRIBUTE
Acres 188.10

Page No 1
Date: 12/31/2015
Time 9:16:24AM

| Species | Total | Total | Total | Net Cubic Ft/ | | CF/ LF | Total CCF | | Total MBF | |
|---------------|---------------|---------------|---------------|---------------|--------------|-------------|---------------|---------------|---------------|---------------|
| | Trees | Logs | Tons | Tree | Log | | Gross | Net | Gross | Net |
| DOUG FIR | 7,318 | 21,080 | 50,137 | 240.38 | 83.45 | 2.27 | 17,592 | 17,592 | 9,179 | 8,836 |
| WHEMLOCK | 1,595 | 3,864 | 5,043 | 98.79 | 40.79 | 1.21 | 1,576 | 1,576 | 733 | 719 |
| R ALDER | 2,477 | 4,815 | 2,794 | 41.00 | 21.09 | 0.71 | 1,016 | 1,016 | 427 | 421 |
| WR CEDAR | 2,645 | 3,973 | 2,688 | 43.25 | 28.79 | 0.93 | 1,144 | 1,144 | 349 | 325 |
| PS FIR | 61 | 182 | 443 | 253.95 | 84.65 | 2.12 | 154 | 154 | 82 | 80 |
| Totals | 14,097 | 33,915 | 61,104 | 152.39 | 63.34 | 1.82 | 21,482 | 21,482 | 10,770 | 10,381 |

| Wood Type Species | Total | Total | Total | Net Cubic Ft/ | | CF/ LF | Total CCF | | Total MBF | |
|----------------------|---------------|---------------|---------------|---------------|--------------|-------------|---------------|---------------|---------------|---------------|
| | Trees | Logs | Tons | Tree | Log | | Gross | Net | Gross | Net |
| C | 11,619 | 29,100 | 58,311 | 176.14 | 70.33 | 1.98 | 20,466 | 20,466 | 10,343 | 9,960 |
| H | 2,477 | 4,815 | 2,794 | 41.00 | 21.09 | 0.71 | 1,016 | 1,016 | 427 | 421 |
| Totals | 14,097 | 33,915 | 61,104 | 152.39 | 63.34 | 1.82 | 21,482 | 21,482 | 10,770 | 10,381 |



FPA/N No: 2418566

Effective Date: 5/24/2016

Expiration Date: 5/24/2019

Shut Down Zone: 651N

EARR Tax Credit: Eligible Non-eligible

Reference: Tribute 30-093218

**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

Notify DNR at least 48 hours prior to beginning work in Type S or F waters. Email southpuget.forestpractices@dnr.wa.gov and provide application number and legal description of your activity.

Note: Ensure State Lands Contract Administrator is on-site during bridge installation.

Work window of July 1 through September 30, of any year, for work in Type S or F waters.

Issued By: Josh Meek

Region: South Puget Sound

Title: Resource Protection Forester

Date: 5/24/2016

Copies to: Landowner, Timber Owner and Operator.

Issued in person: Landowner Timber Owner Operator By: S Tomlinson

*AEM
5-24-16*

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.

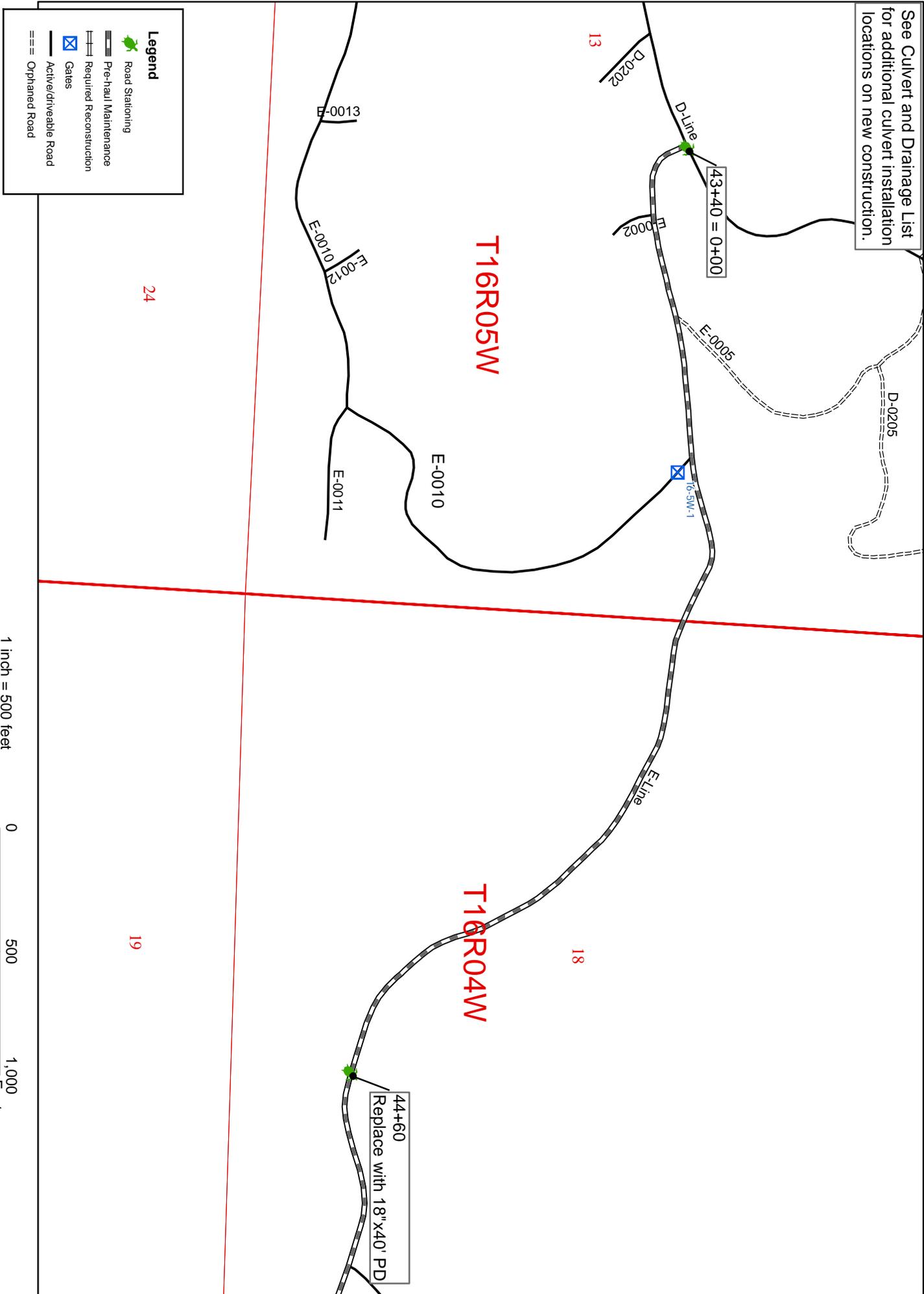
DNR affidavit of mailing:

| | |
|--|-------------|
| On this day <u>5/24/2016</u> , I placed in the United States mail at _____, WA, (date mm/dd/yyyy) | |
| (post office location) | |
| postage paid, a true and accurate copy of this document. Notice of Decision FPA #Click here to enter text. | |
| Choose an item. | |
| _____ | _____ |
| (Printed name) | (Signature) |

Tribute TBS Road Plan Views, pg 1 of 8



See Culvert and Drainage List for additional culvert installation locations on new construction.



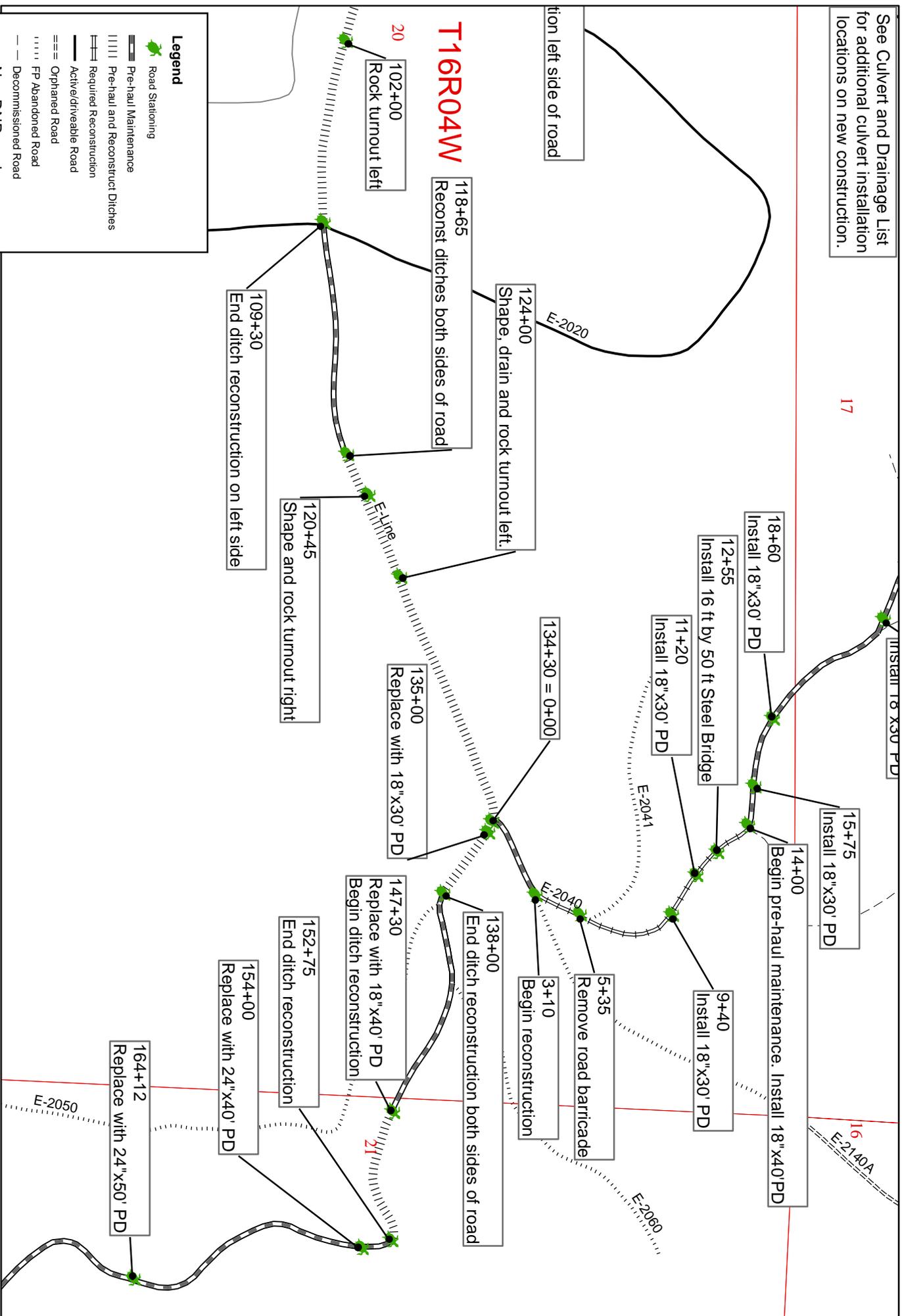
1 inch = 500 feet



Tribute TBS Road Plan Views, pg 3 of 8



See Culvert and Drainage List for additional culvert installation locations on new construction.



T16R04W

Legend

- Road Stationing
- Pre-haul Maintenance
- Pre-haul and Reconstruct Ditches
- Required Reconstruction
- Active/driveable Road
- Orphaned Road
- FP Abandoned Road
- Decommissioned Road
- Non-DNR road

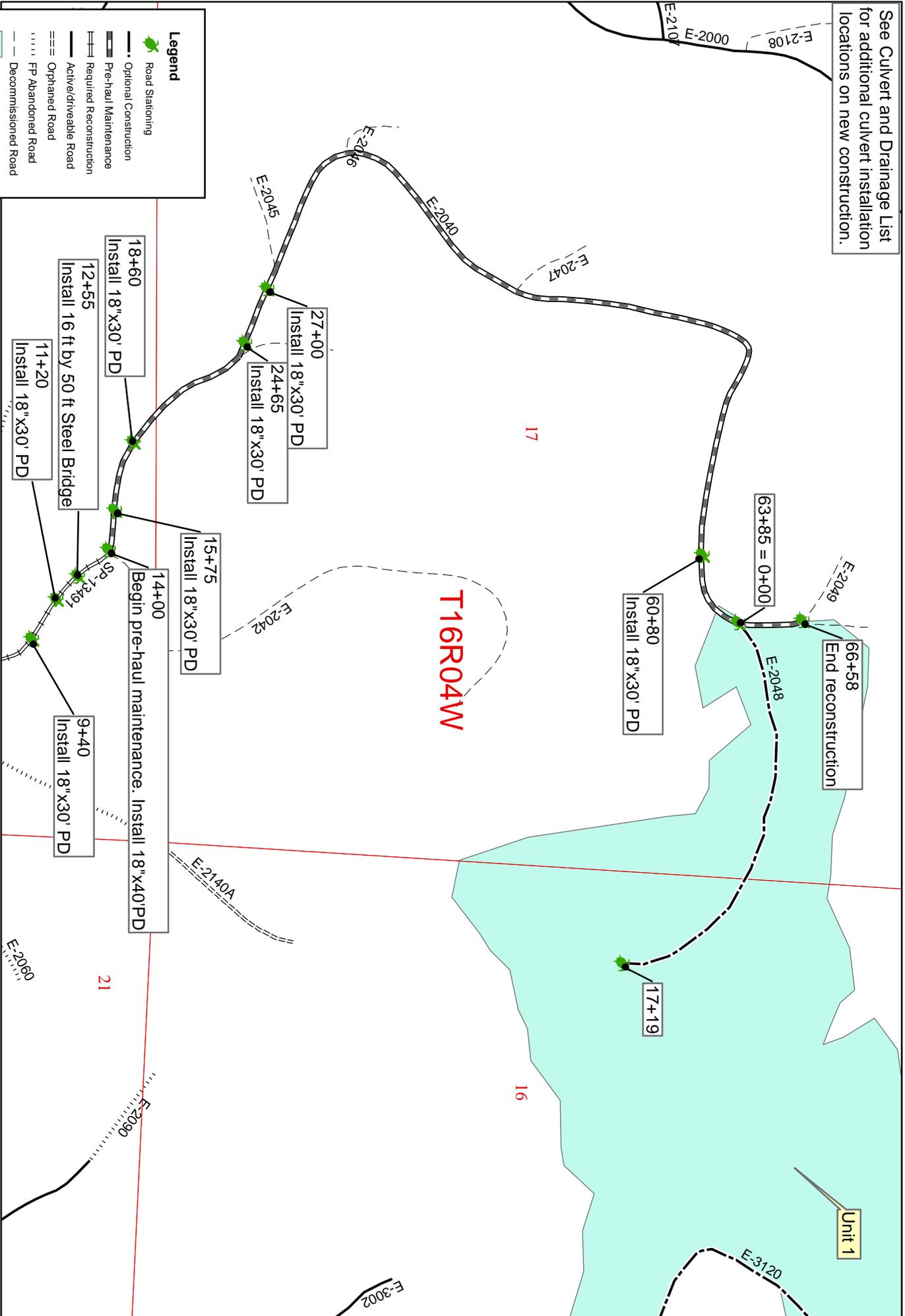
1 inch = 500 feet



Tribute TBS Road Plan Views, pg 4 of 8



See Culvert and Drainage List for additional culvert installation locations on new construction.



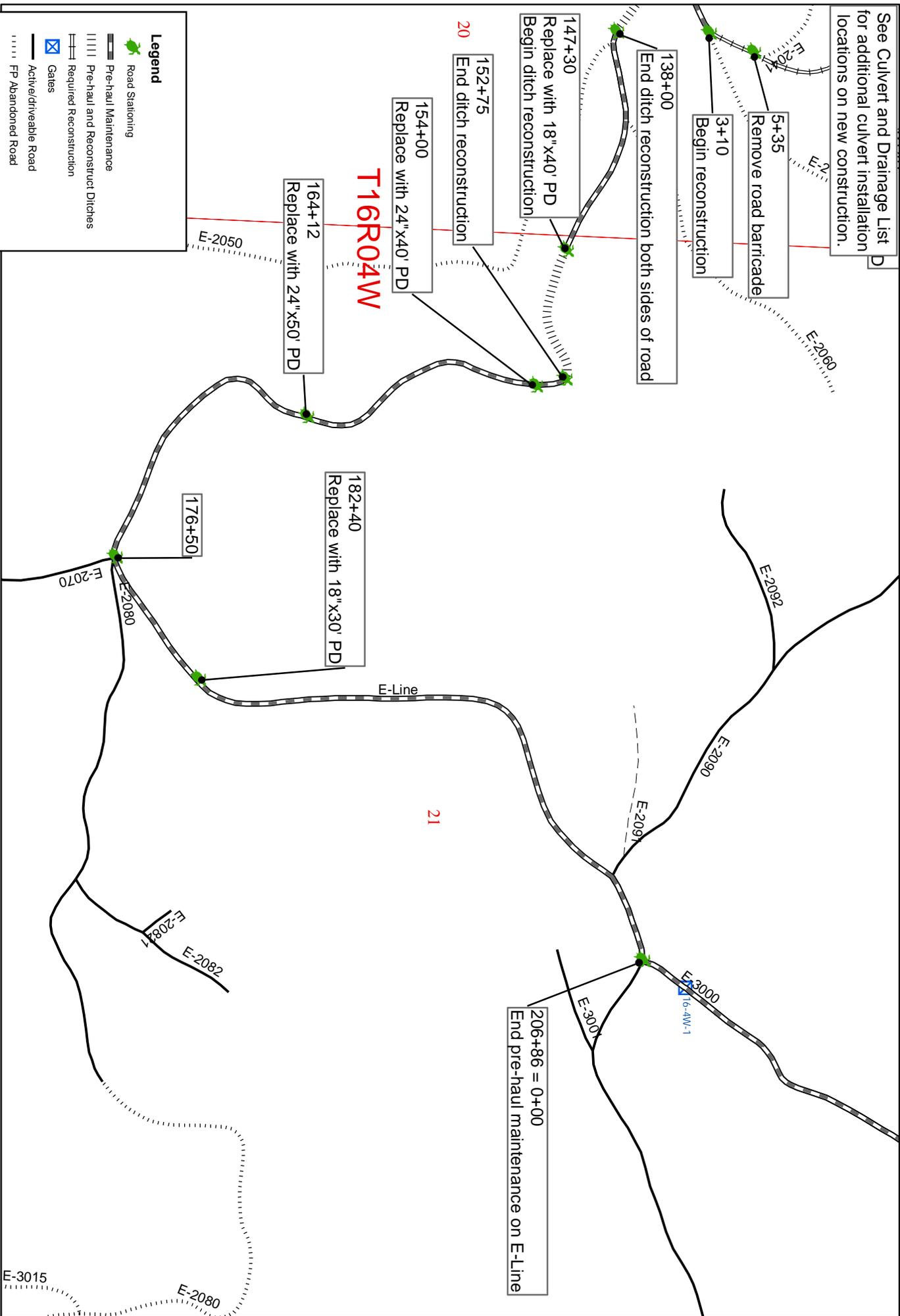
1 inch = 500 feet



Tribute TBS Road Plan Views, pg 5 of 8



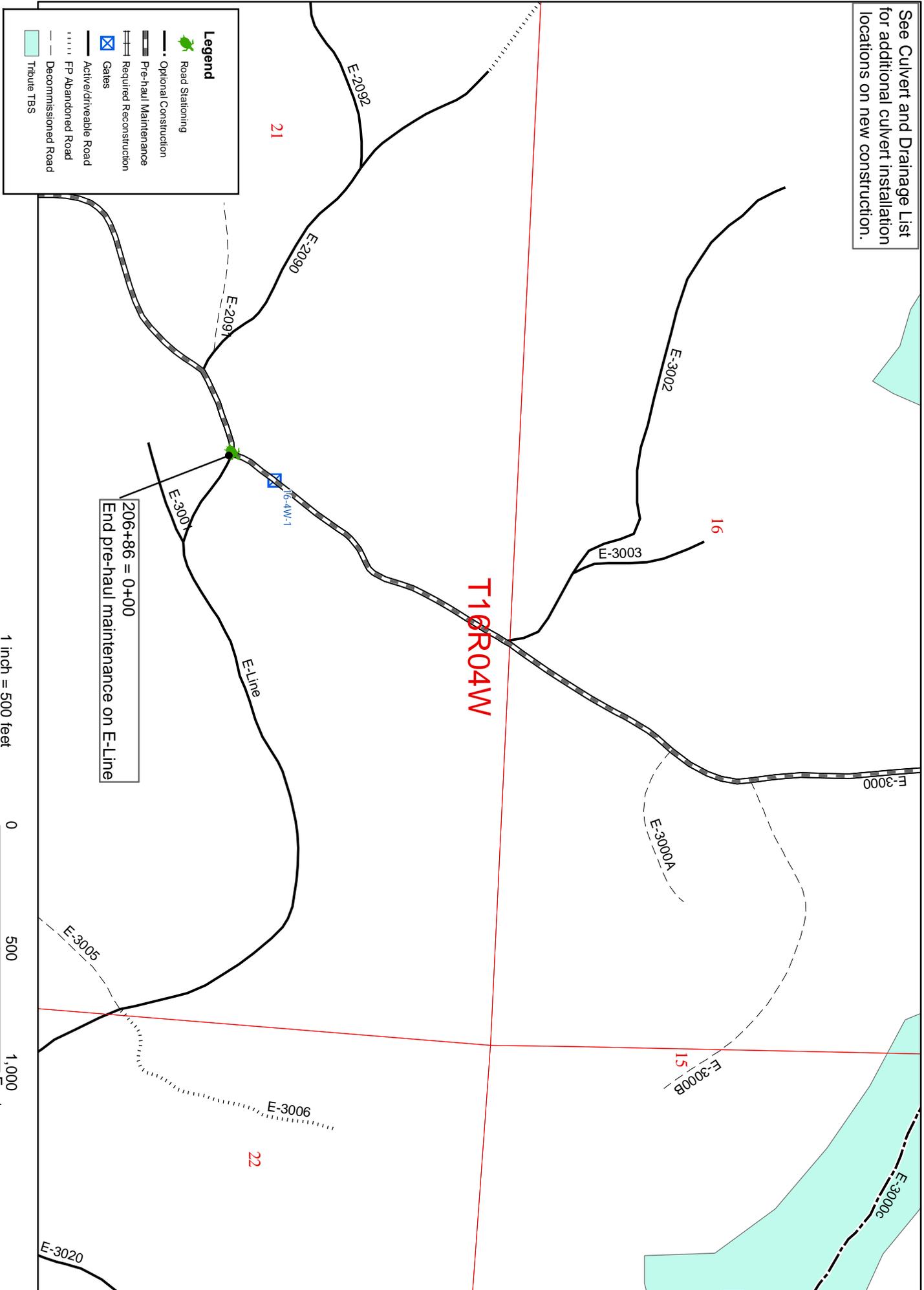
See Culvert and Drainage List for additional culvert installation locations on new construction.



Tribute TBS Road Plan Views, pg 6 of 8



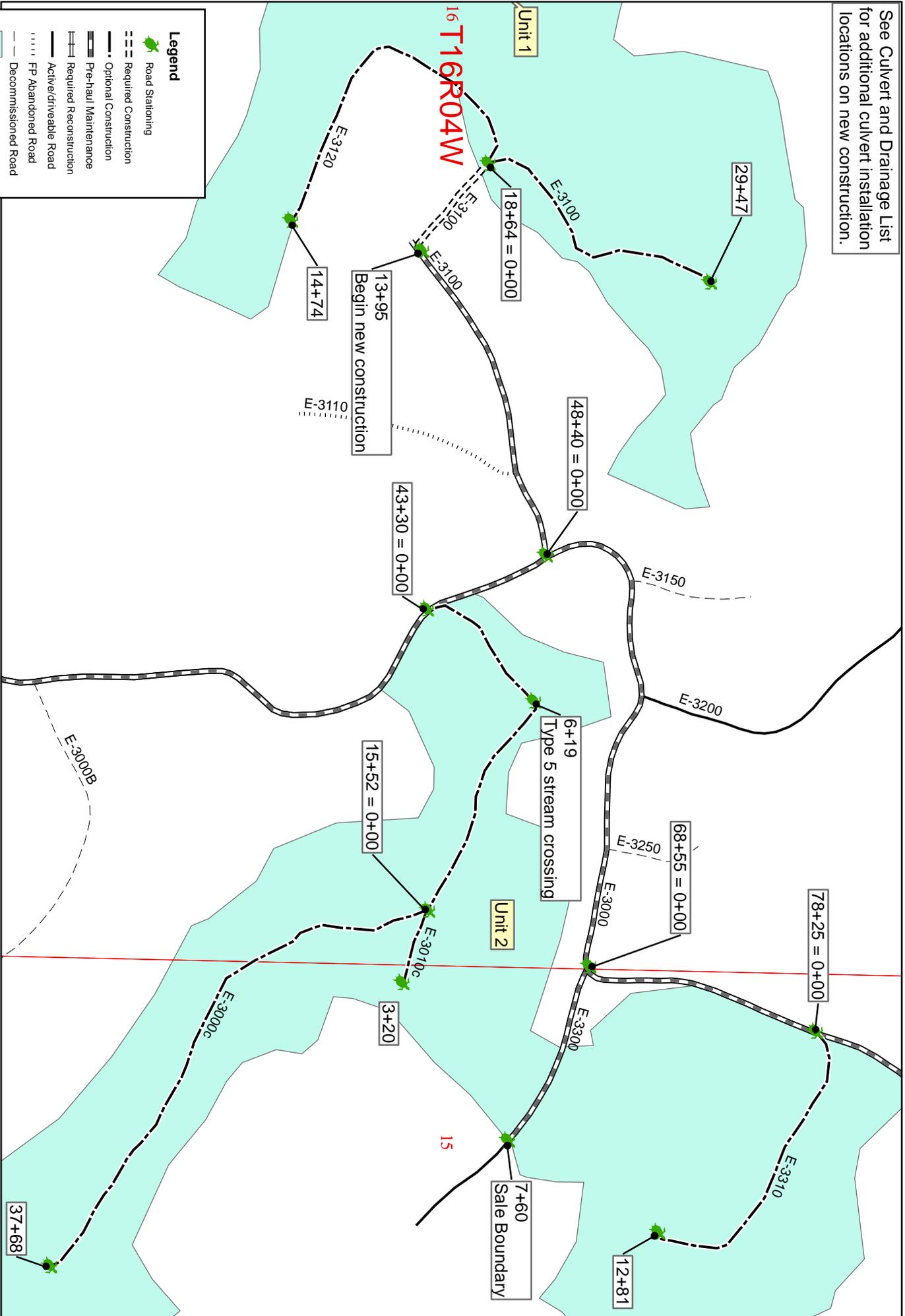
See Culvert and Drainage List for additional culvert installation locations on new construction.



Tribute TBS Road Plan Views, pg 7 of 8



See Culvert and Drainage List for additional culvert installation locations on new construction.



Legend

- Road Stationing
- Required Construction
- Optional Construction
- Pre-haul Maintenance
- Required Reconstruction
- Active/drivable Road
- FP Abandoned Road
- Decommissioned Road
- Tribute TBS

1 inch = 500 feet



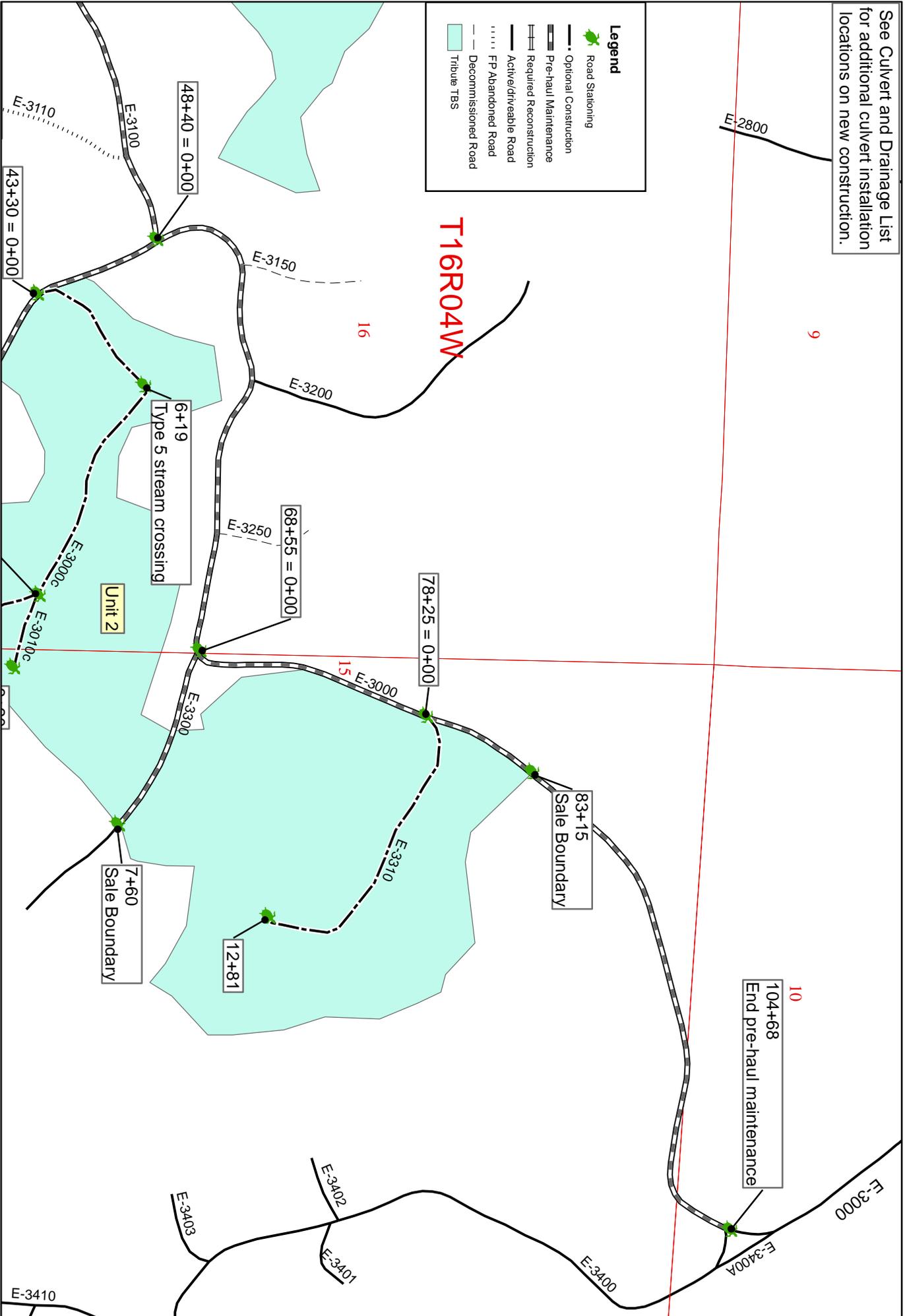
Tribute TBS Road Plan Views, pg 8 of 8



See Culvert and Drainage List for additional culvert installation locations on new construction.

Legend

- Road Stationing
- Optional Construction
- Pre-haul Maintenance
- Required Reconstruction
- Active/driveable Road
- FP Abandoned Road
- Decommissioned Road
- Tribute TBS



STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

TRIBUTE TIMBER SALE ROAD PLAN
GRAYS HARBOR COUNTY
BLACK HILLS DISTRICT
LITTLE ROCK UNIT

AGREEMENT NO.: 30-093218

STAFF ENGINEER: C. VANDEHEY

DATE: JANUARY 12, 2016

DRAWN & COMPILED BY: M.BELL

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> |
|-------------|-----------------|----------------------|
| E-Line | 0+00 to 206+86 | Pre-haul maintenance |
| E-2040 | 0+00 to 3+10 | Pre-haul maintenance |
| E-2040 | 3+10 to 14+00 | Reconstruction |
| E-2040 | 14+00 to 66+58 | Pre-haul maintenance |
| E-3000 | 0+00 to 104+68 | Pre-haul maintenance |
| E-3100 | 0+00 to 13+95 | Pre-haul maintenance |
| E-3100 | 13+95 to 18+64 | Construction |
| E-3300 | 0+00 to 7+60 | Pre-haul maintenance |

0-3 OPTIONAL ROADS

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

| <u>Road</u> | <u>Stations</u> | <u>Type</u> |
|-------------|-----------------|--------------|
| E-2048 | 0+00 to 17+19 | Construction |
| E-3000c | 0+00 to 37+68 | Construction |
| E-3010c | 0+00 to 3+20 | Construction |
| E-3100 | 18+64 to 29+47 | Construction |
| E-3120 | 0+00 to 14+74 | Construction |
| E-3310 | 0+00 to 12+81 | Construction |

0-4 CONSTRUCTION

Construction includes, but is not limited to:

- Clearing.
- Grubbing.
- Right of way debris disposal.
- Excavation and/or embankment to subgrade.
- Turnout and turnaround construction;
- Landing construction.
- Acquisition and installation of drainage structures.
- Acquisition and installation of stream culverts.
- Acquisition and manufacture and application of rock.

0-5 RECONSTRUCTION

Reconstruction includes, but is not limited to:

- Brushing.
- Excavation and/or embankment to subgrade.
- Removal of road barricade and waterbars.
- Acquisition and installation of a 50 foot steel bridge.
- Acquisition and installation of drainage structures.
- Acquisiting, manufacture and application of rock.

0-6 PRE-HAUL MAINTENANCE

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

- Brushing.
- Removal of waterbars.
- Grading.
- Ditch cleaning and ditch reconstruction.
- Culvert cleaning and headwall reconstruction.
- Acquisition and installation of drainage structures.
- Acquistioin, manufacture and application of rock.

0-7 POST-HAUL MAINTENANCE

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

0-12 DEVELOP ROCK SOURCE

Purchaser may develop an existing rock source. Rock source development will include manufacture of crushed rock stockpiles totaling 10,000cy. Work for developing rock sources is listed in Section 6 ROCK AND SURFACING.

0-13 STRUCTURES

Purchaser shall provide and install a 16 foot wide by 50 foot long steel bridge. Requirements for these structures are listed in Section 7 STRUCTURES.

SECTION 1 – GENERAL

1-1 ROAD PLAN CHANGES

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

1-2 UNFORESEEN CONDITIONS

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

1-3 ROAD DIMENSIONS

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

1-4 ROAD TOLERANCES

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

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

1-6 ORDER OF PRECEDENCE

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

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

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

1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS

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

1-9 DAMAGED METALLIC COATING

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

1-10 WSDOT STANDARD SPECIFICATION REFERENCE

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

1-11 APPLICABLE SPECIFICATIONS AND CODES

These Technical Specifications are to be used in conjunction with the indicated section of the following:

- AASHTO – American Association of State Highway and Transportation Officials.
- ASTM – American Society of Testing and Materials.
- HPA – Hydraulic Project Approval.
- FPA – Forest Practices Application.
- MUTCD – Manual on Uniform Traffic Control Devices.

SUBSECTION ROAD MARKING

1-15 ROAD MARKING

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

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

1-16 CONSTRUCTION STAKES SET BY STATE

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

1-18 REFERENCE POINT DAMAGE

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

SUBSECTION TIMING

1-20 COMPLETE BY DATE

Purchaser shall complete pre-haul road work before the start of timber haul, unless approved in writing by the Contract Administrator.

1-21 HAUL APPROVAL

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

1-22 WORK NOTIFICATIONS

Purchaser shall notify the Contract Administrator a minimum of 3 calendar days before work begins.

1-23 ROAD WORK PHASE APPROVAL

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

- Subgrade construction
- Drainage installation
- Subgrade compaction
- Rock application
- Rock compaction

SUBSECTION RESTRICTIONS

1-25 ACTIVITY TIMING RESTRICTION

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

| <u>Activity</u> | <u>Closure Period</u> |
|---|-----------------------|
| Operation of road construction equipment or rock haul | 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> |
|-------------|--------------------------------|--|-------------------------|
| E-2040 | 12+55 (bridge installation) | Per FPA conditions, any work below the ordinary high water mark (OHWM) | July 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.

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

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

1-32 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 road construction and hauling operations. Purchaser shall remove any dirt, rock, or other material tracked or spilled on the bridge or asphalt surface(s) and have surface(s) evaluated for any damage caused by transporting equipment. Any damage to the surface(s) will be repaired, at the Purchaser's expense, as directed by the Contract Administrator.

1-33 SNOW PLOWING RESTRICTION

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

SUBSECTION OTHER INFRASTRUCTURE

1-40 ROAD APPROACHES TO COUNTY ROADS AND STATE HIGHWAYS

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

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

SECTION 2 – MAINTENANCE

2-1 GENERAL ROAD MAINTENANCE

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

2-2 ROAD MAINTENANCE – PURCHASER MAINTENANCE

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

2-3 ROAD MAINTENANCE – DESIGNATED MAINTAINER

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

2-4 PASSAGE OF LIGHT VEHICLES

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

| <u>Road</u> | <u>Stations</u> |
|-------------|-----------------|
| E-Line | 0+00 to 206+86 |

2-5 MAINTENANCE GRADING – EXISTING ROAD

On the following road(s), Purchaser shall use a grader to shape the existing surface before before timber haul. Purchaser shall accomplish all grading using a motor grader with a minimum of 175 horsepower.

| <u>Road</u> | <u>Stations</u> | <u>Requirements</u> |
|-------------|-----------------|--|
| E-Line | 0+00 to 206+86 | |
| E-2040 | 0+00 to 66+58 | |
| E-3000 | 0+00 to 104+68 | Desod, grade, apply rock per ROCK LIST, grade and shape rock lift, compact per COMPACTION LIST |
| E-3100 | 0+00 to 13+95 | |

2-6 CLEANING CULVERTS

On the following road(s), Purchaser shall clean the inlets and outlets of all culverts and shall obtain written approval from the Contract Administrator before timber haul.

| <u>Road</u> | <u>Stations</u> |
|-------------|-----------------|
| E-Line | 0+00 to 206+86 |
| E-3000 | 0+00 to 104+68 |

2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS

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

| <u>Road</u> | <u>Stations</u> | <u>Comments</u> |
|-------------|------------------|---|
| E-Line | 0+00 to 206+86 | Clean ditches where not scheduled below for reconstruction |
| E-Line | 90+20 to 109+30 | Reconstruct left ditch |
| E-Line | 118+65 to 134+30 | Reconstruct ditches on both sides of road unless directed otherwise by the Contract Administrator |
| E-Line | 134+30 to 138+00 | Reconstruct ditches both sides of the road |
| E-Line | 147+30 to 152+75 | Reconstruct ditch left side of road |
| E-2040 | 0+00 to 66+58 | |
| E-3000 | 0+00 to 104+68 | |

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

SUBSECTION BRUSHING

3-1 BRUSHING

On the following road(s), Purchaser shall cut vegetative material up to 9 inches in diameter, including limbs, as shown on the ROAD BRUSHING DETAIL. Brushing must be achieved by manual or mechanical cutting of brush, trees, and branches. Root systems and stumps of cut vegetation may not be disturbed unless directed by the Contract Administrator. Purchaser shall remove brushing debris from the road surface, ditchlines, and culvert inlets and outlets.

| <u>Road</u> | <u>Stations</u> |
|-------------|-----------------|
| E-3100 | 0+00 to 13+95 |
| E-3300 | 0+00 to 7+60 |

SUBSECTION CLEARING

3-5 CLEARING

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

3-8 PROHIBITED DECKING AREAS

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

- Within the grubbing limits.
- Within 50 feet of any stream.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- On slopes greater than 55%.
- Against standing trees unless approved by the Contract Administrator.

SUBSECTION GRUBBING

3-10 GRUBBING

Purchaser shall remove all stumps between the grubbing limits specified on the TYPICAL SECTION SHEET. Purchaser shall also remove stumps with undercut roots outside the grubbing limits. Purchaser shall remove stumps using a hydraulic excavator unless authorized in writing by the Contract Administrator. Grubbing must be completed before starting excavation and embankment.

SUBSECTION ORGANIC DEBRIS

3-20 ORGANIC DEBRIS DEFINITION

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

3-21 DISPOSAL COMPLETION

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

3-23 PROHIBITED DISPOSAL AREAS

Purchaser shall not place organic debris in the following areas:

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

3-24 BURYING ORGANIC DEBRIS RESTRICTED

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

3-25 SCATTERING ORGANIC DEBRIS

Purchaser shall scatter organic debris outside the clearing limits. 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 more than 1000 feet beyond completed construction unless approved in writing by the Contract Administrator. In addition, the following actions must be taken as pioneering progresses:

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

4-3 ROAD GRADE AND ALIGNMENT STANDARDS

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

- Grade and alignment must have smooth continuity, without abrupt changes in direction.
- Maximum grades may not exceed 18 percent favorable and 12 percent adverse.
- Minimum curve radius is 60 feet at centerline.
- Maximum grade change for sag vertical curves is 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, unless construction staked or designed:

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

4-6 EMBANKMENT SLOPE RATIO

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

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

4-7 SHAPING CUT AND FILL SLOPE

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

4-8 CURVE WIDENING

The minimum widening placed on the inside of curves is:

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

4-9 EMBANKMENT WIDENING

The minimum embankment widening is:

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

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

SUBSECTION INTERSECTIONS, TURNOUTS AND TURNAROUNDS

4-21 TURNOUTS

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

4-22 TURNAROUNDS

Purchaser shall construct turnarounds as designated on the TURNAROUND LIST. Additional turnarounds must be no larger than 30 feet long and 30 feet wide and are subject to written approval by the Contract Administrator.

SUBSECTION DITCH CONSTRUCTION

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

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

4-27 DITCH WORK – MATERIAL USE PROHIBITED

On the following road(s), 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.

| |
|-------------|
| <u>Road</u> |
| E-Line |
| E-2040 |
| E-3000 |
| E-3100 |

4-28 DITCH DRAINAGE

Ditches must drain to cross-drain culverts or ditchouts.

SUBSECTION WASTE MATERIAL (DIRT)

4-35 WASTE MATERIAL DEFINITION

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

4-36 DISPOSAL OF WASTE MATERIAL

Purchaser may sidecast waste material on side slopes up to 55% if the waste material is compacted and free of organic debris. On side slopes greater than 55%, all waste material must be end hauled or pushed to the designated embankment sites and waste areas identified in Clause 4-37 WASTE AREA LOCATION.

4-37 WASTE AREA LOCATION

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

| <u>Road</u> | <u>Waste Area Location</u> | <u>Comments</u> |
|-------------|----------------------------|--|
| E-2040 | 3+10 | Place waste at back of turnout on the E-2140A and E-2040 junction. |

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.
- Within a riparian management zone.
- On side slopes steeper than 55%.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Within the operational area for cable landings.
- Against standing timber.

SUBSECTION BORROW

4-46 COMMON BORROW

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

4-49 BORROW SOURCE

Purchaser may obtain borrow material from the listed borrow source(s).

| <u>Source</u> | <u>Location</u> |
|----------------|---|
| Vantage Quarry | SW ¼ NW ¼ Section 22 Township 16 North Range 04 West |

SUBSECTION SHAPING

4-55 ROAD SHAPING

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

4-56 DRY WEATHER SHAPING

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

SUBSECTION COMPACTION

4-60 FILL COMPACTION

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

4-61 SUBGRADE COMPACTION

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

SUBSECTION CULVERTS

5-5 CULVERTS

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

5-9 CULVERT MARKER INSTALLATION

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

5-10 CONTINGENCY CULVERTS

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

| <u>Road</u> | <u>Size</u> |
|---|--|
| On any portion of road used for timber or rock haul | <ul style="list-style-type: none"> • 18"x30' culvert • 18"x30' culvert • 18"x30' culvert • 18"x30' culvert • 18" culvert band |

5-11 UNUSED MATERIALS STATE PROPERTY

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

SUBSECTION CULVERT INSTALLATION

5-15 CULVERT INSTALLATION

Culvert installation must be in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL and the Corrugated Polyethylene Pipe Association's "Recommended Installation Practices for Corrugated Polyethylene Pipe and Fittings". Corrugated Polyethylene pipe must be installed in a manner consistent with the manufacturer's recommendations.

5-16 APPROVAL FOR LARGER CULVERT INSTALLATION

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

5-17 CROSS DRAIN SKEW AND SLOPE

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

5-18 CULVERT DEPTH OF COVER

Cross drain culverts must be installed with a depth of cover of not less than 1 foot of compacted subgrade over the top of the culvert at the shallowest point.

SUBSECTION ENERGY DISSIPATERS

5-20 ENERGY DISSIPATERS

Purchaser shall install energy dissipaters in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all culverts on the CULVERT AND DRAINAGE 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 AND DRAINAGE LIST. Energy dissipaters must extend a minimum of 1 foot to each side of the culvert at the outlet and a minimum of 2 feet beyond the outlet. Rock must be set in place by machine. Placement must be by zero-drop-height method only. No placement by end dumping or dropping of rock is allowed.

SUBSECTION CATCH BASINS, HEADWALLS, AND ARMORING

5-25 CATCH BASINS

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

5-26 HEADWALLS FOR CROSS DRAIN CULVERTS

Purchaser shall construct headwalls in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all cross drain culverts. Rock used for headwalls must be QUARRY SPLLS or LIGHT LOOSE RIP RAP. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets. Minimum specifications require that rock be placed at a width of one culvert diameter on each side of the culvert opening, and to a height of one culvert diameter above the top of the culvert. Rock may not restrict the flow of water into culvert inlets or catch basins. Placement must be by zero-drop-height method only. No placement by end dumping or dropping of rock is allowed. QUARRY SPALLS and LIGHT LOOSE RIP RAP shall meet the specifications in CLAUSE 6-43 QUARRY SPALLS and CLAUSE 6-50 LIGHT LOOSE RIP RAP.

5-27 ARMORING FOR STREAM CROSSING CULVERTS

Purchaser shall place LIGHT LOOSE RIP RAP or QUARRY SPALLS 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 or as directed by the Contract Administrator. Rock may not restrict the flow of water into culvert inlets or catch basins. Rock must be set in place by machine. Placement must be by zero-drop-height method only. No placement by end dumping or dropping of rock is allowed.

SUBSECTION SURFACE DRAINAGE

5-33 NATIVE SURFACE ROADS

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

SECTION 6 – ROCK AND SURFACING

SUBSECTION ROCK SOURCE

6-2 ROCK SOURCE ON STATE LAND

Rock used in accordance with the quantities on the ROCK LIST may be obtained from the following source(s) on state land at no charge to the Purchaser. Purchaser shall obtain written approval from the Contract Administrator for the use of material from any other source. If other operators are using, or desire to use the rock source(s), a joint operating plan must be developed. All parties shall follow this plan. Purchaser shall notify the Contract Administrator a minimum of 5 calendar days before starting any operations in the listed locations.

| <u>Source</u> | <u>Location</u> | <u>Rock Type</u> |
|----------------|--|--|
| Vantage Quarry | SW ¼ NW ¼ Section 22 Township 16 North Range 04 West | 1-1/2 Inch Minus 3 Inch Minus 4 Inch Jaw Quarry Spalls Light Loose Rip Rap |

6-5 ROCK FROM COMMERCIAL SOURCE

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

SUBSECTION ROCK SOURCE DEVELOPMENT

6-10 ROCK SOURCE DEVELOPMENT PLAN BY STATE

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

| <u>Source</u> |
|----------------|
| Vantage Quarry |

6-12 ROCK SOURCE SPECIFICATIONS

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

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

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

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

6-14 DRILL AND SHOOT

Rock drilling and shooting must meet the following specifications:

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

SUBSECTION ROCK MANUFACTURE

6-20 ROCK GRADATION TYPES

Purchaser shall manufacture rock in accordance with the types and amounts listed in the ROCK LIST. Rock must meet the following specifications for gradation and uniform quality when placed in hauling vehicles or during manufacture and placement into a stockpile. Purchaser shall provide a sieve analysis upon request from the Contract Administrator.

6-23 ROCK CRUSHING OPERATIONS

Rock crushing operations must conform to the following specifications:

- Operations and placement of oversize material must be conducted in or near the rock source site, as approved in writing by the Contract Administrator.
- If a smooth roll crusher is used, the maximum size of material fed into it shall be equal to the largest size of the material coming out of it plus 8.5 percent of the roll radius.
- Purchaser shall provide an onsite weatherproof field laboratory equipped with all necessary testing equipment (oven, sieves, sieve shaker, and scales) for conducting sieve testing of the required aggregate that is being produced. This laboratory must be available for use by the Contract Administrator during the entire crushing operation.
- The crushing operation per pit must be concluded within 45 working days from the time it begins in that pit.
- Purchaser is required to produce sieve analysis for crushing operations every 1000 yards for each rock gradation type.

SUBSECTION ROCK GRADATIONS

6-29 1 ½-INCH MINUS CRUSHED ROCK

| | |
|-----------------------------|--------------|
| % Passing 1 ½" square sieve | 100% |
| % Passing 1" square sieve | 70 - 90% |
| % Passing 5/8" square sieve | 50 - 80% |
| % Passing U.S. #4 sieve | 30 - 50% |
| % Passing U.S. #40 sieve | 3 - 18% |
| % Passing U.S. #200 sieve | 7.5% maximum |

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

6-33 3-INCH MINUS CRUSHED ROCK

| | |
|-----------------------------|----------|
| % Passing 3" square sieve | 100% |
| % Passing 2" square sieve | 65 - 95% |
| % Passing 3/4" 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.

6-37 4-INCH JAW RUN ROCK

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

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

6-43 QUARRY SPALLS

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

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

6-50 LIGHT LOOSE RIP RAP

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

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

SUBSECTION ROCK MEASUREMENT

6-55 ROCK APPLICATION MEASURED BY COMPACTED DEPTH

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

6-56 ROCK MEASUREMENT BY TRUCK VOLUME

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

SUBSECTION ROCK STOCKPILE

6-65 ROCK STOCKPILE LOCATION

Purchaser shall stockpile rock as listed below.

| <u>Rock Source</u> | <u>Rock Type</u> | <u>Quantity (c.y.)</u> | <u>Stockpile Location</u> |
|--------------------|--------------------------|------------------------|---------------------------|
| Vantage Quarry | 1-1/2 Inch Minus Crushed | 4,000 | Vantage Quarry |
| Vantage Quarry | 4 Inch Jaw run | 3,000 | Vantage Quarry |
| Vantage Quarry | 3 Inch Minus Crushed | 3,000 | Vantage Quarry |

6-67 ROCK STOCKPILE SPECIFICATIONS

ROCK STOCKPILES LISTED IN CLAUSE

6-65 ROCK STOCKPILE LOCATION ROCK STOCKPILE LOCATION must meet the following specifications:

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

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

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

SUBSECTION ROCK APPLICATION

6-70 APPROVAL BEFORE ROCK APPLICATION

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

6-71 ROCK APPLICATION

Purchaser shall apply rock in accordance with the specifications and quantities shown on the ROCK LIST. Rock must be spread, shaped, and compacted full width concurrent with rock hauling operations. 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 7 – STRUCTURES

SUBSECTION STREAM CROSSING STRUCTURES GENERAL

7-5 STRUCTURE DEBRIS

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

7-6 STREAM CROSSING INSTALLATION

Purchaser shall install stream crossing structures in accordance with the manufacturer's requirements, Designs, Specifications and/or DETAILS.

7-7 BANK PROTECTION FOR STREAM CROSSING STRUCTURES

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

SUBSECTION ACCEPTANCE

7-15 DRAWING AND CALCULATION REVIEW FOR ACCEPTANCE

Purchaser shall prepare and submit three sets of complete design drawings and calculations for the superstructure and substructure, including footings, foundation and bank protection. All drawings and calculations must be prepared, stamped, and signed by a Registered Professional Engineer in the State of Washington. The superstructure must be designed by a Professional Engineer licensed in the state or Canadian Province of manufacture. Drawings can be in either electronic or hard copy form and must be no smaller than 11" X 17" sheets.

Send submittals to:

Department of Natural Resources
Attn.: Keith Yonaka
950 Farman Ave N. Enumclaw, WA 98022
360-825-1631
keith.yonaka@dnr.wa.gov

Reports and plans will be accepted or rejected within 15 working days of receipt of final drawing submittal. Delays in work because of the possibility of rejection, revision, and resubmittal of documents are deemed a risk of the Purchaser and may not be the basis for claims of additional compensation.

7-16 STRUCTURE ACCEPTANCE

The Region Engineer or designee will inspect the structure upon delivery. Acceptance will be issued if the structure meets all specifications and certifications. Structures that are not accepted may not be installed.

7-17 INSTALLATION PRODUCTION SCHEDULE

Purchaser shall provide the Contract Administrator or their designee, with a production schedule showing projected completion dates for the following items before starting construction of the structure(s). Production schedule must include:

- construction staking
- excavation
- placement of sills/abutments/footings/structure
- backfill compaction, rock application and compaction

7-18 INSTALLATION STAGE ACCEPTANCE

Purchaser shall ensure that all materials and procedures used during construction comply with the design. Purchaser shall obtain written approval from the Purchaser’s licensed Professional Engineer for each stage of construction, listed in Clause 7-17 INSTALLATION PRODUCTION SCHEDULE, before starting construction on the next stage. Purchaser shall notify the Contract Administrator in writing when each construction stage is complete.

7-19 INSTALLATION FINAL ACCEPTANCE

Purchaser shall notify the Contract Administrator in writing when each structure is complete. Within 15 working days of final construction acceptance, Purchaser shall submit a complete set of as-built plans stamped by the design engineer. Any omissions to the plans are the responsibility of the Purchaser to correct and include in the finalized set of plans. Submit finalized plans to the same location stated in Clause 7-15 DRAWING AND CALCULATION REVIEW FOR ACCEPTANCE.

SUBSECTION BRIDGE INSTALLATION

7-45 PURCHASER SUPPLIED BRIDGE

Purchaser shall design, provide, and construct each bridge listed below. Designs must include curbs and a full width, continuous wood deck with no gaps that allow water and sediment to drain from the bridge to the stream. Refer to BRIDGE DETAIL, HYDRAULIC PROJECT REQUIREMENTS DETAIL, and this plan for additional information. Bridge deflection shall not exceed L/500 under inventory loading.

| Road | Station | Length (ft) | W.B.S.R. ¹ (ft) | Loading/Deflection Ratio | Type | Vert. Clear ² (ft) | Hor. Align ³ |
|--------|---------|-------------|----------------------------|------------------------------|--|-------------------------------|-------------------------|
| E-2040 | 12+55 | 50 | 16 | HL-93 with U-80/L90 overload | Steel bridge w/ full width timber deck | Min. 7 feet | P.P. |

¹W.B.S.R. = Width between shear rails.

²Vertical clearance shall be measured from the streambed.

³Horizontal alignment: P.P. = on the attached plan/profile, C.S. = according to construction stakes on the ground.

- A. The superstructure shall be a two-piece modular design consisting of steel girder and corrugated steel deck construction with integral guard rail on each side.
- B. Bridge deck shall be continuous full width, with no gaps that allow water and sediment to drain through the bridge deck.
- C. Top of bridge side dam shall be 8-inches above corrugated steel deck.
- D. W-beam guard rail shall be installed the full length of the bridge on each side. The top of the guard rails shall be a minimum height of 20-inches above the finished running surface of the bridge.
- E. Wingwalls shall match slope and elevation of the top of the endwalls and be butted against the endwalls to retain fill material. Wingwalls and endwalls shall be constructed such that no embankment fill encroaches any closer to the stream than shown on attached plans. Wingwalls and endwalls shall be precast concrete or galvanized steel with reinforcement and extend at least 5 feet beyond edges of the bridge. Galvanized steel shall be a minimum thickness of 7-gauge. No sheet piling will be considered.
- F. All exposed steel components shall be weathering steel unless otherwise specified as galvanized. The following components shall be galvanized steel: beam guard rail, corrugated deck, and steel backwall/wingwall.
- G. Elastomeric bearing pads shall be used and in accordance with the bridge manufacturers specifications.

- H. Road approaches shall be constructed at a smooth and continuous grade from the finished ends of the bridge.
- I. The bridge running surface shall be full width timber plank.

7-47 PURCHASER SUPPLIED ABUTMENTS

Purchaser shall provide pre-cast concrete abutment designs. Bridge abutments must be designed by an engineer licensed in the state of Washington or in the state of manufacture. The abutment design includes, but is not limited to wing walls, steel reinforced concrete sills, and permanent, functional provisions for lifting. Sampling and testing shall be performed on all precast concrete pieces. Purchaser shall provide the Contract Administrator with a testing report certifying that all pre-cast concrete products meet the requirements of this Contract. Certification shall be submitted to the Contract Administrator before placement and payment of the pre-cast concrete products, unless this requirement is waived in writing by the Contract Administrator.

7-52 TECHNICAL SPECIFICATIONS

Design: The bridge superstructure must be designed in accordance with AASHTO LRFD Bridge Design Specifications, latest edition and any subsequent interim specifications. Design details not covered by the AASHTO specifications must be in accordance with other normally accepted structural design standards.

Fabrication: The structural steel fabricating plant of origin must be certified under the AISC Quality Certification Program. Certification categories must include Simple and Intermediate Steel Bridges.

Certification of Materials: Mill test certificates must be provided for the steel stringers and the bridge deck. Certified mill test reports for steel bridge stringers with specified values must include, in addition to other tests, the results of Charpy V-notch impact tests.

Concrete Test Methods: Acceptance testing shall be provided by the Purchaser and performed by a certified testing laboratory. Test methods to be used are:

| | |
|-----------------|--|
| AASHTO T 22-10 | Compressive Strength of Cylindrical Concrete Specimens |
| AASHTO T 23-08 | Making and Curing Concrete Test Specimens in the Field |
| AASHTO T 119-10 | Slump of Hydraulic Cement Concrete |
| AASHTO T 152-10 | Air Content of Freshly Mixed Concrete by the Pressure Method |
| AASHTO T 309-10 | Temperature of Freshly Mixed Portland Cement Concrete |

Welding: All welding must be completed by welders certified in accordance with the requirements and qualification tests of the American Welding Society.

The bridge fabricator shall be certified under the Precast/Prestressed Concrete Institute’s (PCI) Plant Certification Program or alternative equivalent program at a level equivalent or higher than B1 – Precast Bridge Products (No Prestressed Reinforcement).

7-53 BRIDGE INSTALLATION

Purchaser shall install bridges ensuring there is a full width, continuous deck with no gaps that allow water and sediment to drain from the bridge to the stream.

SECTION 8 – EROSION CONTROL

8-1 SEDIMENT CONTROL STRUCTURES

Sediment control shall be accomplished using sediment traps, silt fence, settling ponds or other methods as approved, in writing, by the Contract Administrator. 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 within 50 feet of a stream or wetland. Soils must be covered before the first anticipated storm event. Soils may not sit exposed during any rain event.

SUBSECTION REVEGETATION

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> | <u>Comments</u> |
|-------------|-----------------|--------------------------|
| E-Line | 0+00 to 206+86 | At culvert installations |
| E-2040 | 3+10 to 14+00 | |
| E-2048 | 0+00 to 17+19 | |
| E-3000c | 0+00 to 37+68 | |
| E-3010c | 0+00 to 3+20 | |
| E-3100 | 13+95 to 29+47 | |
| E-3120 | 0+00 to 14+74 | |
| E-3310 | 0+00 to 12+81 | |

8-16 REVEGETATION SUPPLY

The Purchaser shall provide the seed and straw.

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 alternate. 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.

SUBSECTION SEED AND MULCH

8-25 GRASS SEED

Purchaser shall evenly spread the seed mixture listed below on all soil specified in CLAUSE 8-15 REVEGETATION at a rate of 50 pounds per acre of exposed soil. Grass seed must meet the following specifications:

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

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

SECTION 9 – POST-HAUL ROAD WORK

SUBSECTION STRUCTURES

9-3 CULVERT MATERIAL REMOVED FROM STATE LAND

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

SUBSECTION POST-HAUL MAINTENANCE

9-5 POST-HAUL MAINTENANCE

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

SUBSECTION POST-HAUL LANDING MAINTENANCE

9-10 LANDING DRAINAGE

Purchaser shall provide for drainage of the landing surface.

SECTION 10 MATERIALS

SUBSECTION CULVERTS

10-17 CORRUGATED PLASTIC CULVERT

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

10-22 PLASTIC BAND

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

SUBSECTION BRIDGE

10-50 BRIDGE MATERIAL

All materials necessary for assembly must be included with the structure and meet the following requirements:

- a. All structural steel must be of domestic (USA) manufacture and conform to the requirements of ASTM Specification A588 weathering steel. Structural steel used as main load-carrying tension members or as tension components of flexural members shall be impact tested and shall have a minimum average Charpy V-notch (CVN) toughness of 25 ft-lbf at 40deg F. Before shipment all weathering steel must be sandblasted.
- b. All galvanizing must be done after fabrication and must be in accordance with AASHTO Designation M111-09 (ASTM Designation: A123) and/or AASHTO Designation M232-10 centrifuged to remove excess (ASTM Designation A153) and/or AASHTO M298-10 mechanical galvanization (ASTM B695-04).
- c. Flanges used for connecting the stringer units together must be designed to facilitate field assembly.
- d. All bolts used to facilitate field assembly will be A325 Type 1 or 2 galvanized. All materials necessary for assembly must be included with the structure. All hardware connections and fasteners must be in accordance with AASHTO Designation ASTM Designation A325 Type 3 weathering steel.
- e. Elastomeric bearing pads must conform to the requirements of AASHTO M251-06.
- f. All concrete and asphalt used must conform to AASHTO specifications.
- g. The superstructure must have permanent, functional provisions for lifting.
- h. All deck material must be 4"x12" No. 2 or better Douglas fir pressure treated. The running planks shall be installed full-width and must be installed with a minimum 3-foot stagger. The running planks exposed edge at each end of the bridge deck must have the top 1/3 beveled at 45 degrees angle.
- i. The running planks must be fastened with galvanized machined grade 8 bolts with nuts and washers. The bolt holes must be pre-drilled and treated. All bridge lifting locations must remain accessible.

SECTION 11 SPECIAL NOTES

11-1 EXISTING ROAD CLEAN-UP

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

| <u>Road</u> |
|-------------|
| E-2040 |
| E-3000 |
| E-3300 |

11-2 DITCH MAINTENANCE

The Purchaser shall maintain ditches in accordance with Forest Access Road Maintenance Specifications. Any landing construction, especially which crosses ditches, shall provide for drainage, as approved by the Contract Administrator.

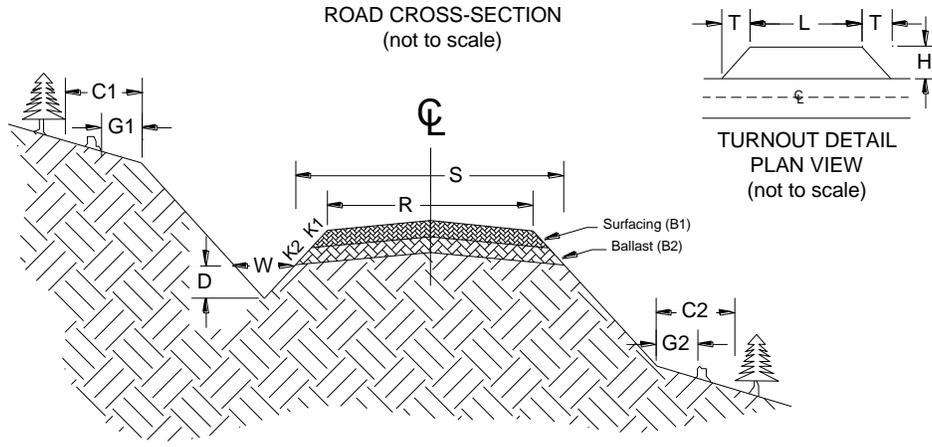
11-3 LANDING DEBRIS

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

11-4 BRIDGE DELINEATORS

Bridge delineators shall consist of four 12" x 36" reflective striped delineators mounted on each bridge. Mounting may consist of post and bolt or other Owner approved means of attachment. One delineator shall be installed at each end of each bridge guard rail, and shall be installed with the reflector stripes angled downward and guiding traffic towards the center of the bridge.

TYPICAL SECTION SHEET



| Road Number | From Station | To Station | Tolerance Class | Subgrade Width (feet) | Road Width (feet) | Ditch | | Crown in. @ CL | Grubbing Limits (feet) | | Clearing Limits* (feet) | |
|-------------|--------------|------------|-----------------|-----------------------|-------------------|--------------|--------------|----------------|------------------------|----|-------------------------|----|
| | | | | | | Width (feet) | Depth (feet) | | G1 | G2 | C1 | C2 |
| | | | | S | R | W | D | | | | | |
| E-Line | 0+00 | 206+86 | A | - | Varies | 3 | 1 | 4 | - | - | - | - |
| E-2040 | 0+00 | 66+58 | C | 15 | 12 | 3 | 1 | 4 | 2 | 2 | - | - |
| E-2048 | 0+00 | 17+19 | C | 15 | 12 | 3 | 1 | 4 | 2 | 2 | 5 | 5 |
| E-3000 | 0+00 | 104+68 | C | 15 | 12 | 3 | 1 | 4 | - | - | - | - |
| E-3000c | 0+00 | 37+68 | C | 15 | 12 | 3 | 1 | 4 | 2 | 2 | 5 | 5 |
| E-3010c | 0+00 | 3+20 | C | 15 | 12 | 3 | 1 | 4 | 2 | 2 | 5 | 5 |
| E-3100 | 0+00 | 13+95 | C | 15 | 12 | 3 | 1 | 4 | - | - | See Brushing Detail | |
| E-3100 | 13+95 | 29+47 | C | 15 | 12 | 3 | 1 | 4 | 2 | 2 | 5 | 5 |
| E-3120 | 0+00 | 14+74 | C | 15 | 12 | 3 | 1 | 4 | 2 | 2 | 5 | 5 |
| E-3300 | 0+00 | 7+60 | C | 15 | 12 | 3 | 1 | 4 | - | - | See Brushing Detail | |
| E-3310 | 0+00 | 12+81 | C | 15 | 12 | 3 | 1 | 4 | 2 | 2 | 5 | 5 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

TURNOUT LIST

| Road Number | Begin L- Station | End L- Station | Turnout Width (H) | Full Width Length (L) | Taper Length (T) | Comments |
|-------------|------------------|----------------|-------------------|-----------------------|------------------|------------------------------------|
| E-Line | 102+00 | 102+50 | 10' | 30' | 10' | Shape and Rock Turnout Left |
| E-Line | 120+45 | 120+95 | 10' | 30' | 10' | Shape and Rock Turnout Right |
| E-Line | 124+00 | 124+50 | 10' | 30' | 10' | Drain, Shape and Rock Turnout Left |
| E-2048 | 9+96 | 10+96 | 10' | 50' | 25' | Turnout Left |
| E-3000c | 4+52 | 5+52 | 10' | 50' | 25' | Turnout Left |
| E-3000c | 14+11 | 15+11 | 10' | 50' | 25' | Turnout Left |
| E-3000c | 23+02 | 24+02 | 10' | 50' | 25' | Turnout Right |
| E-3100 | 17+41 | 18+41 | 10' | 50' | 25' | Turnout Right |
| E-3120 | 8+27 | 9+27 | 10' | 50' | 25' | Turnout Left |
| E-3310 | 7+53 | 8+53 | 10' | 50' | 25' | Turnout Right |

TURNAROUND LIST

| Road Number | Station | Length (feet) | Width (feet) | Comments |
|-------------|------------------------------------|---------------|--------------|---|
| E-2048 | 17+19 or end of construction | 30 | 30 | Turnaround will be constructed at the end of the road |
| E-3000c | 37+68 | 30 | 30 | |
| E-3010c | 3+20 or end of construction | 30 | 30 | Turnaround will be constructed at the end of the road |
| E-3100 | 29+47 | 30 | 30 | |
| E-3120 | 14+74 | 30 | 30 | |
| E-3310 | 12+81 or end of construction | 30 | 30 | Turnaround will be constructed at the end of the road |

COMPACTION LIST

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

ROCK LIST, page 1 of 2

BALLAST

| Road Number | From Station | To Station | Rock Slope | Compacted Rock Depth | C.Y. Station | # of Stations | C.Y. Subtotal | Rock Source | |
|--|--------------|------------|------------|----------------------|----------------|---------------|---------------|----------------|--|
| | | | K2 | B2 | 4 Inch Jaw Run | | | | |
| E-2040 (bridge approaches) | 10+55 | 14+55 | 1.5:1 | 12" | 50 | 4 | 200 | Vantage Quarry | |
| E-2048 | 0+00 | 17+19 | 1.5:1 | 12" | 50 | 17.2 | 860 | | |
| E-3000c | 0+00 | 37+68 | 1.5:1 | 12" | 50 | 37.7 | 885 | | |
| E-3010c | 0+00 | 3+20 | 1.5:1 | 12" | 50 | 3.2 | 175 | | |
| E-3100 | 13+95 | 29+47 | 1.5:1 | 12" | 50 | 15.5 | 775 | | |
| E-3120 | 0+00 | 14+74 | 1.5:1 | 12" | 50 | 14.7 | 735 | | |
| E-3310 | 0+00 | 12+81 | 1.5:1 | 12" | 50 | 12.8 | 640 | | |
| 7 Turnouts and 6 Turnarounds | | | | | | | 461 | | |
| Quarry Spalls or Light Loose Rip Rap | | | | | | | | | |
| Culvert Headwalls and Dissipaters. See Culvert and Drainage List for locations. | | | | | | | 42 | | |
| 1-1/2" Minus Crushed | | | | | | | | | |
| For culvert bedding. See Culvert and Drainage List for locations. Estimated 5 cyd per 18"x30' culvert. | | | | | | | 175 | | |

4 Inch Jaw Run BALLAST TOTAL: 4731 cubic yards
 Quarry Spalls BALLAST TOTAL: 42 cubic yards
 1-1/2" Minus BALLAST TOTAL: 175 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.

ROCK LIST, page 2 of 2

SURFACE

| Road Number | From Station | To Station | Rock Slope | Compacted Rock Depth | C.Y. Station | # of Stations | C.Y. Total | Rock Source | Comment |
|--|--------------|------------|------------|----------------------|--------------------------|---------------|------------|----------------|--|
| | | | K1 | B1 | 1-1/2 Inch Minus Crushed | | | | |
| E-2040 | 10+55 | 14+55 | 1.5:1 | 6" | 25 | 4 | 100 | Vantage Quarry | |
| E-2040 | | | 1.5:1 | | | | 400 | | For spot rocking. Locations as directed by CA. |
| E-3000 | | | 1.5:1 | | | | 400 | | For spot rocking. Locations as directed by CA. |
| For surface rock over E-Line Road culvert Installations. See Culvert List for locations. Place minimum 12 inches of compacted rock over disturbed ground over each culvert installation on the E-Line road. Rock slope is 1.5:1. | | | | | | | 140 | | Estimated 20 cyd for one 18"x30' culvert installation. |
| For surface rock over E-2040 Road culvert Installations. See Culvert List for locations. Place minimum 12 inches of compacted rock over disturbed ground over each culvert installation on the E-2040 road. Rock slope is 1.5:1. | | | | | | | 160 | | Estimated 20 cyd for one 18"x30' culvert installation. |
| 1-1/2 Inch Minus Stockpile at Vantage Quarry | | | | | | | 4,000 | | |
| 3 Inch Minus Stockpile at Vantage Quarry | | | | | | | 3,000 | | |
| 4 Inch Jaw Run Stockpile at Vantage Quarry | | | | | | | 3,000 | | |

SURFACE TOTAL 1,200 Cubic Yards
Stockpile TOTAL 10,000 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.

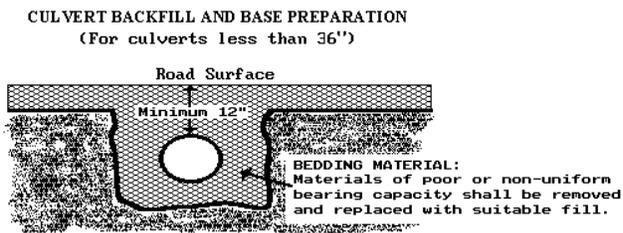
CULVERT AND DRAINAGE LIST, pg 1 of 2

| Road Number | Location | Culvert | | Length (ft) | | | Riprap (C.Y.) | | | Backfill Material | Placement Method* | Const. Staked* | Remarks |
|-------------------------------|----------|-----------|------|-------------|---------|-------|---------------|--------|------|-------------------|-------------------|----------------|--|
| | | Dia. (in) | Type | Culvert | Downspt | Flume | Inlet | Outlet | Type | | | | |
| E-Line | 44+60 | 18 | PD | 40 | | | 0.5 | 0.5 | QS | NT | | | Replace existing culvert |
| | 135+00 | 18 | PD | 30 | | | 0.5 | 0.5 | QS | NT | | | Replace existing culvert |
| | 147+30 | 18 | PD | 40 | | | 0.5 | 0.5 | QS | NT | | | Replace existing culvert |
| | 154+00 | 24 | PD | 40 | | | 1 | 1 | QS | NT | | | Replace existing stream culvert |
| | 164+12 | 24 | PD | 50 | | | 1 | 1 | QS | NT | | | Replace existing stream culvert |
| | 182+40 | 18 | PD | 30 | | | 0.5 | 0.5 | QS | NT | | | Replace existing culvert |
| E-2040 | 9+40 | 18 | PD | 30 | | | 0.5 | 0.5 | QS | NT | | | |
| | 11+20 | 18 | PD | 30 | | | 0.5 | 0.5 | QS | NT | | | |
| | 12+55 | - | - | - | | | | | | | | | Bridge Installation. Type F stream. |
| | 14+00 | 18 | PD | 40 | | | 0.5 | 0.5 | QS | NT | | | |
| | 15+75 | 18 | PD | 30 | | | 0.5 | 0.5 | QS | NT | | | |
| | 18+60 | 18 | PD | 30 | | | 0.5 | 0.5 | QS | NT | | | |
| | 24+65 | 18 | PD | 30 | | | 0.5 | 0.5 | QS | NT | | | |
| | 27+00 | 18 | PD | 30 | | | 0.5 | 0.5 | QS | NT | | | |
| | 60+80 | 18 | PD | 30 | | | 0.5 | 0.5 | QS | NT | | | |
| E-2048 | 8+26 | 18 | PD | 30 | | | 0.5 | 0.5 | QS | NT | | | |
| E-2048 | 9+96 | 18 | PD | 30 | | | 0.5 | 0.5 | QS | NT | | | |
| E-3000c | 2+36 | 18 | PD | 30 | | | 0.5 | 0.5 | QS | NT | | | |
| | 6+19 | 48 | PD | 55 | | | 4 | 4 | LL | NT | | | Np stream. |
| | 7+00 | 18 | PD | 40 | | | 0.5 | 0.5 | QS | NT | | | |
| | 9+99 | 18 | PD | 30 | | | 0.5 | 0.5 | QS | NT | | | |
| | 12+34 | 18 | PD | 30 | | | 0.5 | 0.5 | QS | NT | | | |
| | 28+05 | 18 | PD | 30 | | | 0.5 | 0.5 | QS | NT | | | |
| | 32+72 | 18 | PD | 30 | | | 0.5 | 0.5 | QS | NT | | | |
| E-3010c | 120 | 18 | PD | 30 | | | 0.5 | 0.5 | QS | NT | | | |
| E-3100 | 21+62 | 18 | PD | 30 | | | 0.5 | 0.5 | QS | NT | | | |
| E-3120 | 6+95 | 18 | PD | 30 | | | 0.5 | 0.5 | QS | NT | | | |
| E-3120 | 10+82 | 18 | PD | 30 | | | 0.5 | 0.5 | QS | NT | | | |
| E-3310 | 4+36 | 18 | PD | 30 | | | 0.5 | 0.5 | QS | NT | | | |
| E-3310 | 10+19 | 18 | PD | 30 | | | 0.5 | 0.5 | QS | NT | | | |
| Any Road listed in Clause 0-2 | - | 18 | PD | 30 | | | 0.5 | 0.5 | QS | NT | | | Contingency. Install at CA discretion |
| | - | 18 | PD | 30 | | | 0.5 | 0.5 | QS | NT | | | |
| | - | 18 | PD | 30 | | | 0.5 | 0.5 | QS | NT | | | |
| | - | 18 | PD | 30 | | | 0.5 | 0.5 | QS | NT | | | |

CULVERT AND DRAINAGE LIST, pg 2 of 2

* SEE CULVERT AND DRAINAGE SPECIFICATION DETAIL

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

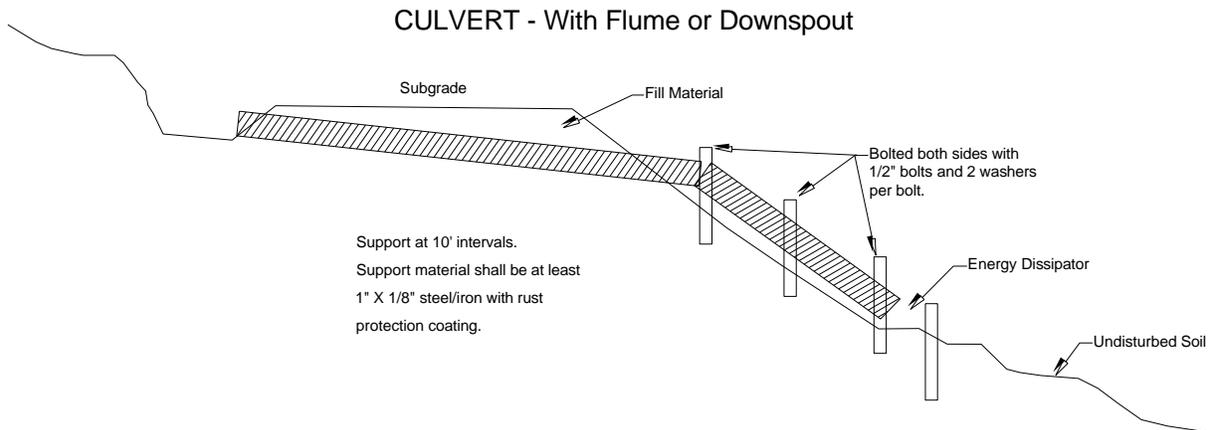
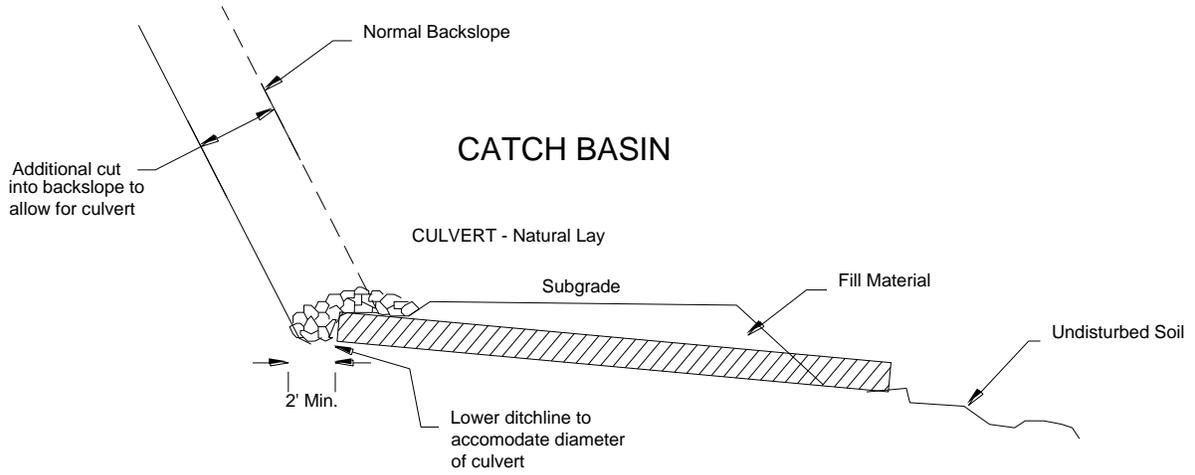


Key:

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

CULVERT AND DRAINAGE SPECIFICATION DETAIL

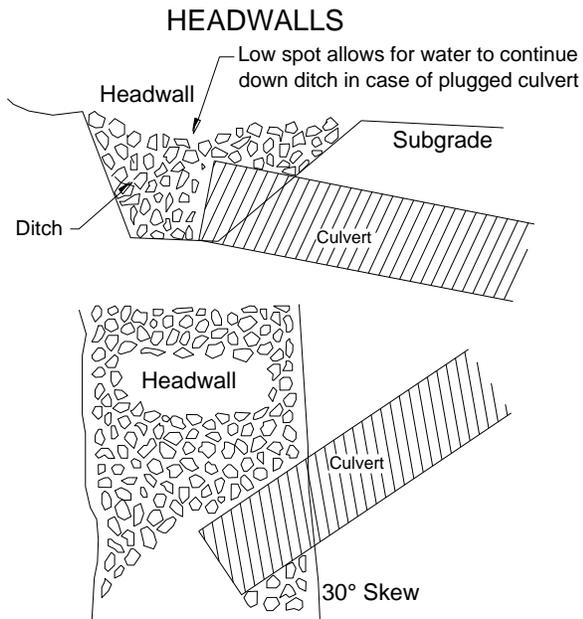
(Page 1 of 3)



CULVERT AND DRAINAGE SPECIFICATION DETAIL

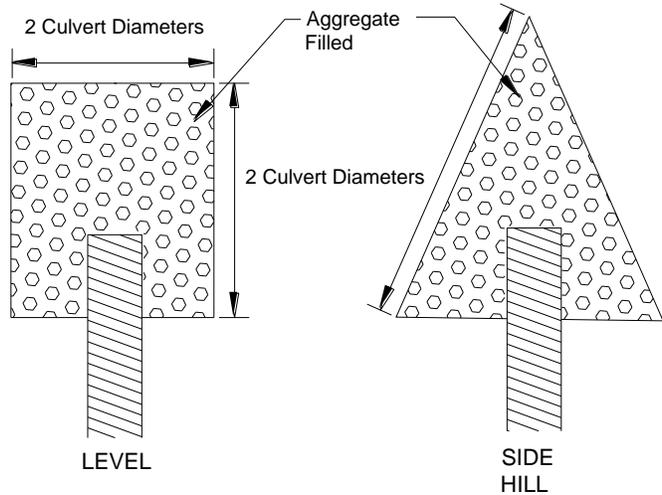
(Page 2 of 3)

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



Headwalls to be constructed of material that will resist erosion.

ENERGY DISSIPATORS



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

CULVERT AND DRAINAGE SPECIFICATION DETAIL

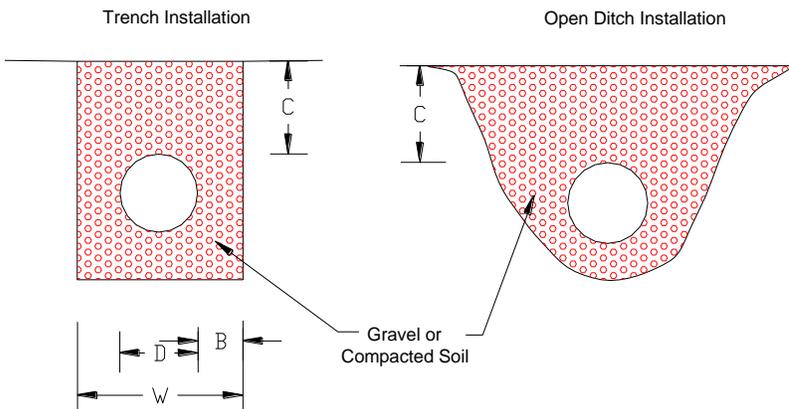
(Page 3 of 3)

POLYETHYLENE PIPE INSTALLATION

INSTALLATION REQUIREMENTS:

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

MINIMUM DIMENSIONS Trench or Open Ditch Installation



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

FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS, page 1 of 2

Cuts and Fills

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

Surface

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

Drainage

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

Preventative Maintenance

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

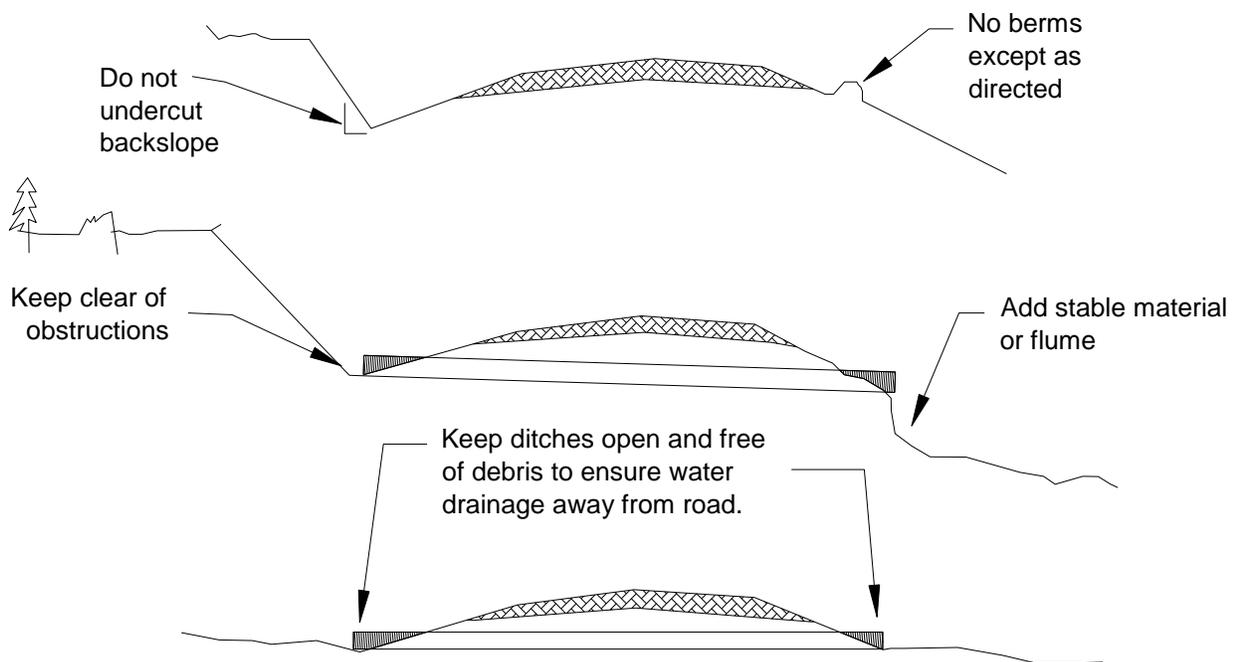
FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS, page 2 of 2

Termination of Use or End of Season

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

Debris

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



STATE OF WASHINGTON
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VANTAGE QUARRY DEVELOPMENT PLAN

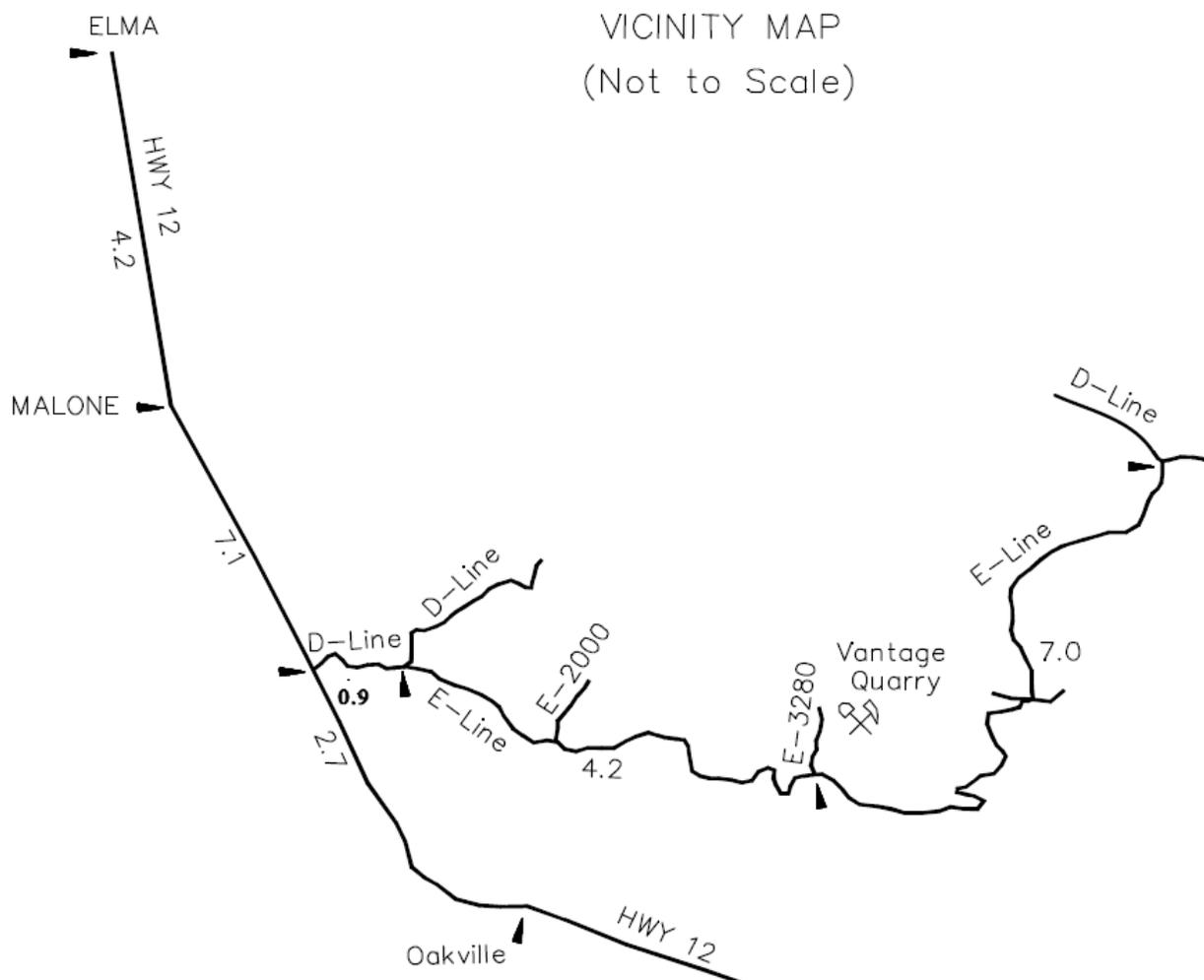
SW ¼, NW ¼, Section 22, Township 16 North, Range 4 West, W.M.
(Page 1 of 3)

1. Existing oversize, shot rock material, and stockpiles are not available for use without approval from the Contract Administrator. Most of the stockpile material will be utilized by Board O Feet Timber Sale. Oversize, shot rock material, and stockpiles may be moved to facilitate pit operations with written approval from the Contract Administrator.
2. Stockpiles created through this timber sale will be located within the Vantage Quarry. Exact location will be determined by the Contract Administrator.
3. Development for ballast rock shall begin in area A and continue into area B if necessary as indicated on the Vantage Quarry Plan View below.
4. All vegetation including stumps shall be cleared a minimum of 35 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. Surface shall be scalped of all overburden within 20 feet of working face at all times.
5. Overburden shall be end hauled or pushed to the designated waste area within the quarry as located by Contract Administrator 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.

Root wads and organic debris larger than one cubic foot in volume shall be separated from overburden material and piled in the vegetative waste area in location approved by the Contract Administrator.
6. Quarry faces shall not exceed 30 feet in height and shall be sloped no steeper than 1/4:1.
7. Working bench width shall be a minimum of 20 feet.
8. The quarry floor shall have continuity of slope be left in a smooth and neat condition, providing drainage to the northwest at a minimum of 2 percent. All knobs, bumps, or extrusions shall be removed to the designated floor level by excavation or drill and shoot techniques.
9. Reclamation will not be required following use.
10. 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.
11. The Purchaser shall submit an informational drilling and shooting plan to the Contract Administrator 5 working days prior to any drilling (Form #M-126PAC). Access roads and recreational trails in the area shall be blocked prior to blasting operations.

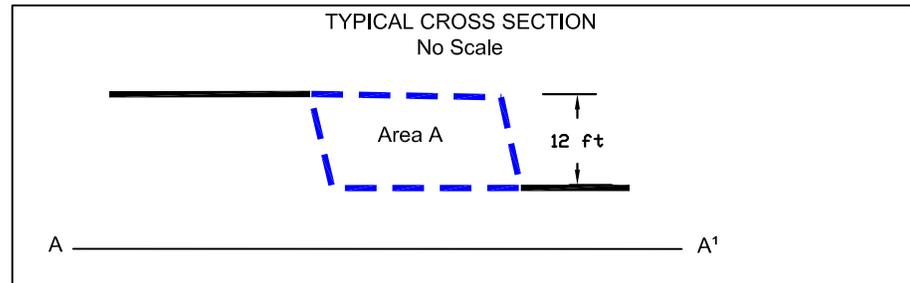
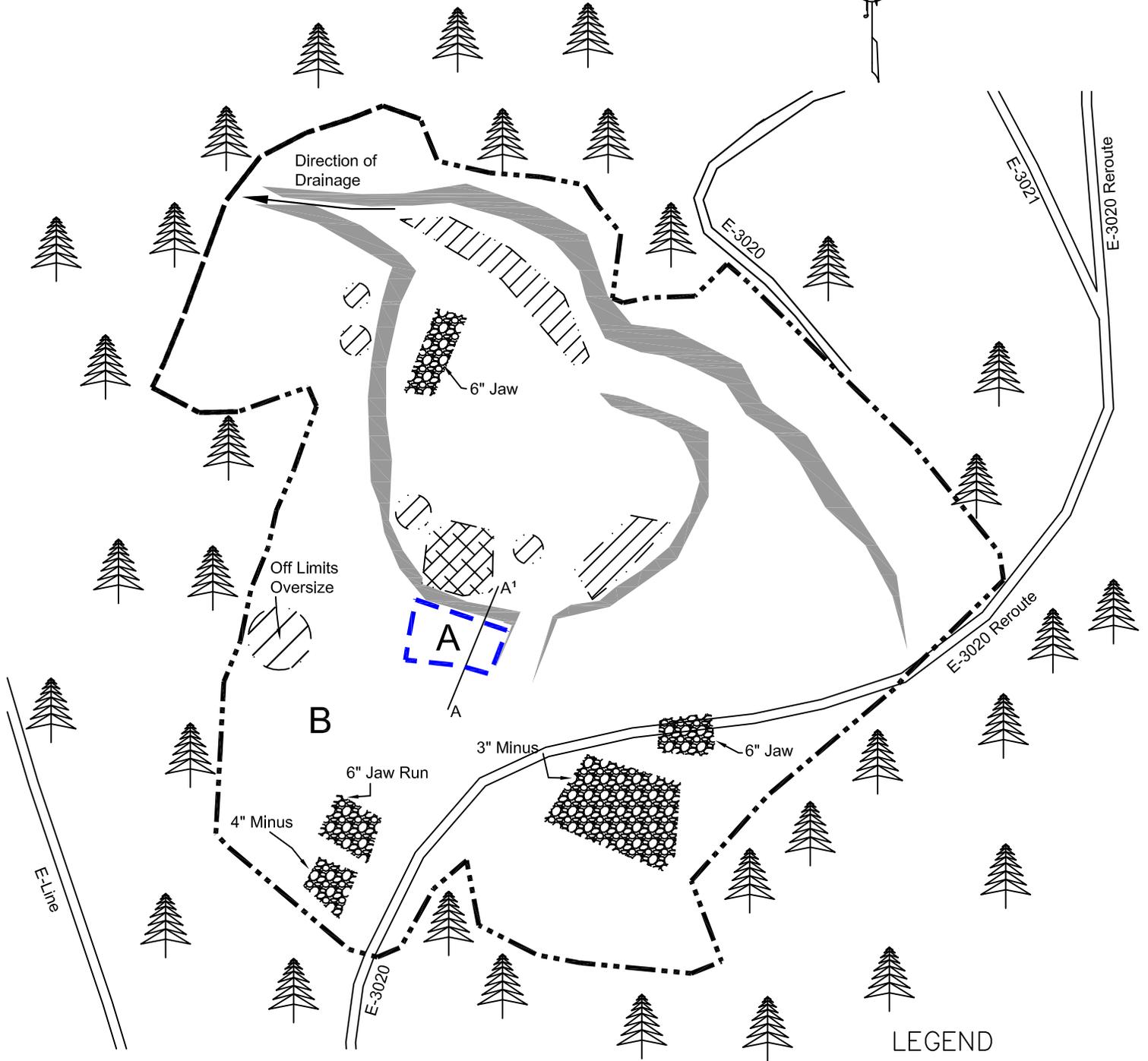
12. The Purchaser shall notify the Contract Administrator a minimum of 5 working days before blasting operations.
13. At the completion of rock source operations, Purchaser shall ask Contract Administrator for written approval of final rock source condition and compliance with the terms of this plan.
14. At the end of operations, quarry faces and walls shall be scaled and cleared of loose and overhanging material, and benches shall have safety berms constructed or access blocked to highway vehicles.
15. Upon completion of operations in the pit, the area will be left in a condition that will not endanger public safety, damage property, or be hazardous to animal or human life.
16. The site shall be cleared of all temporary structures, equipment and rubbish, and shall be left in a neat and presentable condition so that future operations may proceed in an orderly manner.

Date of update 1/12/2016. M. Bell. Tribute TBS.



VANTAGE QUARRY PLAN VIEW

SEC. 22, T16N, R04W, W.M.



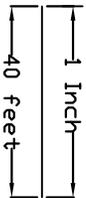
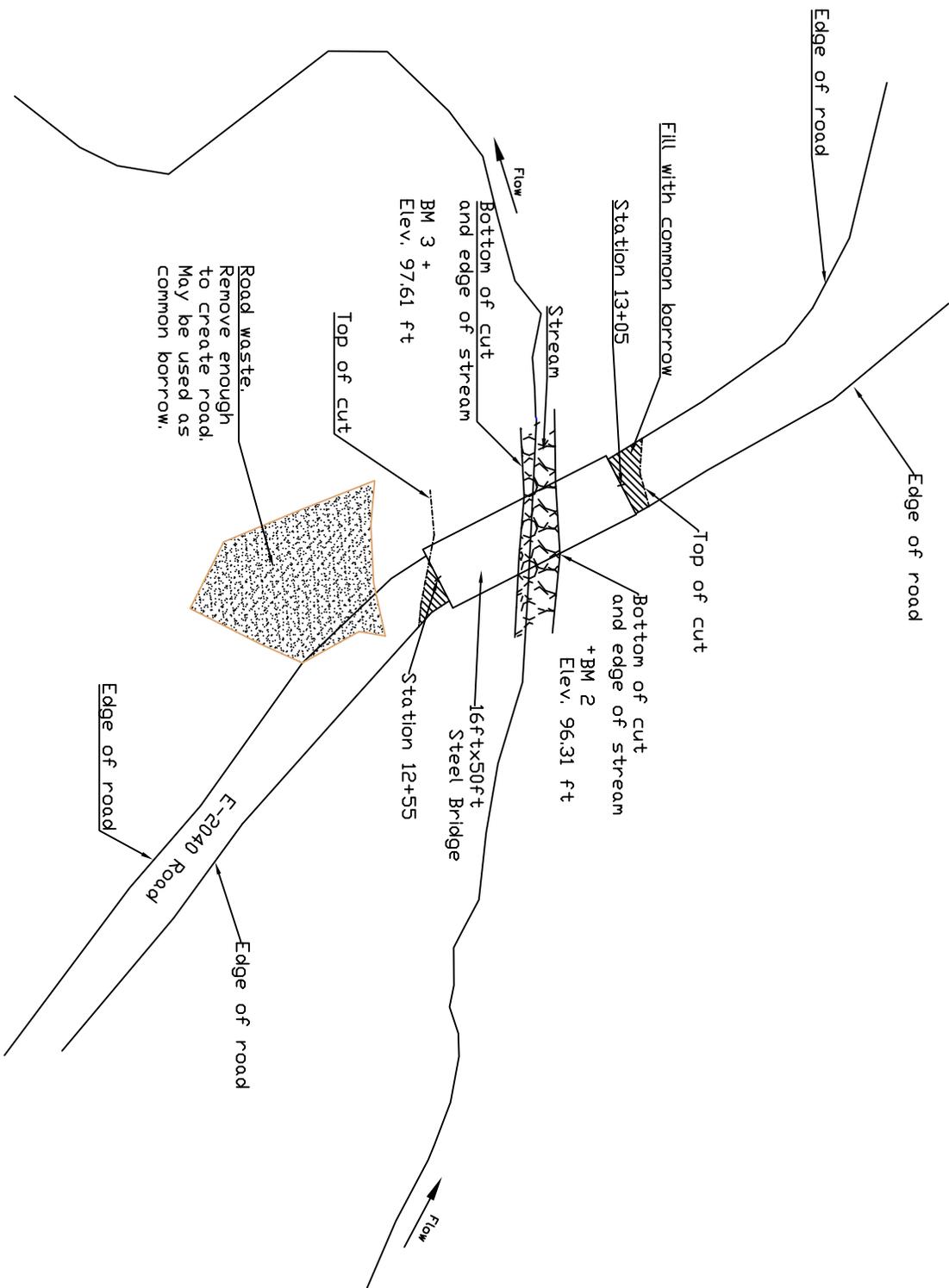
LEGEND

| | |
|---|--|
| Existing Pit Boundary | |
| Existing Road | |
| Oversize Shot Rock | |
| Shot Rock | |
| Existing Stockpiles to be used by Board Of Feet TBS | |
| Quarry Face | |

NOT TO SCALE

BRIDGE DETAIL

Page 1 of 2



Date: 1/12/16
 Drawn by: JDB

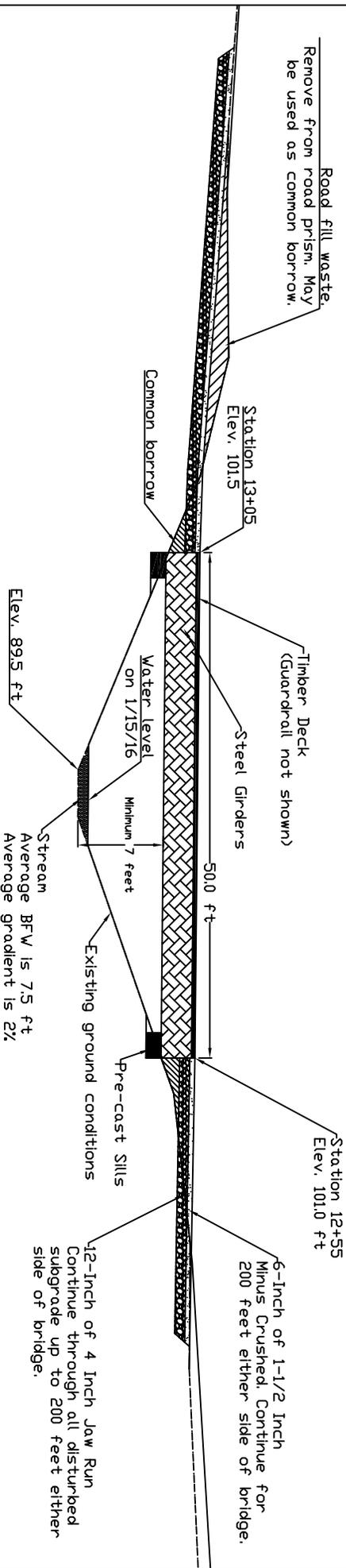


WASHINGTON STATE DEPARTMENT OF
Natural Resources

Bridge Plan View

BRIDGE DETAIL

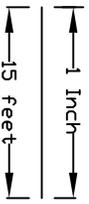
page 2 of 2



Note: Local elevations are assumed. Additional subgrade rock specified in roadplan to be placed as needed and as directed by the Contract Administrator.

RP Information

| From | To | AZ | HD | VD |
|------|---------------|------|-------|-------|
| BM 2 | Station 12+55 | 205° | 41.1' | +4.7' |
| BM 2 | Station 13+05 | 280° | 40.7' | +5.2' |
| BM 3 | Station 12+55 | 88° | 76.4' | +3.4' |
| BM 3 | Station 13+05 | 49° | 71.5' | +3.9' |



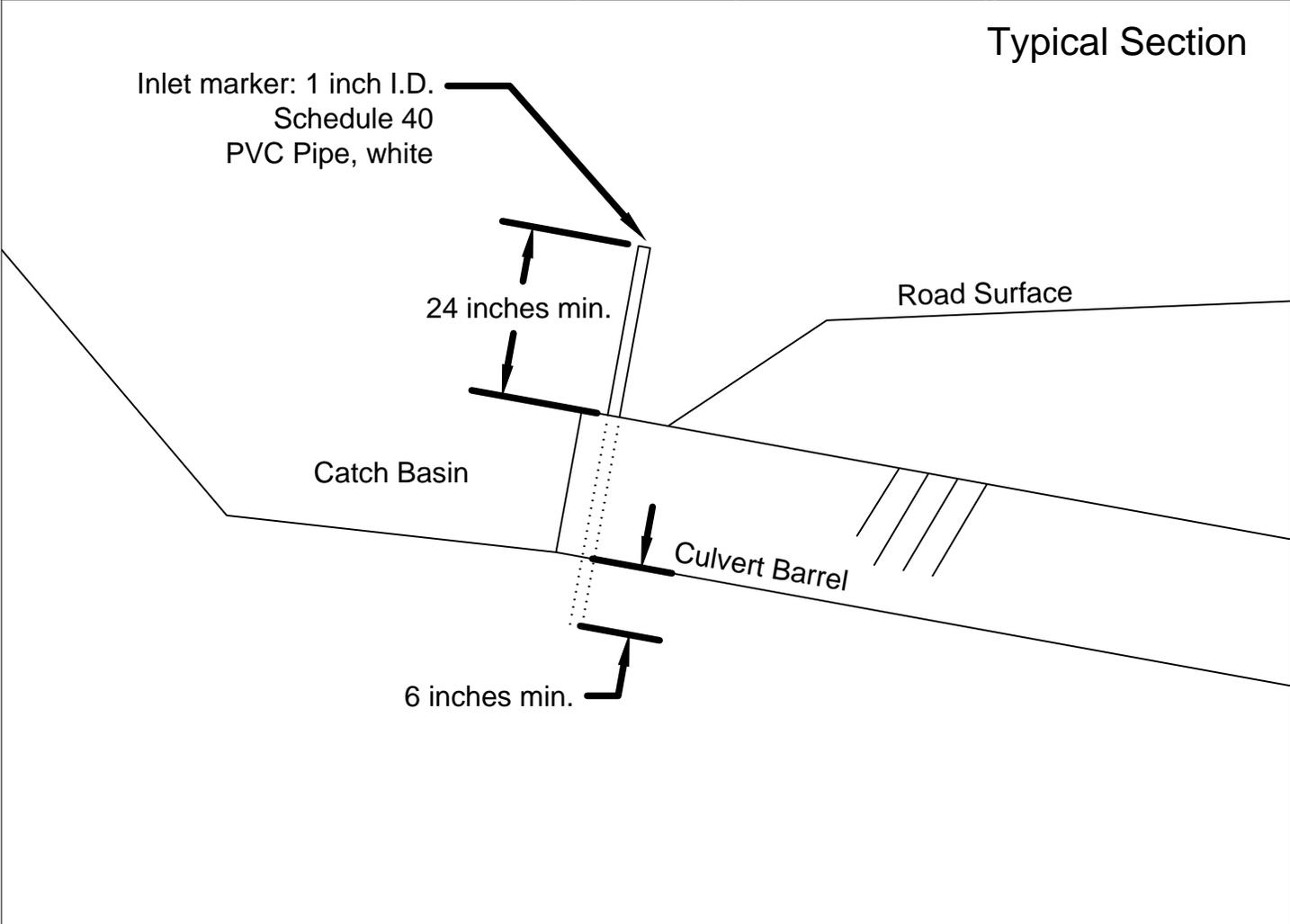
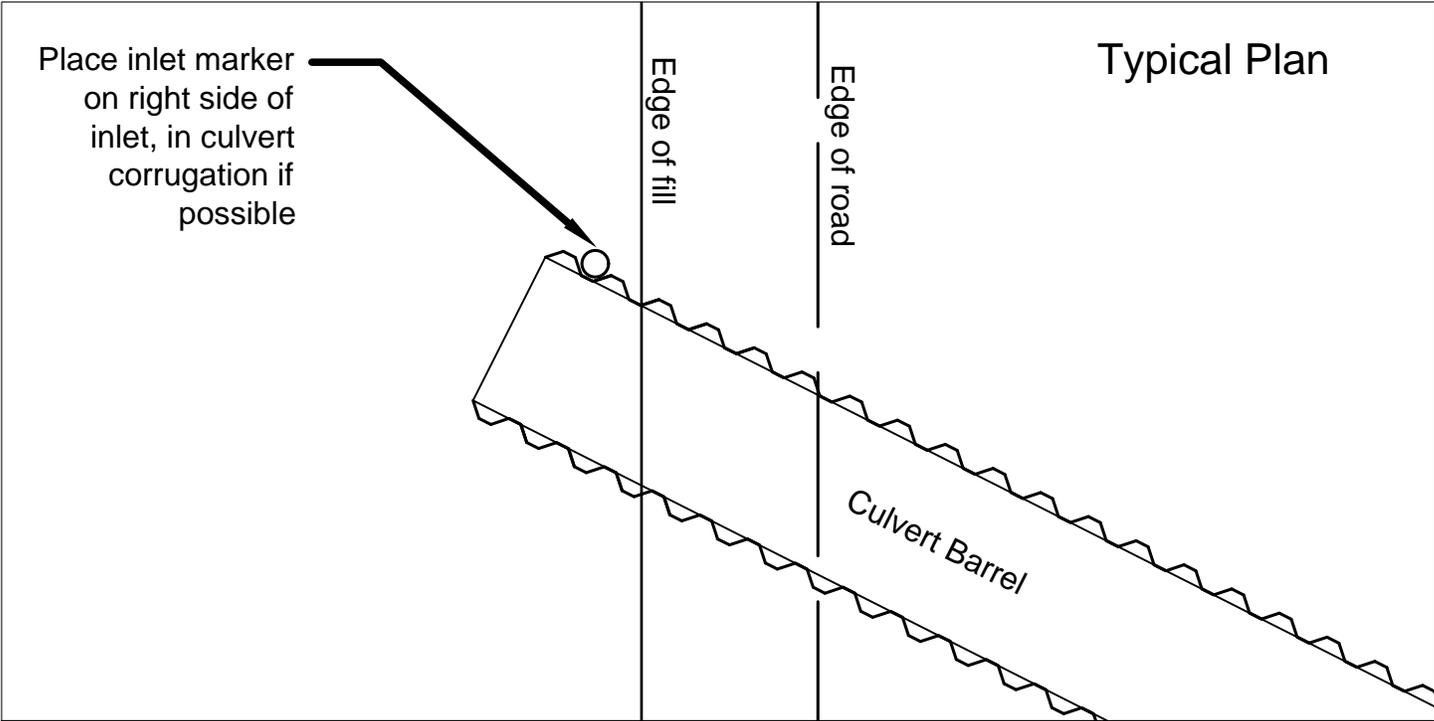
Date: 1/12/16
Drawn by: MDB



Bridge Profile
Looking Downstream

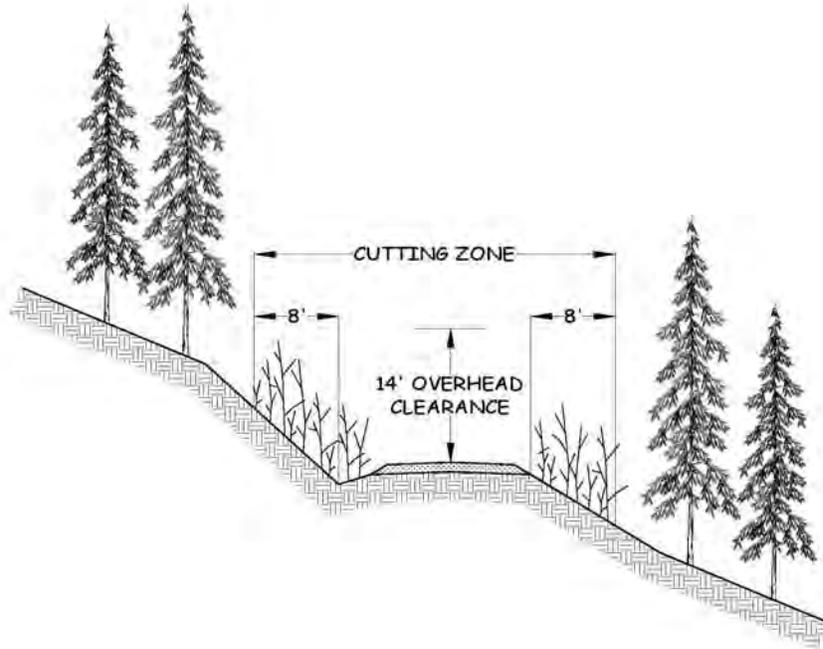
**WASHINGTON STATE DEPARTMENT OF
Natural Resources**

see page 1



CULVERT MARKER DETAIL
(Inlet shown)

ROAD BRUSHING DETAIL



SPECIFICATIONS

Brush shall be cut on the road surface and 8 ft. back from the back of road ditch and outside edge of running surface.

On the inside of switchbacks and tight curves, brush shall be cut back 16 ft. for visibility.

On truck turnouts or turnarounds, brush shall be cut 8 ft. back from outside edge.

Brush shall be cut to provide an overhead clearance of 14 ft. above the road running surface.

Brush shall be cut to within 6 in. of the ground.

Slash shall be removed from cut slopes above the road and scattered on embankment slopes.

Ditches shall be cleared of woody debris.

Culvert inlets and outlets shall be cleaned a minimum distance of two pipe diameters away.

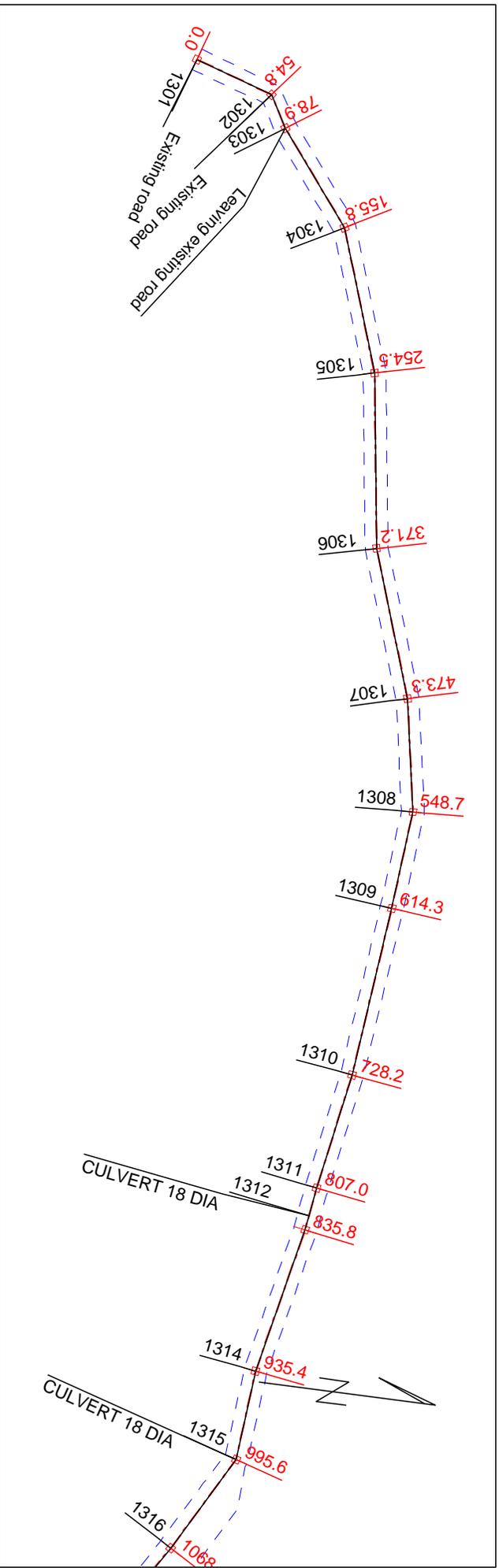
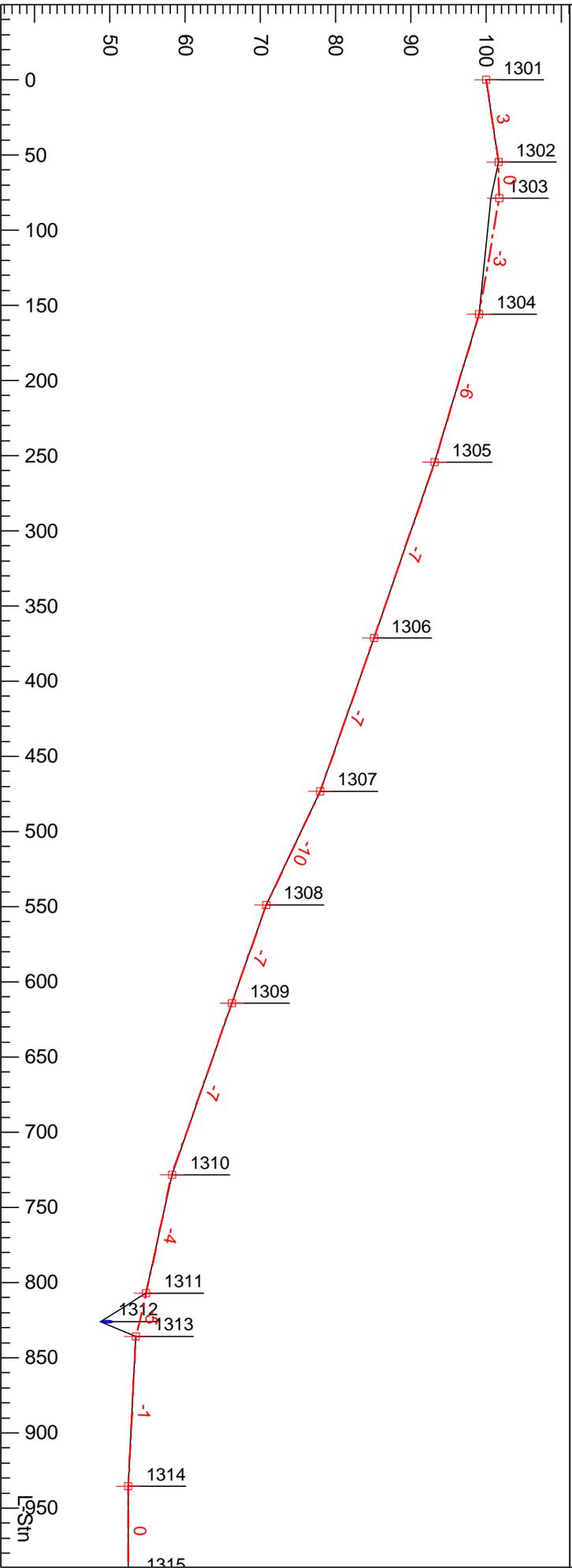
Tribute Timber Sale
 E-2048 road January 12, 2016
 Contract #: 30-093218



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: M. Bell
 16/01/18
 Page 1 of 2



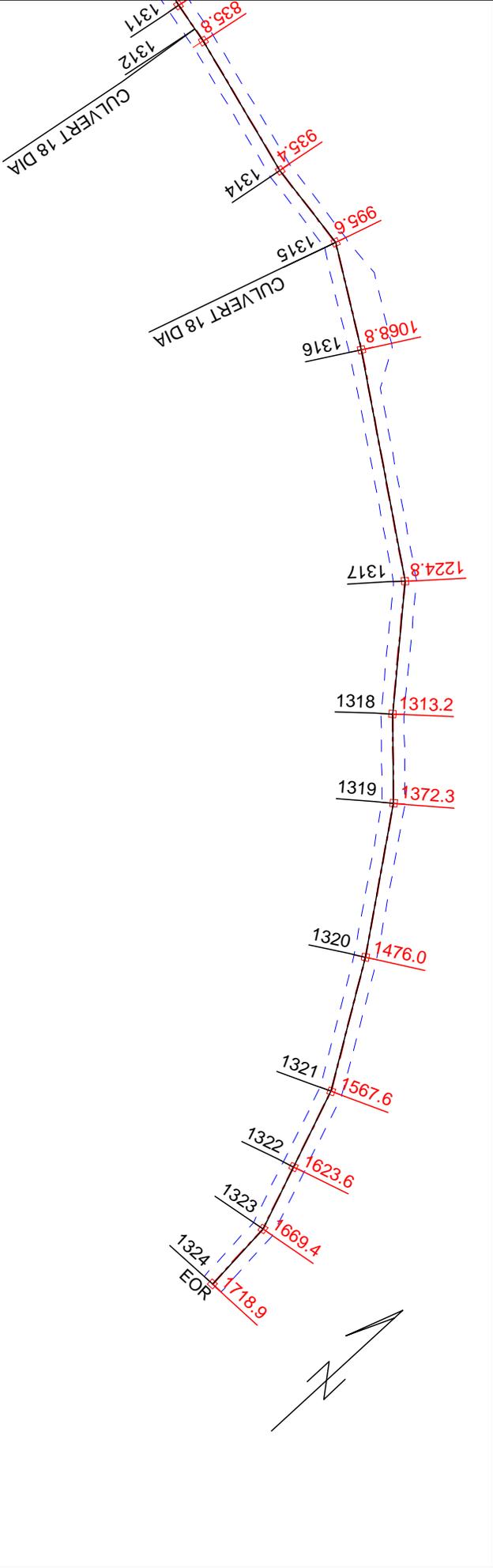
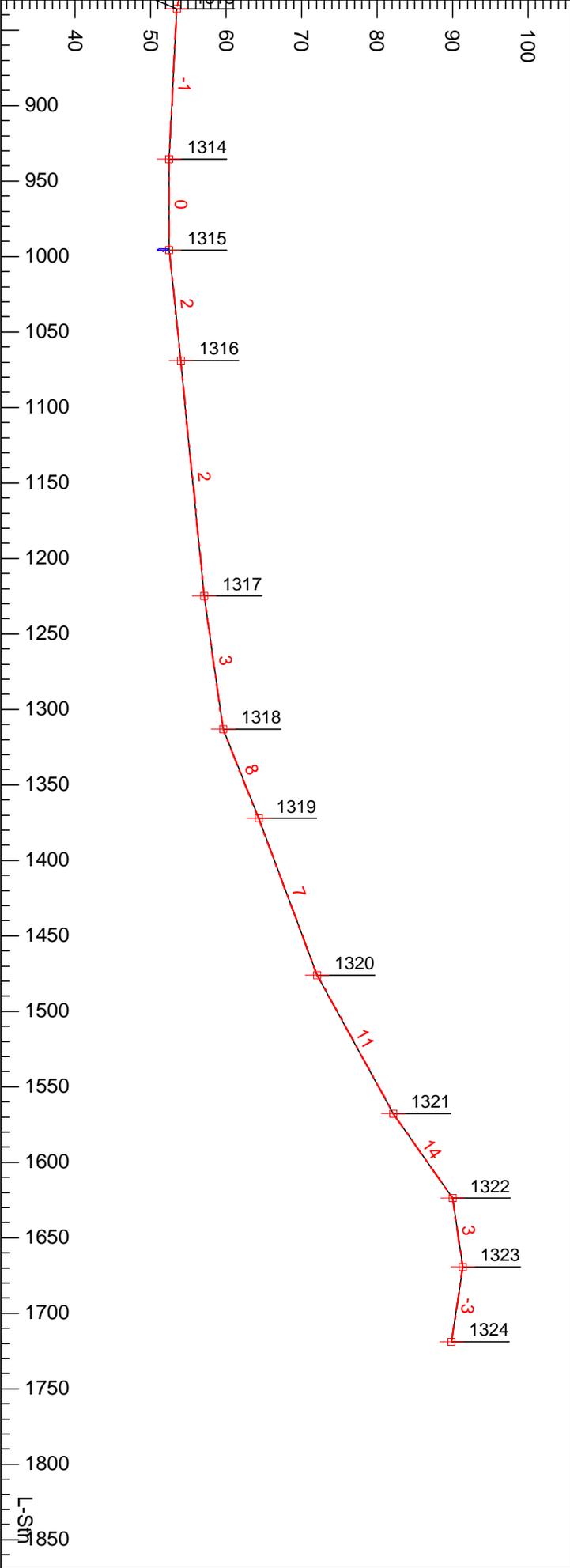
Tribute Timber Sale
 E-2048 road January 12, 2016
 Contract #: 30-093218

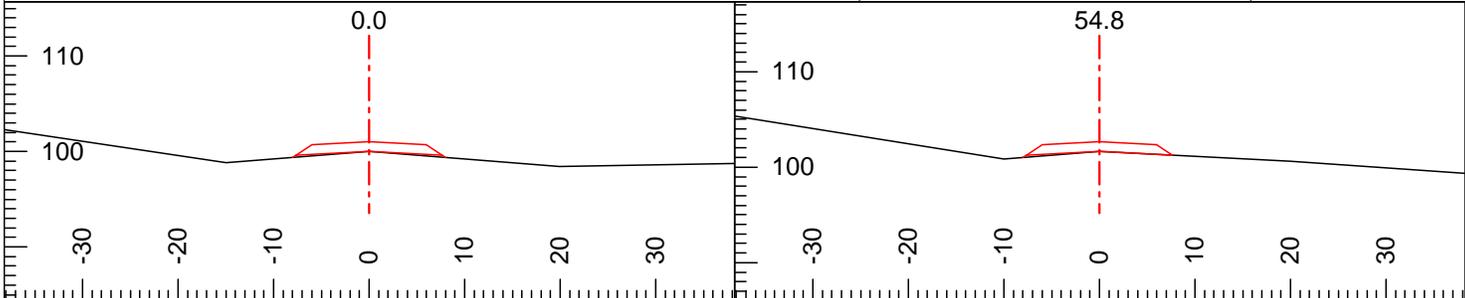


Washington State Department of
 Natural Resources
 South Puget Sound Region

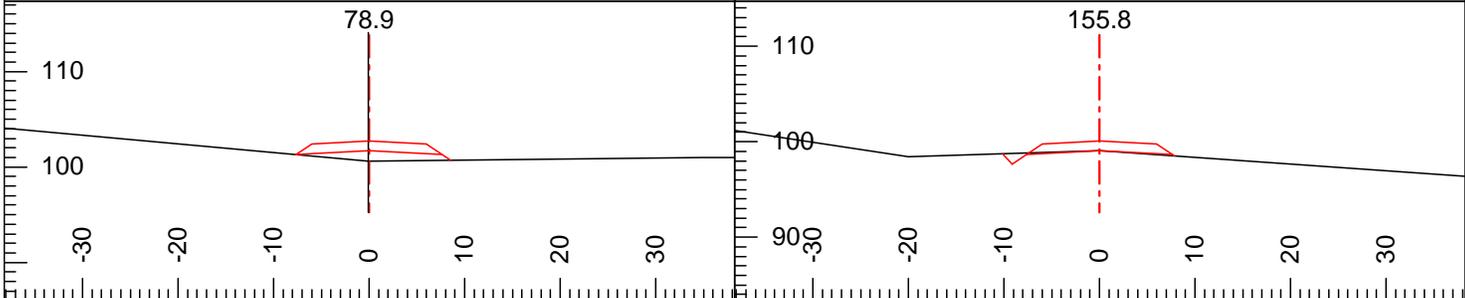
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 Profile Vert Scale 1:240
 Profile Horz Scale 1:1200

Engineer: M. Bell
 16/01/18
 Page 2 of 2

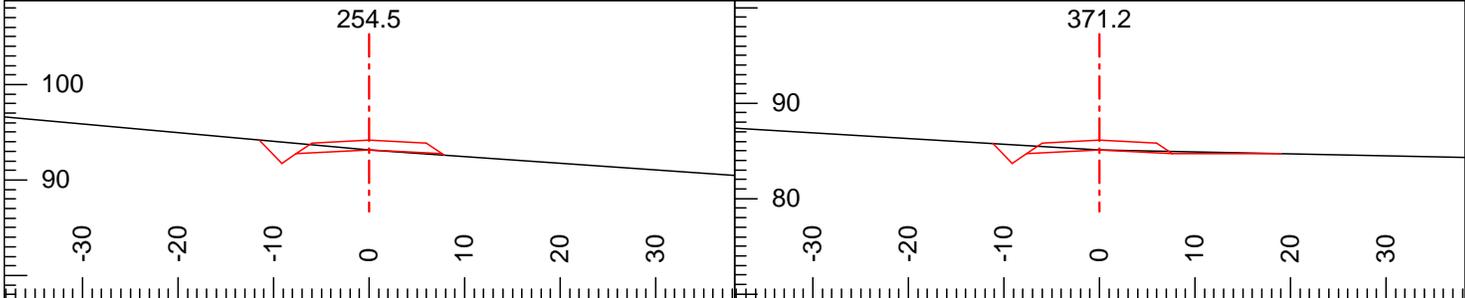




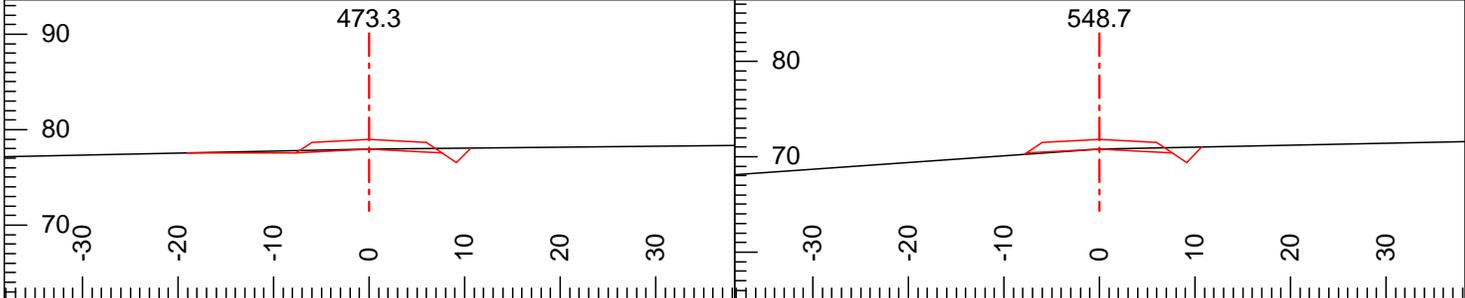
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|-----------|------|------------|-----|------------|-------|
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| Grd.Nxt.: | 3 | H. Offset: | 0.0 | Rd. Wd. L: | 7.6 |
| Grd.Lst: | n/a | Cut Dp: | 0.0 | Rd. Wd. R: | 7.6 |



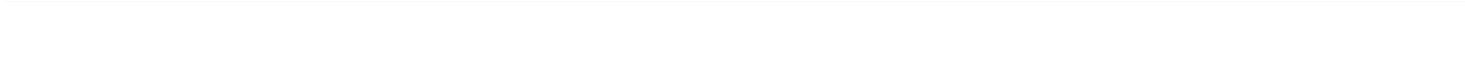
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| Grd.Lst: | 3 | Cut Dp: | 0.0 | Rd. Wd. R: | 7.6 |



| | | | | | |
|-----------|------|------------|------|------------|-------|
| L-Stn: | 78.9 | Ssl: (Av) | 9 | CL Elev: | 101.7 |
| Index: | 1303 | Ssr: (Av) | 1 | Rd. Wd.: | 15.2 |
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| Grd.Lst: | 0 | Cut Dp: | -1.1 | Rd. Wd. R: | 7.6 |



| | | | | | |
|-----------|-------|------------|-----|------------|------|
| L-Stn: | 155.8 | Ssl: (Av) | -3 | CL Elev: | 99.1 |
| Index: | 1304 | Ssr: (Av) | -7 | Rd. Wd.: | 15.2 |
| Grd.Nxt.: | -6 | H. Offset: | 0.0 | Rd. Wd. L: | 7.6 |
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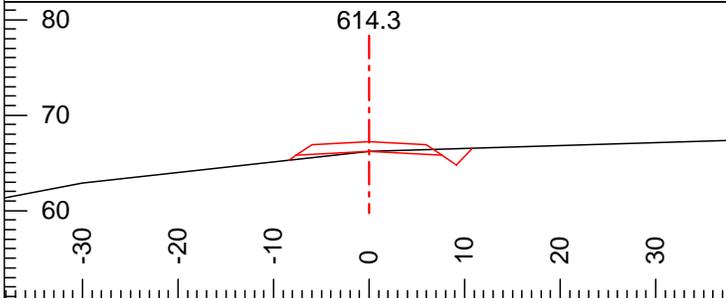


| | | | | | |
|-----------|-------|------------|-----|------------|------|
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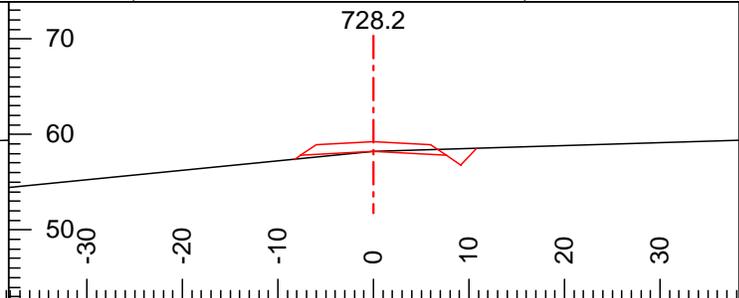
| | | | | | |
|-----------|-------|------------|-----|------------|------|
| L-Stn: | 371.2 | Ssl: (Av) | 6 | CL Elev: | 85.1 |
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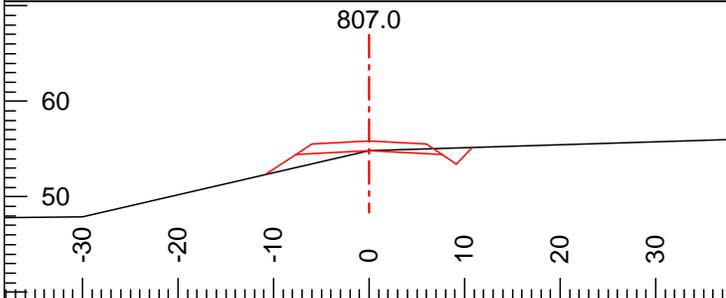
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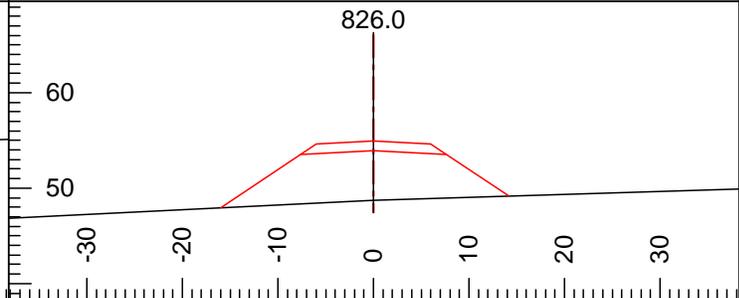
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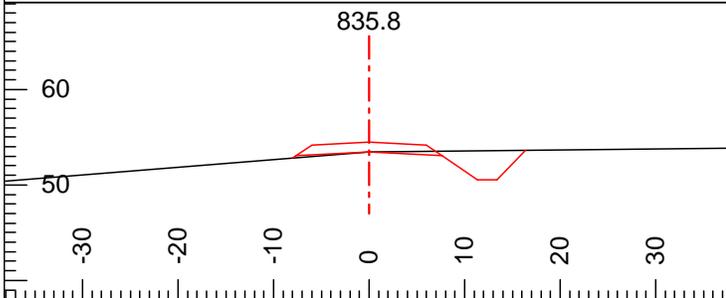
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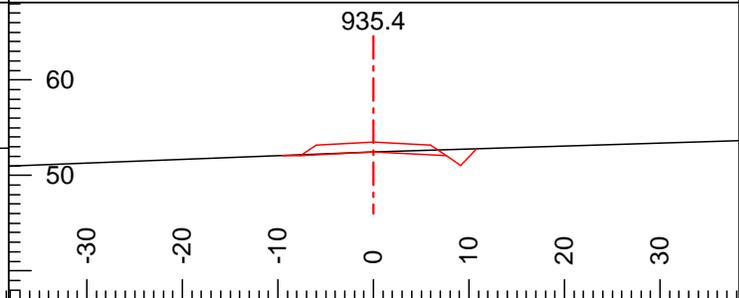
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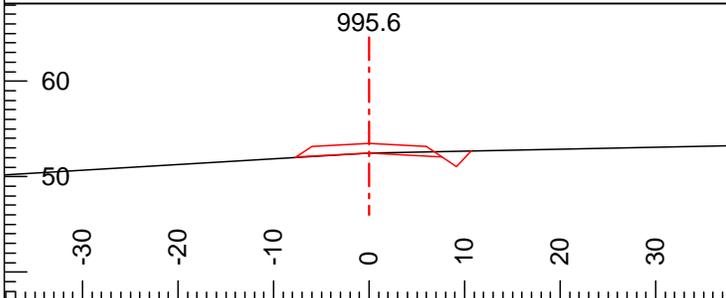
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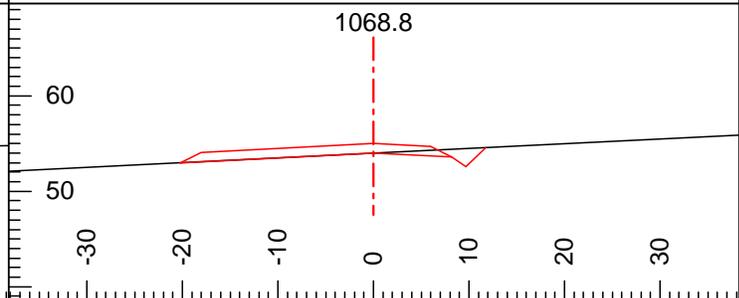
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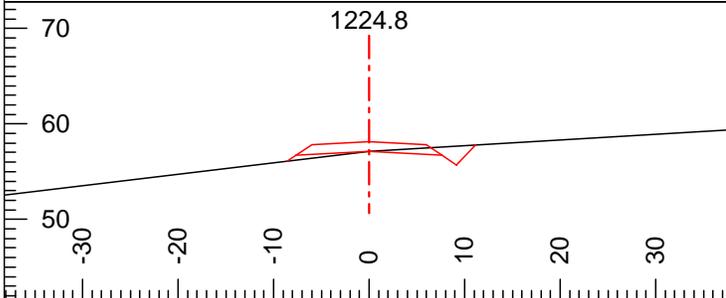
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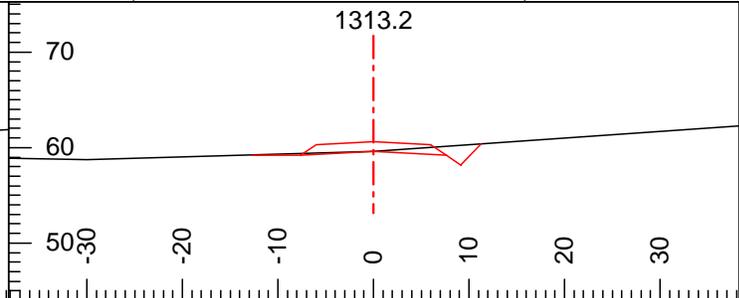
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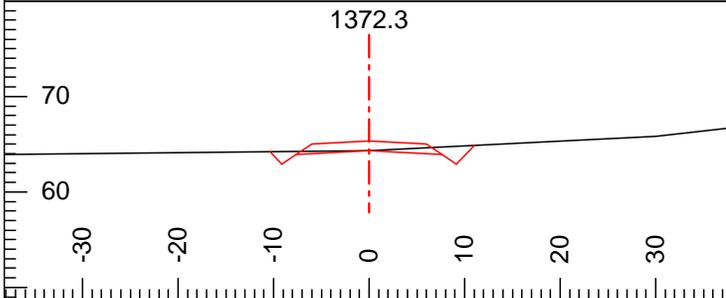
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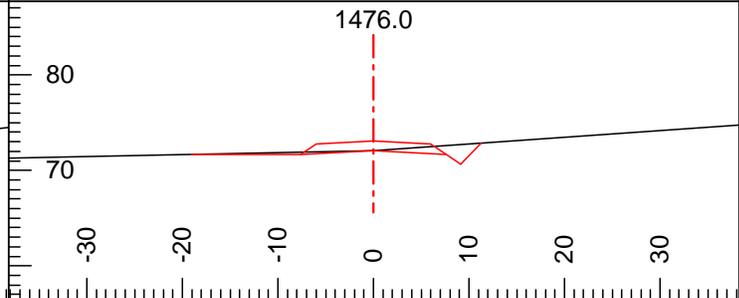
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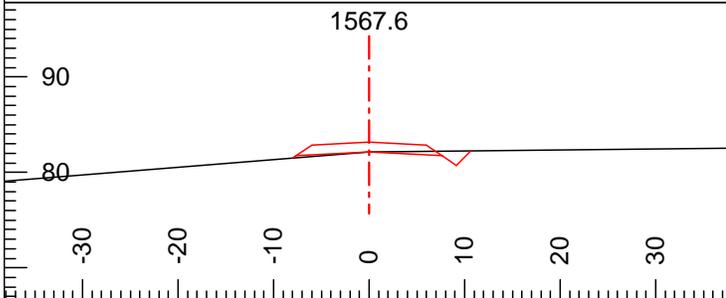
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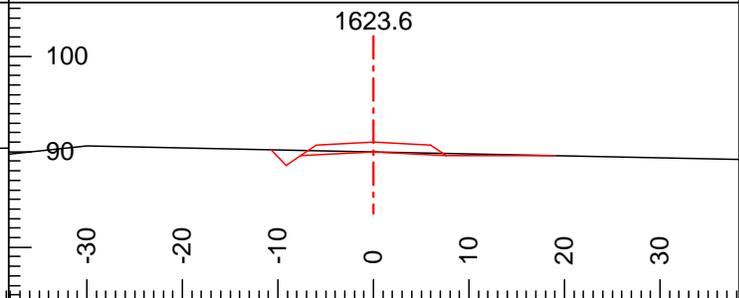
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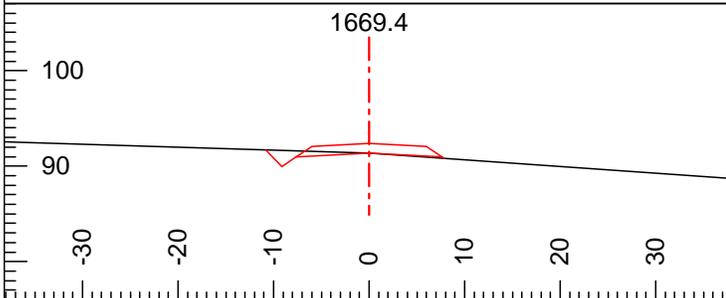
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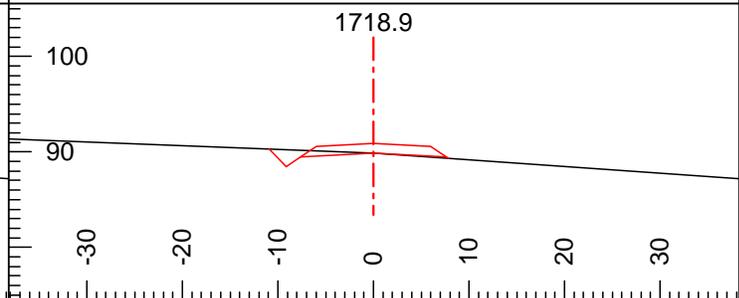
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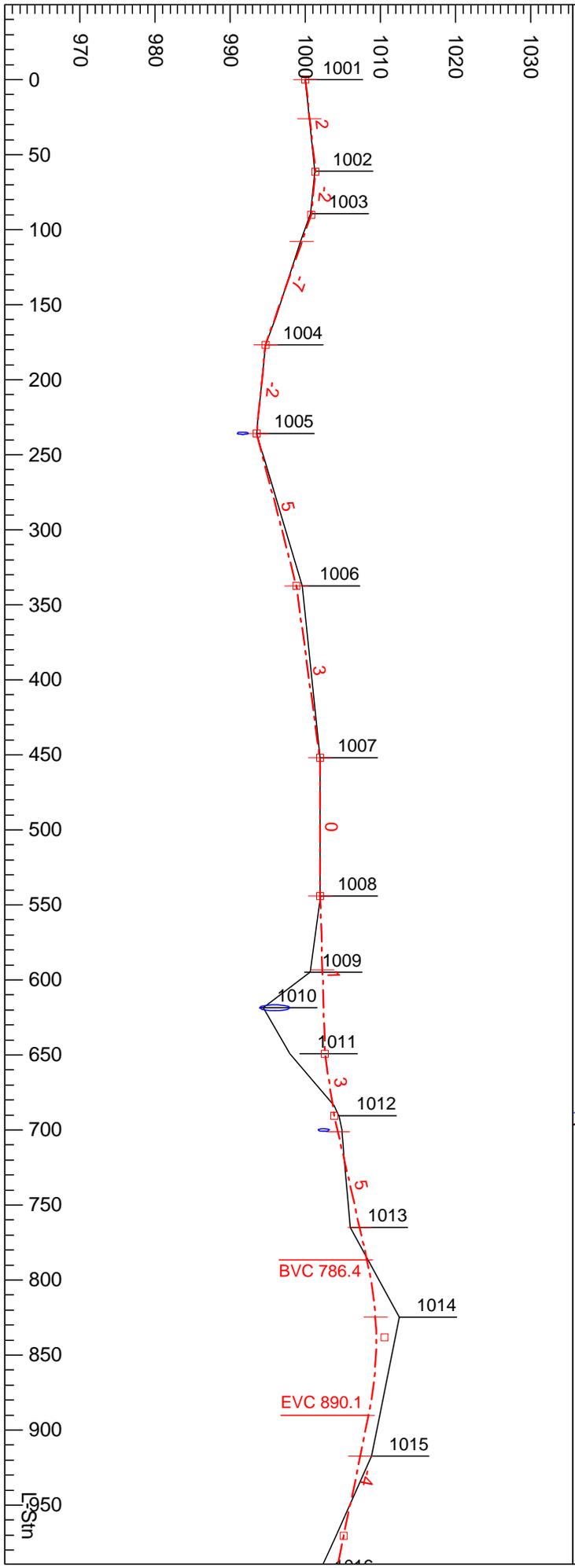
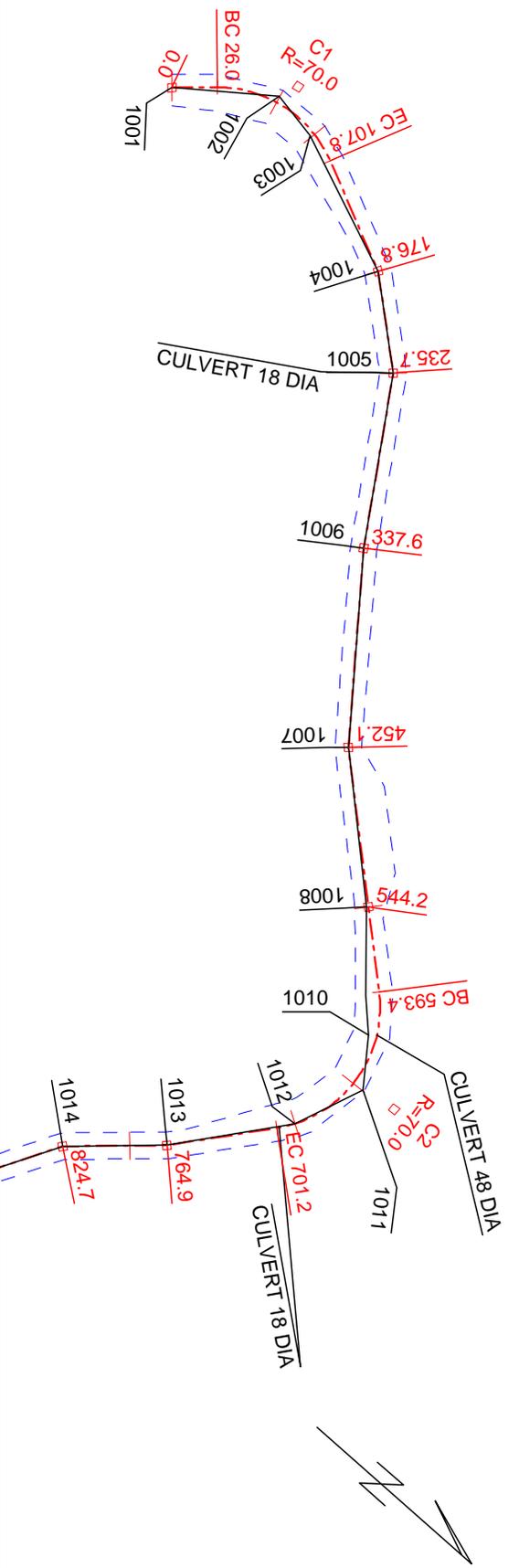
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|-----------|--------|------------|-----|------------|------|
| L-Stn: | 1669.4 | Ssl: (Av) | 3 | CL Elev: | 91.4 |
| Index: | 1323 | Ssr: (Av) | -7 | Rd. Wd.: | 15.2 |
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|-----------|--------|------------|-----|------------|------|
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Tribute Timber Sale
 E-3000c road January 12, 2016
 Contract #: 30-093218



Washington State Department of
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Plan Scale 1:1200
 Profile Vert Scale 1:240
 Profile Horz Scale 1:1200

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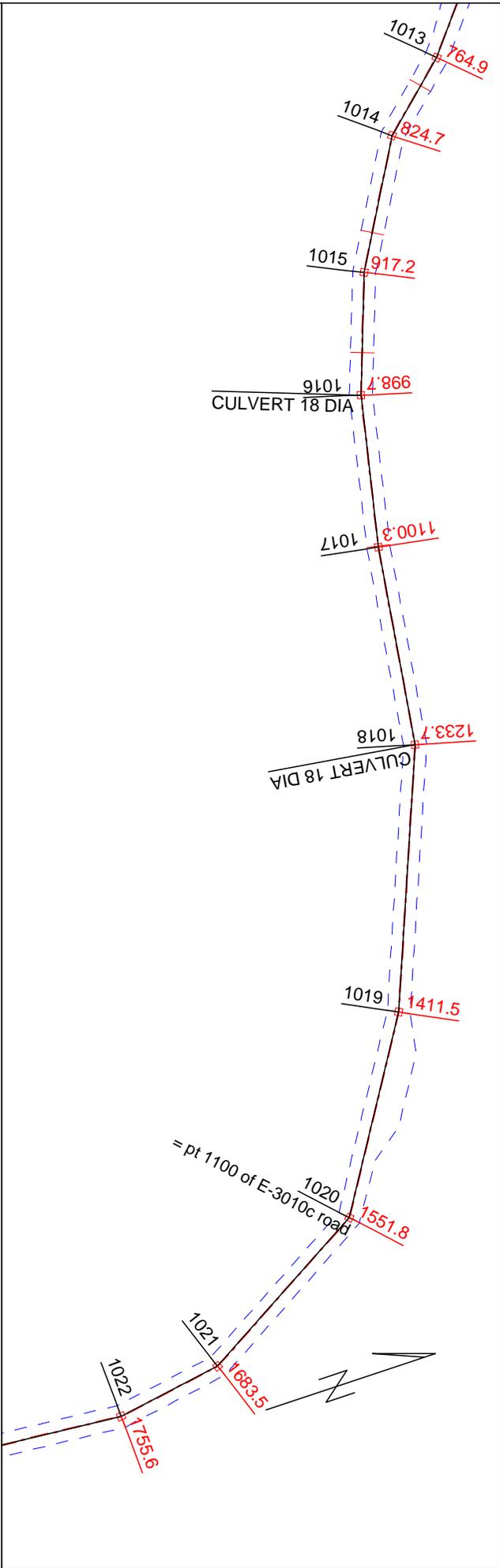
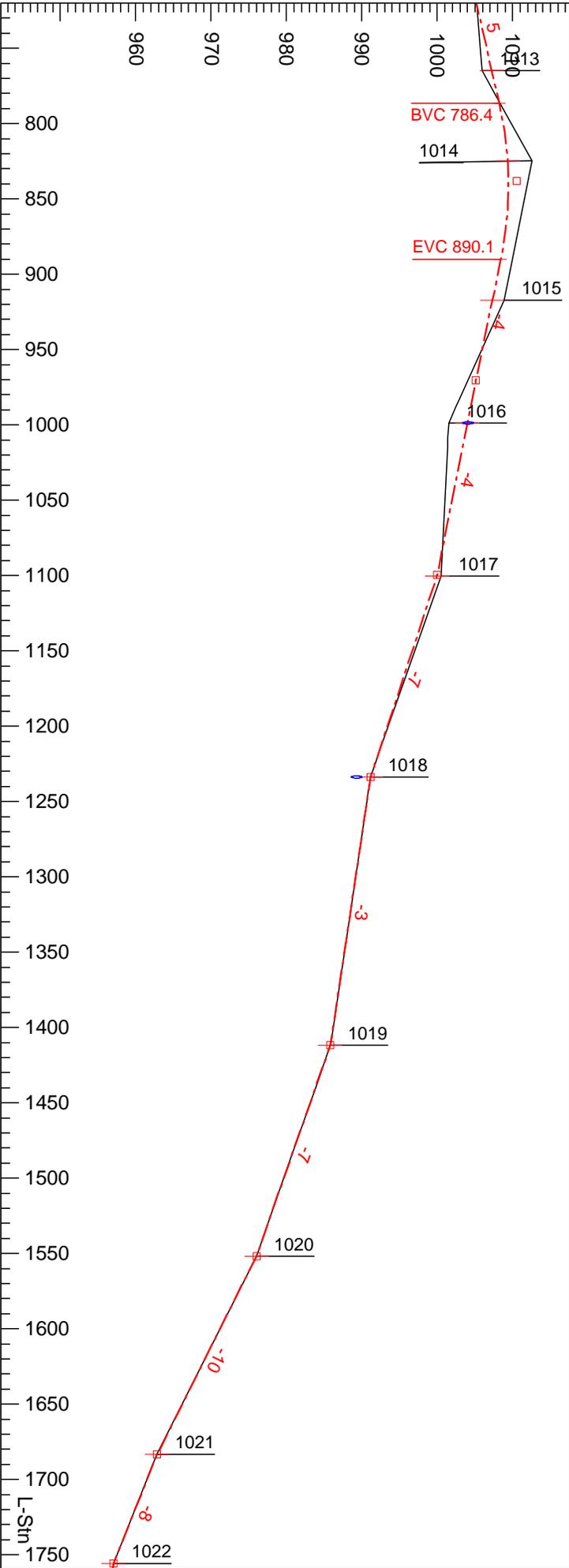
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 Contract #: 30-093218



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Plan Scale 1:1200
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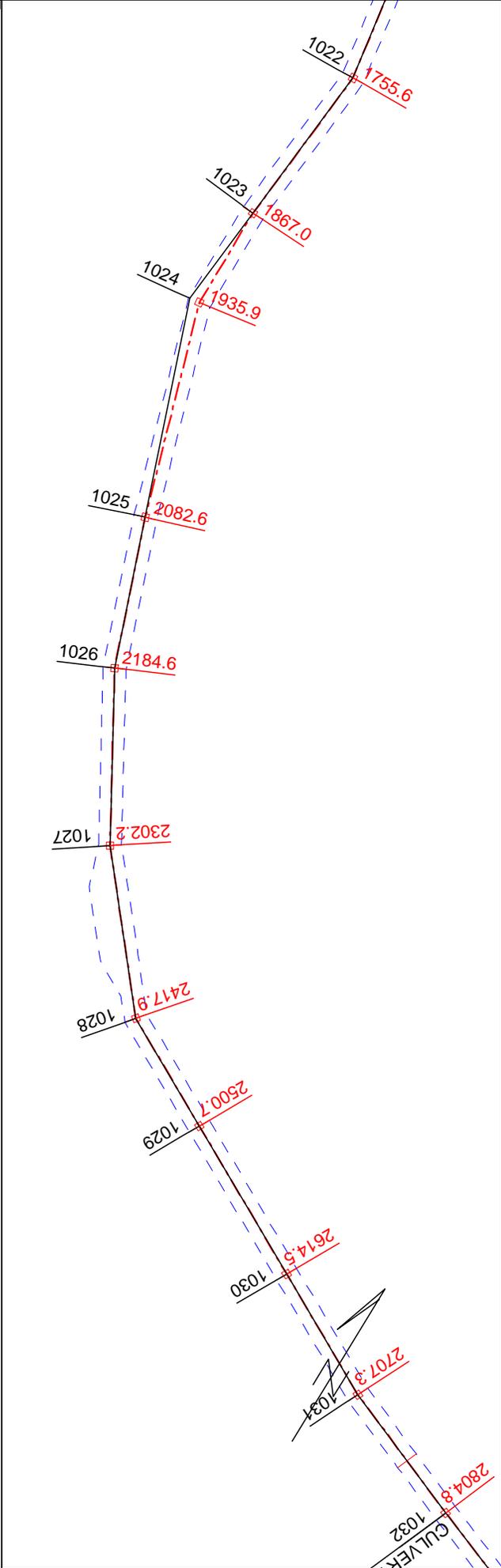
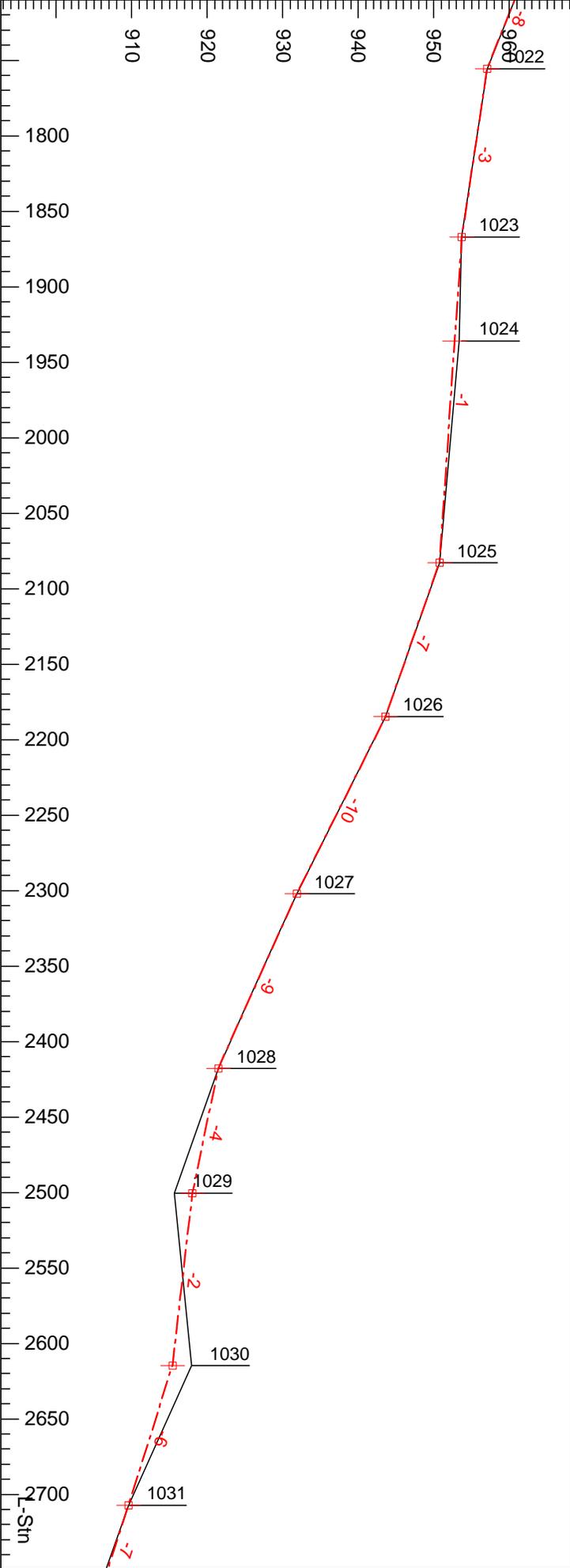
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Plan Scale 1:1200
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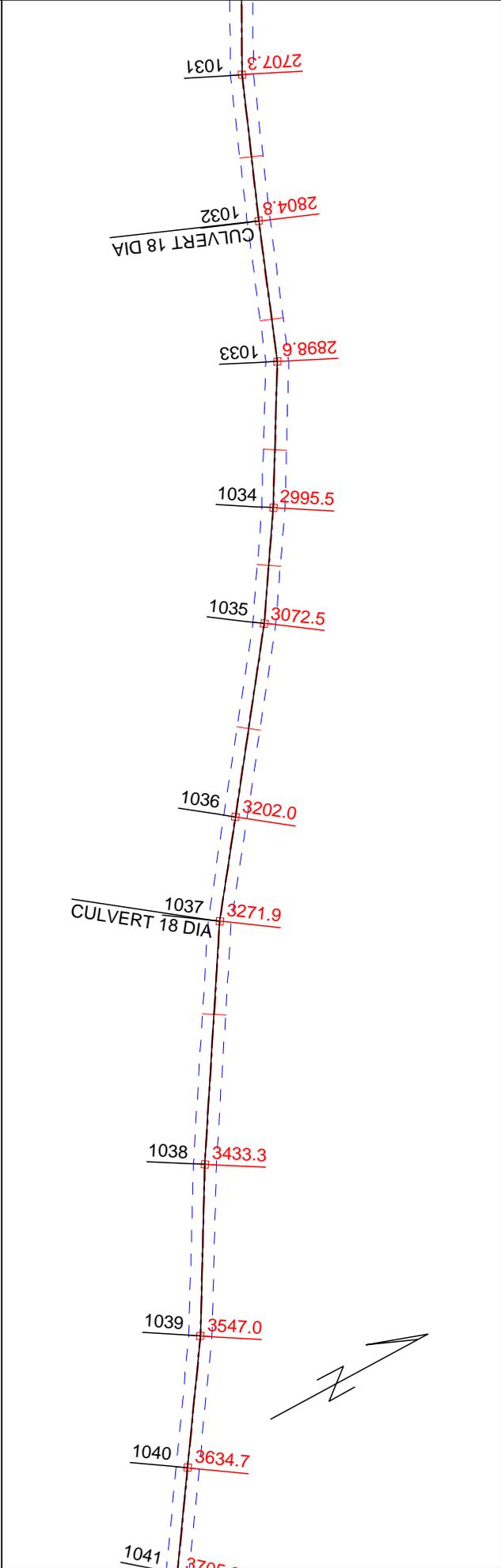
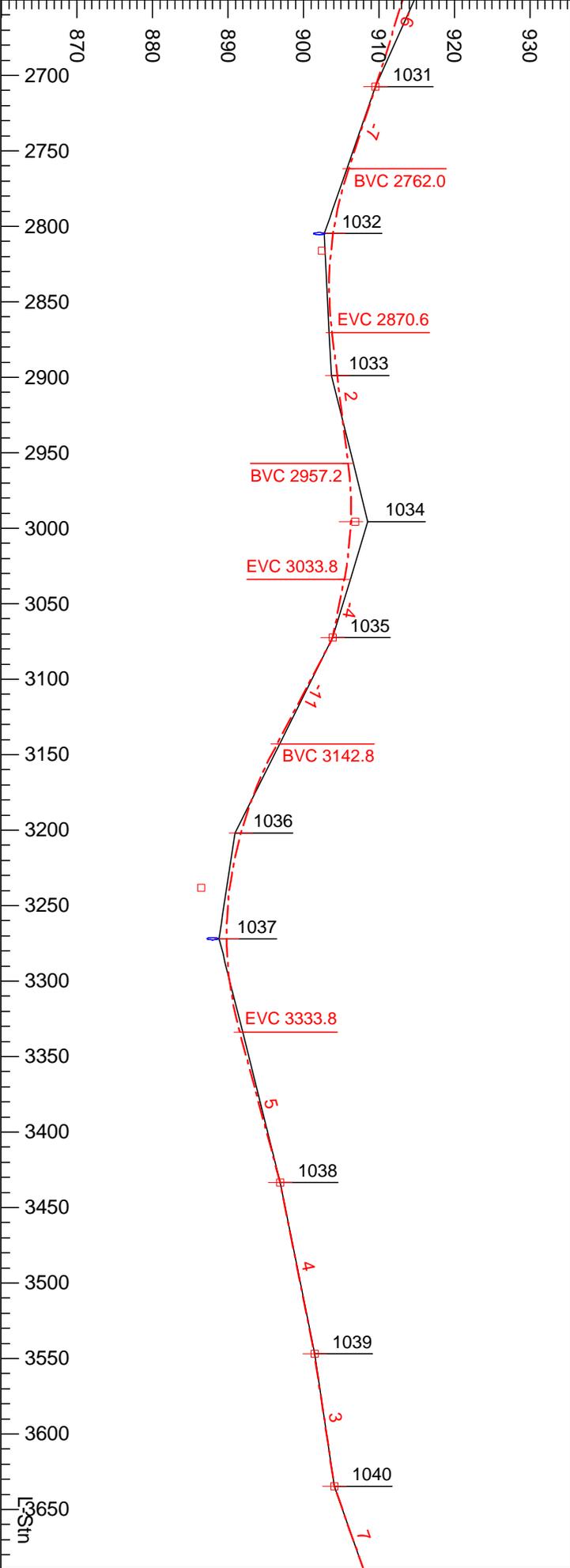
Tribute Timber Sale
 E-3000c road January 12, 2016
 Contract #: 30-093218



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Plan Scale 1:1200
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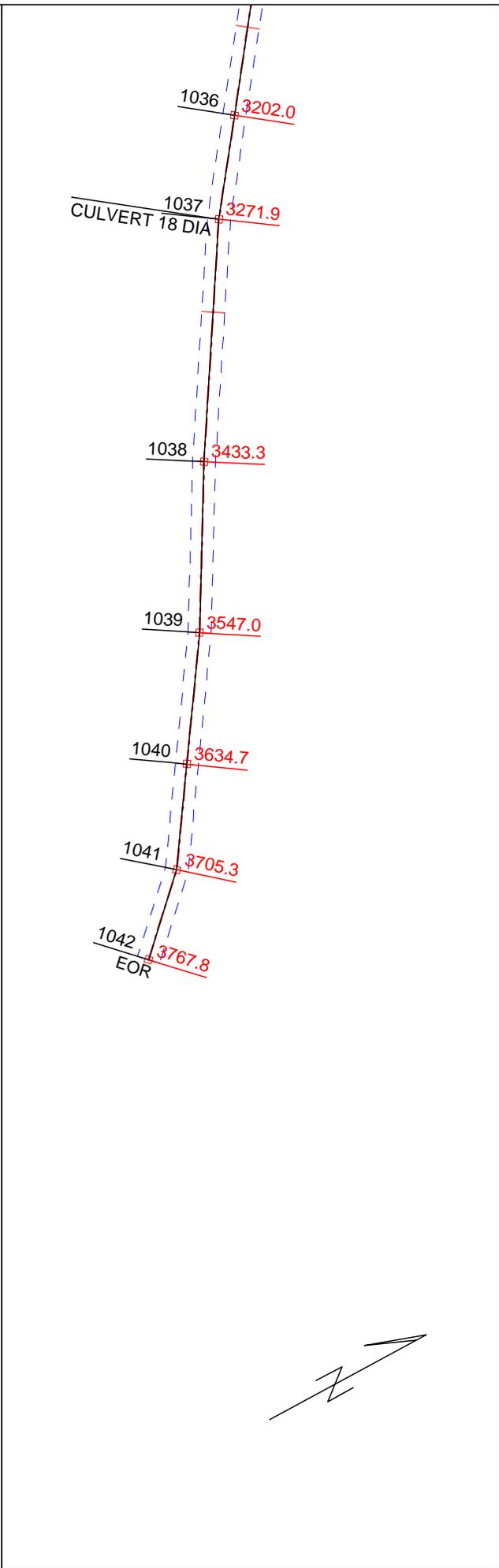
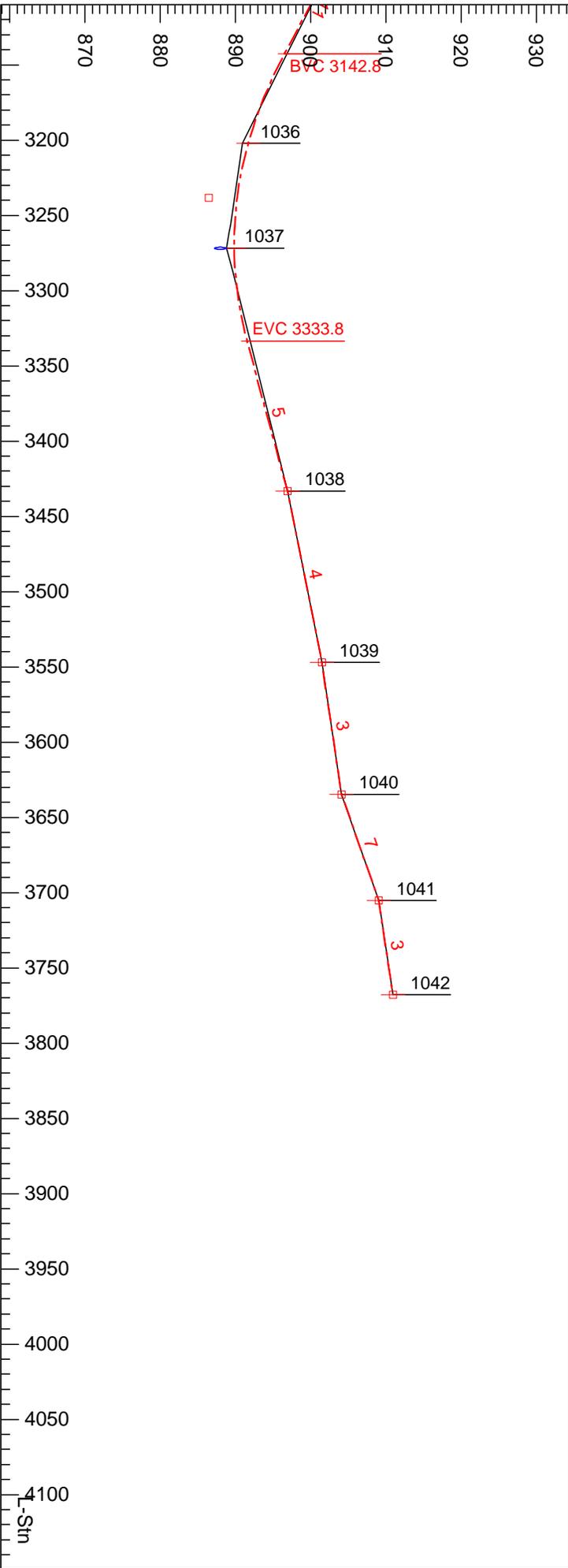
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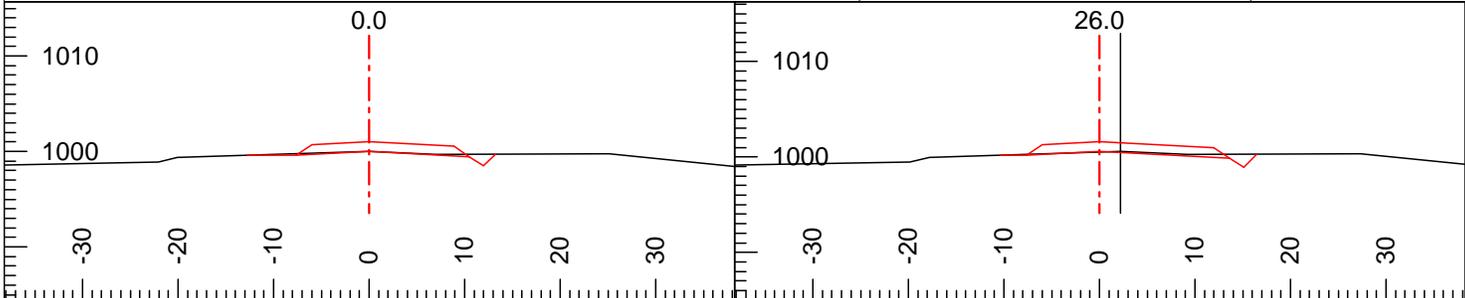


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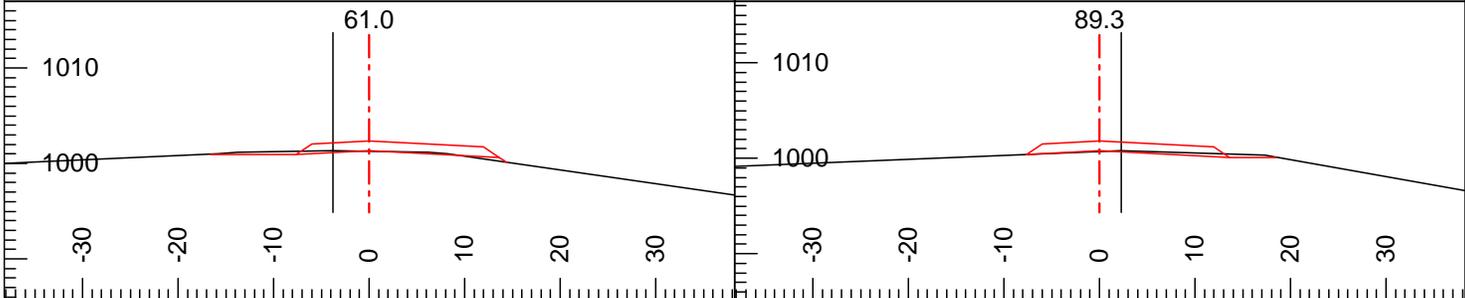
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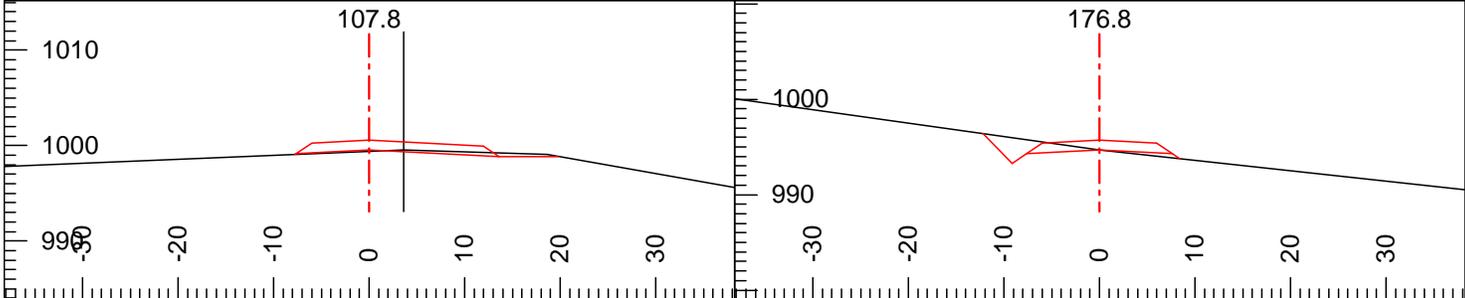




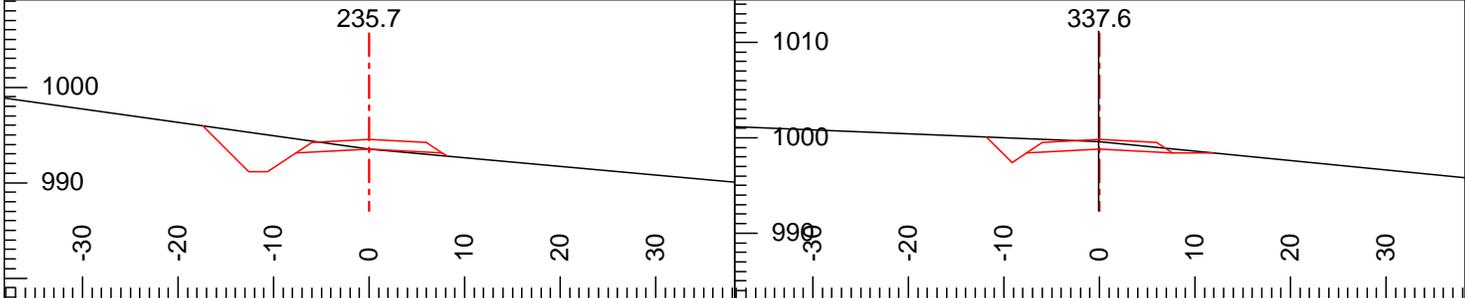
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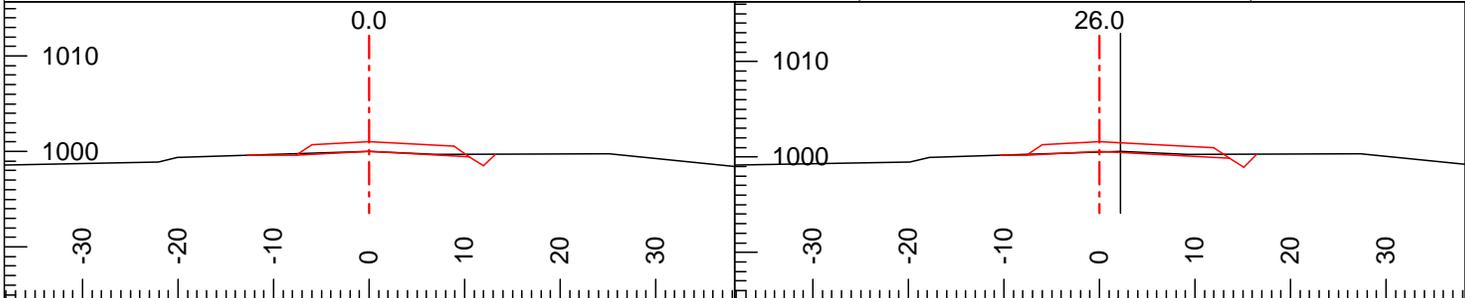
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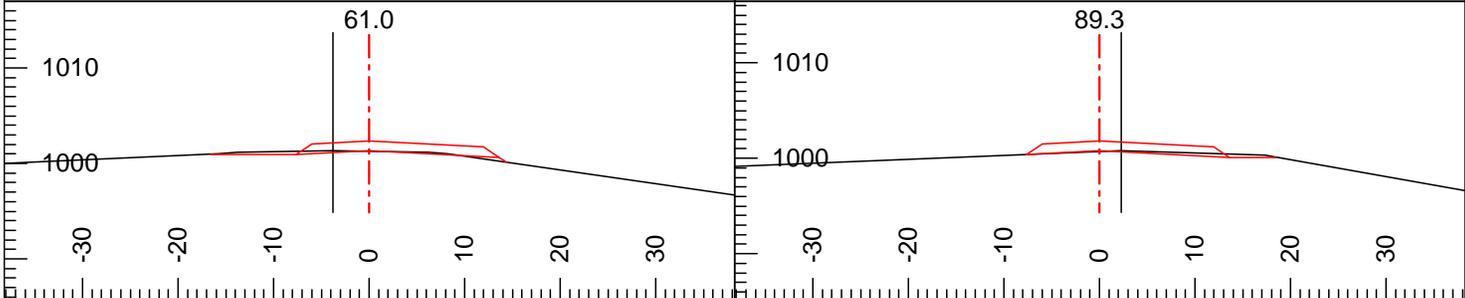
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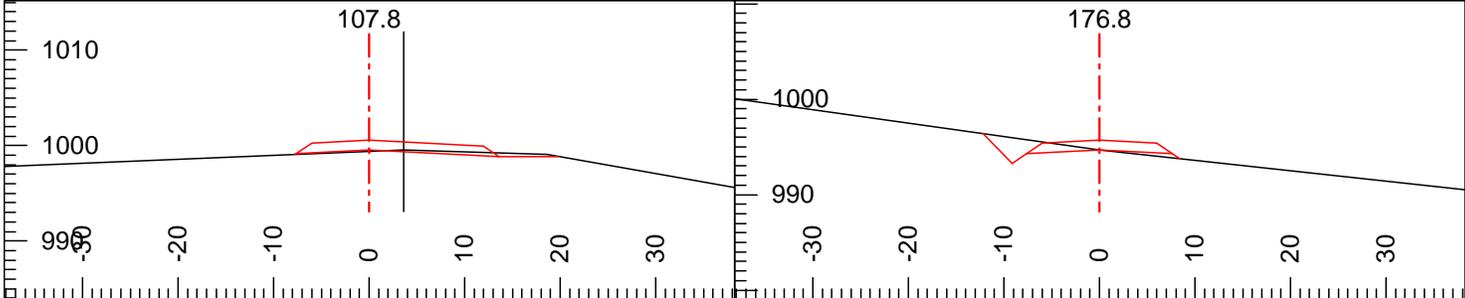
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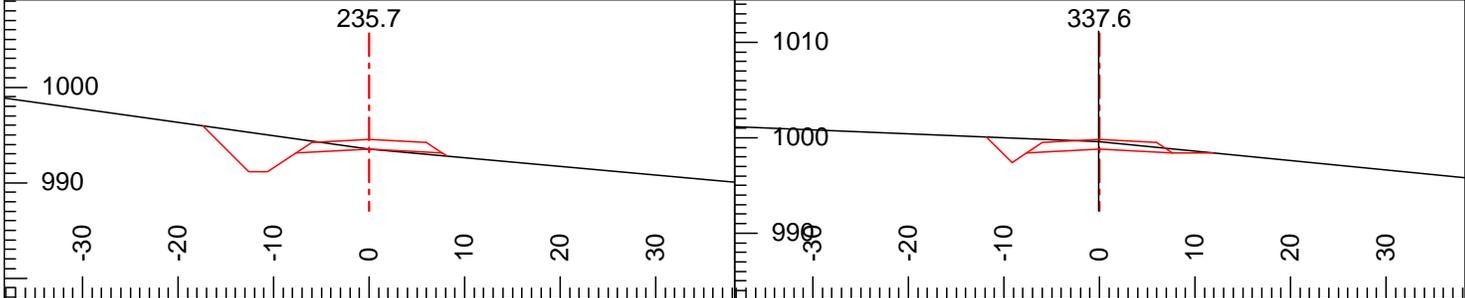
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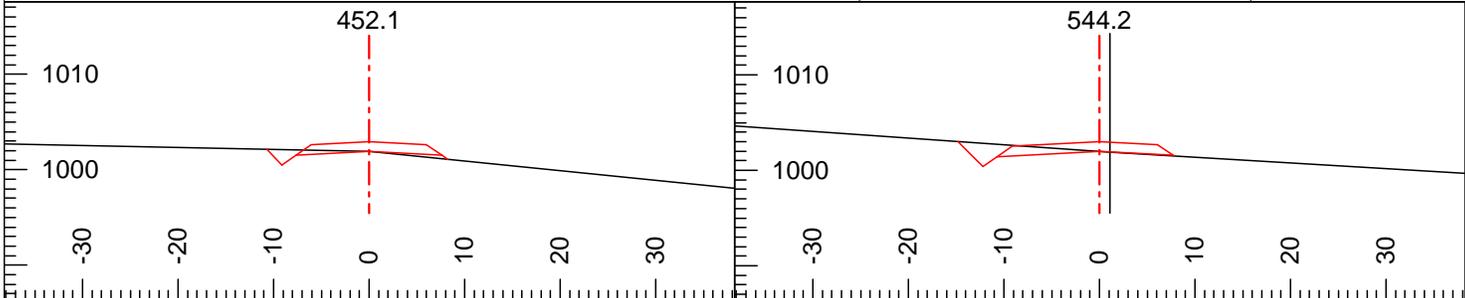
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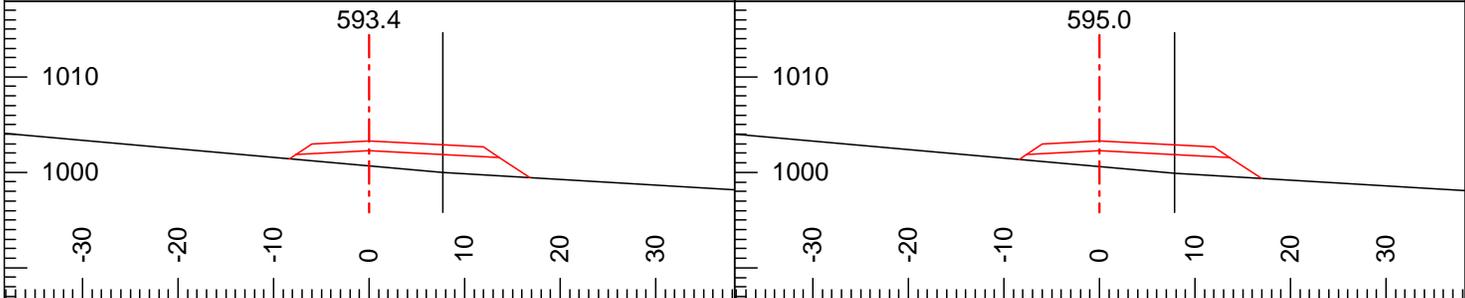
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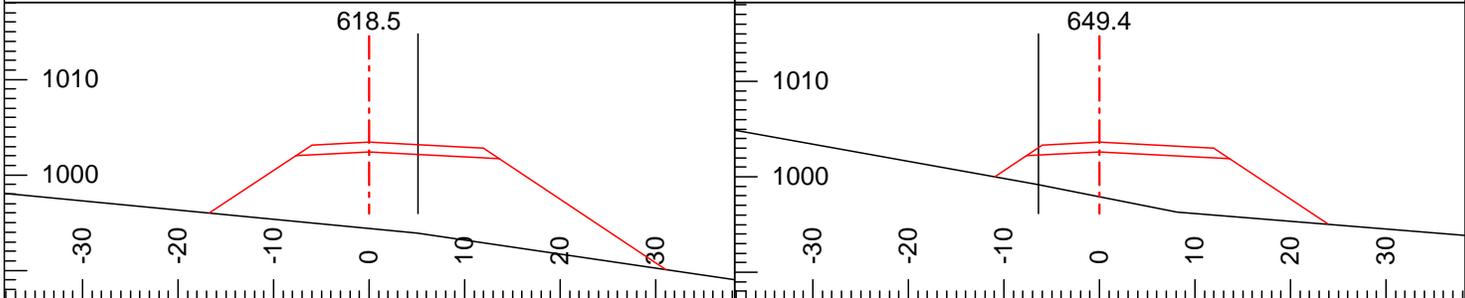
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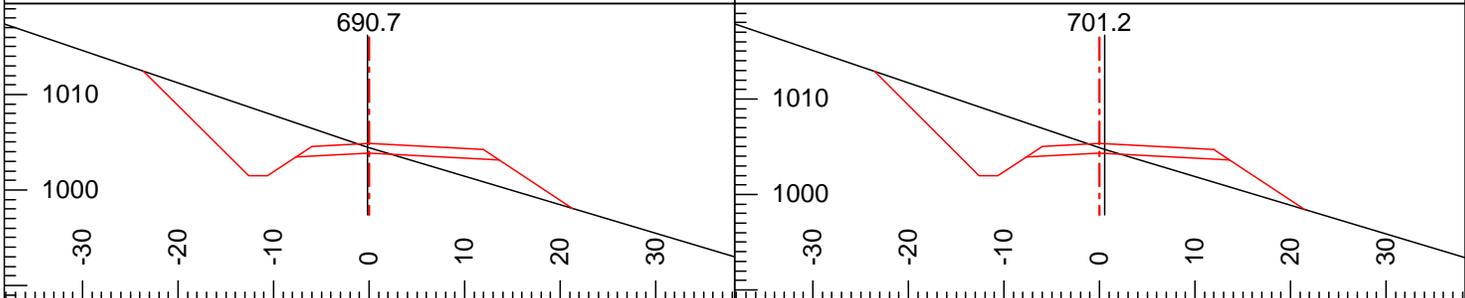
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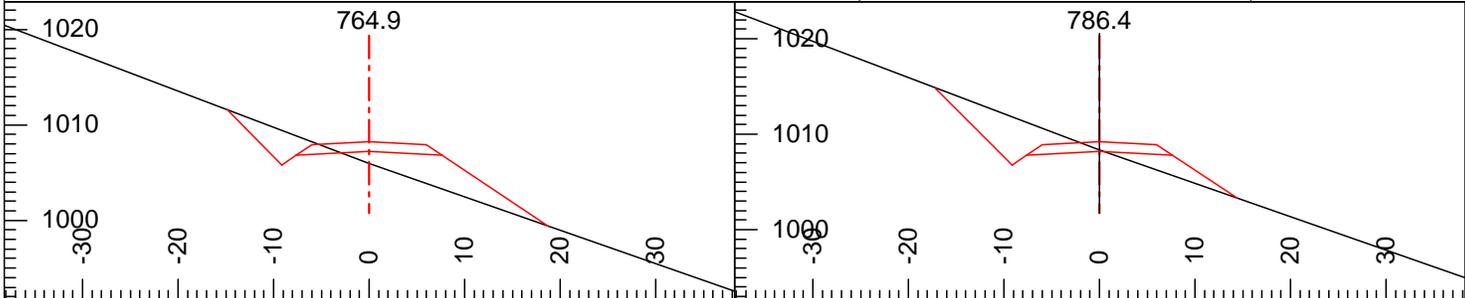
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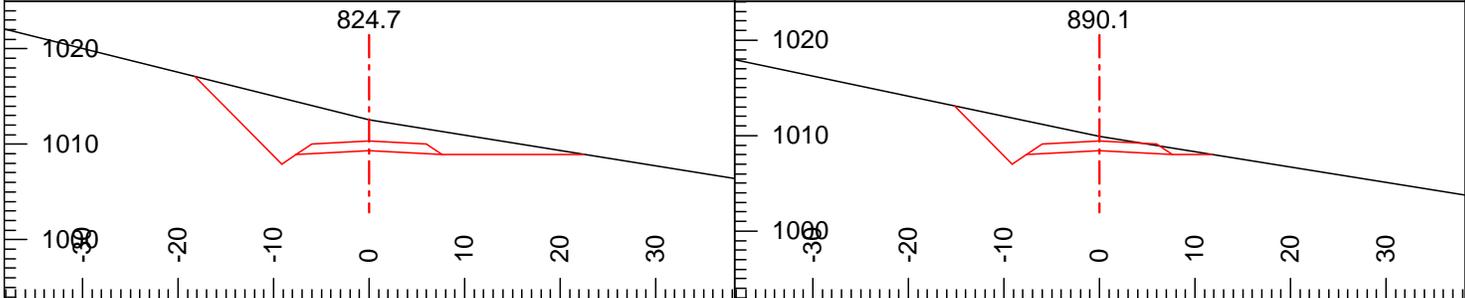
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| Index: | 1010 | Ssr: (Av) | -15 | Rd. Wd.: | 21.2 | Index: | 1011 | Ssr: (Av) | -20 | Rd. Wd.: | 21.2 |
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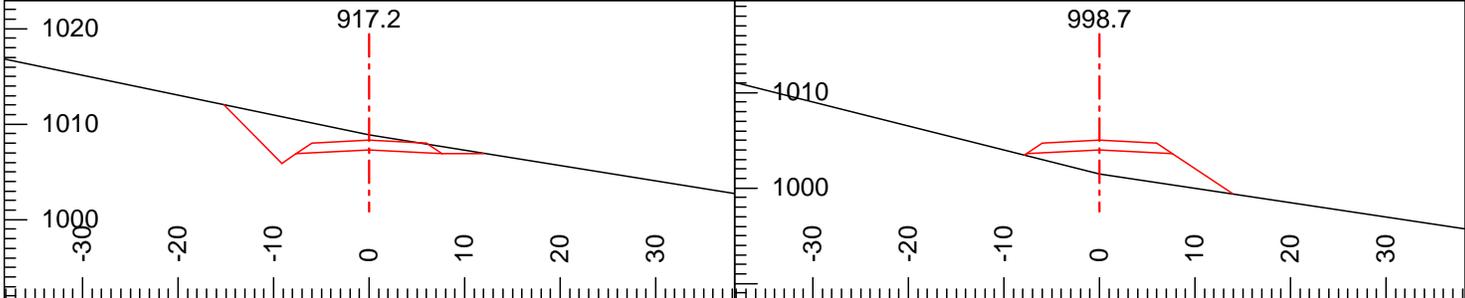
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| Index: | 1012 | Ssr: (Av) | -30 | Rd. Wd.: | 21.2 | Index: | | Ssr: (Av) | -30 | Rd. Wd.: | 21.2 |
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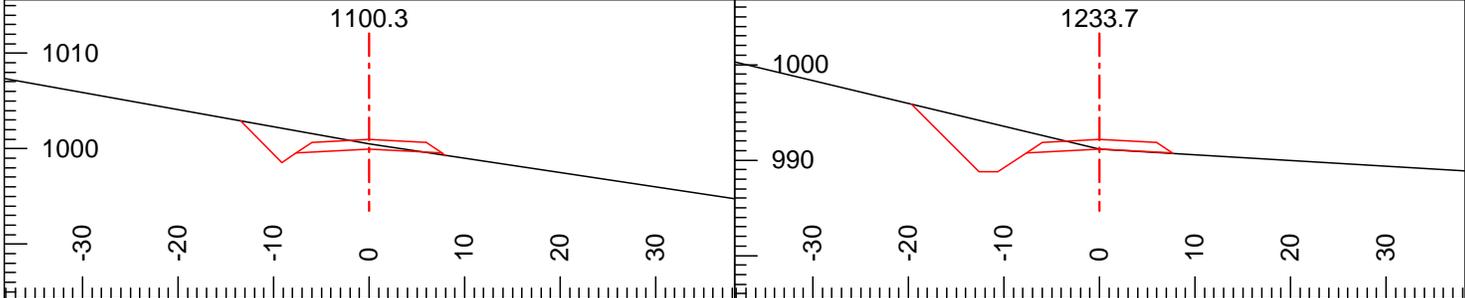
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| Grd.Lst: | 5 | Cut Dp: | -1.3 | Rd. Wd. R: | 7.6 | Grd.Lst: | 5 | Cut Dp: | 0.1 | Rd. Wd. R: | 7.6 |



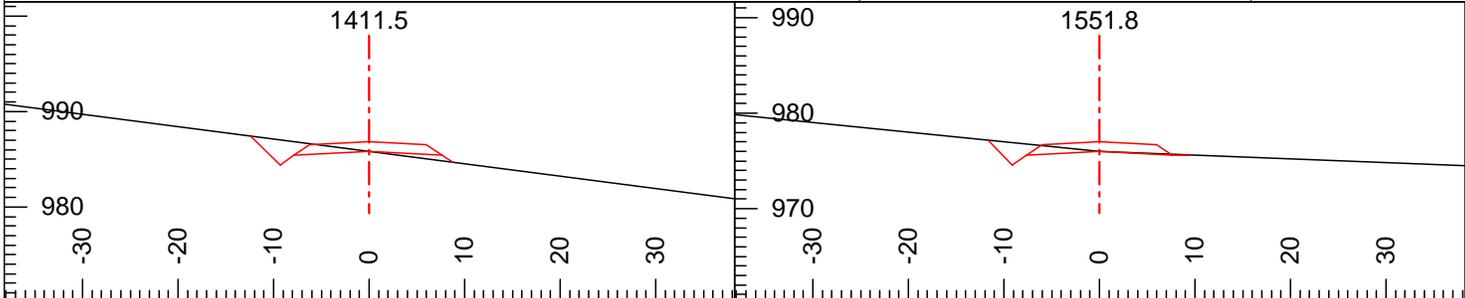
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| Index: | 1014 | Ssr: (Av) | -16 | Rd. Wd.: | 15.2 | Index: | | Ssr: (Av) | -16 | Rd. Wd.: | 15.2 |
| Grd.Nxt.: | 1 | H. Offset: | 0.0 | Rd. Wd. L: | 7.6 | Grd.Nxt.: | -4 | H. Offset: | 0.0 | Rd. Wd. L: | 7.6 |
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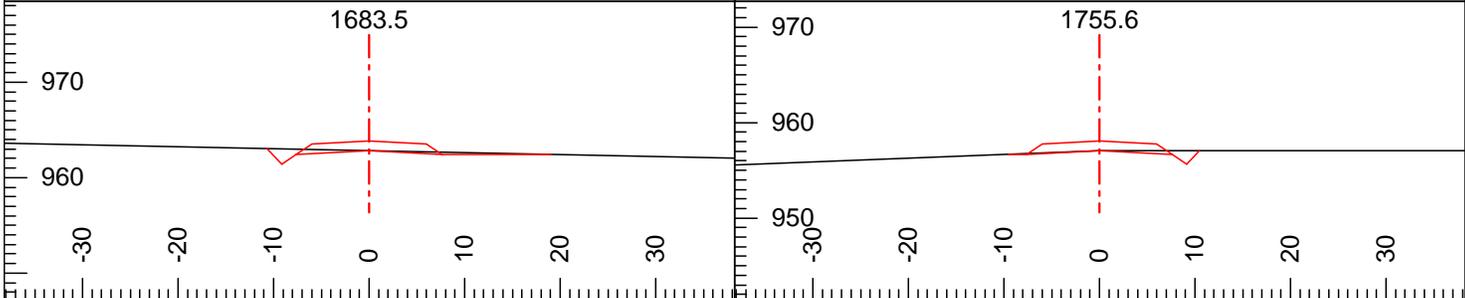
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| Index: | 1015 | Ssr: (Av) | -16 | Rd. Wd.: | 15.2 | Index: | 1016 | Ssr: (Av) | -15 | Rd. Wd.: | 15.2 |
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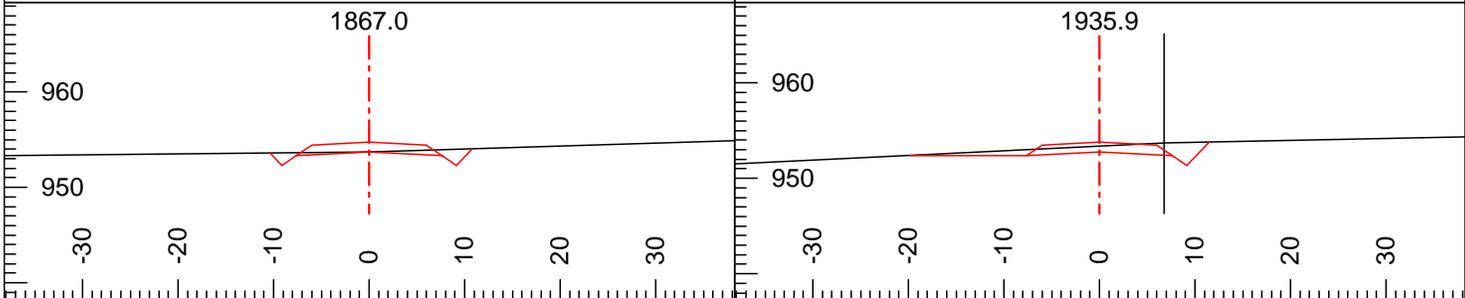
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| Index: | 1017 | Ssr: (Av) | -15 | Rd. Wd.: | 15.2 | Index: | 1018 | Ssr: (Av) | -6 | Rd. Wd.: | 15.2 |
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| Grd.Lst: | -7 | Cut Dp: | 0.5 | Rd. Wd. R: | 7.6 | Grd.Lst: | -7 | Cut Dp: | 0.0 | Rd. Wd. R: | 7.6 |



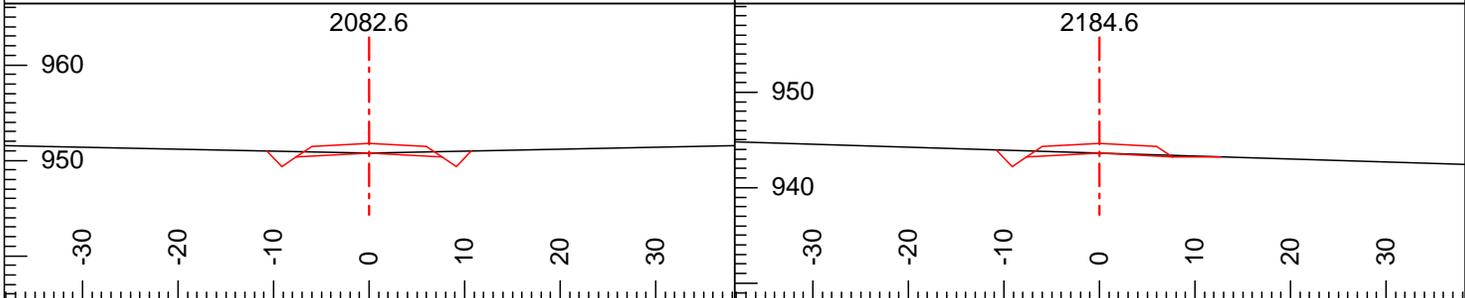
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| Index: | 1019 | Ssr: (Av) | -13 | Rd. Wd.: | 15.5 | Index: | 1020 | Ssr: (Av) | -4 | Rd. Wd.: | 15.2 |
| Grd.Nxt.: | -7 | H. Offset: | 0.0 | Rd. Wd. L: | 7.8 | Grd.Nxt.: | -10 | H. Offset: | 0.0 | Rd. Wd. L: | 7.6 |
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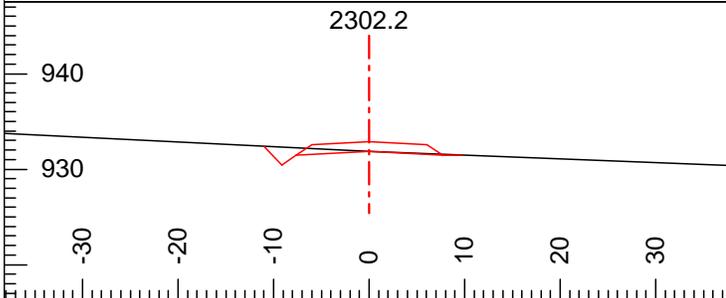
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| Index: | 1021 | Ssr: (Av) | -2 | Rd. Wd.: | 15.2 | Index: | 1022 | Ssr: (Av) | 0 | Rd. Wd.: | 15.2 |
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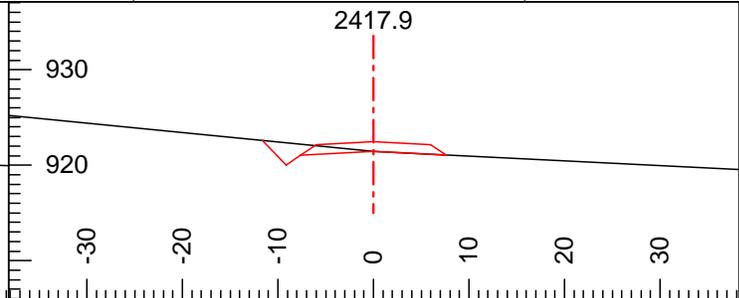
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| Index: | 1023 | Ssr: (Av) | 3 | Rd. Wd.: | 15.2 | Index: | 1024 | Ssr: (Av) | 2 | Rd. Wd.: | 15.2 |
| Grd.Nxt.: | -1 | H. Offset: | 0.0 | Rd. Wd. L: | 7.6 | Grd.Nxt.: | -1 | H. Offset: | -6.9 | Rd. Wd. L: | 7.6 |
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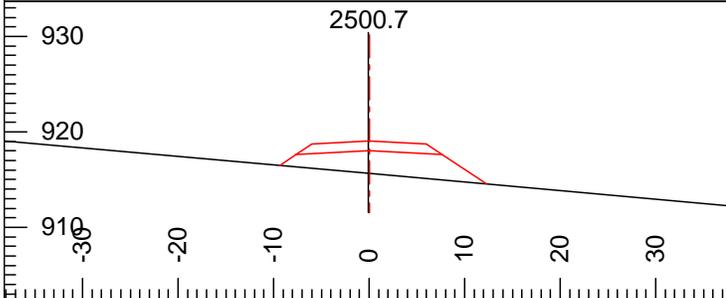
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| Index: | 1025 | Ssr: (Av) | 2 | Rd. Wd.: | 15.2 | Index: | 1026 | Ssr: (Av) | -3 | Rd. Wd.: | 15.2 |
| Grd.Nxt.: | -7 | H. Offset: | 0.0 | Rd. Wd. L: | 7.6 | Grd.Nxt.: | -10 | H. Offset: | 0.0 | Rd. Wd. L: | 7.6 |
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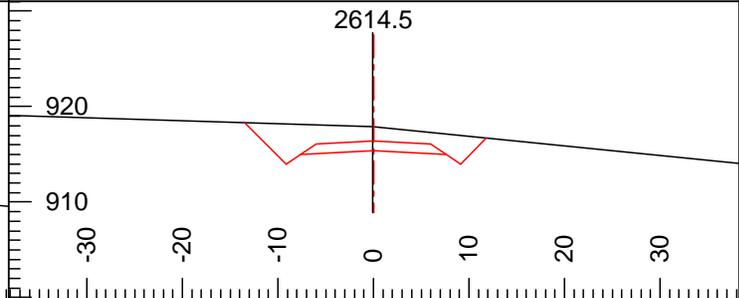
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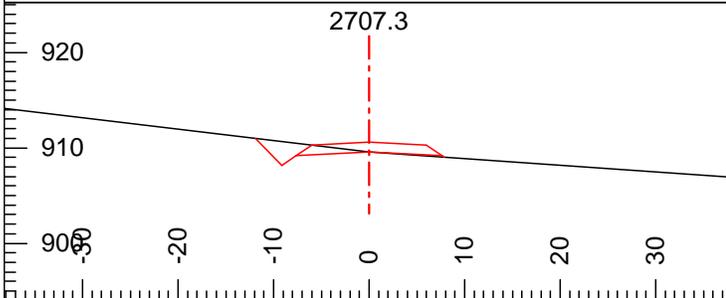
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| Index: 1028 | Ssr: (Av) -5 | Rd. Wd.: 15.2 |
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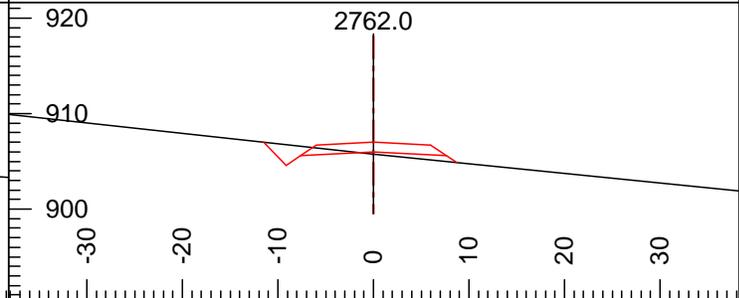
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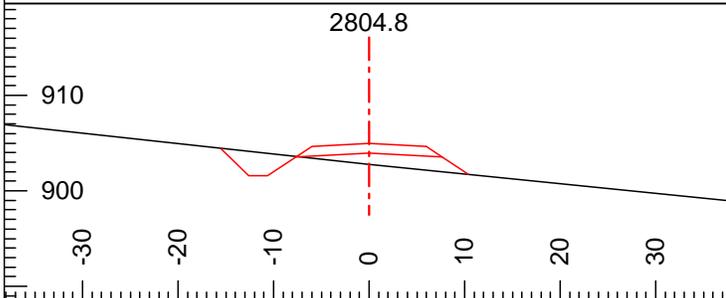
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| Index: 1030 | Ssr: (Av) -10 | Rd. Wd.: 15.2 |
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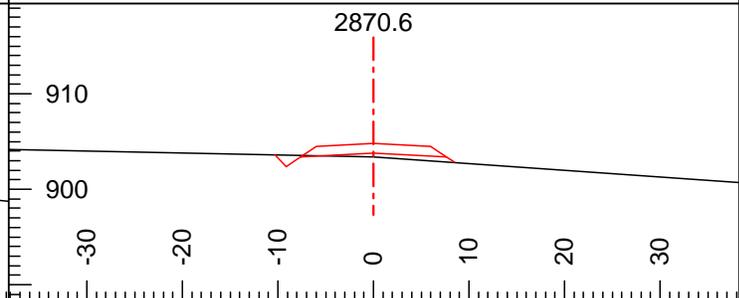
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| Index: 1031 | Ssr: (Av) -7 | Rd. Wd.: 15.2 |
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| Grd.Lst: -6 | Cut Dp: 0.0 | Rd. Wd. R: 7.6 |



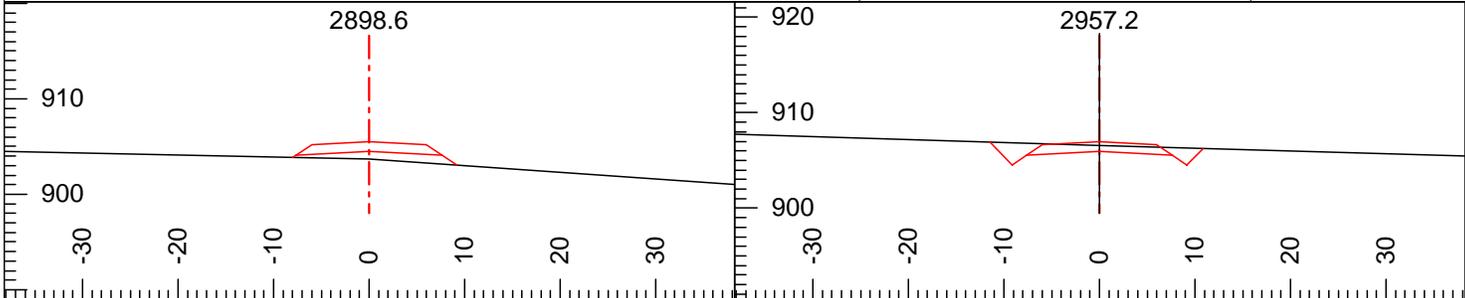
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| L-Stn: 2762.0 | Ssl: (Av) 11 | CL Elev: 906.0 |
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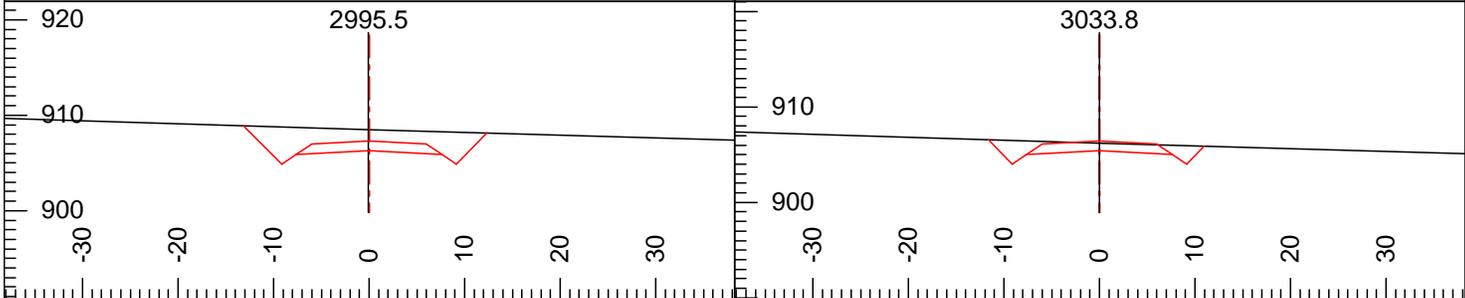
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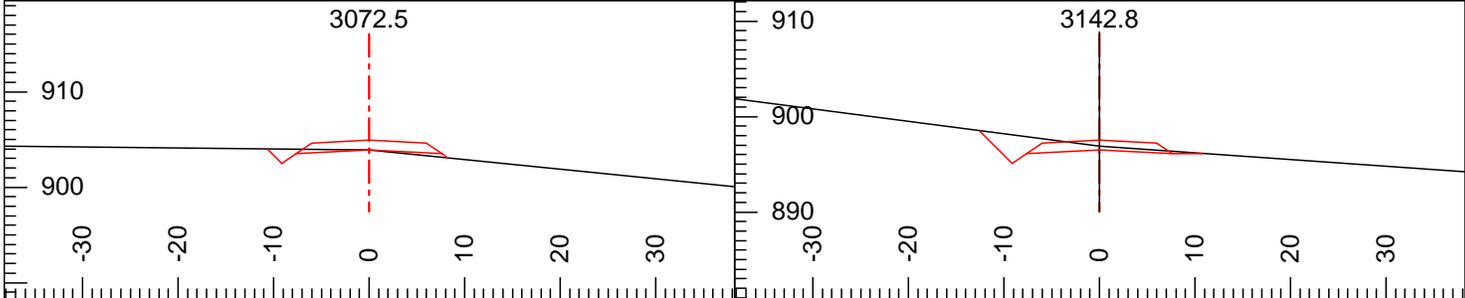
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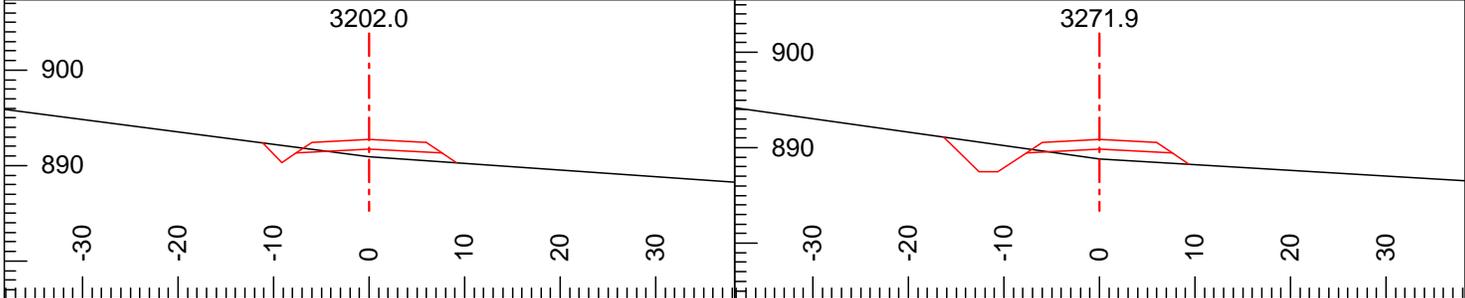
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| L-Stn: 2898.6 | Ssl: (Av) 2 | CL Elev: 904.5 | L-Stn: 2957.2 | Ssl: (Av) 3 | CL Elev: 905.9 |
| Index: 1033 | Ssr: (Av) -7 | Rd. Wd.: 15.2 | Index: | Ssr: (Av) -3 | Rd. Wd.: 15.2 |
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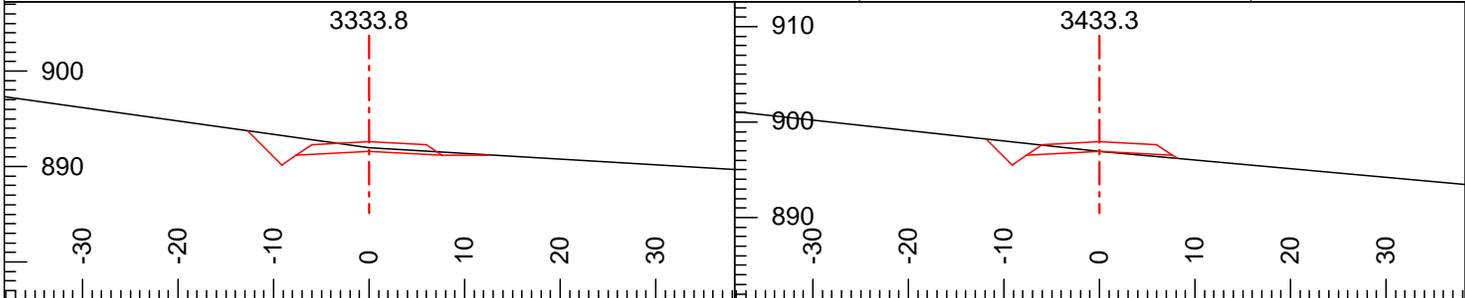
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| Index: 1034 | Ssr: (Av) -3 | Rd. Wd.: 15.2 | Index: | Ssr: (Av) -3 | Rd. Wd.: 15.2 |
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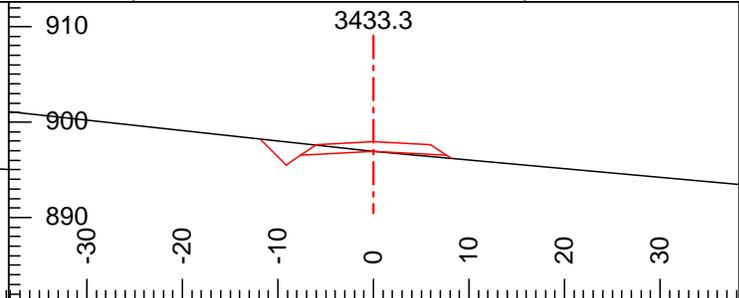
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| Index: 1035 | Ssr: (Av) -10 | Rd. Wd.: 15.2 | Index: | Ssr: (Av) -7 | Rd. Wd.: 15.2 |
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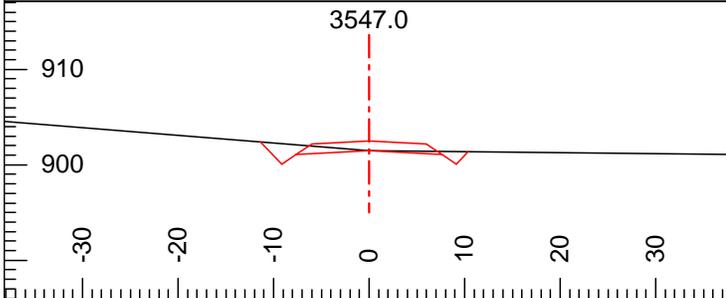
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| Index: 1036 | Ssr: (Av) -7 | Rd. Wd.: 15.2 | Index: 1037 | Ssr: (Av) -6 | Rd. Wd.: 15.2 |
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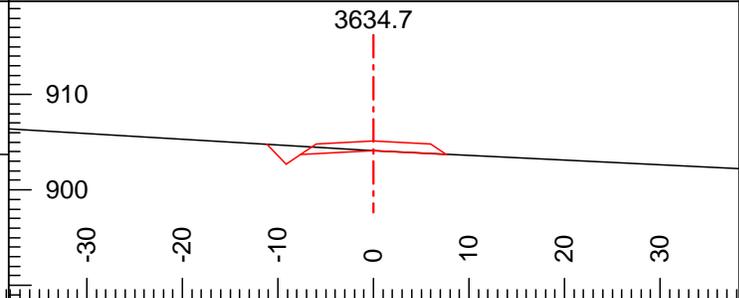
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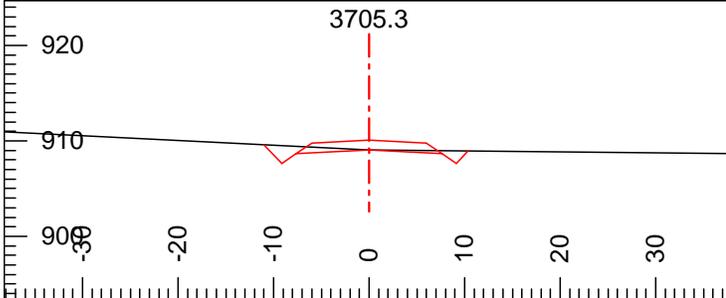
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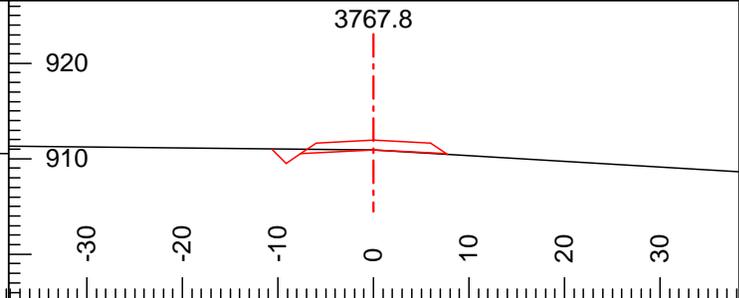
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| | | | | | |
|-----------|--------|------------|-----|------------|-------|
| L-Stn: | 3634.7 | Ssl: (Av) | 6 | CL Elev: | 904.1 |
| Index: | 1040 | Ssr: (Av) | -5 | Rd. Wd.: | 15.2 |
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|-----------|--------|------------|-----|------------|-------|
| L-Stn: | 3705.3 | Ssl: (Av) | 5 | CL Elev: | 909.0 |
| Index: | 1041 | Ssr: (Av) | -1 | Rd. Wd.: | 15.2 |
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| Grd.Lst: | 7 | Cut Dp: | 0.0 | Rd. Wd. R: | 7.6 |



| | | | | | |
|-----------|--------|------------|-----|------------|-------|
| L-Stn: | 3767.8 | Ssl: (Av) | 1 | CL Elev: | 910.9 |
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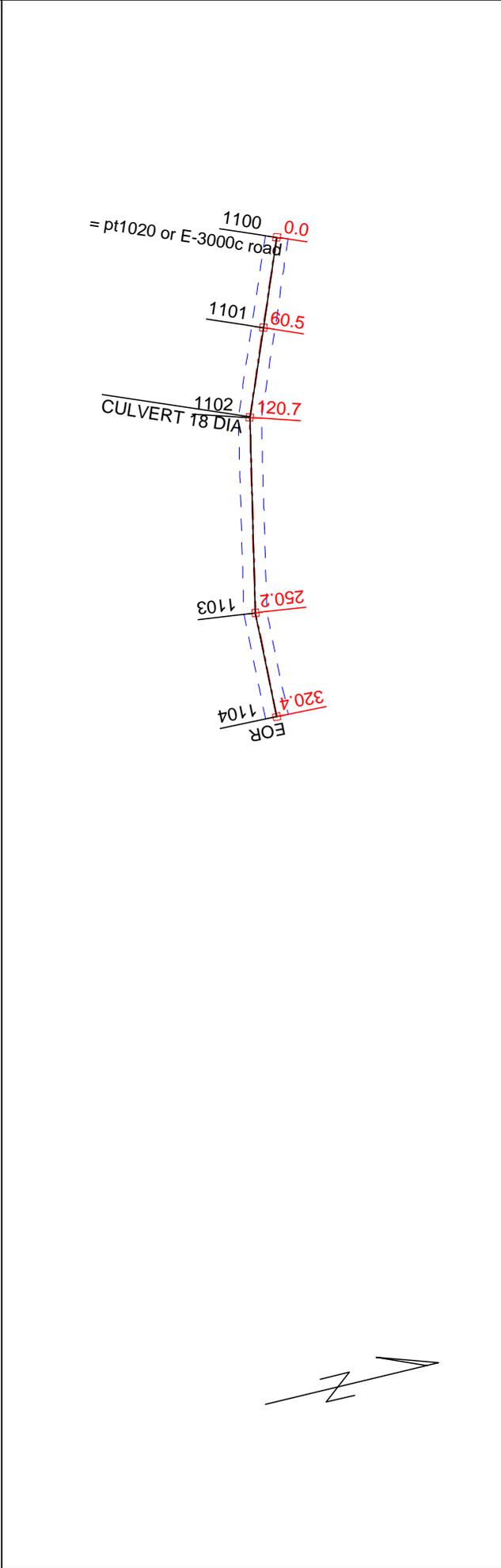
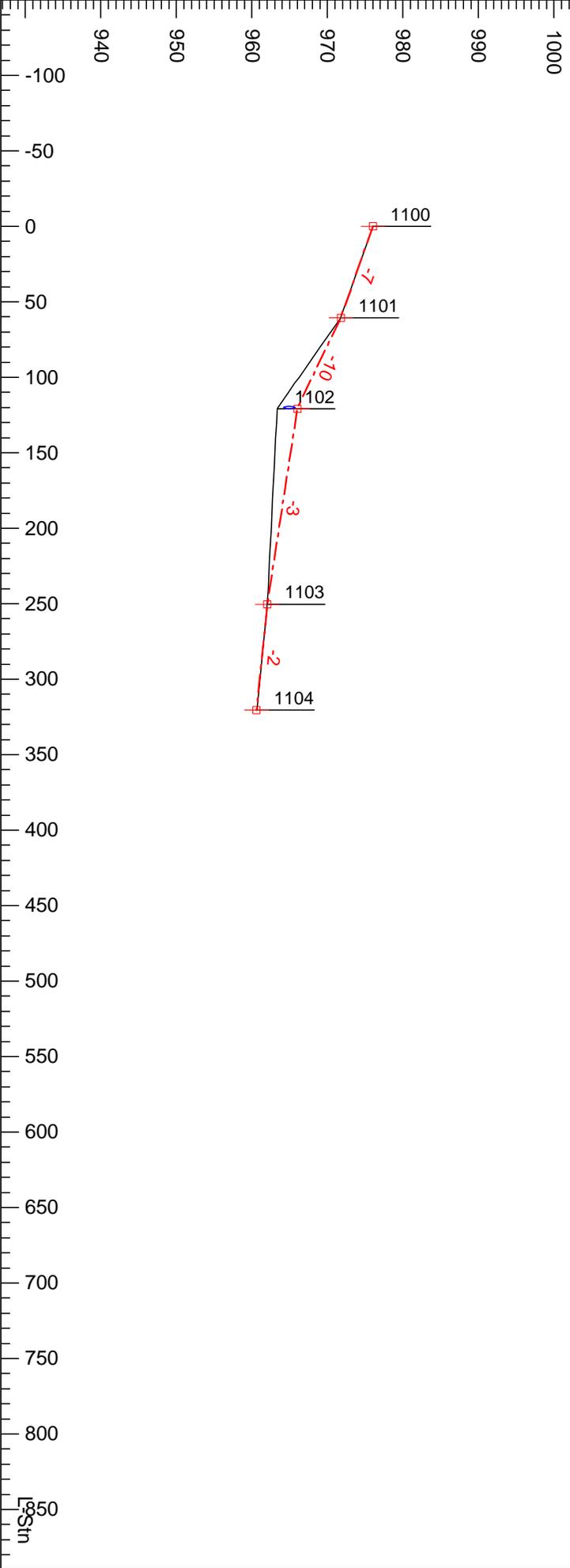
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 E-3010c road January 12, 2016
 Contract #: 30-093218

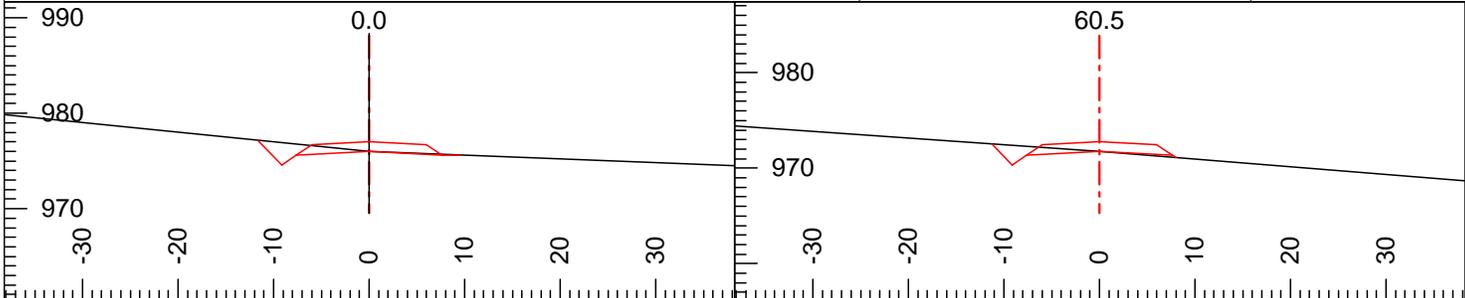


Washington State Department of
 Natural Resources
 South Puget Sound Region

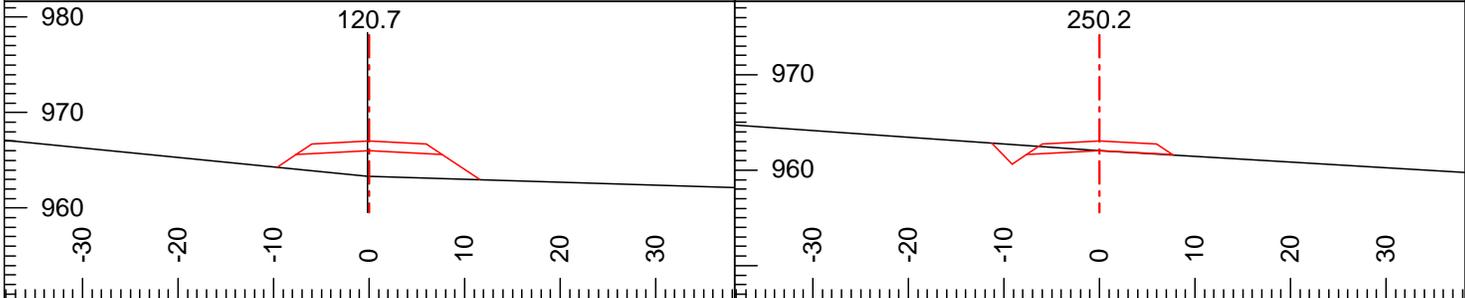
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 Profile Vert Scale 1:240
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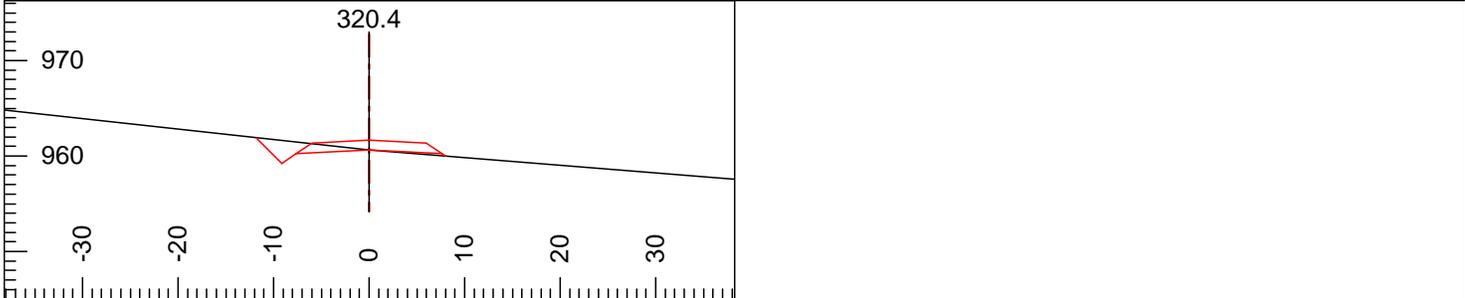




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| L-Stn: 120.7 | Ssl: (Av) 10 | CL Elev: 966.0 | L-Stn: 250.2 | Ssl: (Av) 7 | CL Elev: 962.0 |
| Index: 1102 | Ssr: (Av) -3 | Rd. Wd.: 15.2 | Index: 1103 | Ssr: (Av) -6 | Rd. Wd.: 15.2 |
| Grd.Nxt.: -3 | H. Offset: 0.2 | Rd. Wd. L: 7.6 | Grd.Nxt.: -2 | H. Offset: 0.0 | Rd. Wd. L: 7.6 |
| Grd.Lst: -10 | Cut Dp: -2.7 | Rd. Wd. R: 7.6 | Grd.Lst: -3 | Cut Dp: 0.0 | Rd. Wd. R: 7.6 |



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|---------------|----------------|----------------|
| L-Stn: 320.4 | Ssl: (Av) 11 | CL Elev: 960.6 |
| Index: 1104 | Ssr: (Av) -8 | Rd. Wd.: 15.2 |
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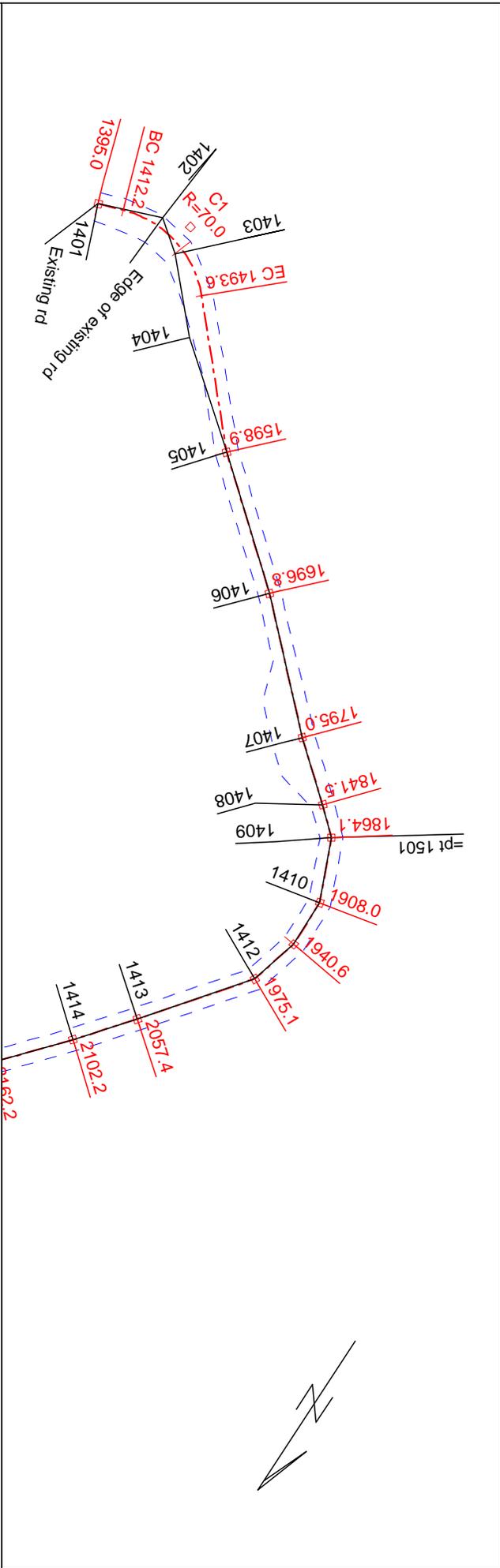
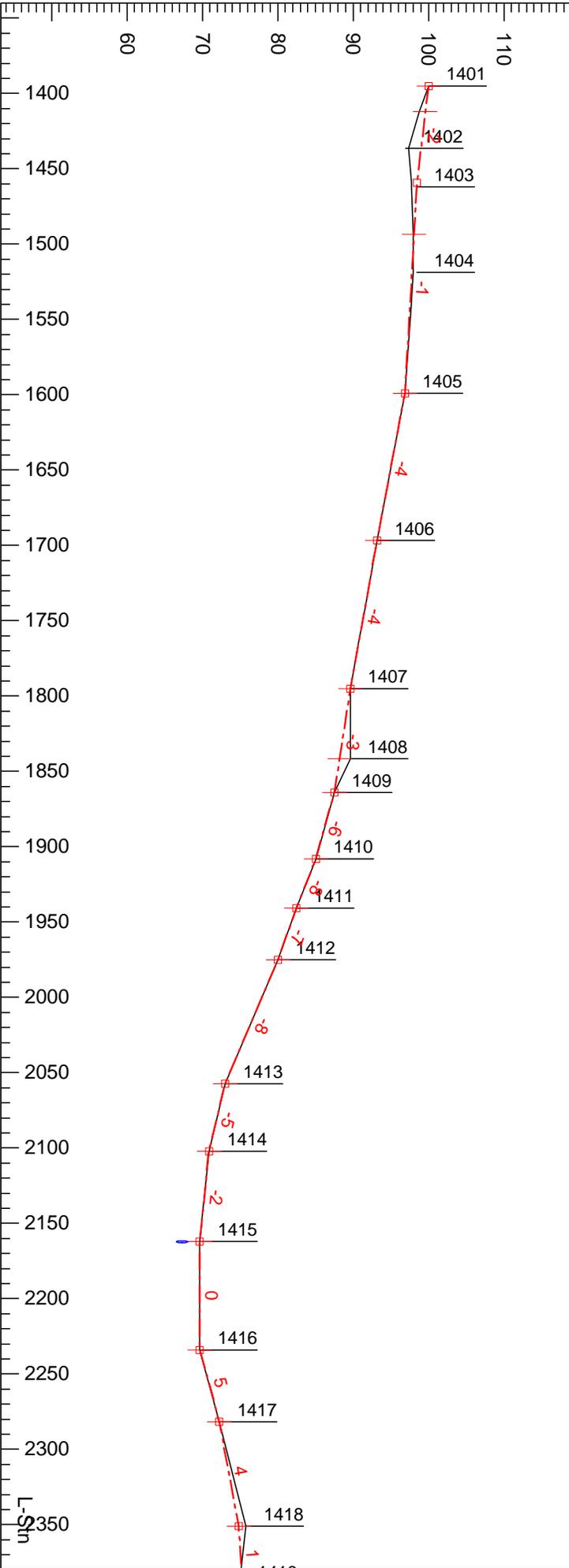
Tribute Timber Sale
 E-3100 road January 12, 2016
 Contract #: 30-093218



Washington State Department of
 Natural Resources
 South Puget Sound Region

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

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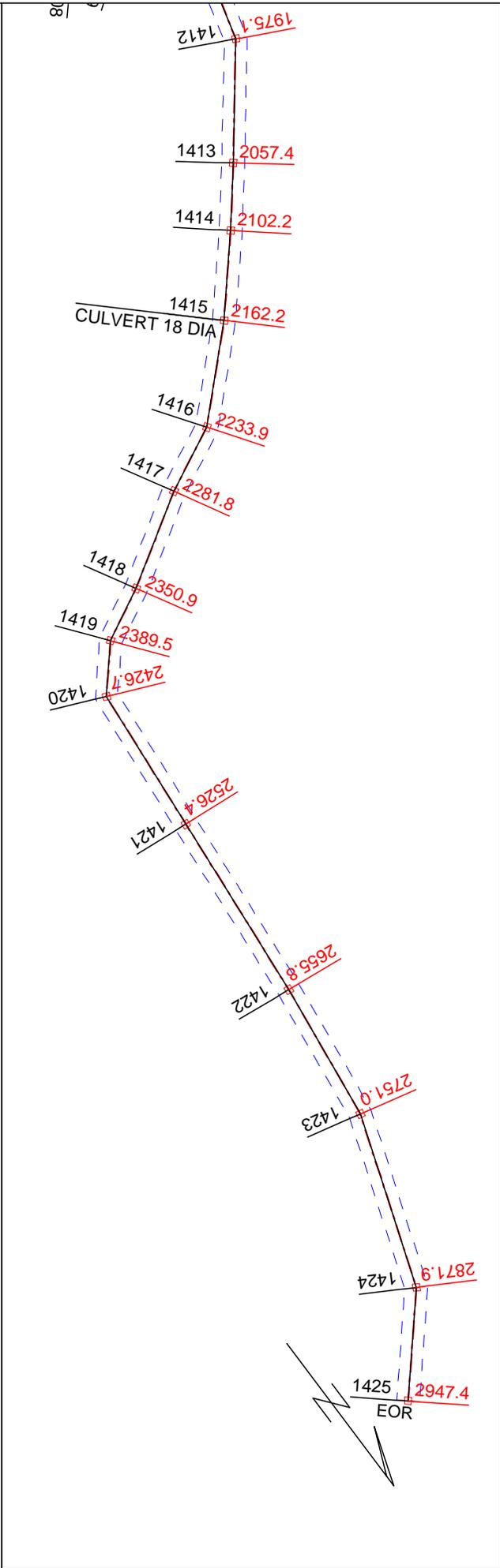
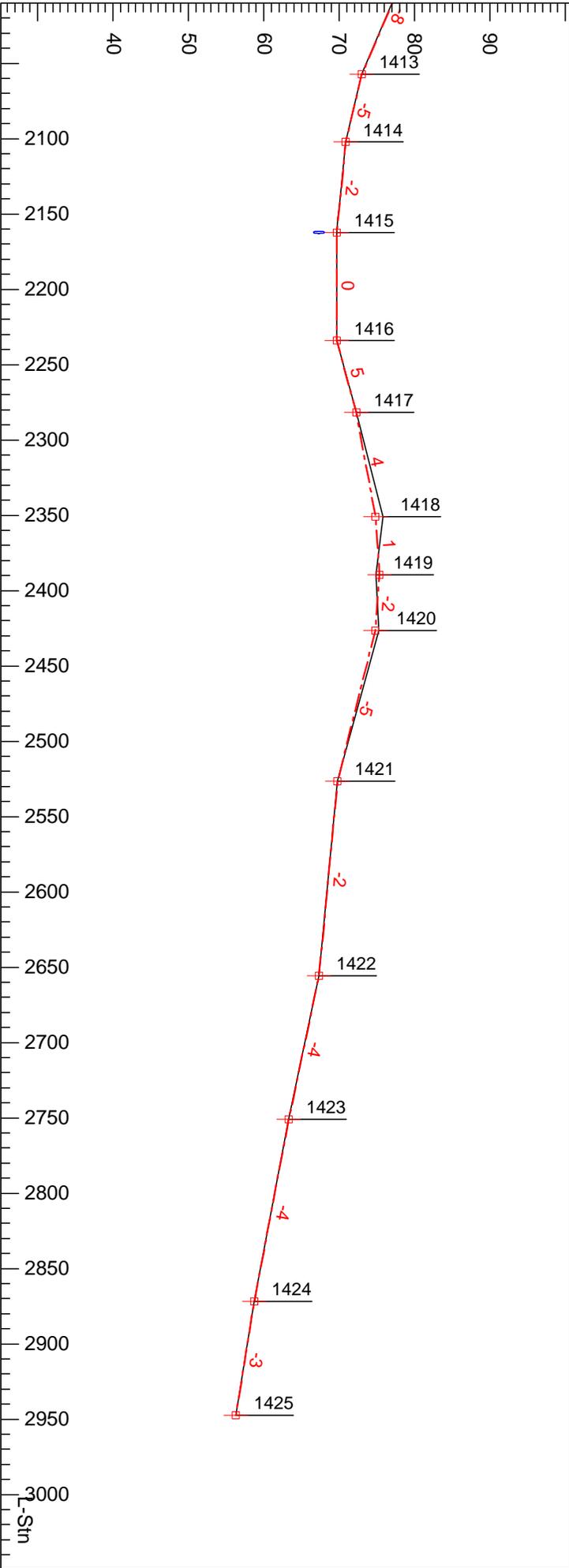
Tribute Timber Sale
 E-3100 road January 12, 2016
 Contract #: 30-093218

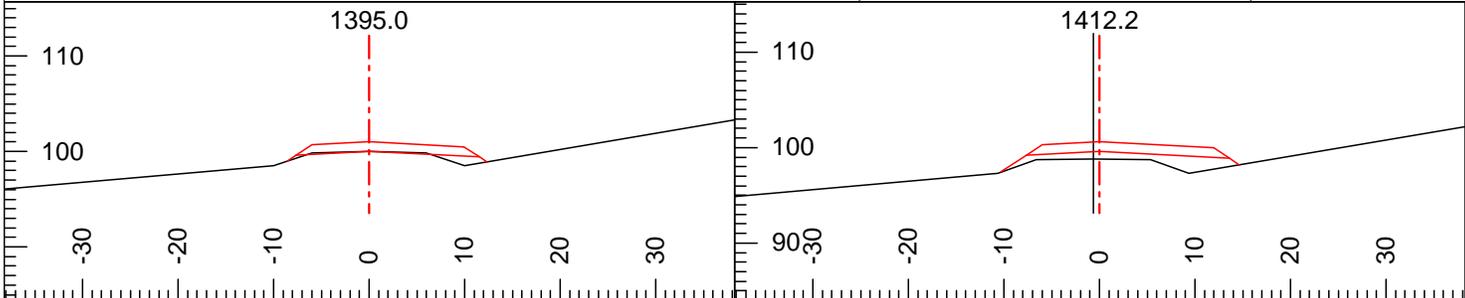


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 South Puget Sound Region

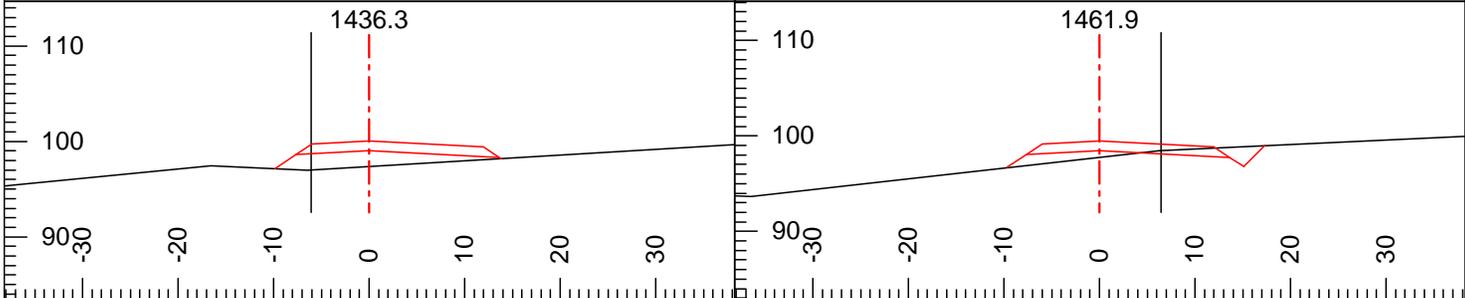
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 16/01/18
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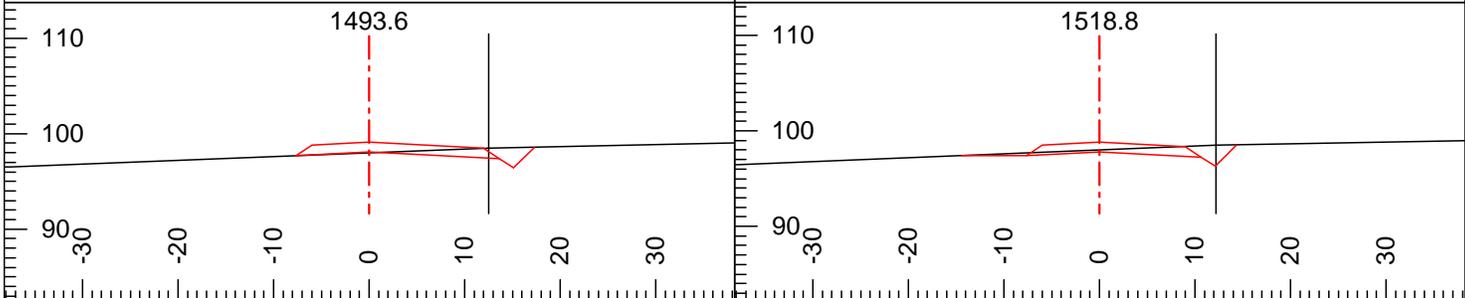




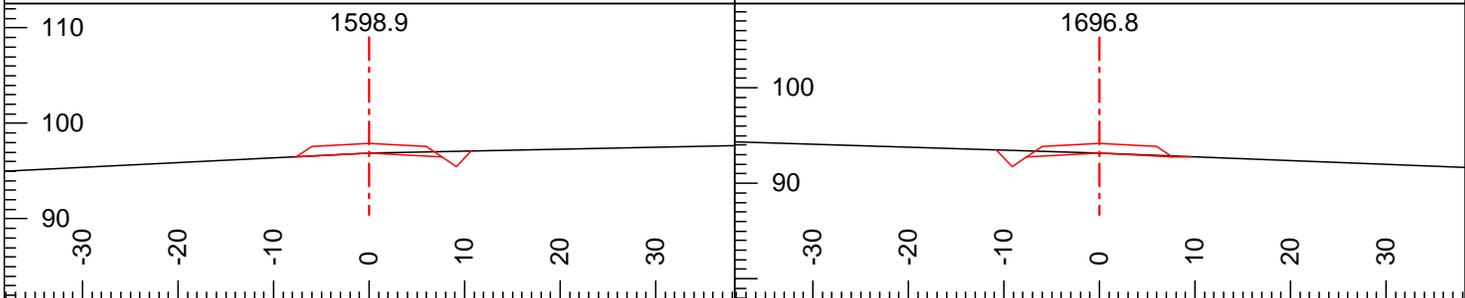
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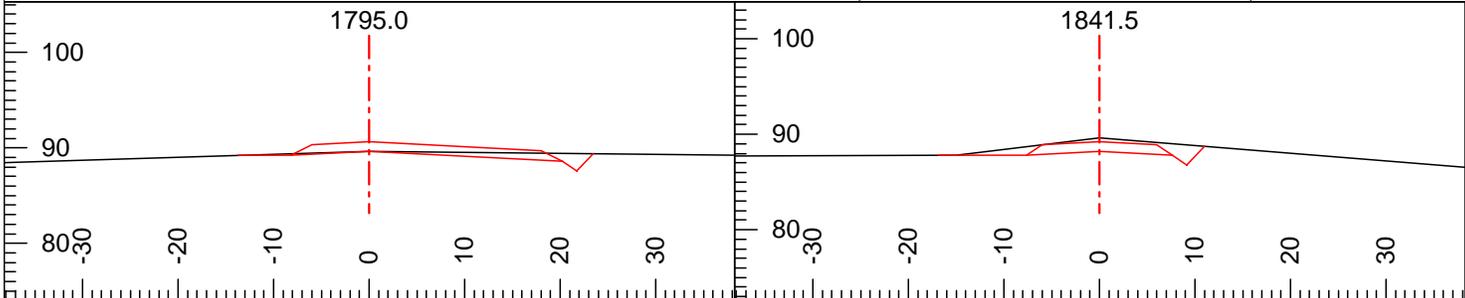
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| Index: | 1402 | Ssr: (Av) | 6 | Rd. Wd.: | 21.2 | Index: | 1403 | Ssr: (Av) | 5 | Rd. Wd.: | 21.2 |
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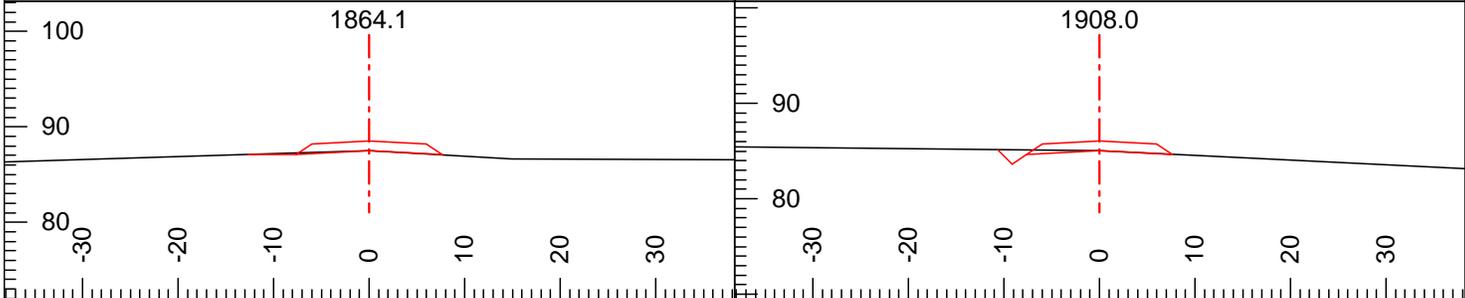
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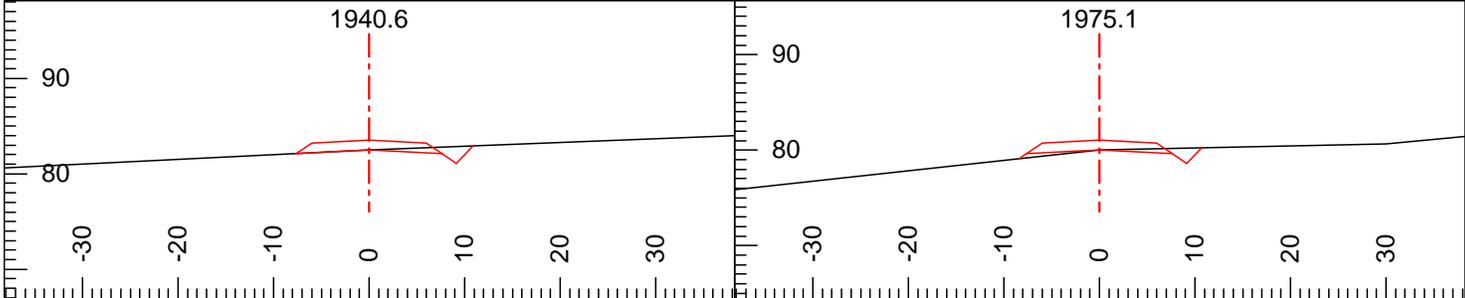
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| Index: | 1405 | Ssr: (Av) | 2 | Rd. Wd.: | 15.2 | Index: | 1406 | Ssr: (Av) | -4 | Rd. Wd.: | 15.2 |
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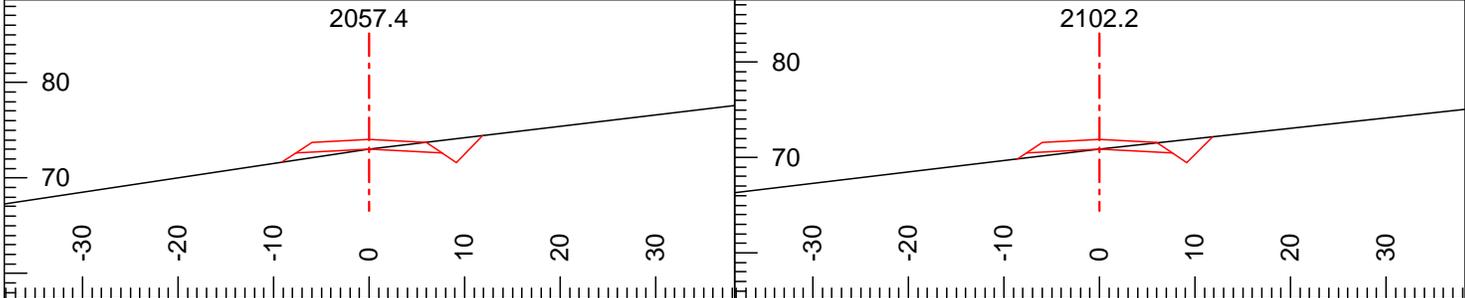
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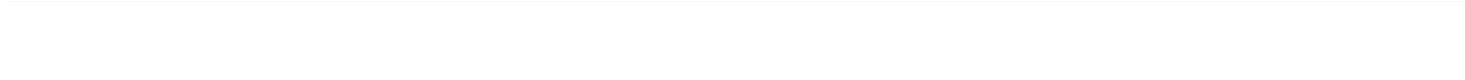
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|-----------|--------|------------|-----|------------|------|
| L-Stn: | 1864.1 | Ssl: (Av) | -3 | CL Elev: | 87.5 |
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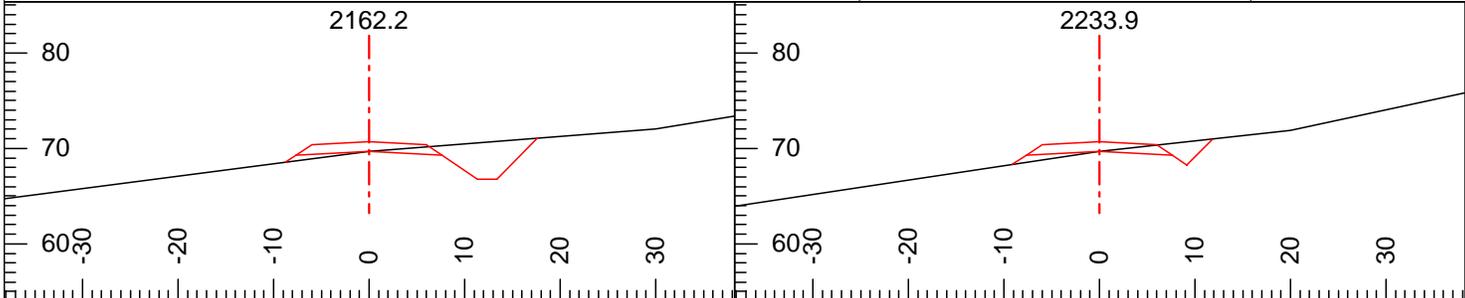


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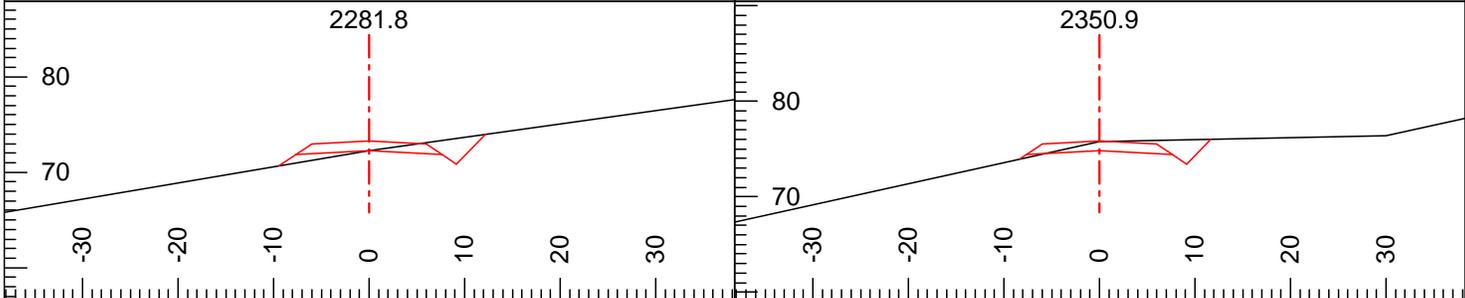
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|-----------|--------|------------|-----|------------|------|
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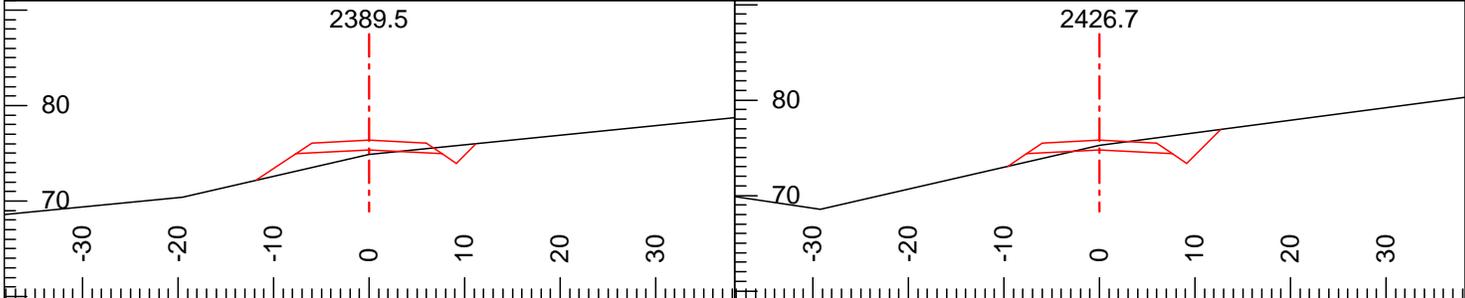
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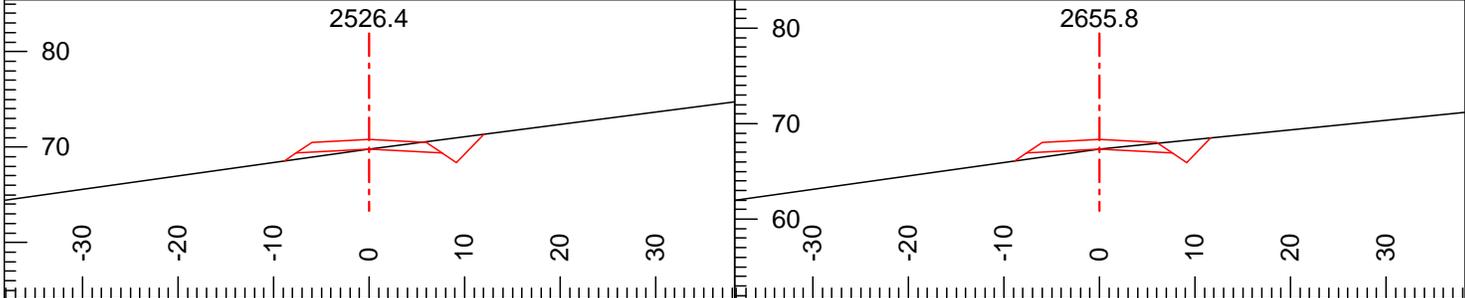
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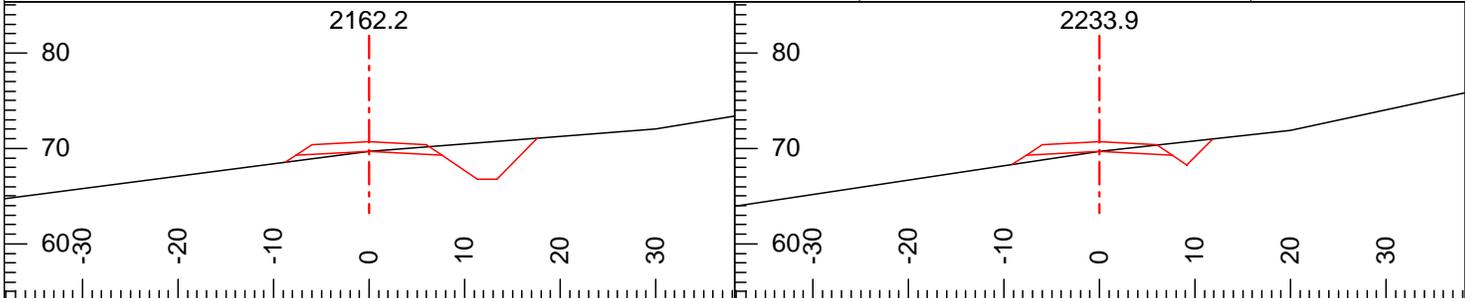
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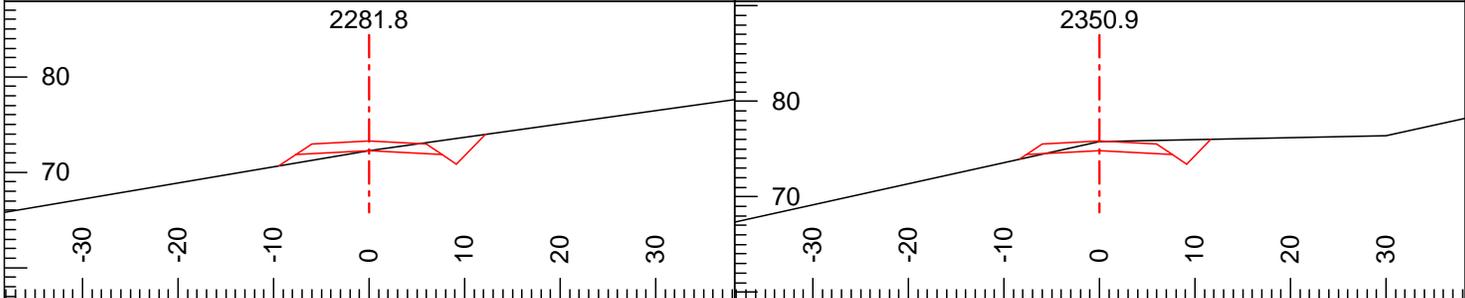
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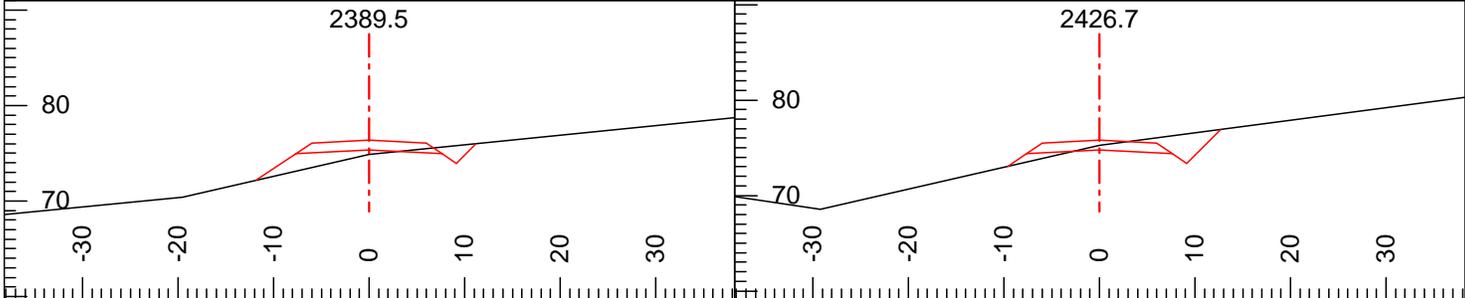
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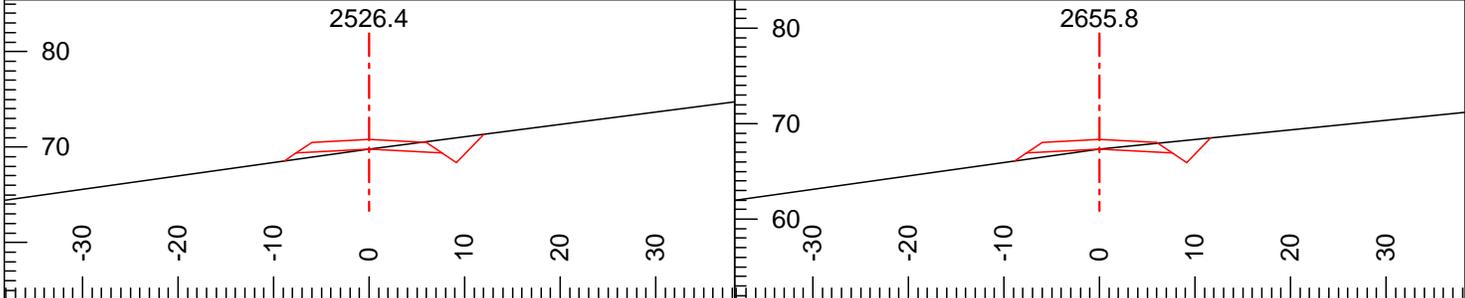
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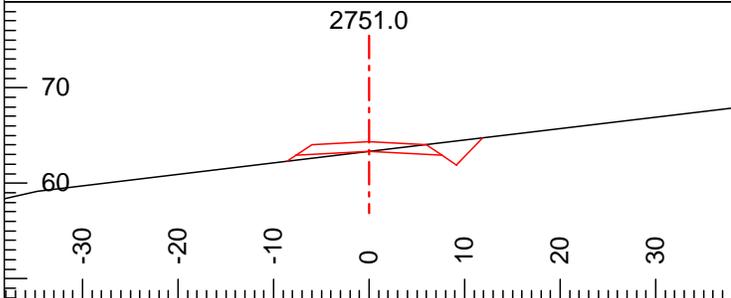
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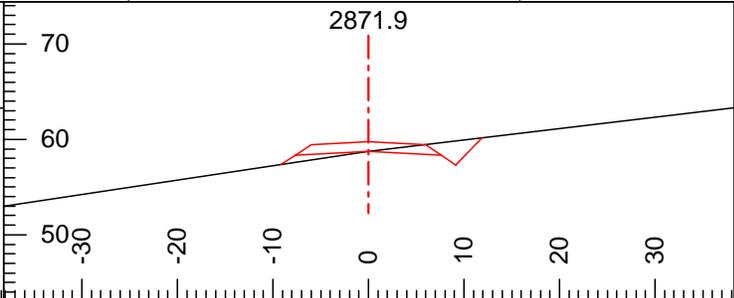
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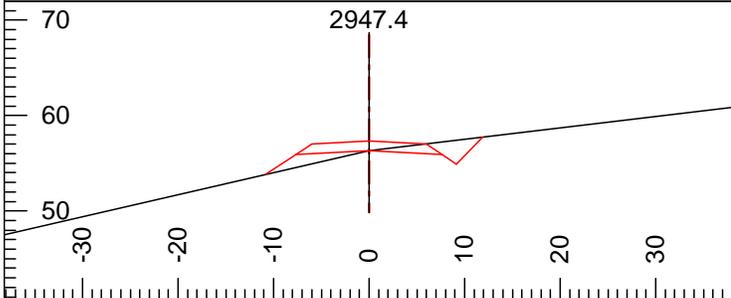
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|-----------|--------|------------|-----|------------|------|
| L-Stn: | 2947.4 | Ssl: (Av) | -23 | CL Elev: | 56.3 |
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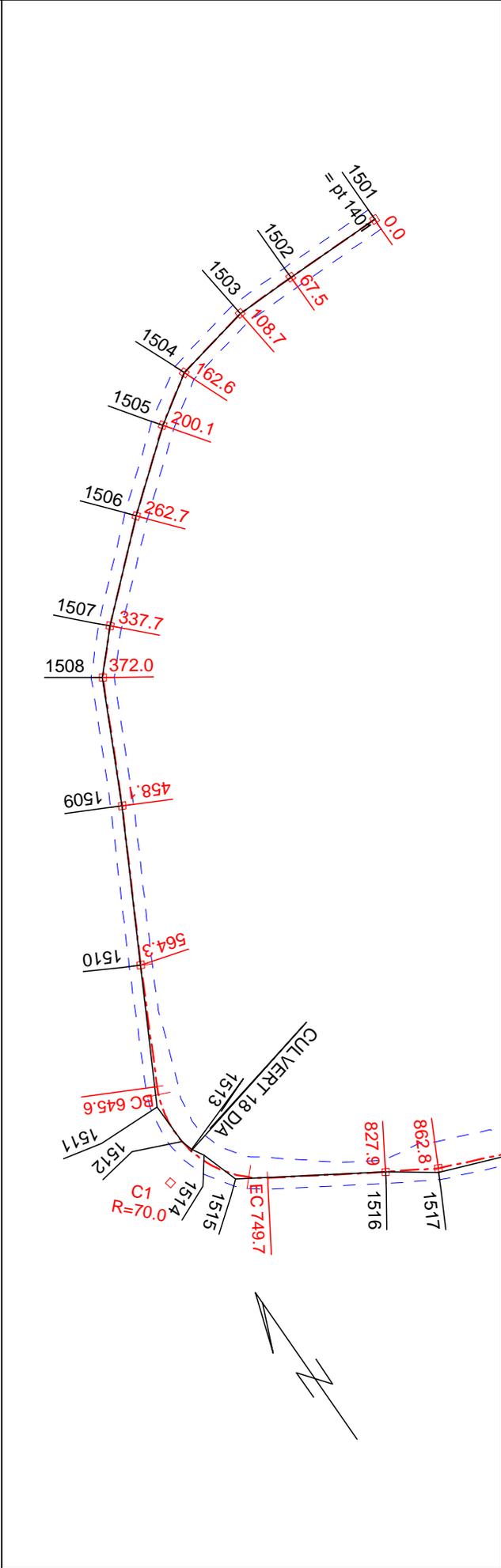
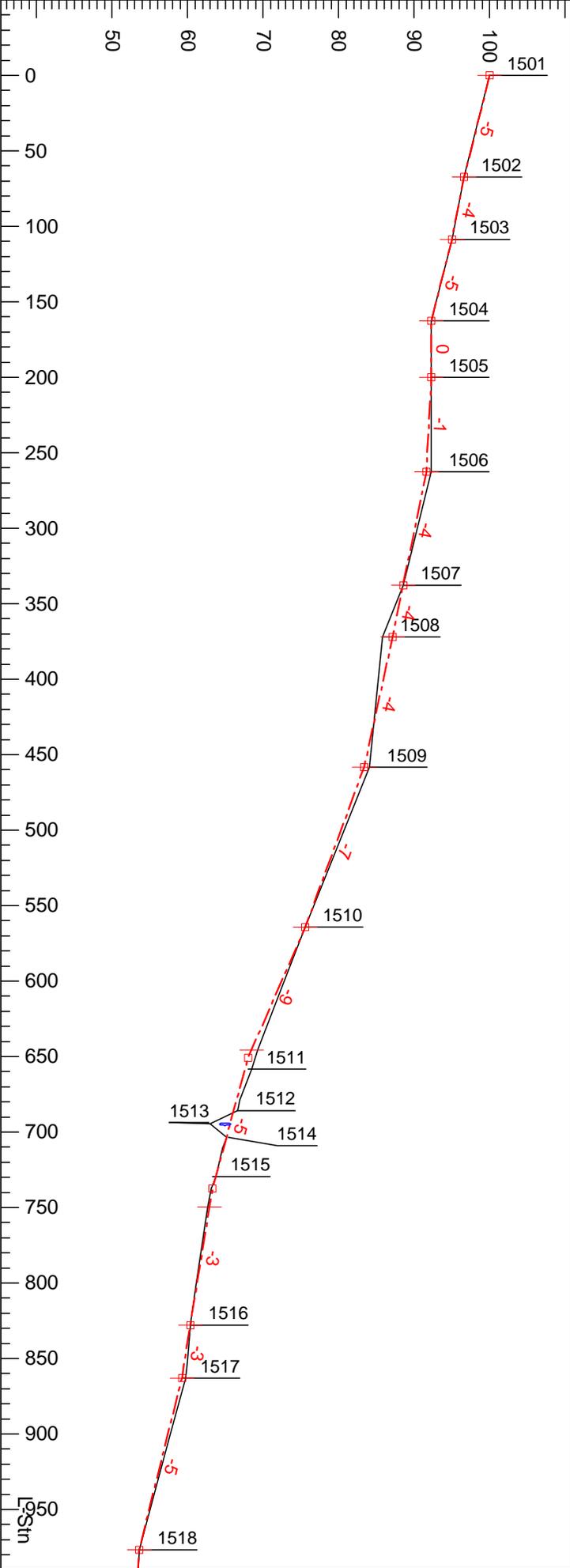
Tribute Timber Sale
 E-3120 road January 12, 2016
 Contract #: 30-093218

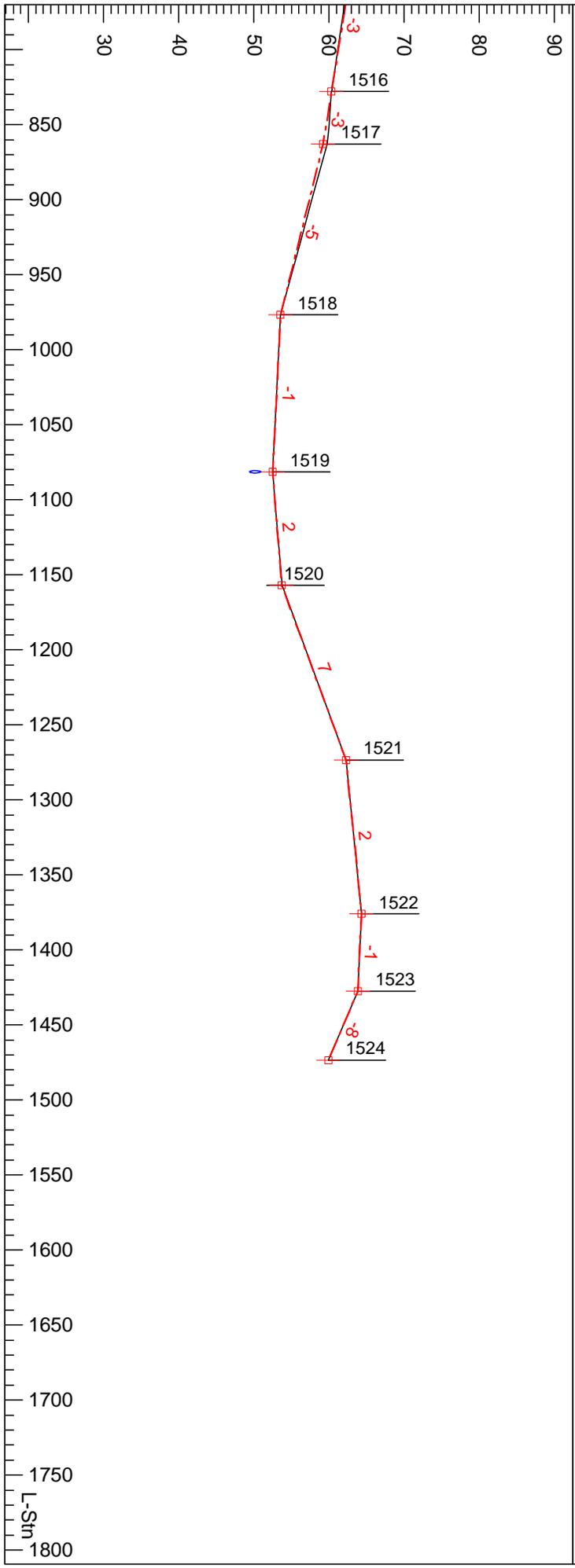
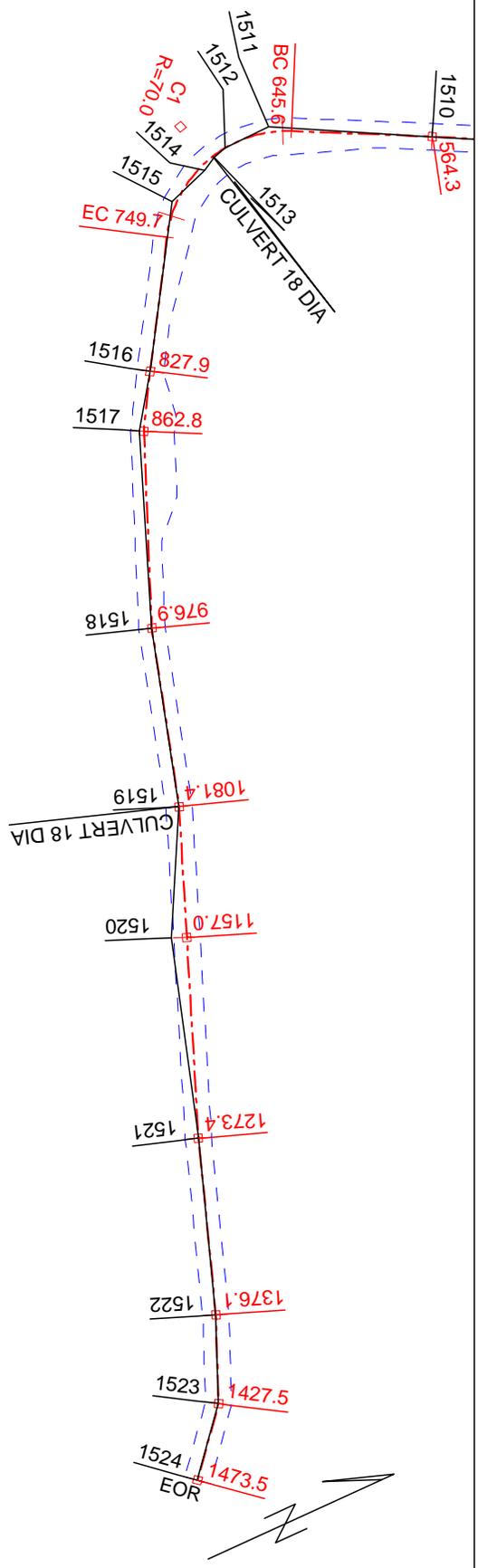


Washington State Department of
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Plan Scale 1:1200
 Profile Vert Scale 1:240
 Profile Horz Scale 1:1200

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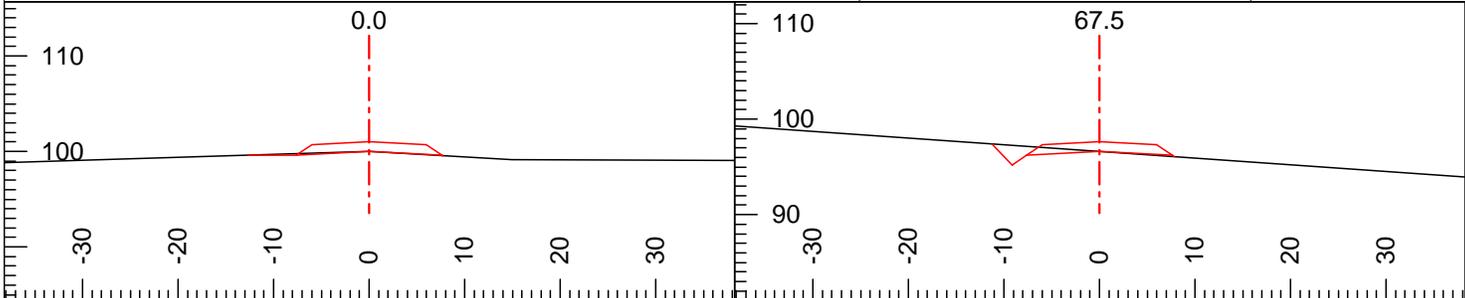
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 E-3120 road January 12, 2016
 Contract #: 30-093218



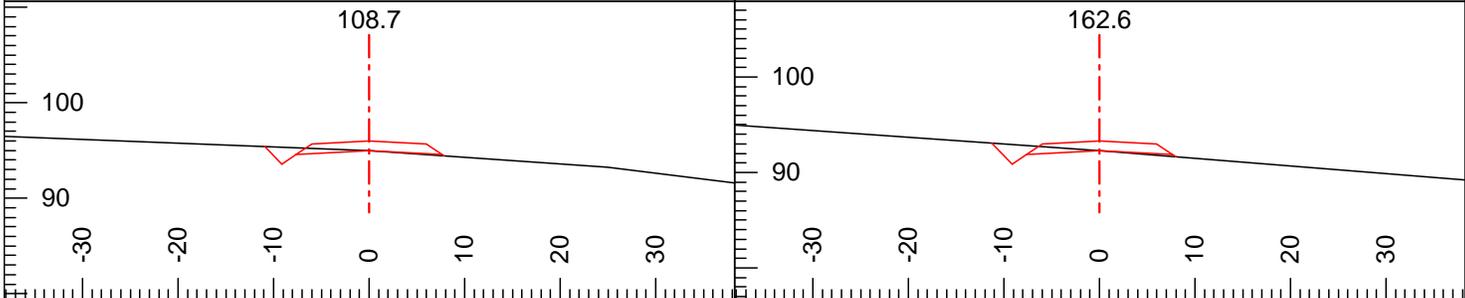
Washington State Department of
 Natural Resources
 South Puget Sound Region

Plan Scale 1:1200
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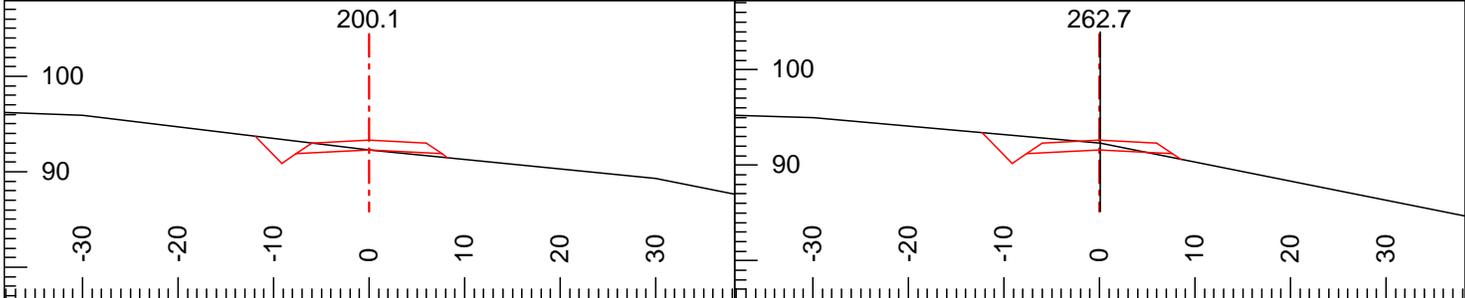
Engineer: M. Bell
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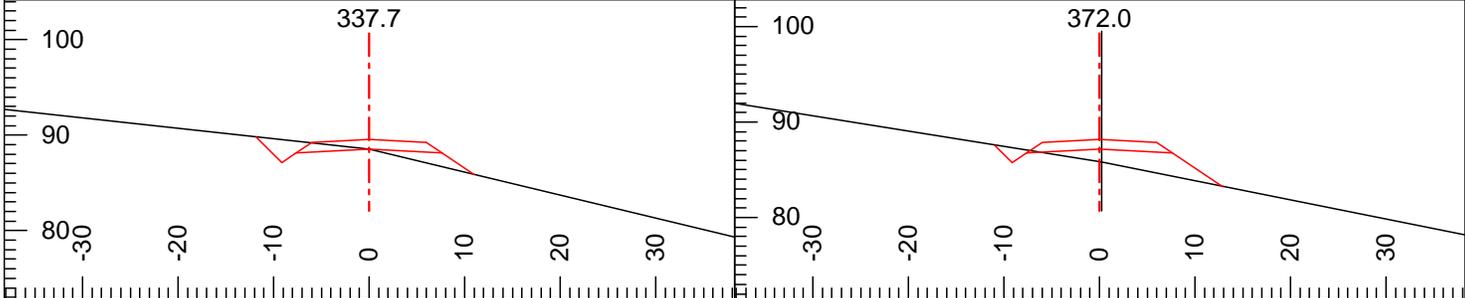
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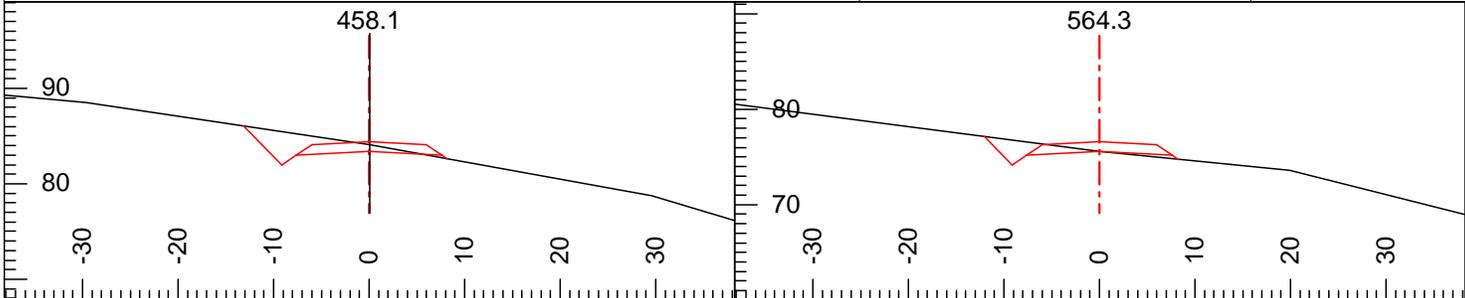
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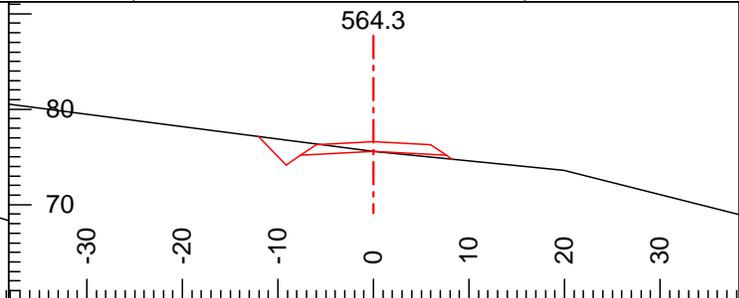
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| Index: | 1505 | Ssr: (Av) | -10 | Rd. Wd.: | 15.2 | Index: | 1506 | Ssr: (Av) | -20 | Rd. Wd.: | 15.2 |
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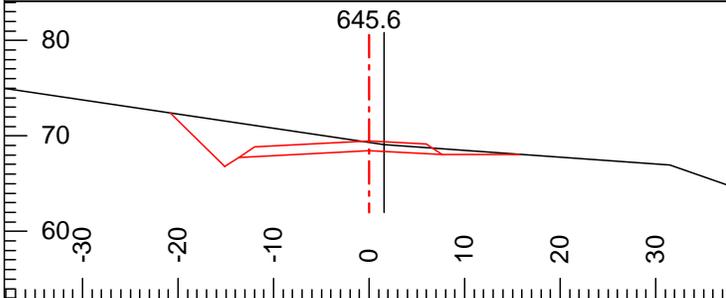
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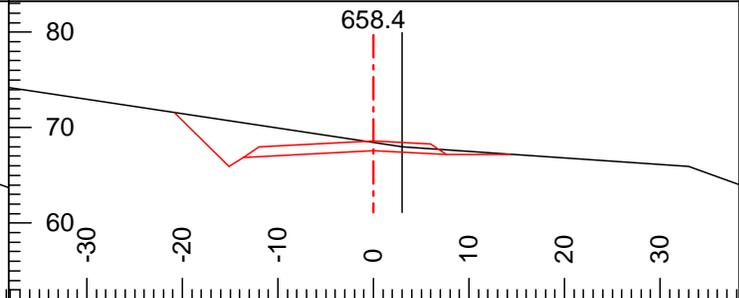
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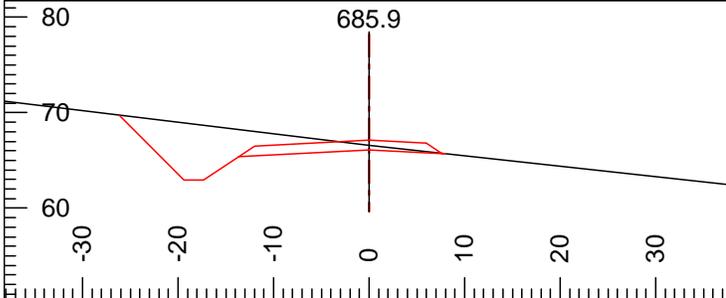
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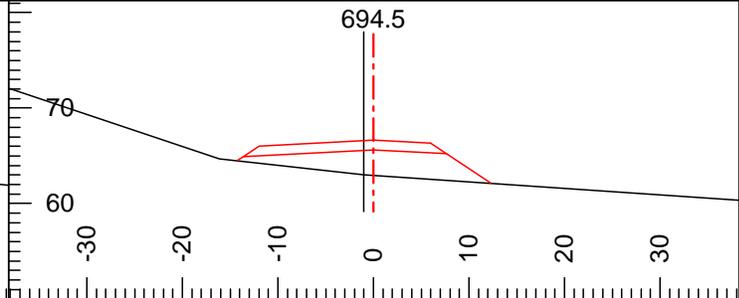
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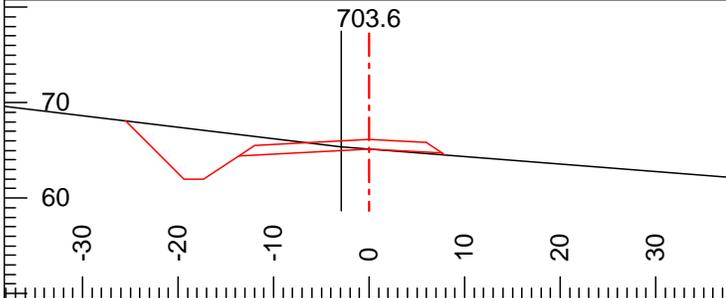
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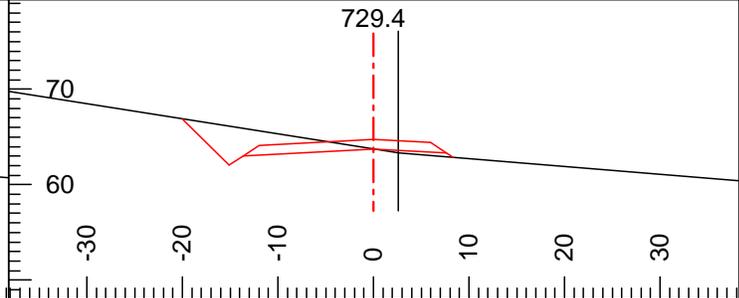
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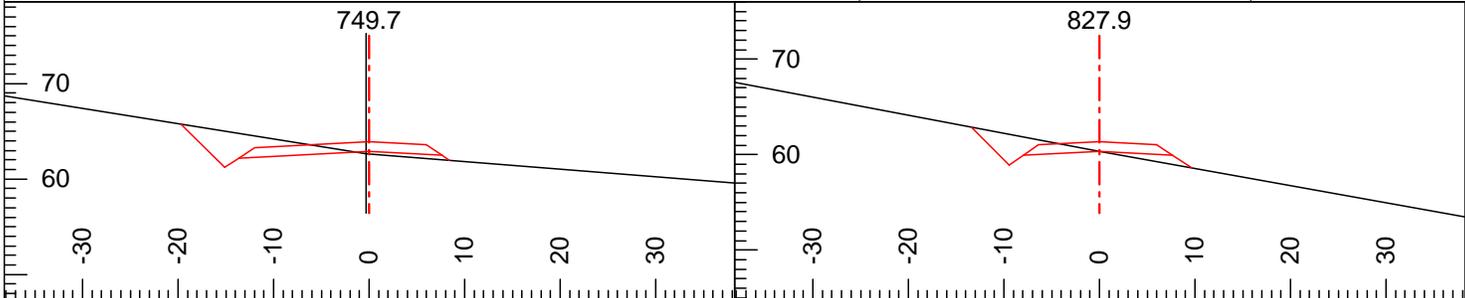
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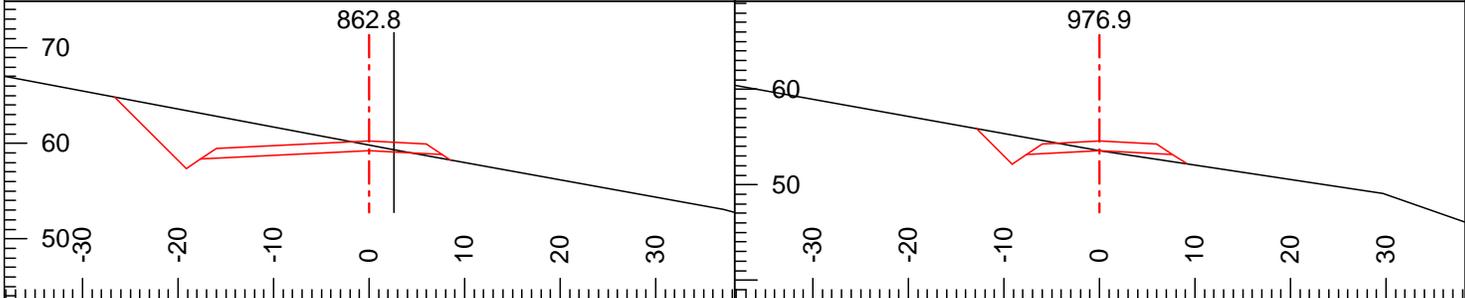
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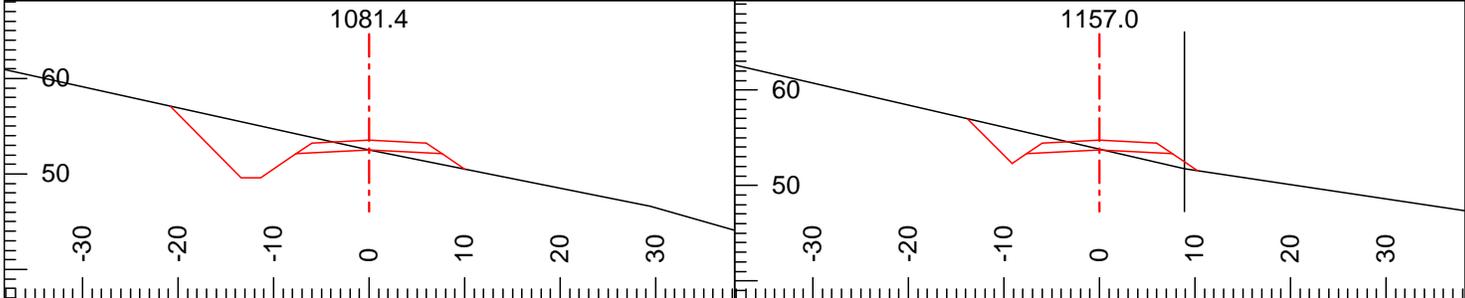
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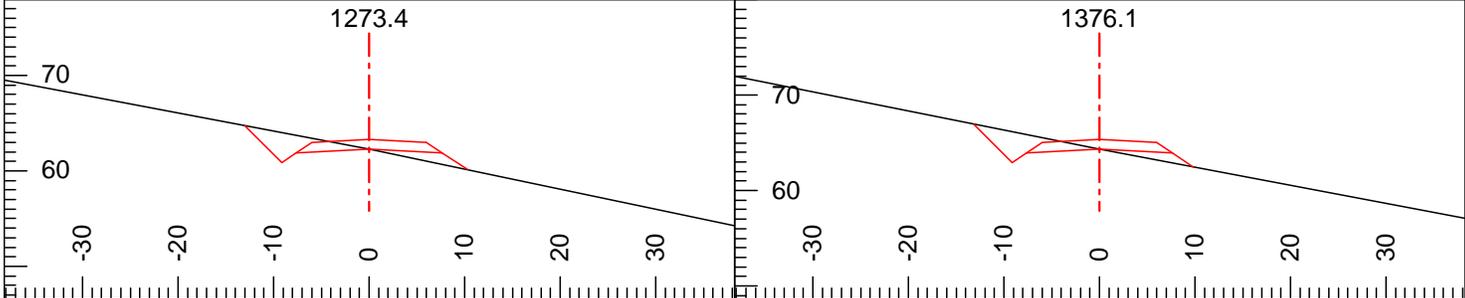
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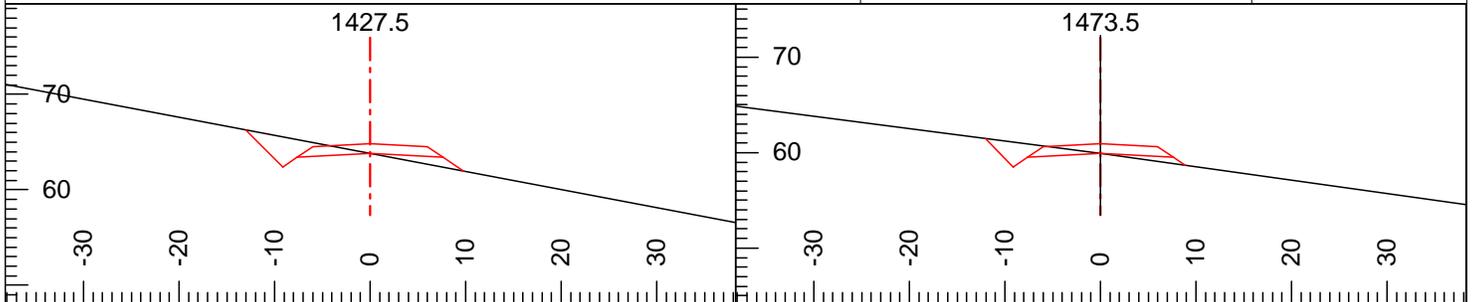
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| Index: 1517 | Ssr: (Av) -18 | Rd. Wd.: 25.2 | Index: 1518 | Ssr: (Av) -15 | Rd. Wd.: 15.2 |
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| L-Stn: 1081.4 | Ssl: (Av) 22 | CL Elev: 52.5 | L-Stn: 1157.0 | Ssl: (Av) 23 | CL Elev: 53.7 |
| Index: 1519 | Ssr: (Av) -20 | Rd. Wd.: 15.2 | Index: 1520 | Ssr: (Av) -15 | Rd. Wd.: 15.2 |
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|---------------|----------------|----------------|---------------|----------------|----------------|
| L-Stn: 1273.4 | Ssl: (Av) 19 | CL Elev: 62.3 | L-Stn: 1376.1 | Ssl: (Av) 20 | CL Elev: 64.3 |
| Index: 1521 | Ssr: (Av) -21 | Rd. Wd.: 15.2 | Index: 1522 | Ssr: (Av) -19 | Rd. Wd.: 15.2 |
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|-----------|--------|------------|-----|------------|------|-----------|--------|------------|-----|------------|------|
| L-Stn: | 1427.5 | Ssl: (Av) | 19 | CL Elev: | 63.8 | L-Stn: | 1473.5 | Ssl: (Av) | 13 | CL Elev: | 59.9 |
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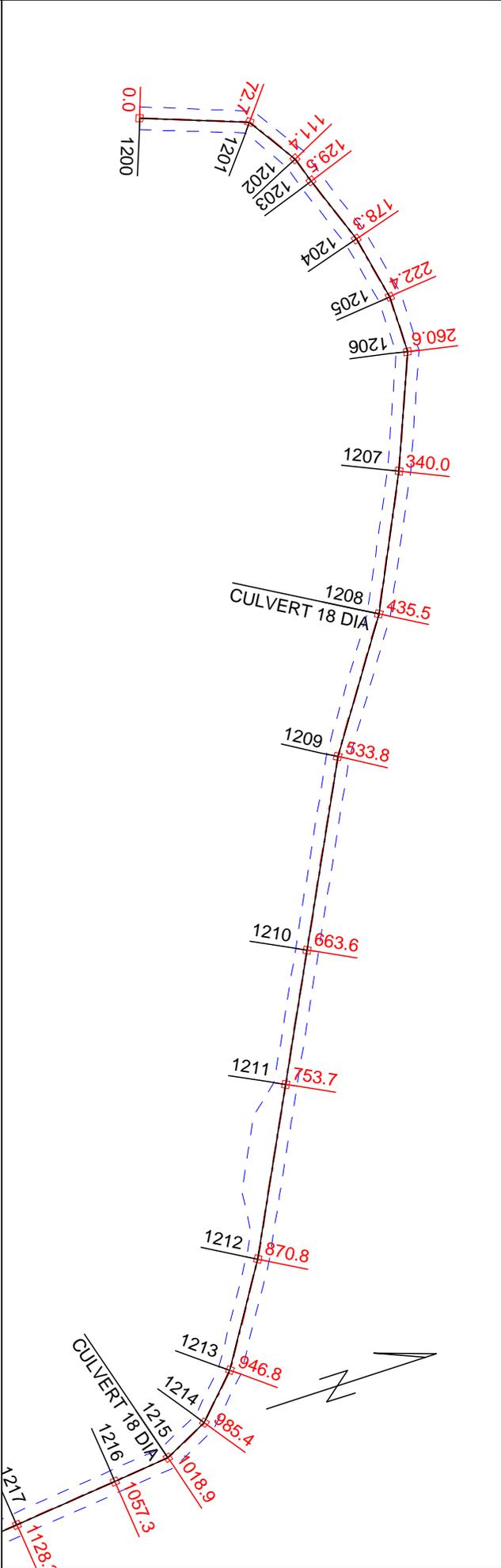
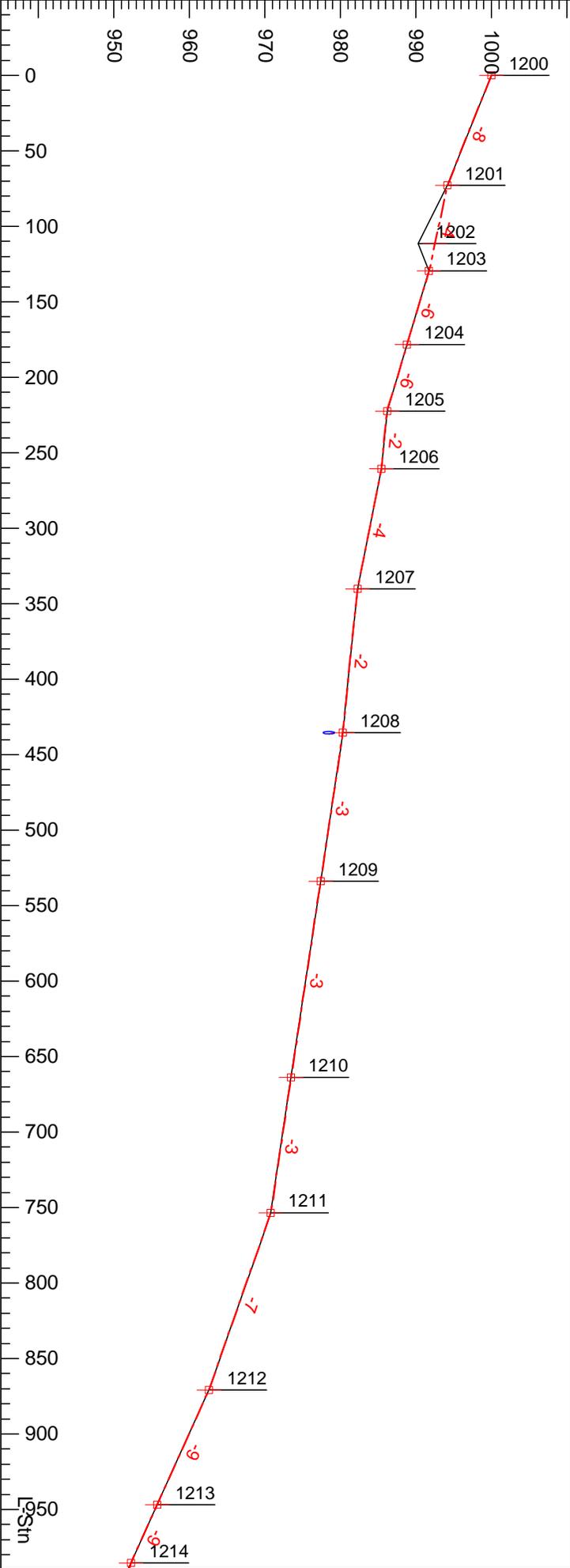
Tribute Timber Sale
 E-3310 road January 12, 2016
 Contract #: 30-093218



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: M. Bell
 16/01/18
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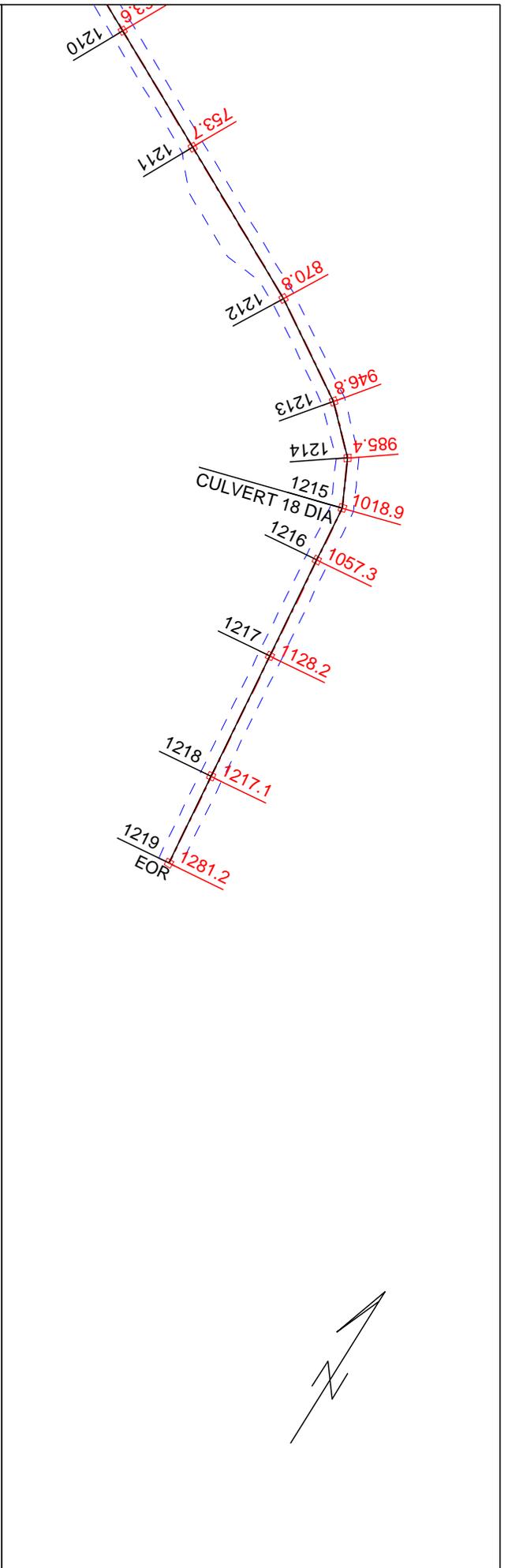
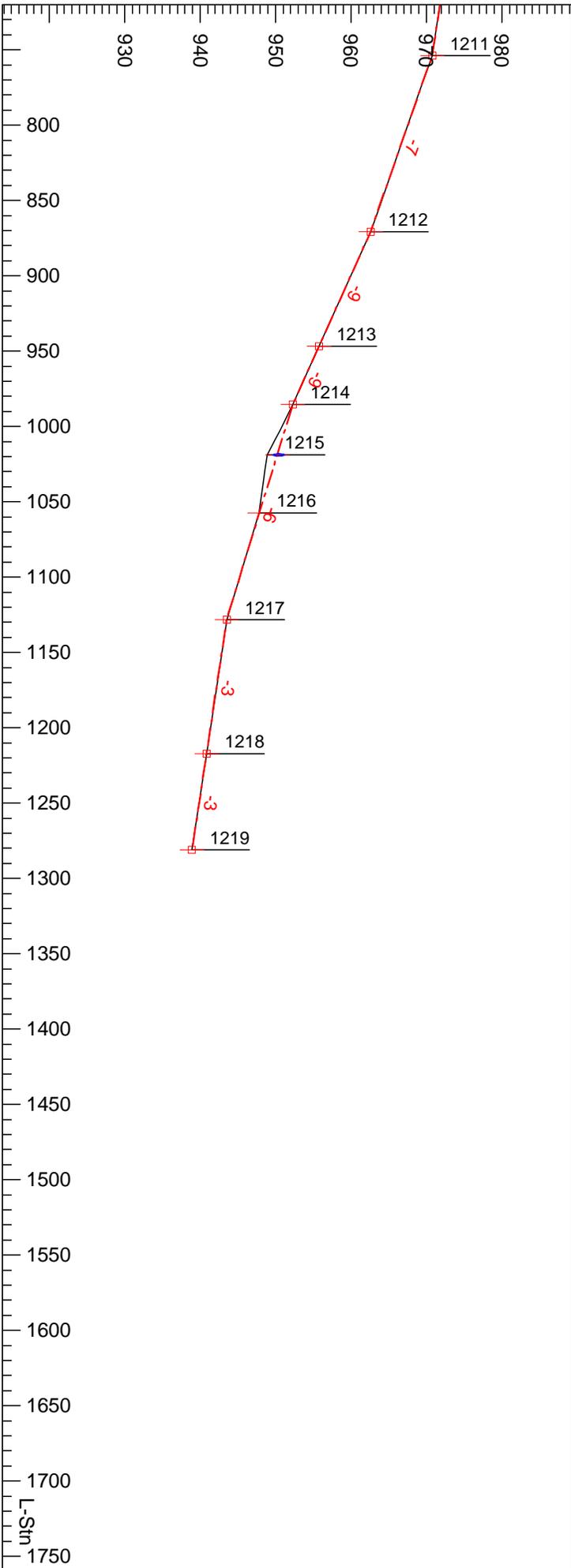
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 E-3310 road January 12, 2016
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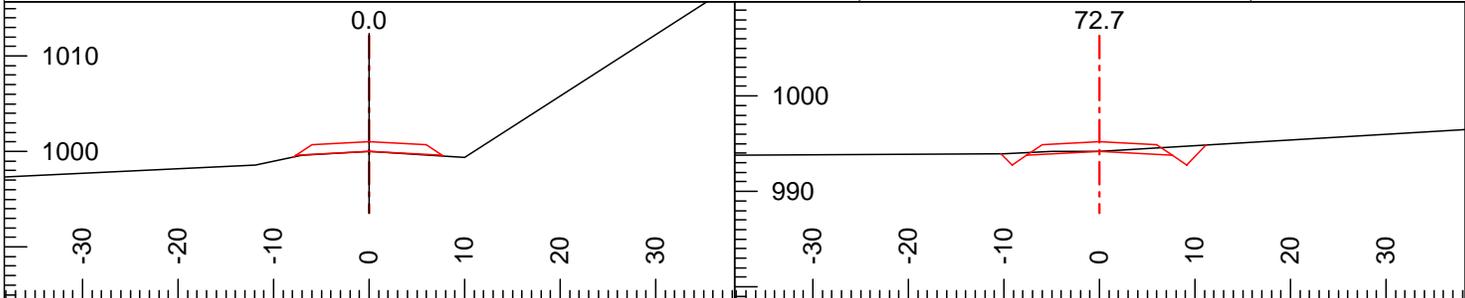


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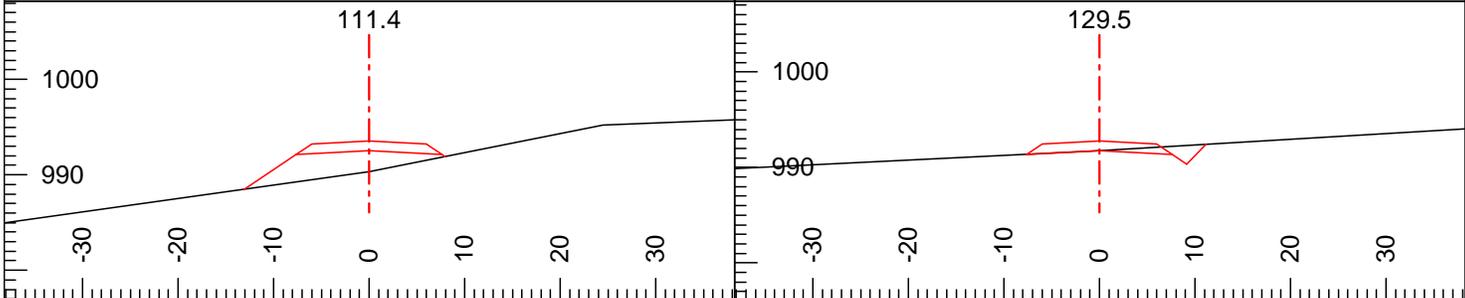
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Engineer: M. Bell
 16/01/18

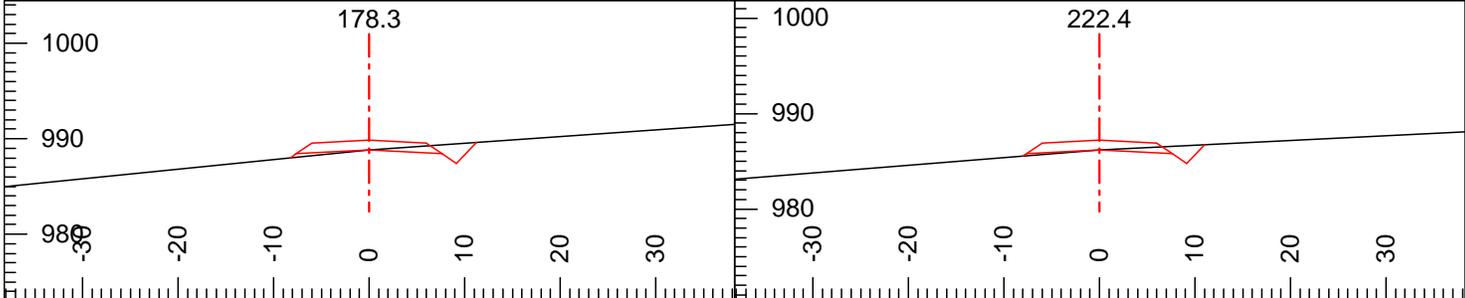




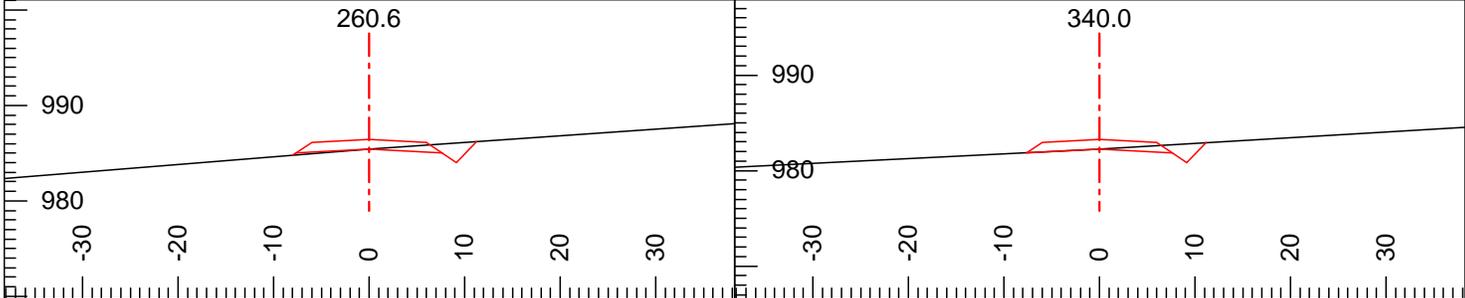
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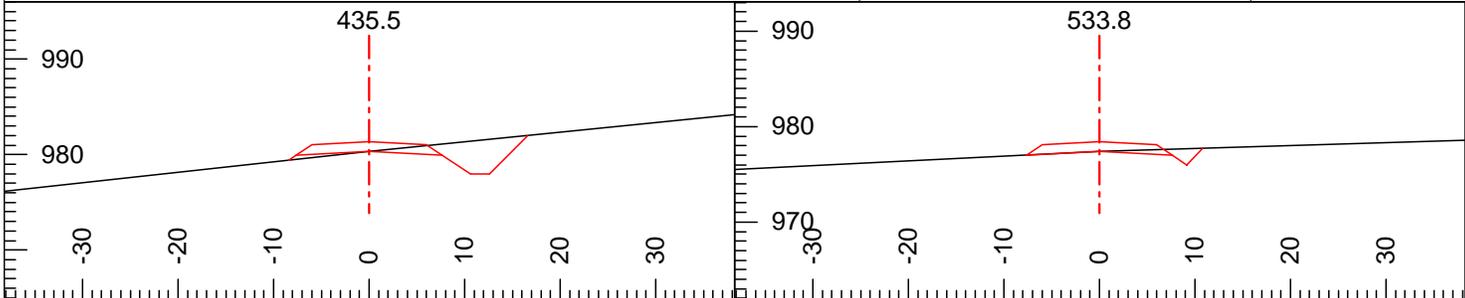
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| Index: 1202 | Ssr: (Av) 20 | Rd. Wd.: 15.2 | Index: 1203 | Ssr: (Av) 6 | Rd. Wd.: 15.2 |
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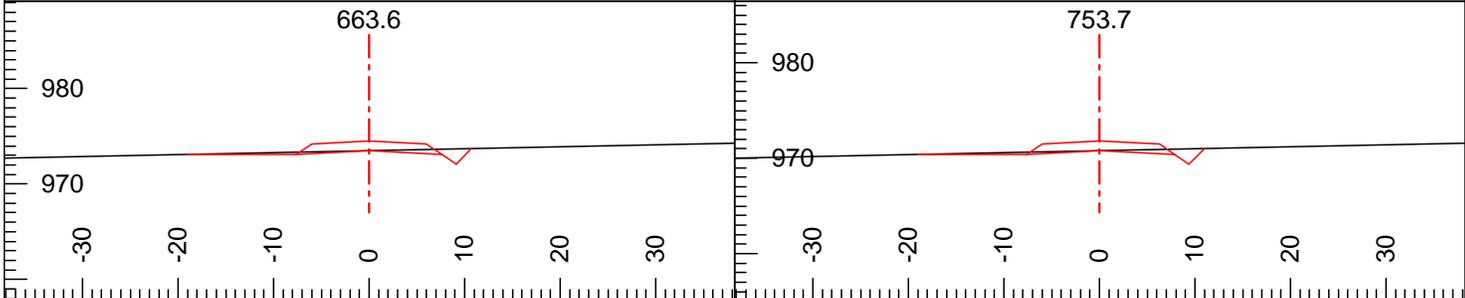
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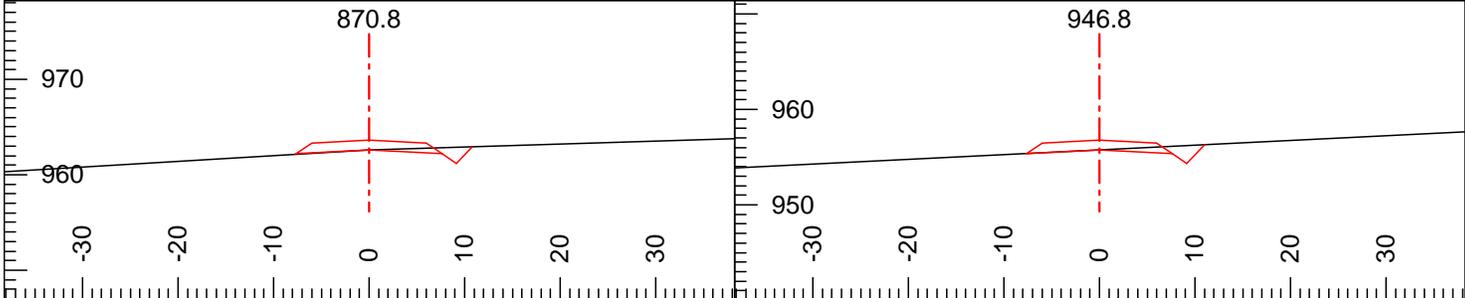
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| Index: 1206 | Ssr: (Av) 7 | Rd. Wd.: 15.2 | Index: 1207 | Ssr: (Av) 6 | Rd. Wd.: 15.2 |
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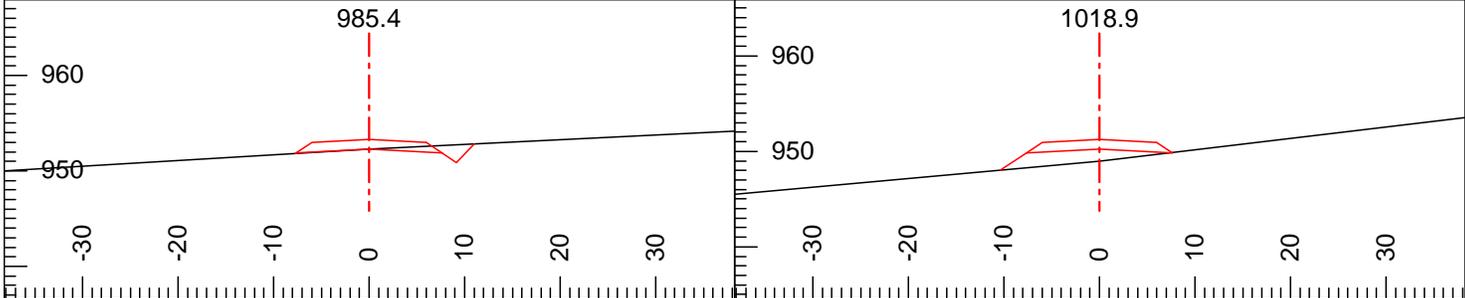
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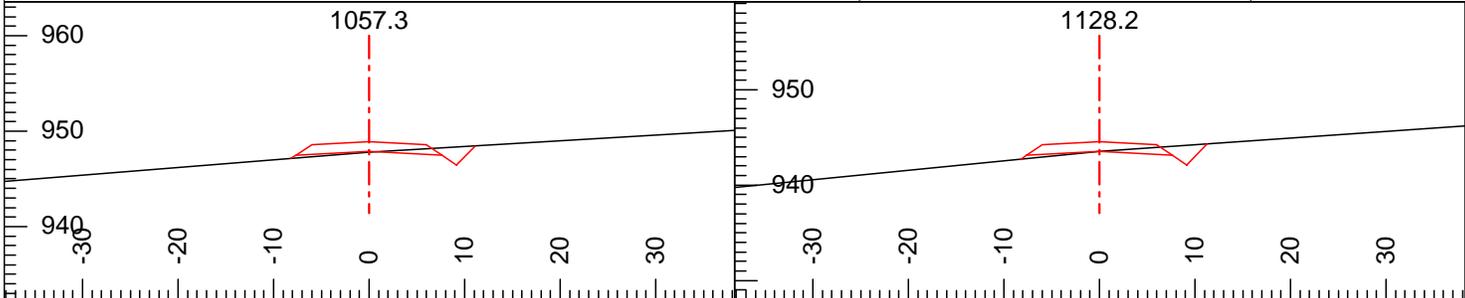
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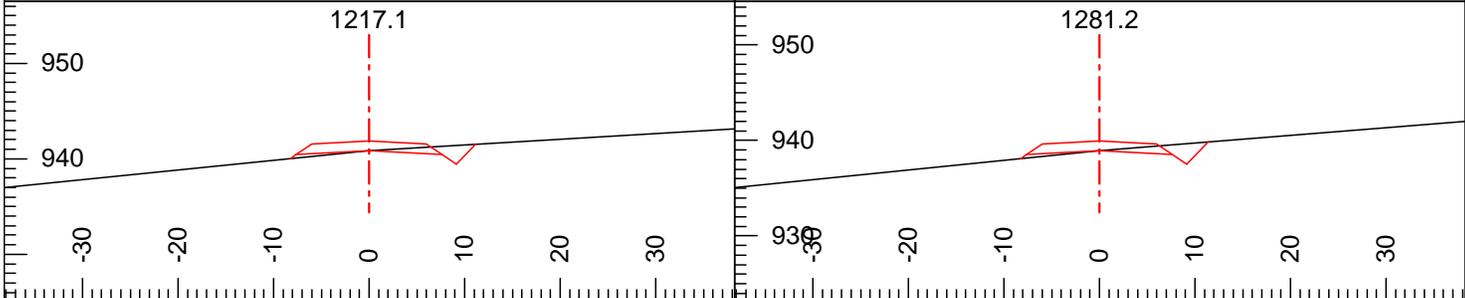
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| Grd.Lst: | -9 | Cut Dp: | 0.0 | Rd. Wd. R: | 7.6 | Grd.Lst: | -6 | Cut Dp: | -1.3 | Rd. Wd. R: | 7.6 |



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| L-Stn: | 1057.3 | Ssl: (Av) | -8 | CL Elev: | 947.9 | L-Stn: | 1128.2 | Ssl: (Av) | -10 | CL Elev: | 943.5 |
| Index: | 1216 | Ssr: (Av) | 6 | Rd. Wd.: | 15.2 | Index: | 1217 | Ssr: (Av) | 7 | Rd. Wd.: | 15.2 |
| Grd.Nxt.: | -6 | H. Offset: | 0.0 | Rd. Wd. L: | 7.6 | Grd.Nxt.: | -3 | H. Offset: | 0.0 | Rd. Wd. L: | 7.6 |
| Grd.Lst: | -6 | Cut Dp: | -0.1 | Rd. Wd. R: | 7.6 | Grd.Lst: | -6 | Cut Dp: | 0.0 | Rd. Wd. R: | 7.6 |



| | | | | | | | | | | | |
|-----------|--------|------------|-----|------------|-------|-----------|--------|------------|-----|------------|-------|
| L-Stn: | 1217.1 | Ssl: (Av) | -10 | CL Elev: | 940.9 | L-Stn: | 1281.2 | Ssl: (Av) | -10 | CL Elev: | 938.9 |
| Index: | 1218 | Ssr: (Av) | 6 | Rd. Wd.: | 15.2 | Index: | 1219 | Ssr: (Av) | 8 | Rd. Wd.: | 15.2 |
| Grd.Nxt.: | -3 | H. Offset: | 0.0 | Rd. Wd. L: | 7.6 | Grd.Nxt.: | n/a | H. Offset: | 0.0 | Rd. Wd. L: | 7.6 |
| Grd.Lst: | -3 | Cut Dp: | 0.0 | Rd. Wd. R: | 7.6 | Grd.Lst: | -3 | Cut Dp: | 0.0 | Rd. Wd. R: | 7.6 |

DEPARTMENT OF NATURAL RESOURCES - SOUTH PUGET SOUND REGION

FORM 9-87(Rev. 05-03)

SUMMARY - ROAD DEVELOPMENT COSTS

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

SALE/PROJECT NAME: **Tribute**

CONTRACT NUMBER: **30-093218**

| TYPE: | Construction | Reconstruction | Pre-Haul Maintenance |
|--|--------------|----------------|----------------------|
| NUMBER OF STATIONS: | 101.14 | 10.90 | 388.77 pre-haul |
| AVG. SIDESLOPE: | 12 | 15 | |
| CLEARING AND GRUBBING: | \$13,144 | \$436 | |
| EXCAVATION AND FILL: | \$13,999 | \$1,679 | |
| MISC. MAINTENANCE: | | | \$8,073 |
| ROCK TOTALS (Cu. Yds.): | | | |
| Ballast: | \$58,526 | \$2,583 | \$0 |
| Surfacing: | \$1,331 | \$1,800 | \$18,394 |
| Riprap/Quarry Spalls: | \$145 | \$20 | \$112 |
| Stockpiles: | | | \$55,300 |
| CULVERTS AND FLUMES: | \$12,194 | \$2,028 | \$10,541 |
| STRUCTURES: | \$0 | \$92,000 | \$0 |
| GENERAL EXPENSES: | \$7,947 | \$8,044 | \$7,394 |
| MOBILIZATION: | \$2,733 | \$2,733 | \$2,733 |
| | | | |
| TOTAL COSTS: | \$110,019 | \$111,323 | \$102,547 |
| COST PER STATION: | \$1,088 | \$10,213 | \$264 |
| ROAD DEACTIVATION AND ABANDONMENT COSTS: | | \$0 | |

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

| | |
|----------------------|-----------|
| TOTAL (All Roads) = | \$323,890 |
| SALE VOLUME MBF = | 10,381 |
| TOTAL COST PER MBF = | \$31.20 |

Plans to be furnished by:

Compiled by: M. Bell

Date: 01/12/16

**ROAD COST ESTIMATE - CONSTRUCTION
(FOR INTERNAL DNR USE ONLY)**

SALE NAME: Tribute

CONTRACT NUMBER: 30-093218

I. CLEARING AND GRUBBING:

| Flat Rate - | % Side Slope | MBF/ac | Disposal Factor | Production Factor | Cost/Station | Width Factor | Total Stations | Sub Total |
|-------------|--------------|--------|-----------------|-------------------|--------------|--------------|----------------|-----------|
| E-2048 | 10 | 53 | 1.00 | 3.33 | \$40 | 1.00 | 17.19 | \$2,290 |
| E-3000c | 11 | 53 | 1.00 | 3.33 | \$40 | 1.00 | 37.68 | \$5,019 |
| E-3010c | 10 | 53 | 1.00 | 3.33 | \$40 | 1.00 | 3.20 | \$426 |
| E-3100 | 12 | 50 | 1.00 | 3.33 | \$40 | 1.00 | 15.52 | \$2,067 |
| E-3120 | 20 | 10 | 1.00 | 1.50 | \$40 | 1.00 | 14.74 | \$884 |
| E-3310 | 10 | 53 | 1.00 | 3.33 | \$48 | 1.20 | 12.81 | \$2,457 |
| 0 | 0 | | | 1.00 | | | 0.00 | \$0 |
| 0 | 0 | | | 1.00 | | | 0.00 | \$0 |
| 0 | 0 | | | 1.00 | | | 0.00 | \$0 |
| 0 | 0 | | | 1.00 | | | 0.00 | \$0 |
| 0 | 0 | | | 1.00 | | | 0.00 | \$0 |
| 0 | 0 | | | 1.00 | | | 0.00 | \$0 |
| 0 | 0 | | | 1.00 | | | 0.00 | \$0 |
| 0 | 0 | | | 1.00 | | | 0.00 | \$0 |
| 0 | 0 | | | 1.00 | | | 0.00 | \$0 |
| 0 | 0 | | | 1.00 | | | 0.00 | \$0 |
| 0 | 0 | | | 1.00 | | | 0.00 | \$0 |
| 0 | 0 | | | 1.00 | | | 0.00 | \$0 |

Clear and Grub TOTAL = \$13,144

II. EXCAVATION:

| Flat Rate - | % Side Slope | Exc. Type Fact. | Production Factor | Cost/Station | Width Factor | Total Stations | Sub Total |
|-------------|--------------|-----------------|-------------------|--------------|--------------|----------------|-----------|
| E-2048 | 10 | 1.0 | 1.50 | \$88 | 1.00 | 17.19 | \$2,269 |
| E-3000c | 11 | 1.0 | 1.50 | \$88 | 1.00 | 37.68 | \$4,974 |
| E-3010c | 10 | 1.0 | 1.50 | \$88 | 1.00 | 3.20 | \$422 |
| E-3100 | 12 | 1.0 | 1.50 | \$88 | 1.00 | 15.52 | \$2,049 |
| E-3120 | 20 | 1.0 | 2.00 | \$88 | 1.00 | 14.74 | \$2,594 |
| E-3310 | 10 | 1.0 | 1.50 | \$88 | 1.00 | 12.81 | \$1,691 |
| 0 | 0 | | 1.00 | | | 0.00 | \$0 |
| 0 | 0 | | 1.00 | | | 0.00 | \$0 |
| 0 | 0 | | 1.00 | | | 0.00 | \$0 |
| 0 | 0 | | 1.00 | | | 0.00 | \$0 |
| 0 | 0 | | 1.00 | | | 0.00 | \$0 |
| 0 | 0 | | 1.00 | | | 0.00 | \$0 |
| 0 | 0 | | 1.00 | | | 0.00 | \$0 |
| 0 | 0 | | 1.00 | | | 0.00 | \$0 |
| 0 | 0 | | 1.00 | | | 0.00 | \$0 |
| 0 | 0 | | 1.00 | | | 0.00 | \$0 |
| 0 | 0 | | 1.00 | | | 0.00 | \$0 |
| 0 | 0 | | 1.00 | | | 0.00 | \$0 |

*End Haul, Over Haul, Large Fills/Cuts

End Haul/ Over Haul
Large Fills/ Cuts

| Estimated Vol. (cy) | No. of Equip. Days | Cost/day | Sub Total |
|---------------------|--------------------|----------|-----------|
| | | | \$0 |

Excavation TOTAL = \$13,999

III. BALLAST AND SURFACING :

Ballast source 1: Vantage Quarry
Ballast source 2: Vantage Quarry
Riprap source : Vantage Quarry

| Description | cu.yds/sta | x sta | x compaction factor | = cubic yds | Landings |
|-----------------------------|------------|-------|---------------------|-------------|----------|
| Required Ballast 1 (4"-Jaw) | 4531 | | 1.30 | 5,890 | |
| Required Surface (1-1/2") | 85 | | 1.30 | 111 | |
| Riprap/Quarry Spalls | 22 | | 1.30 | 29 | |

| UNIT COSTS | Ballast 1 | Surface | Riprap |
|----------------------|---------------|----------------|---------------|
| Drill & Shoot | \$1.50 | \$1.50 | |
| Dig and load | \$0.50 | \$0.50 | \$0.75 |
| Crushing | \$2.75 | \$4.70 | |
| Purchase | | | |
| Haul * | \$3.20 | \$3.20 | \$3.20 |
| Spread | \$0.80 | \$0.80 | \$0.75 |
| Compact | \$0.45 | \$0.45 | |
| Strip | | | |
| Reclamation | | | |
| Use tax | \$0.74 | \$0.89 | \$0.38 |
| TOTAL (\$/cy) | \$9.94 | \$12.04 | \$5.08 |

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

| | |
|---------------|----------|
| R.T. Miles = | 4.1 |
| Ave. Speed = | 15 |
| Delay (Hrs.)= | 0.1 |
| Cost / Hour = | \$102.85 |
| CY / Load = | 12 |

| | | | | |
|-----------------------------|------|-----------|-------------------|----------|
| Required Ballast 1 (4"-Jaw) | 5890 | Cu. yds @ | \$9.94 /cu. yd = | \$58,526 |
| Required Surface (1-1/2") | 111 | Cu. yds @ | \$12.04 /cu. yd = | \$1,331 |
| Riprap/Quarry Spalls | 29 | Cu. yds @ | \$5.08 /cu. yd = | \$145 |

Rock total = \$60,002

IV. CULVERTS AND FLUMES:

| Description | Qty. | Gauge | Diameter | No/Length | Installed Cost/ft | Sub-total |
|-------------|------|-------|----------|-----------|-------------------|-----------|
| | 13 | PD | 18 | 30 | \$20.08 | \$7,831 |
| | 1 | PD | 18 | 41 | \$20.08 | \$823 |
| | | PD | 18 | 51 | \$20.08 | \$0 |
| | | PD | 24 | 41 | \$24.39 | \$0 |
| | | PD | 24 | 30 | \$24.39 | \$0 |
| | 1 | PD | 48 | 59 | \$60.00 | \$3,540 |

Bands & Gaskets: one ft extra included in length to account for band cost.

Culvert total = \$12,194

V. STRUCTURES

| Description | Type | No. | Cost/each | Sub-total |
|-------------|------|-----|-----------|-----------|
| | | | | \$0 |

NOTES:

Structure total = \$0

Sub-TOTAL = \$99,339

VI. GENERAL EXPENSES:

Overhead & General Exp. Add 8% \$7,947

VII. MOBILIZATION:

| Description | \$ per Move | # of Moves | Sub-total |
|------------------|-------------|------------|-----------|
| Dump Trucks | 100 | 3 | \$300 |
| Grader | 400 | 1 | \$400 |
| Compactor | 400 | 1 | \$400 |
| Excavator | 450 | 2 | \$900 |
| Dozer (D8) | 400 | 1 | \$400 |
| Front end loader | 400 | 1 | \$400 |
| Rock crusher | \$5,000 | 1 | \$5,000 |
| Drill | \$400 | 1 | \$400 |
| Crane | \$1,000 | | \$0 |

Total Mobilization = \$8,200 Mobilization sub-total = \$2,733.33

SHEET TOTAL = \$110,019

Stations: 101.14

By: M. Bell

Sheet 2 of 4

Date: 01/12/16

**ROAD COST ESTIMATE - RECONSTRUCTION
(FOR INTERNAL DNR USE ONLY)**

SALE NAME: Tribute

CONTRACT NUMBER: 30-093218

I. CLEARING AND GRUBBING:

| | Flat Rate - | % Side Slope | MBF/ac | Disposal Factor | Production Factor | Cost/Station | Width Factor | Total Stations | Sub Total |
|--------|-------------|--------------|--------|-----------------|-------------------|--------------|--------------|----------------|-----------|
| E-2040 | | 15 | 0 | 1.00 | 1.00 | \$40 | 1.0 | 10.90 | \$436 |
| 0 | | | | 1.00 | 1.00 | | | 0.00 | \$0 |
| 0 | | | | 1.00 | 1.00 | | | 0.00 | \$0 |
| 0 | | | | 1.00 | 1.00 | | | 0.00 | \$0 |
| 0 | | | | 1.00 | 1.00 | | | 0.00 | \$0 |

Clear and Grub TOTAL = \$436

II. EXCAVATION:

| | Flat Rate - | % Side Slope | Exc. Type Fact. | Production Factor | Cost/Station | Width Factor | Total Stations | Sub Total |
|--------|-------------|--------------|-----------------|-------------------|--------------|--------------|----------------|-----------|
| E-2040 | | 15 | 1.0 | 1.75 | \$88 | 1.00 | 10.90 | \$1,679 |
| 0 | | | | 1.00 | | | 0.00 | \$0 |
| 0 | | | | 1.00 | | | 0.00 | \$0 |
| 0 | | | | 1.00 | | | 0.00 | \$0 |
| 0 | | | | 1.00 | | | 0.00 | \$0 |

*End Haul, Over Haul, Large Fills/Cuts

End Haul/ Over Haul
Large Fills/ Cuts

| Estimated Vol. (cy) | No. of Equip. Days | Cost/day | Sub Total |
|---------------------|--------------------|----------|-----------|
| | | | \$0 |
| | | | \$0 |

Excavation TOTAL = \$1,679

III. BALLAST AND SURFACING :

Ballast source 1: Vantage Quarry
Ballast source 2: Vantage Quarry
Riprap source : Vantage Quarry

| UNIT COSTS | Ballast 1 | Surface | Riprap |
|----------------------|---------------|----------------|---------------|
| Drill & Shoot | \$1.50 | \$1.50 | \$0.00 |
| Dig and load | \$0.50 | \$0.50 | \$0.75 |
| Crushing | \$2.75 | \$4.70 | \$0.00 |
| Purchase | | | |
| Haul * | \$3.20 | \$3.20 | \$3.20 |
| Spread | \$0.80 | \$0.80 | \$0.75 |
| Compact | \$0.45 | \$0.45 | \$0.00 |
| Strip | | | |
| Reclamation | | | |
| Use tax | \$0.74 | \$0.89 | \$0.38 |
| TOTAL (\$/cy) | \$9.94 | \$12.04 | \$5.08 |

| Description | cu.yds/sta | x sta | x compaction factor | = cubic yds |
|----------------------------|------------|-------|---------------------|-------------|
| Required Ballast 1 (4"-) | 200 | | 1.30 | 260 |
| Required Surface (1-1/2"-) | 115 | | 1.30 | 150 |
| Riprap/Quarry Spalls | 3 | | 1.30 | 4 |

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

| | Ballast 1 | Ballast 2 |
|---------------|-----------|-----------|
| R.T. Miles = | 4.1 | |
| Ave. Speed = | 15.0 | 15.0 |
| Delay (Hrs.)= | 0.1 | 0.1 |
| Cost / Hour = | \$102.85 | \$102.85 |
| CY / Load = | 12.0 | 12.0 |

| | | | | |
|----------------------------|-----|-----------|-------------------|---------|
| Required Ballast 1 (4"-) | 260 | Cu. yds @ | \$9.94 /cu. yd = | \$2,583 |
| Required Surface (1-1/2"-) | 150 | Cu. yds @ | \$12.04 /cu. yd = | \$1,800 |
| Riprap/Quarry Spalls | 4 | Cu. yds @ | \$5.08 /cu. yd = | \$20 |

Rock total = \$4,403

IV. CULVERTS AND FLUMES:

| Description | Qty. | Gauge | Diameter (in.) | No/Length (ft) | Installed Cost/ft | Sub-total |
|-------------|------|-------|----------------|----------------|-------------------|-----------|
| | 2 | PD | 18 | 30 | \$20.08 | \$1,205 |
| | | PD | 18 | 36 | \$20.08 | \$0 |
| | 1 | PD | 18 | 41 | \$20.08 | \$823 |
| | | PD | 24 | 30 | \$24.39 | \$0 |
| | | PD | 24 | 41 | \$24.39 | \$0 |
| | | PD | 24 | 51 | \$24.39 | \$0 |
| | | PD | 24 | 82 | \$24.39 | \$0 |
| | | PD | 48 | 52 | \$60.00 | \$0 |

Bands & Gaskets: one ft extra included in length to account for band cost.

\$0

Culvert total = \$2,028

V. STRUCTURES

| Description | Type | Width | Length | Cost/ft. | Sub-total |
|--------------|------|-------|--------|----------|-----------|
| Steel Bridge | | 16 | 50 | | \$92,000 |
| | | | | | \$0 |
| | | | | | \$0 |
| | | | | | \$0 |

Structure total = \$92,000

Sub-TOTAL = \$100,546

VI. GENERAL EXPENSES:

Overhead & General Exp. Add 8% \$8,044

VII. MOBILIZATION:

| Description | \$ per Move | # of Moves | Sub-total |
|---|-------------|------------|-----------|
| Dump Trucks | \$100 | 3 | \$300 |
| * Move in costs are for rock crushing only. | | | |
| Grader | \$400 | 1 | \$400 |
| Compactor | \$400 | 1 | \$400 |
| Excavator | \$450 | 2 | \$900 |
| Dozer (D8) | \$400 | 1 | \$400 |
| Front end loader | \$400 | 1 | \$400 |
| Rock crusher | \$5,000 | 1 | \$5,000 |
| Drill | \$400 | 1 | \$400 |

Total Mobilization = \$8,200 Mobilization sub-total = \$2,733.33

SHEET TOTAL = \$111,323

Stations: 10.90

By: M. Bell

Sheet 3 of 4

Date: 01/12/16

**ROAD COST ESTIMATE - PRE-HAUL and POST-HAUL MAINTENANCE
(FOR INTERNAL DNR USE ONLY)**

SALE NAME: Tribute

CONTRACT NUMBER: 30-093218

Total stations Pre-Haul Maintenance = 388.77
 Total stations Post-Haul Maintenance = 0.00

I. MISC. MAINTENANCE ITEMS:

Pre-haul

| Rd | Stations |
|--------|----------|
| E-Line | 206.86 |
| E-2040 | 3.10 |
| E-2040 | 52.58 |
| E-3000 | 104.68 |
| E-3100 | 13.95 |
| E-3300 | 7.60 |

Culvert replace. Ditch reconst
 grade. Ditch clean
 grade. Culvert install.
 grade, clean ditch. Desod. Compact.
 Brush. Desod.
 Brush

| | Cost/ Station | Total Stations | Sub Total |
|-------------------------------|------------------|-------------------|--------------|
| mechanical brushing = | | | \$0 |
| hand brushing = | | | \$0 |
| ditch cleaning = | \$31.00 | 107.8 | \$3,341 |
| grading/berm removal = | \$4.00 | 160.4 | \$641 |
| culvert & headwall cleanout = | \$4.00 | 300.9 | \$1,204 |
| sediment trap installation = | \$50.00 | | \$0 |
| compaction (hrs) = | \$92.14 | 3.0 | \$280 |
| Dust abatement = | \$50.00 | | \$0 |
| post-haul grading = | \$4.00 | | \$0 |
| Light Mechanical Brushing = | \$15.00 | 21.6 | \$324 |
| Medium mechanical brushing = | \$25.00 | | \$0 |
| Heavy mechanical brushing = | \$30.00 | | \$0 |
| ditch reconstruction = | \$2.00 | 43.9 | \$2,283 |
| | | | \$0 |

Misc TOTAL = \$8,073

Post-haul

| Rd | Stations |
|----|----------|
| | |

III. BALLAST AND SURFACING :

Ballast source: Vantage Quarry
 Surface source: Vantage Quarry
 Riprap source : Vantage Quarry

| UNIT COSTS | Surface 1 | Surface 2 | Riprap |
|----------------------|---------------|----------------|---------------|
| Drill & Shoot | \$1.50 | \$1.50 | |
| Dig and load | \$0.50 | \$0.50 | \$0.75 |
| Crushing | \$2.75 | \$4.70 | |
| Purchase | | | |
| Haul * | \$3.20 | \$3.20 | \$3.20 |
| Spread | \$0.80 | \$0.80 | \$0.75 |
| Compact | \$0.45 | \$0.45 | |
| Strip | | | |
| Reclamation | | | |
| Use tax | \$0.74 | \$0.89 | \$0.38 |
| TOTAL (\$/cy) | \$9.94 | \$12.04 | \$5.08 |

| Description | cu.yds/sta | x sta | x compaction factor | = cubic yds |
|---------------------------------------|------------|-------|---------------------|-------------|
| Required Ballast 1 (4"-Jaw) | 0 | | 1.30 | 0 |
| Required Surface (1-1/2"-) | 1175 | | 1.30 | 1,528 |
| Riprap/Quarry Spalls | 17.0 | | 1.30 | 22 |
| Stockpile construction 1 (3 & 4 Inch) | 6000 | | 1 | 6,000 |
| Stockpile construction 2 (1-1/2 Inch) | 4000 | | 1 | 4,000 |

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

Pit: 0
 R.T. Miles = 4.1
 Ave. Speed = 15.0 15.0
 Delay (Hrs.) = 0.1 0.1
 Cost / Hour = 102.9 102.9
 CY / Load = 12.0 12.0

Required Ballast 1 (4"-Jaw) 0 Cu. yds @ \$9.94 /cu. yd = \$0
 Required Surface (1-1/2"-) 1528 Cu. yds @ \$12.04 /cu. yd = \$18,394
 Riprap/Quarry Spalls 22 Cu. yds @ \$5.08 /cu. yd = \$112
 Stockpile construction 1 6000 Cu. yds @ \$4.75 /cu. yd = \$28,500
 Stockpile construction 2 4000 Cu. yds @ \$6.70 /cu. yd = \$26,800

Rock total = \$73,806

IV. CULVERTS AND FLUMES:

| Description | Qty. | Gauge | Diameter (in.) | No/Length (ft) | Installed Cost/ft | Sub-total |
|-------------|------|-------|----------------|----------------|----------------------|-----------|
| | 11 | PD | 18 | 30 | \$20.08 | \$6,626 |
| | 2 | PD | 18 | 41 | \$20.08 | \$1,647 |
| | | PD | 18 | 51 | \$24.39 | \$0 |
| | 1 | PD | 24 | 41 | \$24.39 | \$1,000 |
| | 1 | PD | 24 | 52 | \$24.39 | \$1,268 |
| | | PD | 36 | 70 | \$35.38 | \$0 |
| | | PD | 48 | 41 | \$60.00 | \$0 |
| | | PD | 48 | 52 | \$60.00 | \$0 |

Bands & Gaskets: one ft extra included in length to account for band cost.

\$0

Culvert total = \$10,541

V. STRUCTURES

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

Structure total = \$0

Sub-TOTAL = \$92,420

VI. GENERAL EXPENSES:

Overhead & General Exp. Add 8% \$7,394

VII. MOBILIZATION:

| Description | \$ per Move | # of Moves | Sub-total |
|---------------------------------|-------------|------------|-----------|
| Dump Trucks | 100 | 3 | \$300 |
| Grader | 400 | 1 | \$400 |
| Compactor | 400 | 1 | \$400 |
| Excavator | 450 | 2 | \$900 |
| Dozer (D8) | 400 | 1 | \$400 |
| Front end loader | 400 | 1 | \$400 |
| Rock crusher w/ platform scales | 4,800 | 1 | \$5,000 |
| Drill | 400 | 1 | \$400 |

Total Mobilization = \$8,200 Mobilization sub-total = \$2,733.33

SHEET TOTAL = \$102,547

Stations: 388.77

By: M. Bell

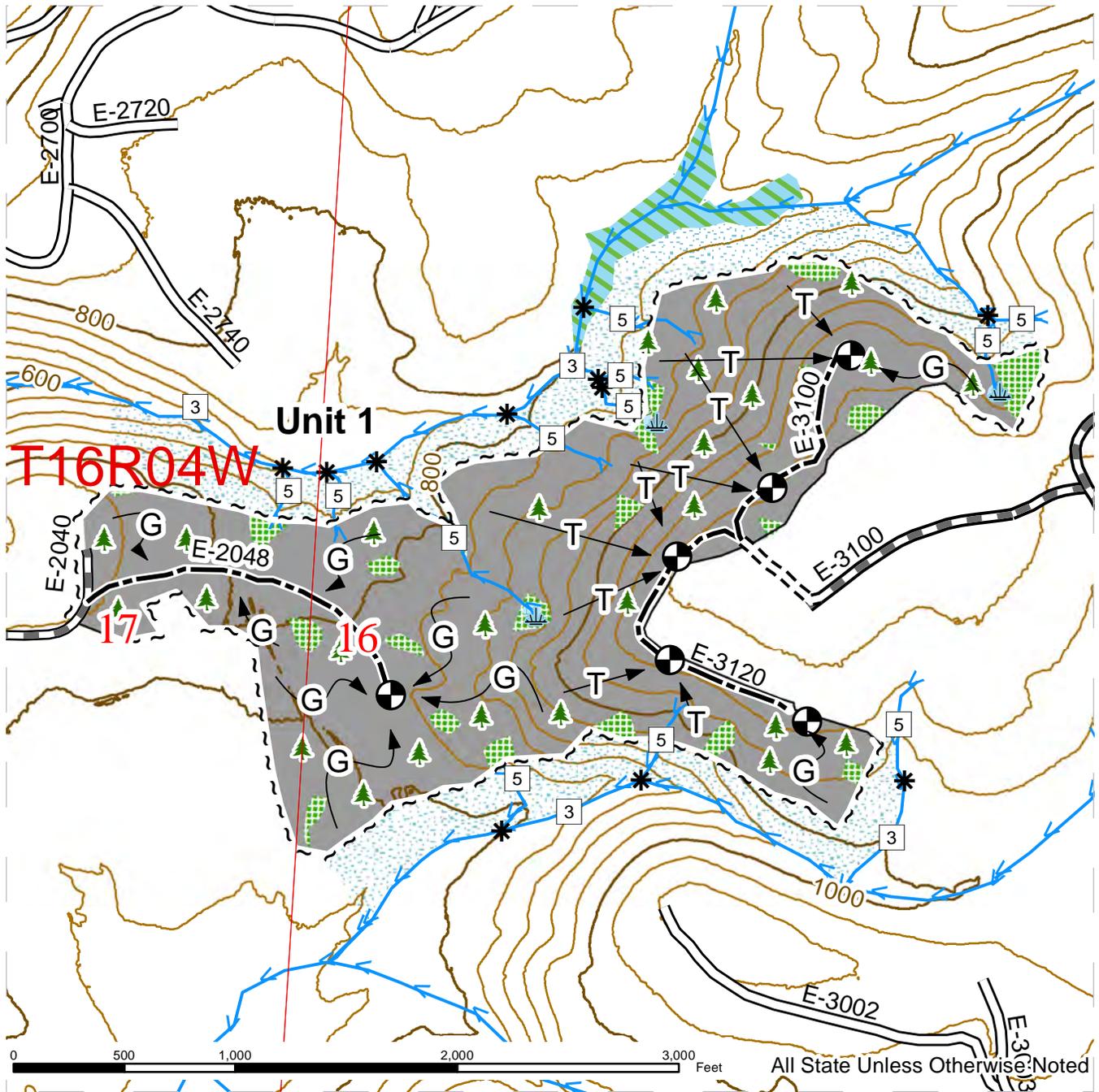
Sheet 4 of 4

Date: 01/12/16

Logging Plan Map

SALE NAME: Tribute
AGREEMENT#: 30-093218
TOWNSHIP(S): T16N R4W S15, S16
TRUST(S): Common School (3), State Forest Purchase (2)

REGION: South Puget Sound Region
COUNTY(S): Grays Harbor
ELEVATION RGE: 772' - 1211'

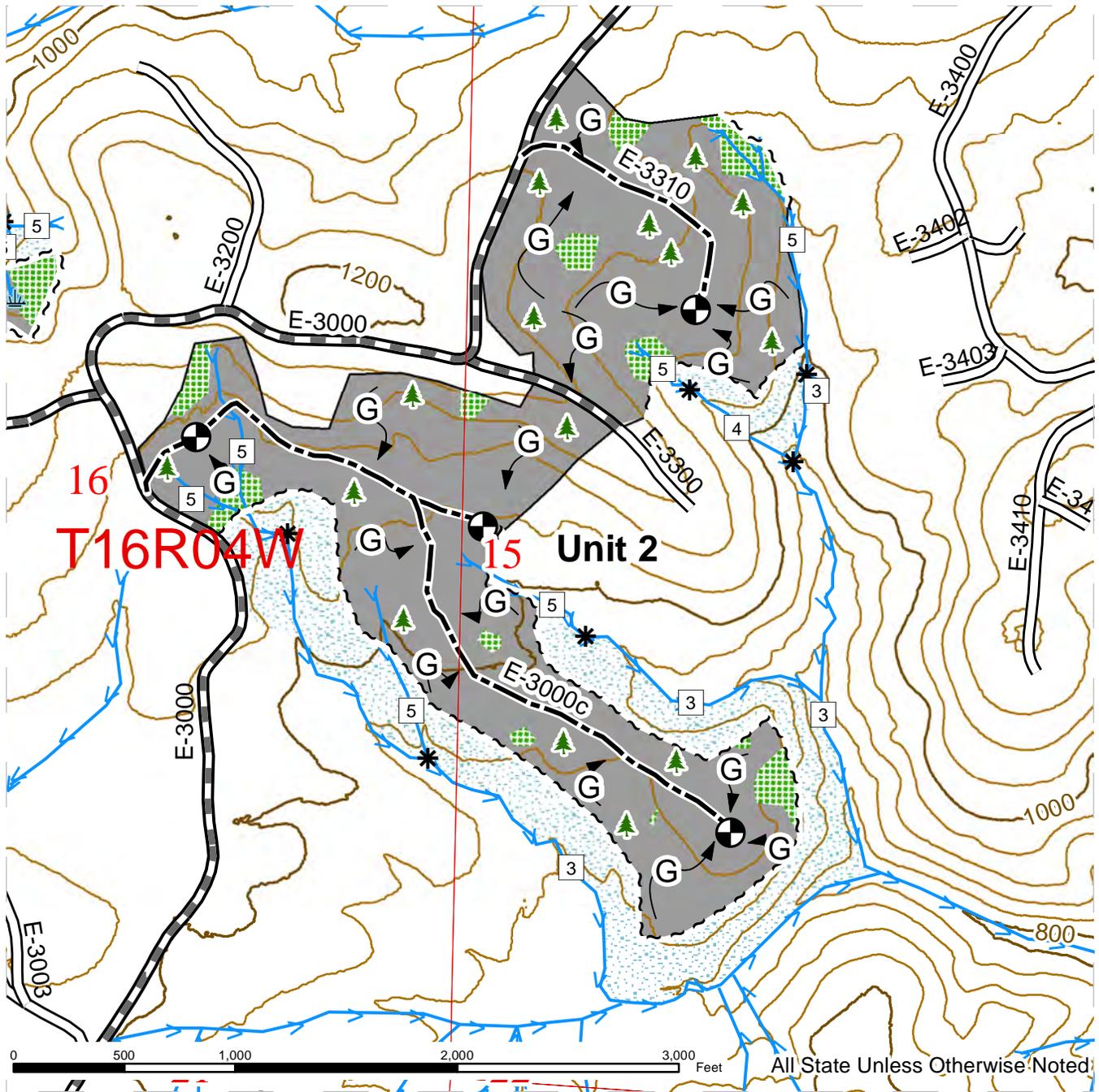


| | | |
|------------------------------------|-------------------------------|-----------------------------|
| Timber Sale Unit | Required Construction | Scattered Leave Trees |
| RMZ Area | Required Pre-haul Maintenance | Contours 40 ft |
| Forested Wetland | Optional Construction | Public Land Survey Sections |
| Non-Forested Wetland | Stream | Ground Based Logging |
| Yellow Tagged Leave Tree Clumps | Stream Type | Cable Based Logging |
| White "Timber Sale Boundary" Tags | Stream Break | |
| Timber Type Change (pink flagging) | Proposed Landings | |
| Existing Road | | |

Logging Plan Map

SALE NAME: Tribute
AGREEMENT#: 30-093218
TOWNSHIP(S): T16N R4W S15, S16
TRUST(S): Common School (3), State Forest Purchase (2)

REGION: South Puget Sound Region
COUNTY(S): Grays Harbor
ELEVATION RGE: 772' - 1211'



| | | |
|------------------------------------|-------------------------------|-----------------------------|
| Timber Sale Unit | Required Construction | Scattered Leave Trees |
| RMZ Area | Required Pre-haul Maintenance | Contours 40 ft |
| Forested Wetland | Optional Construction | Public Land Survey Sections |
| Non-Forested Wetland | Stream | Ground Based Logging |
| Yellow Tagged Leave Tree Clumps | Stream Type | Cable Based Logging |
| White "Timber Sale Boundary" Tags | Stream Break | |
| Timber Type Change (pink flagging) | Proposed Landings | |
| Existing Road | | |