WASHINGTON STATE DEPARTMENT OF Natural Resources

TIMBER NOTICE OF SALE

***SALE NAME**: TRAP DOOR VRH & VDT* ***AGREEMENT NO**: 30-091844*

AUCTION: December 15, 2015 starting at 10:00 a.m., South Puget Sound Region Office, Enumclaw, WA **COUNTY:** Mason

SALE LOCATION: Sale located approximately 16 miles northwest of Hoodsport.

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, the USFS 2510 Road, and pink flagging along property lines and timber type change in Unit #1; white timber sale boundary tags, the USFS 2510 Road, and pink flagging along property lines in Unit #2; white timber sale boundary tags, the USFS 25 Road, the USFS 2550 Road, and pink flagging along property line in Unit #3; all timber marked with orange paint bounded by white timber sale boundary tags and pink flagging in Units #4 and #5; all timber bounded by orange right of way tags in Unit #6 on part(s) of Sections 2, 11, 15 and 16 all in Township 24 North, Range 3 West, W.M., containing 165 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:

	Avg	Ring	Total	MBF by Grade								
Species	DBH	Count	MBF	1P	2P	3P	SM	1S	2S	3S	4S	UT
Douglas fir	14.6	9	4,689				1		2,175	1,624	834	55
Hemlock	12.1	9	345						72	112	107	54
Red cedar	12.7		150							76	74	
Cottonwood	22.8		14						14			
Maple	17.8		5								5	
Sale Total			5,203									

MINIMUM BID: $1,307,000.00 **BID METHOD:** Sealed Bids

PERFORMANCE SECURITY: $200,000.00 **SALE TYPE:** Lump Sum

EXPIRATION DATE: September 30, 2017 **ALLOCATION:** Export Restricted

BID DEPOSIT: $130,700.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: Estimated 46 percent cable and 54 percent ground based. Cable and ground based equipment with self-leveling shovels limited to sustained slopes that are 60 percent and less and all other ground based equipment limited to sustained slopes of 45 percent or less. Yarding may be restricted during wet weather if rutting becomes excessive, per clause H-017.

Falling, yarding and timber haul will not be permitted from November 1st to April 30th, nor on weekends or state recognized holidays, unless authority to do so is granted, in writing, by the Contract Administrator. If permission is granted to operate from November 1st to April 30th, the Purchaser shall comply with a Winter Operating Plan to include further protection of water, soil, roads and other forest assets at the Purchaser's

expense. Sedimentation preventative measures must be in place prior to commencing any winter operations.

ROADS: 55.92 stations of required construction. 54.42 stations of optional construction. 242.12 stations of required pre-haul maintenance. 342.95 stations of required post-haul maintenance. 54.42 stations of decommissioning, if constructed. Purchaser maintenance on the 2530 Ext., 2530, 2532, 2533, 2550 and USFS 2510 Roads and Spurs 1, 2, 3, 4, 5 and 6. Designated maintenance on all other roads used. Rock for this proposal can be obtained from the state owned 2510 Rock Pit.

Road construction and rock haul will not be permitted from November 1st to April 30th, nor on weekends or state recognized holidays, unless authority to do so is granted, in writing, by the Contract Administrator. If permission is granted to operate from November 1st to April 30th, the Purchaser shall comply with a Winter Operating Plan to include further protection of water, soil, roads and other forest assets at the Purchaser's expense. Sedimentation preventative measures must be in place prior to commencing any winter operations.

ACREAGE DETERMINATION

CRUISE METHOD: Unit acreage was determined by traversing boundaries by GPS. Right of way acreage was determined by multiplying length times width. Traverse GPS data files and cruise maps are available upon request by emailing audrey.mainwaring@dnr.wa.gov. See "Cruise Narrative" for cruise method.

FEES: $94,767.00 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 high quality Douglas fir logs and possible Douglas fir and western red cedar poles.

Required construction on the 2530 Ext. Road may result in higher than normal construction costs due to both very rocky soils and solid rock.

Units #4 and #5 are Wetland Management Zone (WMZ) thinning units with take trees marked with orange paint. No equipment will be allowed within the WMZ thinning Units #4 and #5, unless approved by the Contract Administrator. Take trees within the WMZ are planned to be yarded from the adjacent upland unit.

Hand falling may be necessary within Type 5 stream equipment limitation zones, due to topography and to reduce soil disturbance.

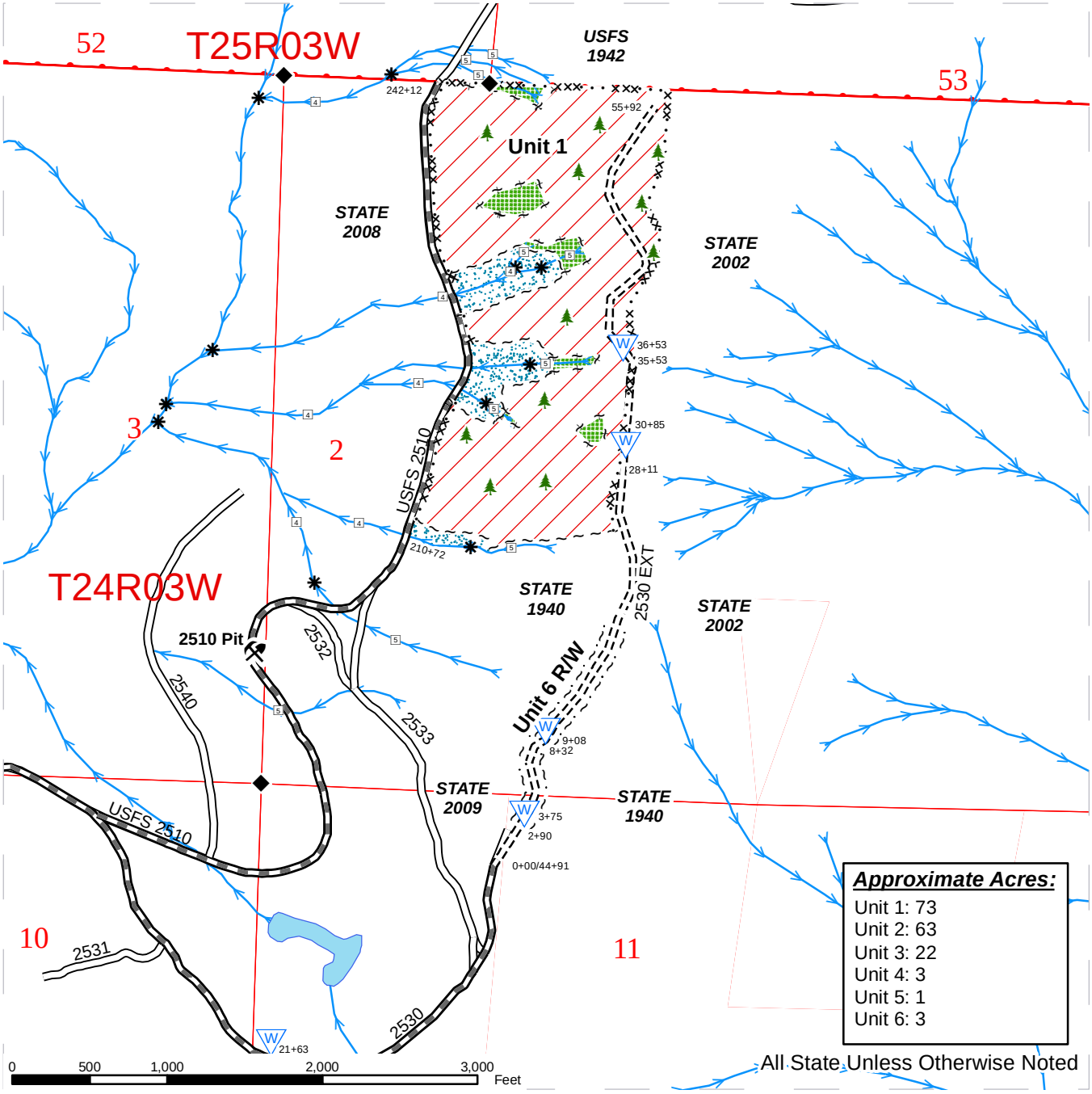
Purchaser shall cut vine maple and sever from the stump in Units #1, #2, and #3. Stumps shall be 12 inches or less in height.

There is an extreme hazard abatement requirement within 100 feet of the USFS 25 Road, see contract clause S-020. Approximate areas shown on the Timber Sale Map.

TIMBER SALE MAP

SALE NAME: Trap Door VRH & VDT
AGREEMENT#: 30-091844
TOWNSHIP(S): T24R03W
TRUST(S): State Forest Transfer(1), Common School and Indemnity(3), Capitol Grant(7)

REGION: South Puget Sound Region
COUNTY(S): MASON
ELEVATION RGE: 659-2246



RMZ/WMZ
Forested Wetland
Tagged Leave Tree Area
Variable Retention Harvest
WMZ Thinning Area - take trees marked with orange paint
Existing Road
Required Construction
Optional Construction
Required Pre-Haul Maintenance

Streams
Monumented Corners
Stream Type
Stream Type Break
Leave Trees - yellow "Leave Tree Area" tags or blue paint
Extreme Hazard Abatement
Existing Rock Pit
White "Timber Sale Boundary" Tags

Right of Way Tags
Pink Flagging
Leave Tree Tags
BPA Corridor
Waste Areas

N

Prepared By: cbgs490
Creation Date: 6/2/2015
Modification Date: 6/2/2015
kfry490 - 10/13/2015

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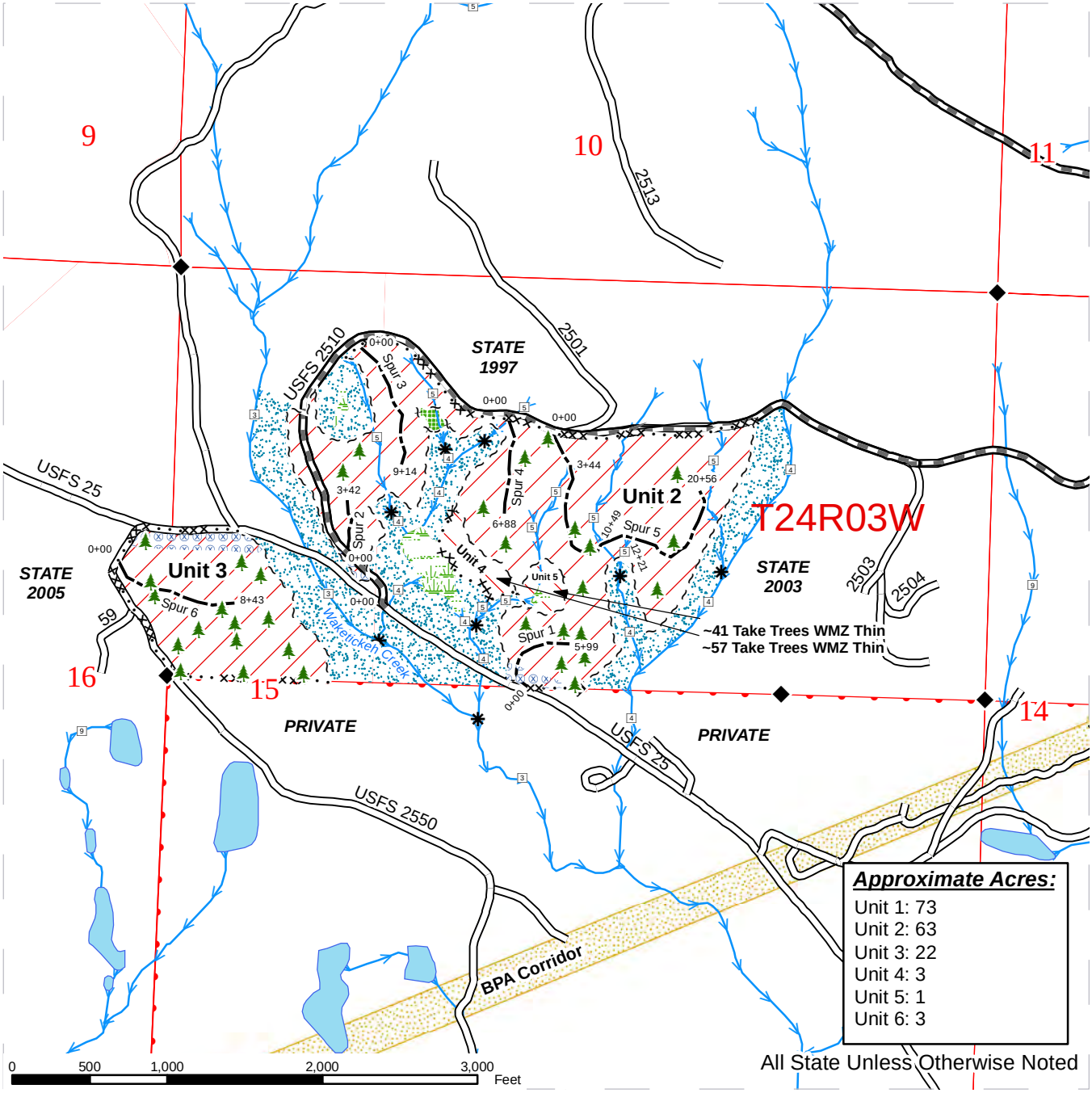

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DRIVING MAP

SALE NAME: TRAP DOOR VRH & VDT
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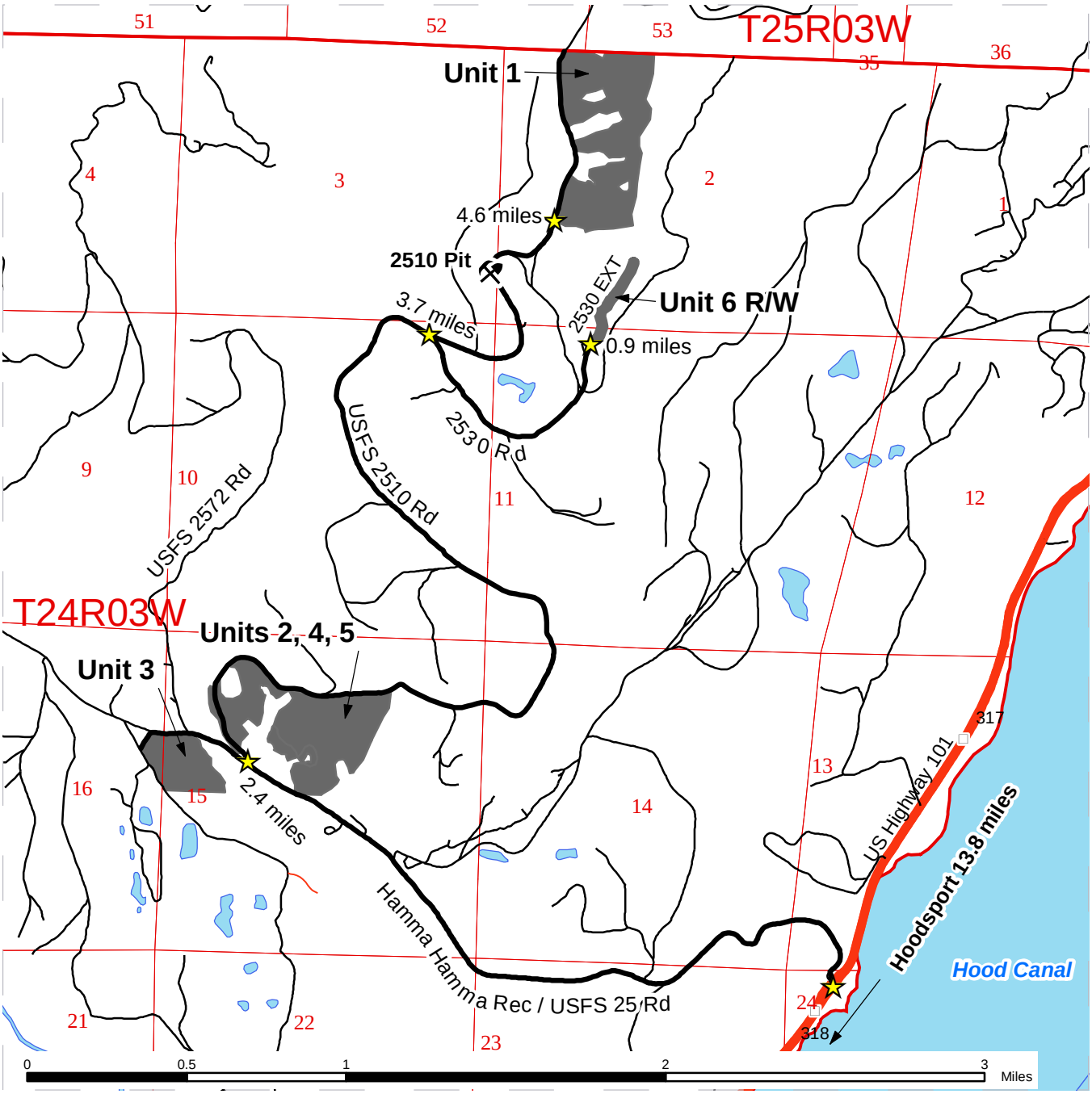


Timber Sale Unit
Highways
Distance Marker
Viewing Route
Existing Rock Pit
Milepost Markers

DRIVING DIRECTIONS:

Directions from Hoodsport: Travel north on US-101 for 13.8 miles. Turn left onto USFS 25 (Hamma Hamma Recreation Road). Travel 2.4 miles to the USFS 2510 road. Unit 2 is to your right and continuing further 0.2 miles on the 25 road Unit 3 is to your left (directly south of the USFS 2572 road). Drive north on the USFS 2510 road for 3.7 miles and take a slight right onto the 2530 road (open blue gate) and continue uphill for 0.9 miles, you will arrive at the start of the 2530 EXT road (Unit 6 R/W) which leads into Unit 1. To directly access Unit 1, drive from the start of the USFS 2510 road for 4.6 miles and Unit 1 will be on your right.

N

Prepared By: cbgs490

Creation Date: 6/4/2015

Modification Date: 6/4/2015
kfry490 - 07/22/2015

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

BILL OF SALE AND CONTRACT FOR FOREST PRODUCTS

Export Restricted Lump Sum AGREEMENT NO. 30-091844

SALE NAME: TRAP DOOR VRH & VDT

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

Section G: General Terms

G-001 Definitions

The following definitions apply throughout this contract;

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

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

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

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

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

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

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

G-011 Right to Remove Forest Products and Contract Area

Purchaser was the successful bidder on December 15, 2015 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, the USFS 2510 Road, and pink flagging along property lines and timber type change in Unit #1; white timber sale boundary tags, the USFS 2510 Road, and pink flagging along property lines in Unit #2; white timber sale boundary tags, the USFS 25 Road, the USFS 2550 Road, and pink flagging along property line in Unit #3; all timber marked with orange paint bounded by white timber sale boundary tags and pink flagging in Units #4 and #5; all timber bounded by orange right of way tags in Unit #6, located on approximately 165 acres on part(s) of Sections 2, 11, 15, and 16 all in Township 24 North, Range 3 West W.M. in Mason 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 September 30, 2017.

G-040 Contract Term Adjustment - No Payment

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

a. Road and bridge failures which deny access.

b. Access road closures imposed by road owner.

c. Excessive suspensions as provided in clause G-220.

d. Regulatory actions not arising from Purchaser's failure to comply with this contract which will prevent timber harvest for a period less than 6 months.

G-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 $634.00 per acre per annum for the acres on which an operating release has not been issued within the harvest area.

f. In no event will the extension charge be less than $200.00.

g. Extension payments are non-refundable.

G-053 Surveys - Sensitive, Threatened, Endangered Species

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

G-060 Exclusion of Warranties

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

a. The MERCHANTABILITY of the forest products. The use of the term "merchantable" in any document is not intended to vary the foregoing.

b. The CONDITION of the forest products. The forest products will be conveyed "AS IS."

c. The ACREAGE contained within any sale area. Any acreage descriptions appearing in the timber notice of sale, timber sale contract, or other documents are estimates only, provided solely for administrative and identification purposes.

d. The VOLUME, QUALITY, OR GRADE of the forest products. The State neither warrants nor limits the amount of timber to be harvested. The descriptions of the forest products to be conveyed are estimates only, made solely for administrative and identification purposes.

e. The CORRECTNESS OF ANY SOIL OR SURFACE CONDITIONS, PRE-SALE CONSTRUCTION APPRAISALS, INVESTIGATIONS, AND ALL OTHER PRE-BID DOCUMENTS PREPARED BY OR FOR THE STATE. These documents have been prepared for the State's appraisal purposes only.

f. THAT THE SALE AREA IS FREE FROM THREATENED OR ENDANGERED SPECIES or their habitat. The State is not responsible for any interference with forestry operations that result from the presence of any threatened or endangered species, or the presence of their habitat, within the sale area.

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

h. Items contained in any other documents prepared for or by the State.

G-062 Habitat Conservation Plan

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

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

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

G-063 Incidental Take Permit Notification Requirements

a. Purchaser shall immediately notify the Contract Administrator of new locations of permit species covered by the Incidental Take Permits (ITP) that are discovered within the area covered by the State's Habitat Conservation Plan (HCP), including, but not limited to: locations of occupied murrelet habitat; spotted owl nest sites; wolves; grizzly bears; nests, communal roosts,

or feeding concentrations of bald eagles; peregrine falcon nests; Columbian white-tailed deer; Aleutian Canada geese; Oregon silverspot butterflies; and additional stream reaches found to contain bull trout. Purchaser is required to notify the Contract Administrator upon discovery of any fish species found in streams or bodies of water classified as non-fish bearing. In all circumstances, notification must occur within a 24 hour time period.

b. Upon locating any live, dead, injured, or sick specimens of any permit species covered by the ITP, Purchaser shall immediately notify the Contract Administrator. Purchaser shall notify the Contract Administrator if there is any doubt as to the identification of a discovered permit species. Purchaser may be required to take certain actions to help the Contract Administrator safeguard the well-being of any live, injured or sick specimens of any permit species discovered, until the proper disposition of such specimens can be determined by the Contract Administrator. Any such requirements will be explained to Purchaser by the Contract Administrator during the Pre-Work Conference. In all circumstances, notification must occur within a 24 hour time period.

c. Purchaser shall refer to a specific ITP number, PRT-812521 or ITP 1168 (copies which are located in the region office) in all correspondence and reports concerning permit activities.

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

G-064 Permits

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

G-065 Regulatory Disclaimer

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

G-066 Governmental Regulatory Actions

a. Risk

Purchaser shall be responsible for any increased operational costs arising from any applicable foreign or domestic governmental regulation or order that does

not cause contract performance to become commercially impracticable or that does not substantially frustrate the purpose of the contract. If impracticability or frustration results from Purchaser's failure to comply with this contract, Purchaser shall remain responsible for payment of the total contract price notwithstanding the impracticability or frustration.

b. Sale Area

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

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

c. Adjustment of Price

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

G-070 Limitation on Damage

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

G-080 Scope of State Advice

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

G-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.

Contract Item	Appraised Price	Overbid Factor	Price	Fees	Contract Payment Rate
Cottonwood	$66.61	0	$0.00	$9.00	$9.00
Douglas fir	$249.63	0	$0.00	$9.00	$9.00
Hemlock	$181.53	0	$0.00	$9.00	$9.00
Maple	$166.73	0	$0.00	$9.00	$9.00
Red cedar	$480.64	0	$0.00	$9.00	$9.00
Other	$254.27	0	$0.00	$9.00	$9.00

G-111 Title and Risk of Loss

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

G-116 Sustainable Forestry Initiative® (SFI) Certification

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

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

G-120 Responsibility for Work

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

G-121 Exceptions

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

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

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

1. Failure of (a) required improvements or roads designated in clause C-050, or (b) required or optional construction completed to the point that authorization to haul has been issued;

2. Caused by a single event from forces beyond the control of Purchaser, its employees, agents, or invitees, including independent contractors; and

3. Includes, but is not limited to natural disasters such as earthquakes, volcanic eruptions, landslides, and floods.

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

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

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

G-140 Indemnity

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

G-150 Insurance

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

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

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

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

2. Insurers subject to Chapter 48.15 RCW (surplus lines): The State shall be given 20 days advance notice of cancellation. If cancellation is due to non-payment of premium, the State shall be given 10 days advance notice of cancellation.

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

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

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

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

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

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

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

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

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

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

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

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

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

G-160 Agents

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

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

G-170 Assignment and Delegation

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

G-180 Modifications

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

G-190 Contract Complete

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

G-200 Notice

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

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

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

G-210 Violation of Contract

a. If Purchaser violates any provision of this contract, the Contract Administrator, by written notice, may suspend those operations in violation. If the violation is capable of being remedied, Purchaser has 30 days after receipt of a suspension notice to remedy the violation. If the violation cannot be remedied (such as a violation of WAC 240-15-015) or Purchaser fails to remedy the violation within 30 days after receipt of a suspension notice, the State may terminate the rights of Purchaser under this contract and collect damages.

b. If the contract expires pursuant to clause G-030 or G-031 without Purchaser having performed all its duties under this contract, Purchaser's right to operate is terminated and Purchaser shall not have the right to remedy the breach. This provision shall not relieve Purchaser of any payment obligations.

c. The State has the right to remedy the breach in the absence of any indicated attempt by Purchaser or if Purchaser is unable, as determined by the State, to

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

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

G-220 State Suspends Operation

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

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

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

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

G-230 Unauthorized Activity

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

G-240 Dispute Resolution

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

a. In the event of a dispute, Purchaser must make a written request to the Region Manager for resolution prior to seeking other relief.

b. The Region Manager will issue a written decision on Purchaser's request within ten business days.

c. Within ten business days of receipt of the Region Manager's decision, Purchaser may make a written request for resolution to the Deputy Supervisor - Uplands of the Department of Natural Resources.

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

G-250 Compliance with All Laws

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

G-260 Venue

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

G-270 Equipment Left on State Land

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

G-280 Operating Release

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

G-310 Road Use Authorization

Purchaser is authorized to use the following State roads and roads for which the State has acquired easements and road use permits; on the USFS 25, USFS 2510, 2530, 2530 Ext., 2532, 2533 and 2550 Roads and Spurs 1, 2, 3, 4, 5 and 6. 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 USFS 25 or USFS 2510 Road, 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 #55-000429 between the State of Washington, Department of Natural Resources and Forest Service, Department of Agriculture, dated June 15, 1967.

G-430 Open Fires

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

G-450 Encumbrances

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

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

Section P: Payments and Securities

P-011 Initial Deposit

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

P-020 Payment for Forest Products

Purchaser agrees to pay the total, lump sum contract price of $141,594.00. The total contract price consists of a $0.00 contract bid price plus $141,594.00 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 $200,000.00. 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 144 square inches.

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

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

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

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

H-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-051 Branding and Painting

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

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

H-120 Harvesting Equipment

Forest products sold under this contract shall be yarded by cable and ground based equipment with self-leveling shovels limited to sustained slopes that are 60 percent and less and all other ground based equipment limited to sustained slopes of 45 percent or less unless authority to use other equipment is granted in writing by the State.

H-125 Log Suspension Requirements

Lead-end suspension is required for all yarding activities.

H-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

A) Falling, yarding and timber haul will not be permitted from November 1st to April 30th, nor on weekends or state recognized holidays, unless authority to do so is granted, in writing, by the Contract Administrator. If permission is granted to operate from November 1st to April 30th, the Purchaser shall comply with a Winter Operating Plan to include further protection of water, soil, roads and other forest assets at the Purchaser's expense. Sedimentation preventative measures must be in place prior to commencing any winter operations.

B) 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.

C) Purchaser shall cut vine maple and sever from the stump in Units #1, #2, and #3. Stumps shall be 12 inches or less in height.

D) 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.

E) Purchaser shall not reopen a skid trail once it is closed unless approved in writing by the Contract Administrator.

F) Warning signs for active logging operations shall be posted as required by the Contract Administrator on the USFS 25, USFS 2510, 2530 and 2550 Roads.

G) To facilitate proper reforestation in areas of high slash concentrations, Purchaser shall, in concurrence with ground based yarding, clear plantable spots at an 11 foot by 11 foot spacing.

H) Within Units #1, #2, and #3, all live stems over six feet in height shall be felled. Areas of young or immature timber may be excluded from this requirement by the Contract Administrator. Trees will be cut below the lowerst live limb and cut completely free of the stump. Cut trees must be on the ground and not "hung up" or leaning against leave trees. Stumps shall not exceed a twelve (12) inch height unless snow conditions prevent this. In no case shall stumps exceed an eighteen (18) inch height.

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 within Units #1, #2 and #3.

B) No equipment may operate within, nor logs yarded through or over, leave tree clumps marked with yellow leave tree area tags.

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.

Section C: Construction and Maintenance

C-040 Road Plan

Road construction and associated work provisions of the Road Plan for this sale, dated 6/2/2015 are hereby made a part of this contract.

C-050 Purchaser Road Maintenance and Repair

Purchaser shall perform work at their own expense on the 2530 Ext., 2530, 2532, 2533, 2550 and USFS 2510 Roads and Spurs 1, 2, 3, 4, 5 and 6. 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-080 Landing Locations Approved Prior to Construction

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

C-090 Landing Location

Landings shall be built 75 feet off the USFS 2510 road(s).

C-140 Water Bars

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

Section S: Site Preparation and Protection

S-001 Emergency Response Plan

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

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

S-010 Fire Hazardous Conditions

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

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

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

S-020 Extreme Hazard Abatement

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

S-030 Landing Debris Clean Up

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

S-050 Cessation of Operations for Low Humidity

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

S-060 Pump Truck or Pump Trailer

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

S-100 Stream Cleanout

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

S-110 Resource Protection

No equipment may operate within the Riparian or Wetland Management Zones or Type 5 equipment limitation zones unless authority is granted in writing by the Contract Administrator.

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.

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

	STATE OF WASHINGTON DEPARTMENT OF NATURAL RESOURCES
_____ Purchaser	_____ Art Tasker South Puget Sound Region Manager
Date: _____ Address:	Date: _____

CORPORATE ACKNOWLEDGEMENT

STATE OF _____)
)
COUNTY OF _____)

On this _____ day of _____, 20___, before me personally appeared _____
_____ to me known to be the _____ of the corporation that executed the within and foregoing instrument and acknowledged said instrument to be the free and voluntary act and deed of the corporation, for the uses and purposes therein mentioned, and on oath stated that (he/she was) (they were) authorized to execute said instrument.

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

_____
Notary Public in and for the State of

_____

My appointment expires _____

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

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOREST EXCISE TAX ROAD SUMMARY SHEET

Region: South Puget Sound

Timber Sale Name: Trap Door

Application Number: 30- 091844

EXCISE TAX APPLICABLE ACTIVITIES

Construction: 11,034 **linear feet**
Road to be constructed (optional and required) but not abandoned

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

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

Decommission: 5,442 **linear feet**
Road to be made undriveable but not officially abandoned.

Pre-Haul Maintenance: 24,212 **linear feet**
Existing road to receive maintenance work (specifically required by the contract) prior to haul

EXCISE TAX EXEMPT ACTIVITIES

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

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

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

All parties must make their own assessment of the taxable or non-taxable status of any work performed under the timber sale contact. The Department of Revenue bears responsibility for determining forest road excise taxes. The Department of Natural Resources developed this form to help estimate the impact of forest excise taxes. However, the information provided may not precisely calculate the actual amount of taxes due. The Department of Revenue is available for consultation by calling 1.800.548.8829.
(Revised 6/13)

PRE-CRUISE NARRATIVE

Sale Name: **Trap Door VRH & VDT**	Region: **South Puget Sound**
Agreement #: **30-091844**	District: **Hood Canal**
Contact Forester: **Chris Briggs**	Phone/ Location: **(360)-801-6915 Shelton, WA**
Alternate Contact: **Mike Davies**	Phone/ Location: **(360)-801-0682 Shelton, WA**

Type of Sale (lump sum, mbf scale, tonnage scale or contract harvest): Lump Sum
Required or Optional removal of utility as pulp: No
Evaluated for RFRS Implementation?: Yes, RFRS strategy not implemented based on evaluation.
Percentage cable (specify downhill vs uphill): 46% uphill
Percentage ground based: 54%
Species Onsite: ☒ RC, ☒ DF, ☒ WH, ☒ RA, ☒ BC, ☒ BLM, ☐ NF, ☐ SF, ☐ SS, ☐ Other: (Please specify)

UNIT ACREAGES AND METHOD OF DETERMINATION:

Unit # Harvest R/W or RMZ WMZ	Legal Description Sec/Twp/Rng	Grant	Gross Proposal Acres	Deductions from Gross Acres (No harvest acres) RMZ/ WMZ Acres	Leave Tree Acres	Existing Road Acres	Other Acres (describe)	Net Harvest Acres	Acreage Determination (List method and error of closure if applicable)
1	Sec 2 / T 24N / R 03W	01	78	0	5.2	0	0	72.8	Garmin 64S GPS
2	Sec 15 / T 24N / R 03W	01, 07	64.6	0	0.4	1.3	0	62.9	Garmin 64S GPS
3	Sec 15 & 16 / T 24N / R 03W	03, 07	22	0	0	0	0	22	Garmin 64S GPS
4 WMZ	Sec 15 / T 24N / R 03W	01	2.6	0	0	0	0	2.6	Garmin 64S GPS
5 WMZ	Sec 15 / T 24N / R 03W	01	1.5	0	0	0	0	1.5	Garmin 64S GPS
6 R/W	Sec 2 & 11 / T 24N / R 03W	01	2.8	0	0	0	0	2.8	L X W
TOTAL ACRES			171.5	0	5.6	1.3	0	164.6	

HARVEST PLAN AND SPECIAL CONDITIONS:

Unit#	Harvest Prescription: (Mark leave, take, etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
1	Standard VRH marked with blue painted leave trees and yellow "Leave Tree Area" tags.	None	624 leave trees
2	Standard VRH marked with blue painted leave trees and yellow "Leave Tree Area" tags.	None	536 leave trees
3	Standard VRH marked with blue painted leave trees.	None	176 leave trees
4	Take trees marked with orange paint.	WMZ Thinning	~57 PSME take trees
5	Take trees marked with orange paint.	WMZ Thinning	~41 PSME take trees
6	Right of way unit marked with orange R/W tags.	None	None

OTHER PRE-CRUISE INFORMATION:

Unit #	Estimated Volume	Access information (Gates, locks, etc.)	Photos, traverse maps required
1	See Cruise	None	See attached maps.
2		None	See attached maps.
3		None	See attached maps.
4		None	See attached maps.
5		None	See attached maps.
6		None	See attached maps.

REMARKS:

Directions from Hoodsport: travel north on US-101 for 13.8 miles. Turn left onto USFS 25 (Hamma Hamma Recreation Road). Travel 2.4 miles to the USFS 2510 road. Unit 2 is to your right and continuing further 0.2 miles on the 25 road Unit 3 is to your left (directly south of the USFS 2572 road). Drive north on the USFS 2510 road for 3.7 miles and take a slight right onto the 2530 road (open blue gate) and continue uphill for 0.9 miles, you will arrive at the start of the Right of Way unit (Unit 6) which leads into Unit 1. To directly access Unit 1, drive from the start of the USFS 2510 road for 4.6 miles and Unit 1 will be on your right.

Leave trees in tagged clumps are shown on maps. Blue painted leave trees are marked along Type 5 streams, as well as clumped and individually throughout the units to meet requirements.

Prepared By: Chris Briggs Date: 09/02/2015	Title: State Lands Forester	CC: Mike Davies

Revised 2/23/2007 (PSLD)

Cruise Narrative

Sale Name: Trap Door	**Region:** **South Puget Sound**
Agree. #: 30-91844	**District:** Hood Canal
Lead cruiser: **John Piety**	**Completion date:** 06-08-2015 revised 9-9-2015
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	72.8	yes	
2	62.9	yes	
3	22	yes	
WMZ4	2.6	yes	
WMZ5	1.5	yes	
RW06	2.8	yes	
Total	164.6		

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	40 BAF	4.5	296’ X 296’	1:1	33
2	VP	40 BAF	4.5	296’ X 296’	1:1	28
3	VP	33.61 BAF	4.5	296’ X296’	1:1	9
WMZ4	ITS	1:4.9091	N/A	N/A	N/A	1
WMZ5	ITS	1:3.5	N/A	N/A	N/A	1
RW06	VP	47.78	4.5	500’ along centerline	100%	3

Sale/Cruise Description:

Minor species cruise intensity:	**100% up to 5 trees per species**
Minimum cruise spec:	HA - Logs meeting the following criteria: Surface characteristics for a high quality A sort will have sound tight knots not to exceed 1 1/2" in diameter, numbering not more than an average of one per foot of log length. May include logs with not more than two larger knots. Knots and knot indicators

	1/2" in diameter and smaller shall not be a determining factor. Logs will have a growth ring count of 6 or more rings per inch in the outer third top end of the log. (High Quality sort. Grades SM, 2S, 12”+ TDIB lengths 16-40ft. Max butt 27” Grade 3S lengths 34ft, 26ft, 17ft. TDIB 8-11".) 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. Grade 2S, 12”+TDIB lengths 16-40ft. Max butt 27” Grade 3S lengths 34ft, 26ft, 17ft min TDIB 8-11".). 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.) O- Logs exceeding 27” on the large end. (Oversize sort. Grade 2S. Lengths 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 that 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** =	9		
Leave/take tree description:	Leave trees are banded with blue paint and tagged out with yellow leave tree tags.					
Other conditions	“P” on the cruise documents indicate possible pole volume.					

Field observations:

Unit 2 and 3 are ground based units. Unit #1 is tower ground. These are mostly DF stands with some RA,BM,CW and WH. The quality is fair to good. The majority of higher quality logs is in unit 2. There are some root rot pockets with snags that have some recoverability.

Grants: 01,03,07

Prepared by:
John Piety

Title:
Cruiser

CC:

TC PSPCSTGR

Species, Sort Grade - Board Foot Volumes (Project)

T24N R03W S02 Ty06RW
THRU
T24N R03W S15 TyWMZ

Project: **TRAPDOOR**

Acres **164.60**

Page **1**
Date **9/9/2015**
Time **3:35:18PM**

Spp	S T	So Gr rt ad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent of Net Board Foot Volume: Log Scale Dia. 2-4	5-7	8-11	12+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF		HASM			8	8	1				100		100			26	16	260	1.90	.0
DF		HA2S	4	.9	1,124	1,114	183				100			22	78	38	13	233	1.37	4.8
DF		HA3S	4		1,149	1,149	189			100				100		34	10	139	0.83	8.3
DF		HB2S	5	1.5	1,650	1,625	267				100			33	67	37	13	247	1.46	6.6
DF		HB3S	5	1.4	1,327	1,309	215			100			3	97		34	9	101	0.69	13.0
DF		D 2S	27	1.9	7,725	7,581	1,248				100		1	0	98	40	14	295	1.66	25.7
DF		D 3S	26	1.6	7,334	7,214	1,187			100			5	12	83	37	9	106	0.72	68.0
DF		D 4S	18	.7	5,047	5,012	825		99	1		9	26	5	60	31	5	39	0.33	130.1
DF		D UT	1		236	236	39	61			39		39		61	28	2	5	0.13	52.0
DF		OS 2S	9	3.0	2,649	2,570	423				100				100	40	20	689	3.42	3.7
DF		OS UT	1		95	95	16				100		100			22	23	520	4.24	.2
DF	**Totals**		88	1.5	28,341	27,912	4,594	1	18	35	47	2	7	16	76	33	7	89	0.65	312.4
DF	P	HA2S	33		192	192	32				100			31	69	38	12	200	1.17	1.0
DF	P	HA3S	7		41	41	7			100				100		34	10	130	0.67	.3
DF	P	HB2S	11		64	64	11				100			100		34	12	170	1.01	.4
DF	P	HB3S	20		118	118	19			100				100		34	9	107	0.73	1.1
DF	P	D 2S	12		68	68	11				100				100	40	14	290	1.52	.2
DF	P	D 3S	7	.0	42	42	7			100					100	38	8	85	0.67	.5
DF	P	D 4S	10		56	56	9		100			18	34		48	27	5	29	0.32	1.9
DF	**Totals**		2		581	581	96		10	35	56	2	3	49	46	33	9	107	0.75	5.4
RC		D 3S	36	2.7	326	317	52			50	50			35	65	35	9	117	1.19	2.7
RC		D 4S	51	4.5	457	437	72		100			7	20	19	54	30	5	31	0.39	14.1
RC		OS 3S	13	24.7	138	104	17				100				100	40	15	268	3.30	.4
RC	**Totals**		3	6.9	922	858	141		51	19	31	4	10	23	64	31	6	50	0.62	17.2
RC	P	D 3S	82	6.7	47	44	7			100					100	40	10	140	1.16	.3
RC	P	D 4S	18		9	9	2		100				100			30	5	30	0.34	.3
RC	**Totals**		0	5.6	56	53	9		18	82			18		82	35	8	85	0.81	.6
WH		D 2S	20		435	435	72				100				100	40	12	212	1.25	2.1
WH		D 3S	33	7.4	736	681	112			100					100	40	9	118	0.78	5.8
WH		D 4S	31		652	652	107		93	7		2	33		64	32	6	43	0.37	15.1
WH		D UT	16		326	326	54	30		70			4		96	33	3	26	0.29	12.5
WH	**Totals**		7	2.5	2,149	2,094	345	5	29	46	21	1	11		88	34	6	59	0.48	35.4
BM		D 4S	100		28	28	5			100			100			26	10	90	0.89	.3
BM	**Totals**		0		28	28	5			100			100			26	10	90	0.89	.3
CW		D 2S	100		83	83	14		16		84				100	40	11	215	1.40	.4
CW	**Totals**		0		83	83	14		16		84				100	40	11	215	1.40	.4
Totals				1.7	32,161	31,610	5,203	1	19	35	45	2	7	15	76	33	7	85	0.64	371.7

TC PSTATS

PROJECT STATISTICS

PROJECT TRAPDOOR

DATE 9/9/2015

TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
24N	03	02	TRAP DOOR	06RW	THR	164.60	75	431	S	W
24N	03W	15	TRAP DOOR	WMZ5						

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	75	431	5.7		
CRUISE	41	236	5.8	32,125	.7
DBH COUNT					
REFOREST COUNT	32	195	6.1		
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	195	152.7	14.6	66	46.7	178.6	28,341	27,912	6,712	6,712
DOUG FIR-P	7	1.9	17.5	95	0.8	3.2	581	581	133	133
WR CEDAR	15	16.5	12.7	36	4.1	14.6	922	858	333	333
WR CEDAR-P	1	.3	17.7	72	0.1	.5	56	53	18	18
WHEMLOCK	16	23.2	12.1	58	5.4	18.7	2,149	2,094	580	580
BL MAPLE	1	.3	17.8	50	0.1	.5	28	28	7	7
COTWOOD	1	.2	22.8	88	0.1	.5	83	83	22	22
TOTAL	*236*	*195.2*	*14.3*	*63*	*57.4*	*216.8*	*32,161*	*31,610*	*7,805*	*7,805*

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	90.3	6.5	324	346	369			
DOUG FIR-P	20.9	8.5	282	309	335			
WR CEDAR	136.8	36.5	77	121	165			
WR CEDAR-P								
WHEMLOCK	72.1	18.6	113	139	165			
BL MAPLE								
COTWOOD								
TOTAL	*94.6*	*6.1*	*296*	*315*	*335*	*357*	*182*	*89*

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	65.9	7.6	141	153	164			
DOUG FIR-P	340.6	39.3	1	2	3			
WR CEDAR	199.5	23.0	13	17	20			
WR CEDAR-P	866.0	99.9	0	0	1			
WHEMLOCK	192.8	22.2	18	23	28			
BL MAPLE	866.0	99.9	0	0	1			
COTWOOD	866.0	99.9	0	0	0			
TOTAL	*63.5*	*7.3*	*181*	*195*	*209*	*161*	*82*	*40*

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	51.9	6.0	168	179	189			
DOUG FIR-P	336.7	38.8	2	3	4			
WR CEDAR	167.5	19.3	12	15	17			
WR CEDAR-P	866.0	99.9	0	1	1			
WHEMLOCK	200.5	23.1	14	19	23			
BL MAPLE	866.0	99.9	0	1	1			
COTWOOD	866.0	99.9	0	1	1			
TOTAL	*47.6*	*5.5*	*205*	*217*	*229*	*91*	*46*	*23*

PROJECT STATISTICS

PROJECT TRAPDOOR

TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
24N	03	02	TRAP DOOR	06RW	THR	164.60	75	431	S	W
24N	03W	15	TRAP DOOR	WMZ5						

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	60.1	6.9	25,976	27,912	29,849			
DOUG FIR-P	340.4	39.3	353	581	809			
WR CEDAR	189.7	21.9	670	858	1,046			
WR CEDAR-P	866.0	99.9	0	53	107			
WHEMLOCK	237.4	27.4	1,521	2,094	2,668			
BL MAPLE	866.0	99.9	0	28	57			
COTWOOD	866.0	99.9	0	83	166			
TOTAL	*54.2*	*6.3*	*29,632*	*31,610*	*33,588*	*117*	*60*	*29*

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: TRAPDOOR

Date 9/9/2015

Time 3:35:20PM

T24N R03W S02 T0001

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
24N	03W	02	TRAPDOOR	0001	72.80	33	94	S	W

T24N R03W S02 T0001

Spp	ST	Sort	Grade	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 2-4	5-7	8-11	12+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF		HA	2S	3		758	758	55				100			34	66	37	13	210	1.34	3.6
DF		HA	3S	2		552	552	40			100				100		34	10	130	0.77	4.2
DF		HB	2S	4	.9	949	940	68				100				100	40	15	342	1.80	2.8
DF		HB	3S	7	1.1	1,642	1,624	118			100				100		34	9	101	0.69	16.1
DF		DM	2S	25	2.4	6,267	6,118	445				100				100	40	14	283	1.62	21.6
DF		DM	3S	31	1.5	7,599	7,482	545			100			7	7	86	38	9	111	0.75	67.4
DF		DM	4S	20	1.6	4,803	4,725	344		100			9	22	8	61	32	5	38	0.35	125.6
DF		DM	UT	1		270	270	20	24			76		76		24	25	2	4	0.13	60.8
DF		OS	2S	6	.7	1,360	1,351	98				100				100	40	19	637	3.05	2.1
DF		OS	UT	1		214	214	16				100		100			22	23	520	4.24	.4
DF		**Totals**		83	1.6	24,415	24,035	1,750	0	20	40	40	2	8	14	76	33	7	79	0.61	304.7
DF	P	HB	3S	78		120	120	9			100				100		34	11	150	1.03	.8
DF	P	DM	4S	22		32	32	2		100						100	40	5	40	0.40	.8
DF	**P**	**Totals**		1		151	151	11		21	79				79	21	37	8	95	0.69	1.6
WH		DM	2S	23		984	984	72				100				100	40	12	212	1.25	4.7
WH		DM	3S	37	7.4	1,663	1,539	112			100					100	40	9	118	0.78	13.0
WH		DM	4S	28		1,171	1,171	85		91	9		3	42		55	31	6	40	0.35	29.0
WH		DM	UT	12		465	465	34	33		67					100	34	3	20	0.24	22.7
WH		**Totals**		14	2.9	4,284	4,160	303	4	26	47	24	1	12		87	34	6	60	0.48	69.4
RC		DM	3S	62		253	253	18			100				100		32	8	70	0.64	3.6
RC		DM	4S	38	21.0	196	155	11		100			47	53			22	5	20	0.30	7.7
RC		**Totals**		1	9.2	449	408	30		38	62		18	20	62		25	6	36	0.43	11.3
RC	P	DM	3S	82	6.7	106	99	7			100					100	40	10	140	1.16	.7
RC	P	DM	4S	18		21	21	2		100				100			30	5	30	0.34	.7
RC	**P**	**Totals**		0	5.6	128	121	9		18	82			18		82	35	8	85	0.81	1.4
Type Totals					1.9	29,427	28,874	2,102	1	21	42	37	2	9	13	76	33	7	74	0.58	388.5

TC TSTATS

STATISTICS

PROJECT TRAPDOOR

DATE 9/9/2015

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
24N	03W	02	TRAPDOOR	0001	72.80	33	183	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	33	183	5.5		
CRUISE	16	94	5.9	16,221	.6
DBH COUNT					
REFOREST COUNT	16	89	5.6		
BLANKS	1				
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	76	166.0	13.9	60	46.8	174.5	24,415	24,035	6,077	6,078
DOUG FIR-P	1	.8	16.7	75	0.3	1.2	151	151	41	41
WHEMLOCK	13	43.2	12.2	61	10.1	35.2	4,284	4,160	1,135	1,134
WR CEDAR	3	12.1	12.1	35	2.8	9.7	449	408	125	125
WR CEDAR-P	1	.7	17.7	72	0.3	1.2	128	121	40	40
TOTAL	*94*	*222.8*	*13.5*	*59*	*60.3*	*221.8*	*29,427*	*28,874*	*7,417*	*7,418*

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	90.8	10.4	249	278	307			
DOUG FIR-P								
WHEMLOCK	67.3	19.4	120	149	178			
WR CEDAR	128.9	89.2	4	37	69			
WR CEDAR-P								
TOTAL	*94.8*	*9.8*	*226*	*250*	*275*	*359*	*183*	*90*

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	64.5	11.2	147	166	185			
DOUG FIR-P	574.5	99.9	0	1	2			
WHEMLOCK	131.0	22.8	33	43	53			
WR CEDAR	179.8	31.3	8	12	16			
WR CEDAR-P	574.5	99.9	0	1	1			
TOTAL	*56.8*	*9.9*	*201*	*223*	*245*	*129*	*66*	*32*

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	52.8	9.2	159	175	191			
DOUG FIR-P	574.5	99.9	0	1	2			
WHEMLOCK	138.7	24.1	27	35	44			
WR CEDAR	179.5	31.2	7	10	13			
WR CEDAR-P	574.5	99.9	0	1	2			
TOTAL	*49.2*	*8.6*	*203*	*222*	*241*	*97*	*49*	*24*

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	62.4	10.9	21,424	24,035	26,645			
DOUG FIR-P	574.5	99.9	0	151	303			
WHEMLOCK	163.1	28.4	2,980	4,160	5,340			
WR CEDAR	220.7	38.4	251	408	564			
WR CEDAR-P	574.5	99.9	0	121	241			
TOTAL	*57.9*	*10.1*	*25,966*	*28,874*	*31,783*	*134*	*68*	*33*

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: TRAPDOOR

Date 9/9/2015

Time 3:35:20PM

T24N R03W S15 T0002

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
24N	03W	15	TRAP DOOR	0002	62.90	28	73	S	W

T24N R03W S15 T0002

Spp	ST	Sort	Grade	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 2-4	5-7	8-11	12+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF		HA	2S	5	1.3	1,974	1,948	123				100			18	82	38	13	244	1.38	8.0
DF		HA	3S	6		1,829	1,829	115			100				100		34	11	141	0.85	12.9
DF		HB	2S	7	1.1	2,664	2,634	166				100			37	63	37	13	242	1.43	10.9
DF		HB	3S	3	2.4	1,057	1,032	65			100				100		34	10	110	0.72	9.4
DF		DM	2S	28	1.7	9,688	9,527	599				100		3		97	39	14	306	1.71	31.1
DF		DM	3S	22	1.5	7,855	7,734	486			100			4	22	74	37	9	101	0.71	76.7
DF		DM	4S	13		4,381	4,381	276		97	3		14	24		61	29	6	39	0.33	112.7
DF		DM	UT	1	.0	250	250	16	100							100	33	2	8	0.14	32.7
DF		OS	2S	15	3.7	5,212	5,019	316				100				100	40	21	705	3.54	7.1
DF		**Totals**		94	1.6	34,911	34,354	2,161	1	12	31	56	2	5	17	76	34	8	114	0.78	301.6
DF	P	HA	2S	43		348	348	22				100				100	40	12	217	1.20	1.6
DF	P	HB	2S	21		168	168	11				100			100		34	12	170	1.01	1.0
DF	P	HB	3S	21		162	162	10			100				100		34	9	86	0.59	1.9
DF	P	DM	3S	7		56	56	4			100					100	36	8	80	0.64	.7
DF	P	DM	4S	8	.0	62	62	4		100			23	77			23	5	24	0.26	2.6
DF	**P**	**Totals**		2		795	795	50		8	27	65	2	6	41	51	32	9	102	0.73	7.8
RC		DM	3S	20		123	123	8			100					100	40	8	100	1.37	1.2
RC		DM	4S	47		287	287	18		100				41	32	27	28	5	26	0.38	10.9
RC		OS	3S	33	7.5	216	200	13				100				100	40	18	490	3.85	.4
RC		**Totals**		2	2.6	626	609	38		47	20	33		19	15	66	29	6	49	0.67	12.5
WH		DM	UT	100		316	316	20	24		76			12		88	30	5	50	0.56	6.4
WH		**Totals**		1		316	316	20	24		76			12		88	30	5	50	0.56	6.4
BM		DM	4S	100		74	74	5			100			100			26	10	90	0.89	.8
BM		**Totals**		0		74	74	5			100			100			26	10	90	0.89	.8
CW		DM	2S	100		217	217	14		16		84				100	40	11	215	1.40	1.0
CW		**Totals**		1		217	217	14		16		84				100	40	11	215	1.40	1.0
Type Totals					1.6	36,939	36,366	2,287	1	13	31	55	2	5	17	76	33	8	110	0.78	330.0

TC TSTATS

STATISTICS

PROJECT **TRAPDOOR**

DATE 9/9/2015

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
24N	03W	15	TRAP DOOR	0002	62.90	28	150	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	28	150	5.4		
CRUISE	15	73	4.9	9,155	.8
DBH COUNT					
REFOREST COUNT	12	77	6.4		
BLANKS	1				
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	61	124.5	16.8	82	46.7	191.4	34,911	34,354	7,929	7,929
DOUG FIR-P	3	2.6	17.4	97	1.0	4.3	795	795	180	180
WR CEDAR	5	12.1	12.3	31	2.8	10.0	626	609	245	245
WHEMLOCK	2	5.0	12.5	37	1.2	4.3	316	316	105	105
BL MAPLE	1	.8	17.8	50	0.3	1.4	74	74	19	19
COTWOOD	1	.5	22.8	88	0.3	1.4	217	217	57	57
TOTAL	*73*	*145.6*	*16.4*	*76*	*52.6*	*212.9*	*36,939*	*36,366*	*8,535*	*8,535*

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	78.4	10.0	428	475	523			
DOUG FIR-P	8.5	5.9	292	310	328			
WR CEDAR	160.8	79.9	32	158	284			
WHEMLOCK	128.6	120.4		110	242			
BL MAPLE								
COTWOOD								
TOTAL	*84.2*	*9.8*	*389*	*431*	*473*	*283*	*144*	*71*

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	59.0	11.3	110	125	139			
DOUG FIR-P	297.3	57.2	1	3	4			
WR CEDAR	294.3	56.6	5	12	19			
WHEMLOCK	317.5	61.1	2	5	8			
BL MAPLE	529.2	101.8		1	2			
COTWOOD	529.2	101.8		1	1			
TOTAL	*54.2*	*10.4*	*130*	*146*	*161*	*122*	*62*	*30*

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	51.6	9.9	172	191	210			
DOUG FIR-P	294.0	56.5	2	4	7			
WR CEDAR	207.3	39.9	6	10	14			
WHEMLOCK	294.0	56.5	2	4	7			
BL MAPLE	529.2	101.8		1	3			
COTWOOD	529.2	101.8		1	3			
TOTAL	*44.6*	*8.6*	*195*	*213*	*231*	*82*	*42*	*21*

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	53.2	10.2	30,842	34,354	37,867			
DOUG FIR-P	295.3	56.8	343	795	1,247			
WR CEDAR	219.3	42.2	352	609	866			
WHEMLOCK	352.5	67.8	102	316	530			
BL MAPLE	529.2	101.8		74	150			

TC TSTATS

STATISTICS

PROJECT **TRAPDOOR**

PAGE 2
DATE 9/9/2015

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
24N	**03W**	**15**	**TRAP DOOR**	**0002**	62.90	28	150	S	W

CL: 68.1 %	COEFF		**NET BF/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10
COTWOOD	529.2	101.8		217	437			
TOTAL	*48.0*	*9.2*	*33,005*	*36,366*	*39,726*	*96*	*49*	*24*

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: TRAPDOOR

Date 9/9/2015

Time 3:35:20PM

T24N R03W S15 T0003

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
24N	03W	15	TRAP DOOR	0003	22.00	9	36	S	W

T24N R03W S15 T0003

Spp	ST	Sort	Grade	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 2-4	5-7	8-11	12+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF		HA	3S	5		1,538	1,538	34			100				100		34	10	140	0.84	11.0
DF		HB	2S	3	5.9	754	710	16				100			100		34	12	160	1.09	4.4
DF		HB	3S	4		962	962	21			100			29	71		30	9	77	0.59	12.4
DF		DM	2S	32	1.3	8,764	8,650	190				100				100	40	14	292	1.60	29.6
DF		DM	3S	23	2.6	6,133	5,971	131			100					100	39	9	103	0.67	57.7
DF		DM	4S	32		8,399	8,399	185		100			4	33	7	55	31	5	40	0.28	210.0
DF		DM	UT	1		153	153	3	100							100	28	2	2	0.10	87.1
DF		**Totals**		82	1.2	26,703	26,383	580	1	32	32	35	1	12	13	74	32	6	64	0.47	412.3
DF	P	HA	2S	26		403	403	9				100			100		34	12	170	1.09	2.4
DF	P	HA	3S	21		308	308	7			100				100		34	10	130	0.67	2.4
DF	P	DM	2S	33		506	506	11				100				100	40	14	290	1.52	1.7
DF	P	DM	3S	11		157	157	3			100					100	40	8	90	0.71	1.7
DF	P	DM	4S	9		130	130	3		100			27			73	28	5	32	0.32	4.1
DF	**P**	**Totals**		5		1,504	1,504	33		9	31	60	2		47	50	34	9	122	0.80	12.3
RC		DM	3S	35	5.3	1,248	1,182	26				100				100	40	13	249	2.19	4.7
RC		DM	4S	58	.9	1,954	1,936	43		100				2	19	80	36	5	40	0.43	48.7
RC		OS	3S	7	50.0	419	209	5				100				100	40	13	120	2.92	1.7
RC		**Totals**		10	8.1	3,621	3,328	73		58		42		1	11	88	37	6	60	0.68	55.2
WH		DM	4S	100		1,000	1,000	22		100						100	40	6	60	0.43	16.7
WH		**Totals**		3		1,000	1,000	22		100						100	40	6	60	0.43	16.7
Type Totals					1.9	32,828	32,216	709	0	36	28	36	1	10	14	75	33	6	65	0.50	496.6

TC TSTATS

STATISTICS

PROJECT TRAPDOOR

DATE 9/9/2015

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
24N	03W	15	TRAP DOOR	0003	22.00	9	65	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	9	65	7.2		
CRUISE	5	36	7.2	6,150	.6
DBH COUNT					
REFOREST COUNT	4	29	7.3		
BLANKS					
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	26	210.0	12.4	55	49.9	175.5	26,703	26,383	6,223	6,223
DOUG FIR-P	2	4.1	18.2	103	1.7	7.5	1,504	1,504	333	333
WR CEDAR	7	48.7	13.5	42	13.2	48.5	3,621	3,328	1,379	1,381
WHEMLOCK	1	16.7	11.1	47	3.4	11.2	1,000	1,000	286	286
TOTAL	*36*	*279.5*	*12.6*	*53*	*68.3*	*242.7*	*32,828*	*32,216*	*8,221*	*8,223*

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	90.0	18.0	202	246	290			
DOUG FIR-P	11.5	10.7	330	370	410			
WR CEDAR	94.1	38.3	80	130	180			
WHEMLOCK								
TOTAL	*90.7*	*15.1*	*191*	*225*	*259*	*329*	*168*	*82*

CL: 68.1 %	COEFF		**TREES/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR	44.1	15.6	177	210	243			
DOUG FIR-P	201.3	71.1	1	4	7			
WR CEDAR	76.3	26.9	36	49	62			
WHEMLOCK	212.1	74.9	4	17	29			
TOTAL	*40.5*	*14.3*	*240*	*280*	*320*	*74*	*38*	*18*

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	20.9	7.4	163	176	188			
DOUG FIR-P	198.4	70.0	2	7	13			
WR CEDAR	50.3	17.8	40	49	57			
WHEMLOCK	212.1	74.9	3	11	20			
TOTAL	*15.1*	*5.3*	*230*	*243*	*256*	*10*	*5*	*3*

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	25.4	9.0	24,016	26,383	28,750			
DOUG FIR-P	199.1	70.3	447	1,504	2,561			
WR CEDAR	56.0	19.8	2,670	3,328	3,985			
WHEMLOCK	212.1	74.9	251	1,000	1,749			
TOTAL	*18.5*	*6.5*	*30,110*	*32,216*	*34,321*	*15*	*8*	*4*

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: TRAPDOOR

Date 9/9/2015

Time 3:35:20PM

T24N R03W S15 TWMZ4

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
24N	03W	15	TRAP DOOR	WMZ4	2.60	1	11	S	W

T24N R03W S15 TWMZ4

Spp	ST	Sort	Grade	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 2-4	5-7	8-11	12+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF		HA	SM	5		491	491	1				100		100			26	16	260	1.90	1.9
DF		HA	2S	22		1,888	1,888	5				100				100	40	13	250	1.38	7.6
DF		HB	3S	13		1,095	1,095	3			100				100		34	10	116	0.73	9.4
DF		DM	2S	16	1.3	1,416	1,397	4				100				100	40	16	370	1.87	3.8
DF		DM	3S	18	1.2	1,605	1,586	4			100				8	92	39	10	140	0.86	11.3
DF		DM	4S	7		623	623	2		100				52	12	36	31	5	37	0.33	17.0
DF		DM	UT														24	2		0.11	3.8
DF		OS	2S	19		1,586	1,586	4				100				100	40	22	840	3.94	1.9
DF		**Totals**		94	.4	8,704	8,666	23		7	31	62		9	15	76	34	9	153	0.97	56.6
DF	P	HA	2S	56		321	321	1				100			100		34	12	170	1.09	1.9
DF	P	HB	3S	34	.0	189	189	0			100				100		34	9	100	0.61	1.9
DF	P	DM	4S	10		57	57	0		100				100			30	5	30	0.29	1.9
DF	**P**	**Totals**		6		566	566	1		10	33	57		10	90		33	9	100	0.68	5.7
Type Totals					.4	9,271	9,233	24		7	31	62		9	20	71	34	9	148	0.94	62.3

TC TSTATS

STATISTICS

PROJECT **TRAPDOOR**

DATE 9/9/2015

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
24N	**03W**	**15**	**TRAP DOOR**	**WMZ**	2.60	1	11	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	1	11	11.0		
CRUISE	1	11	11.0	54	20.4
DBH COUNT					
REFOREST					
COUNT					
BLANKS					
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	10	18.9	19.8	102	9.1	40.6	8,704	8,666	1,886	1,886
DOUG FIR-P	1	1.9	16.6	100	0.7	2.8	566	566	126	126
TOTAL	*11*	*20.8*	*19.6*	*102*	*9.8*	*43.4*	*9,271*	*9,233*	*2,012*	*2,012*

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	80.2	26.7	336	459	582			
DOUG FIR-P								
TOTAL	*79.3*	*25.1*	*333*	*445*	*556*	*276*	*141*	*69*

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: TRAPDOOR

Date 9/9/2015

Time 3:35:20PM

T24N R03W S15 TWMZ5

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
24N	03W	15	TRAP DOOR	WMZ5	1.50	1	8	S	W

T24N R03W S15 TWMZ5

Spp	ST	Sort	Grade	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 2-4	5-7	8-11	12+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF		HA	2S	4		467	467	1				100				100	40	12	200	1.28	2.3
DF		HB	2S	9	2.8	840	817	1				100				100	40	15	350	1.82	2.3
DF		DM	2S	29	2.3	2,987	2,917	4				100			13	87	39	13	250	1.51	11.7
DF		DM	3S	19	2.5	1,890	1,843	3			100				9	91	39	9	113	0.79	16.3
DF		DM	4S	5		420	420	1		78	22		67	11		22	21	6	26	0.37	16.3
DF		OS	2S	34	1.4	3,360	3,313	5				100				100	40	21	710	3.54	4.7
DF		**Totals**		100	1.9	9,963	9,777	15		3	20	77	3	0	5	91	33	10	182	1.26	53.7
Type Totals					1.9	9,963	9,777	15		3	20	77	3	0	5	91	33	10	182	1.26	53.7

TC TSTATS

STATISTICS

PROJECT **TRAPDOOR**

DATE 9/9/2015

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
24N	**03W**	**15**	**TRAP DOOR**	**WMZ**	1.50	1	8	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	1	8	8.0		
CRUISE	1	8	8.0	28	28.6
DBH COUNT					
REFOREST					
COUNT					
BLANKS					
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	8	18.7	22.5	99	10.9	51.7	9,963	9,777	2,261	2,261
TOTAL	*8*	*18.7*	*22.5*	*99*	*10.9*	*51.7*	*9,963*	*9,777*	*2,261*	*2,261*

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	67.7	25.5	390	524	657			
TOTAL	*67.7*	*25.5*	*390*	*524*	*657*	*208*	*106*	*52*

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: TRAPDOOR

Date 9/9/2015

Time 3:35:20PM

T24N R03W S02 T06RW

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
24N	03W	02	TRAP DOOR	06RW	2.80	3	14	S	W

T24N R03W S02 T06RW

Spp	ST	Sort	Grade	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 2-4	5-7	8-11	12+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF		HB	2S	25	2.9	6,085	5,906	17				100			74	26	35	12	172	1.23	34.4
DF		HB	3S	12		2,991	2,991	8			100				100		34	9	100	0.68	29.9
DF		DM	2S	8		1,755	1,755	5				100				100	40	13	240	1.45	7.3
DF		DM	3S	27		6,402	6,402	18			100				10	90	39	9	131	0.91	48.8
DF		DM	4S	28		6,566	6,566	18		100			7	31		61	31	5	38	0.39	172.6
DF		DM	UT														22	2		0.12	54.2
DF		**Totals**		100	.8	23,798	23,619	66		28	40	32	2	9	34	55	32	7	68	0.60	347.3
Type Totals					.8	23,798	23,619	66		28	40	32	2	9	34	55	32	7	68	0.60	347.3

TC TSTATS

STATISTICS

PROJECT **TRAPDOOR**

PAGE 1
DATE 9/9/2015

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
24N	03W	02	TRAP DOOR	06RW	2.80	3	14	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	3	14	4.7		
CRUISE	3	14	4.7	516	2.7
DBH COUNT					
REFOREST					
COUNT					
BLANKS					
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	14	184.4	14.8	57	57.0	218.9	23,798	23,619	6,570	6,570
TOTAL	*14*	*184.4*	*14.8*	*57*	*57.0*	*218.9*	*23,798*	*23,619*	*6,570*	*6,570*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL: 68.1 %	COEFF		**SAMPLE TREES - BF**			# OF TREES REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR	49.9	13.8	140	163	185			
TOTAL	*49.9*	*13.8*	*140*	*163*	*185*	*107*	*54*	*27*

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	51.6	35.7	119	184	250			
TOTAL	*51.6*	*35.7*	*119*	*184*	*250*	*153*	*78*	*38*

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	32.7	22.6	169	219	268			
TOTAL	*32.7*	*22.6*	*169*	*219*	*268*	*62*	*31*	*15*

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	18.7	12.9	20,561	23,619	26,678			
TOTAL	*18.7*	*12.9*	*20,561*	*23,619*	*26,678*	*20*	*10*	*5*

TC PSPCTLTCM

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

T24N R03W S02 Ty0001	72.8
T24N R03W S02 Ty06R	
T24N R03W S15 TyWM	1.5

Project **TRAPDOOR**
Acres **164.60**

Page No **1**
Date: **9/9/2015**
Time **3:35:21PM**

Species	ST	Total Trees	Total Logs	Total Tons	Net Cubic Ft/ Tree	Net Cubic Ft/ Log	CF/ LF	Total CCF Gross	Total CCF Net	Total MBF Gross	Total MBF Net
DOUG FIR		25,131	51,422	31,486	43.96	21.49	0.65	11,048	11,048	4,665	4,594
WHEMLOCK		3,825	5,819	3,057	24.96	16.40	0.48	955	955	354	345
WR CEDAR		2,717	2,828	1,288	20.19	19.40	0.63	548	549	152	141
DOUG FIR	P	316	891	625	69.37	24.63	0.75	219	219	96	96
COTWOOD		32	63	87	112.14	56.07	1.40	36	36	14	14
WR CEDAR	P	52	103	69	56.48	28.24	0.81	29	29	9	9
BL MAPLE		52	52	32	23.04	23.04	0.89	12	12	5	5
Totals		32,125	61,178	36,643	39.99	21.00	0.63	12,847	12,848	5,294	5,203

Wood Type Species	Total Trees	Total Logs	Total Tons	Net Cubic Ft/ Tree	Net Cubic Ft/ Log	CF/ LF	Total CCF Gross	Total CCF Net	Total MBF Gross	Total MBF Net
C	32,041	61,063	36,525	39.95	20.96	0.63	12,800	12,800	5,275	5,185
H	84	115	119	56.78	41.19	1.22	48	48	18	18
Totals	32,125	61,178	36,643	39.99	21.00	0.63	12,847	12,848	5,294	5,203

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

FPA/N No: 2418117
Effective Date: 09/10/2015
Expiration Date: 09/10/2018
Shut Down Zone: 652SE
EARR Tax Credit: ☒ Eligible [ ] Non-eligible
Reference: Trap Door VRH & VDT

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

[ ] Class II ☒ Class III [ ] Class IVG [ ] Class IVS

Number of Years Granted on Multi-Year Request

[ ] 4 yrs [ ] 5 yrs

Conditions on Approval / Reasons for Disapproval

Issued By: Jason Sharp **Region:** South Puget Sound

Title: Resource Protection Forester **Date:** 09/10/2015

Copies to: [ ] **Landowner, Timber Owner and Operator.**

Issued in person: ☒ **Landowner** [ ]**Timber Owner** [ ] **Operator** **By:** Charlotte Bass - Charlotte Bass

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://www.dnr.wa.gov/businesspermits/forestpractices**. Notify DNR of new Operators within 48 hours.

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

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

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

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

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

DNR affidavit of mailing:

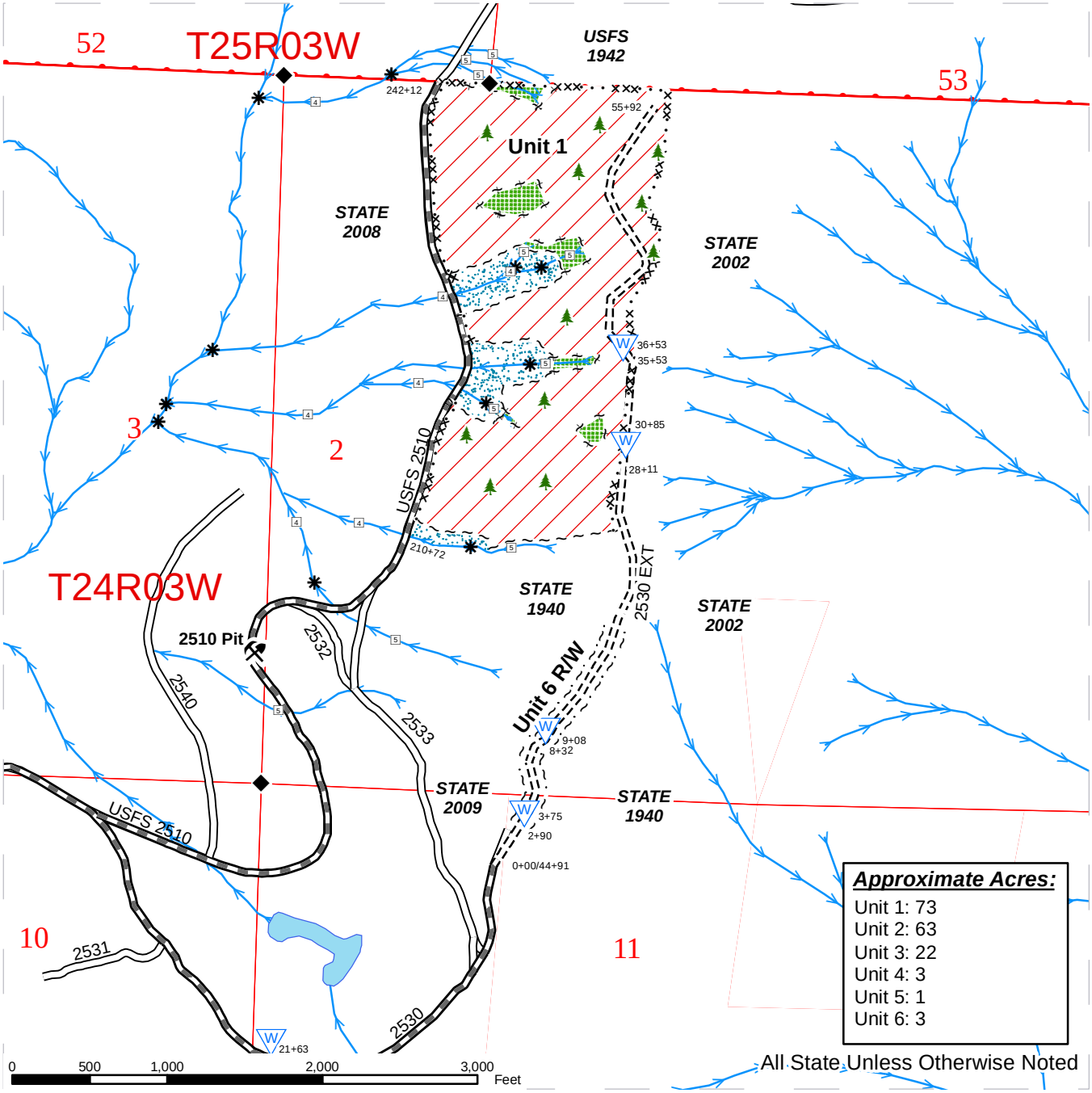
On this day_____, I placed in the United States mail at _____, WA,
(date mm/dd/yyyy) (post office location)
postage paid, a true and accurate copy of this document. Notice of Decision FPA #_____

_____ _____
(Printed name) (Signature)

ROAD PLAN MAP

SALE NAME: Trap Door VRH & VDT
AGREEMENT#: 30-091844
TOWNSHIP(S): T24R03W
TRUST(S): State Forest Transfer(1), Common School and Indemnity(3), Capitol Grant(7)

REGION: South Puget Sound Region
COUNTY(S): MASON
ELEVATION RGE: 659-2246



RMZ/WMZ
Forested Wetland
Tagged Leave Tree Area
Variable Retention Harvest
WMZ Thinning Area - take trees marked with orange paint
Existing Road
Required Construction
Optional Construction
Required Pre-Haul Maintenance

Streams
Monumented Corners
Stream Type
Stream Type Break
Leave Trees - yellow "Leave Tree Area" tags or blue paint
Extreme Hazard Abatement
Existing Rock Pit
White "Timber Sale Boundary" Tags

Right of Way Tags
Pink Flagging
Leave Tree Tags
BPA Corridor
Waste Areas

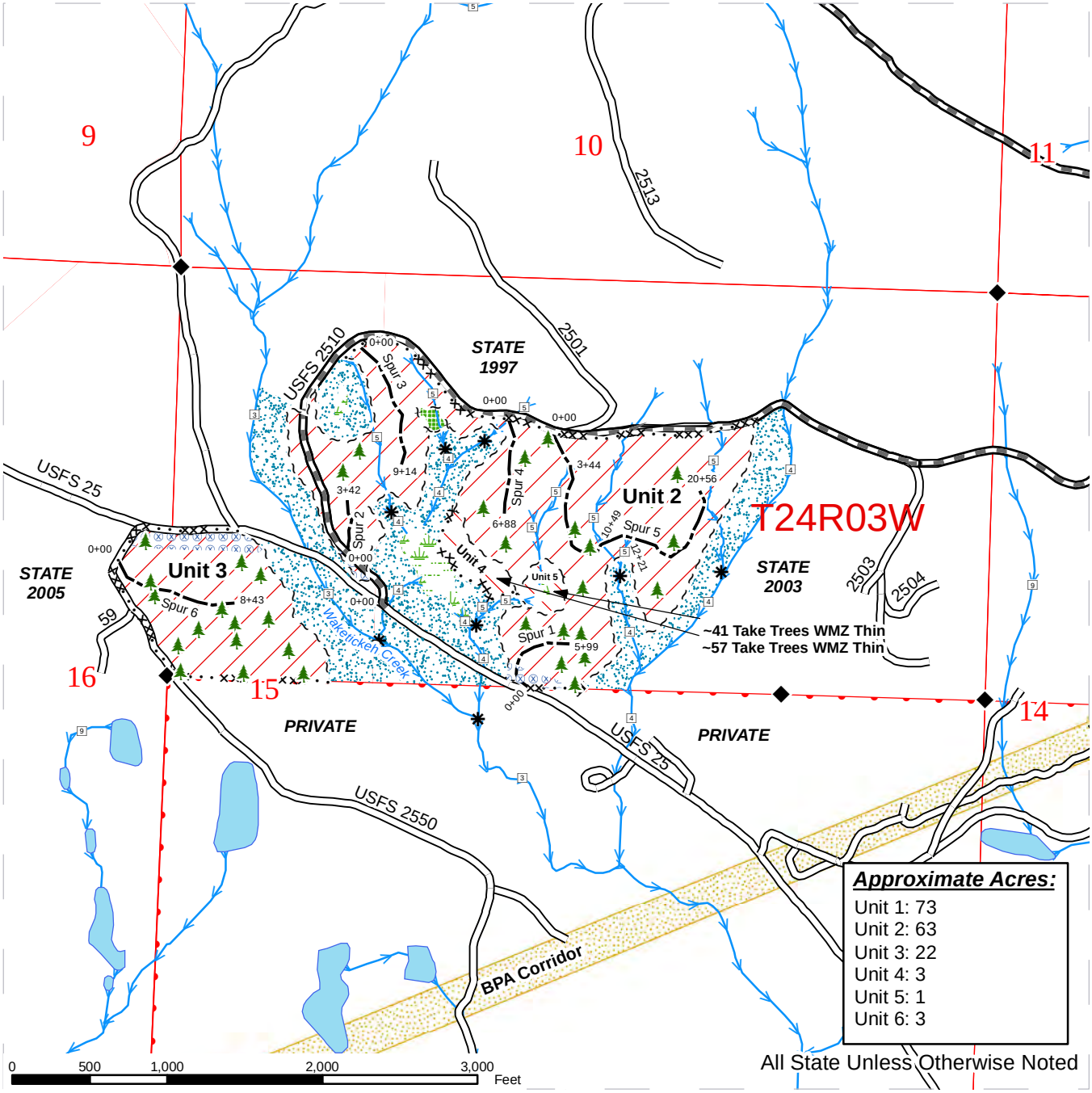
N

Prepared By: cbgs490
Creation Date: 6/2/2015
Modification Date: 6/2/2015
kfry490 - 10/13/2015

ROAD PLAN MAP

SALE NAME: Trap Door VRH & VDT
AGREEMENT#: 30-091844
TOWNSHIP(S): T24R03W
TRUST(S): State Forest Transfer(1), Common School and Indemnity(3), Capitol Grant(7)

REGION: South Puget Sound Region
COUNTY(S): MASON
ELEVATION RGE: 659-2246



RMZ/WMZ
Forested Wetland
Tagged Leave Tree Area
Variable Retention Harvest
WMZ Thinning Area - take trees marked with orange paint
Existing Road
Required Construction
Optional Construction
Required Pre-Haul Maintenance

Streams
Monumented Corners
Stream Type
Stream Type Break
Leave Trees - yellow "Leave Tree Area" tags or blue paint
Extreme Hazard Abatement
Existing Rock Pit
White "Timber Sale Boundary" Tags

Right of Way Tags
Pink Flagging
Leave Tree Tags
BPA Corridor
Waste Areas

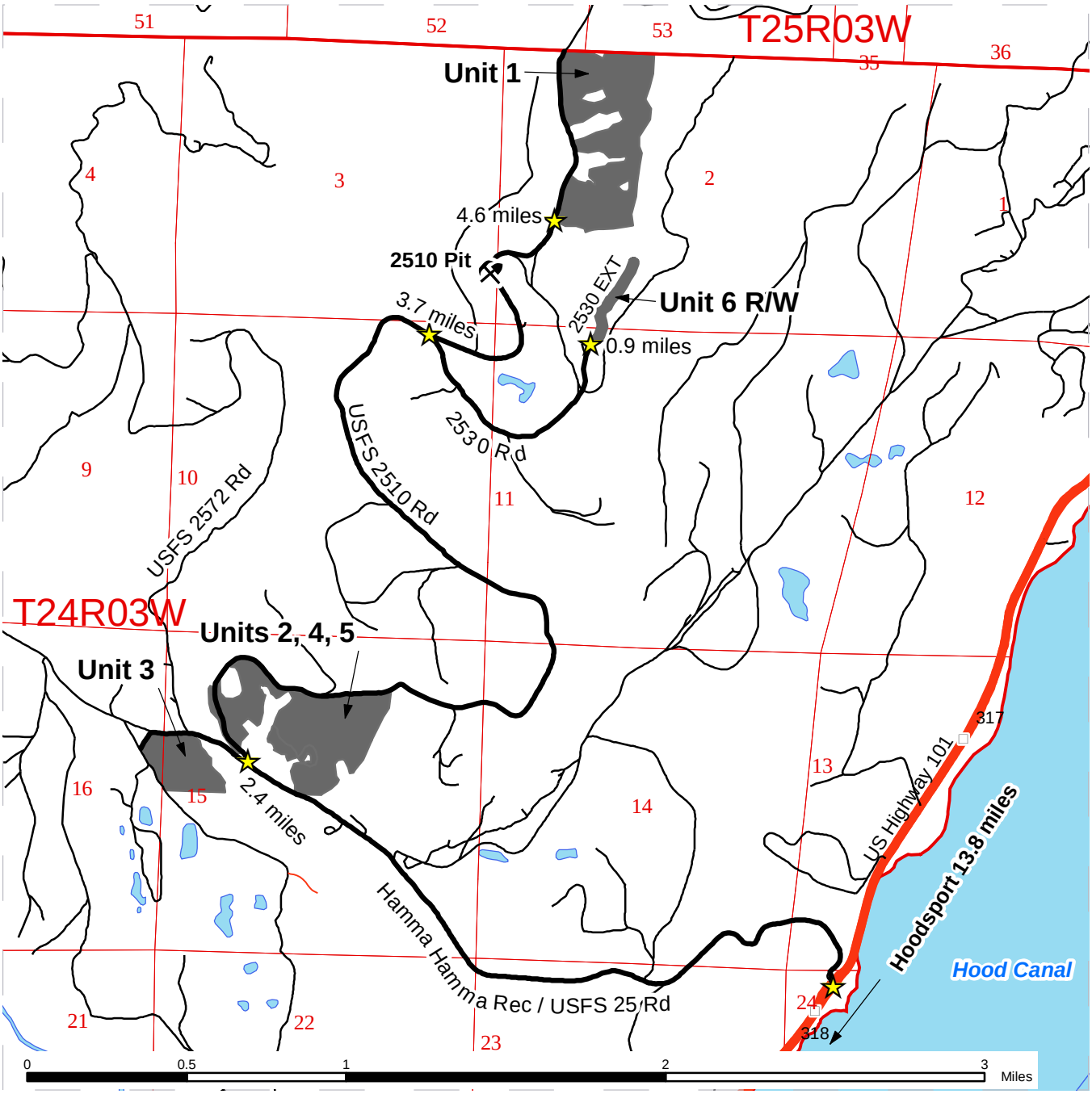
N

Prepared By: cbgs490
Creation Date: 6/2/2015
Modification Date: 6/2/2015
kfry490 - 10/13/2015

DRIVING MAP

SALE NAME: TRAP DOOR VRH & VDT
AGREEMENT#: 30-091844
TOWNSHIP(S): T24R03W
TRUST(S): State Forest Transfer(1), Common School and Indemnity(3), Capitol Grant(7)

REGION: South Puget Sound Region
COUNTY(S): MASON
ELEVATION RGE: 659-2246



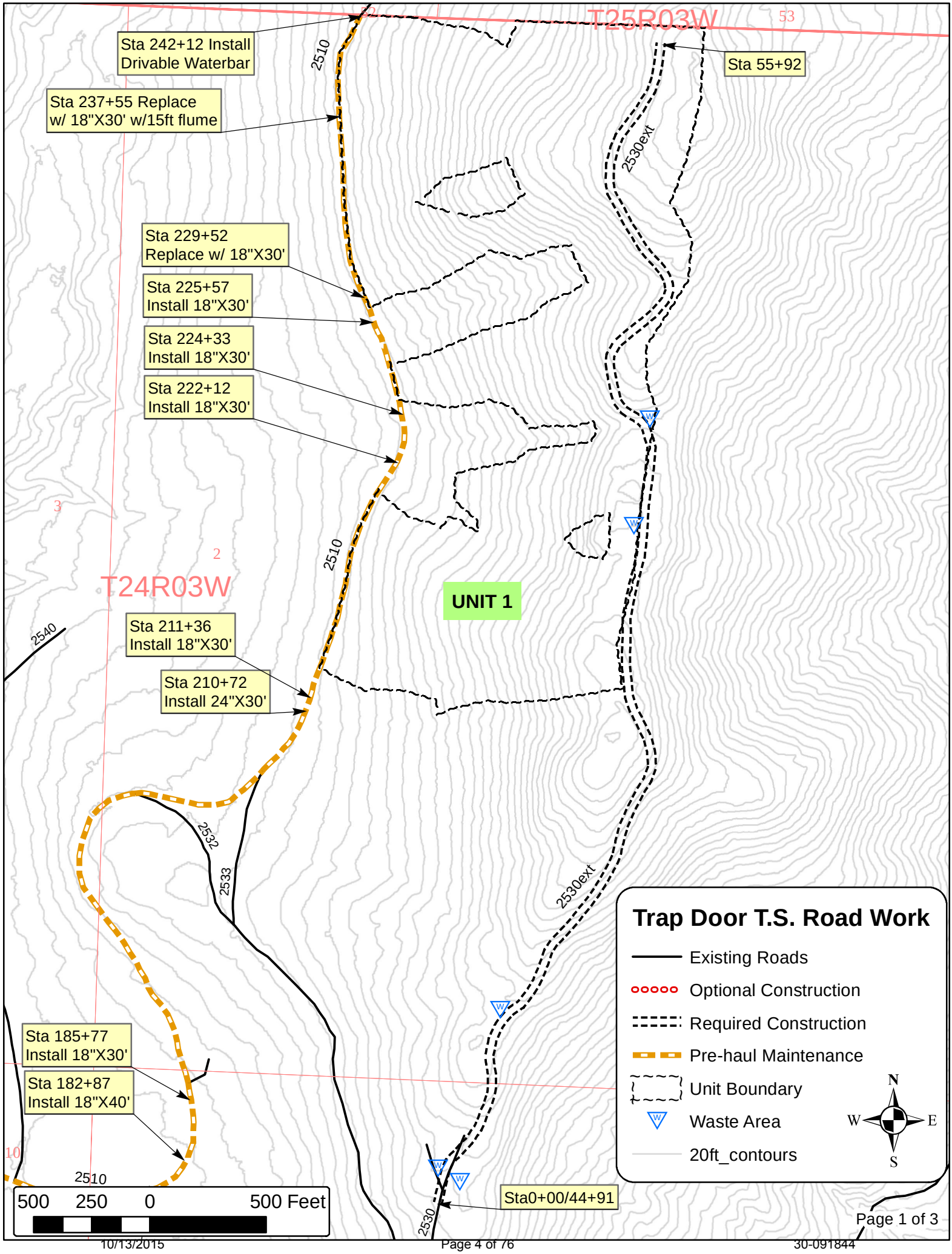
Timber Sale Unit
Highways
Distance Marker
Viewing Route
Existing Rock Pit
Milepost Markers

DRIVING DIRECTIONS:

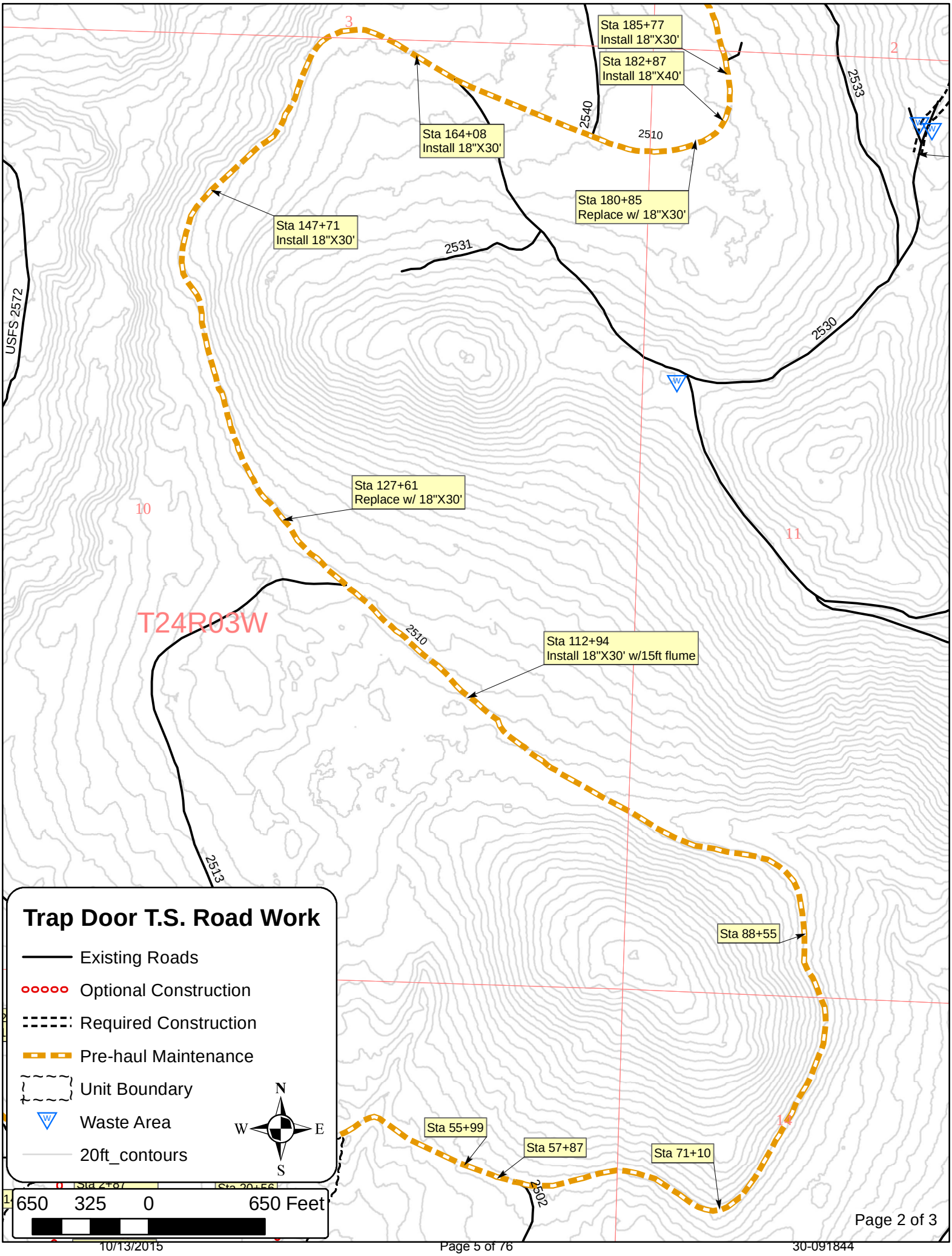
Directions from Hoodsport: Travel north on US-101 for 13.8 miles. Turn left onto USFS 25 (Hamma Hamma Recreation Road). Travel 2.4 miles to the USFS 2510 road. Unit 2 is to your right and continuing further 0.2 miles on the 25 road Unit 3 is to your left (directly south of the USFS 2572 road). Drive north on the USFS 2510 road for 3.7 miles and take a slight right onto the 2530 road (open blue gate) and continue uphill for 0.9 miles, you will arrive at the start of the 2530 EXT road (Unit 6 R/W) which leads into Unit 1. To directly access Unit 1, drive from the start of the USFS 2510 road for 4.6 miles and Unit 1 will be on your right.

N

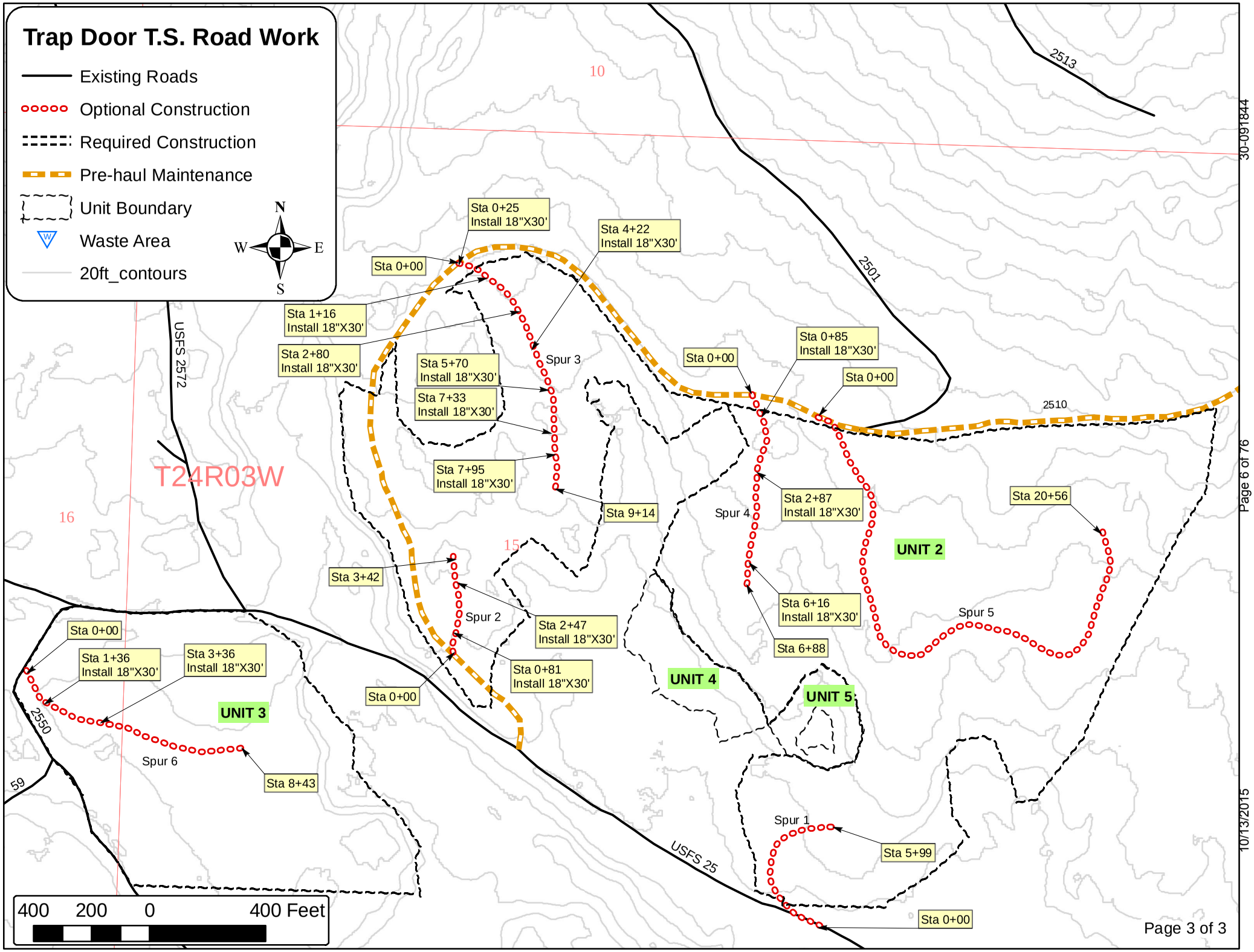
Prepared By: cbgs490 Creation Date: 6/4/2015 Modification Date: 6/4/2015
kfry490 - 07/22/2015


T25R03W
T24R03W
Sta 242+12 Install Drivable Waterbar
Sta 237+55 Replace w/ 18"X30' w/15ft flume
Sta 229+52 Replace w/ 18"X30'
Sta 225+57 Install 18"X30'
Sta 224+33 Install 18"X30'
Sta 222+12 Install 18"X30'
Sta 211+36 Install 18"X30'
Sta 210+72 Install 24"X30'
Sta 185+77 Install 18"X30'
Sta 182+87 Install 18"X40'
Sta 55+92
Sta0+00/44+91
UNIT 1
2510
2530ext
2540
2532
2533
2530
500 250 0 500 Feet
Trap Door T.S. Road Work
Existing Roads
Optional Construction
Required Construction
Pre-haul Maintenance
Unit Boundary
Waste Area
20ft_contours
N
S
E
W

Page 1 of 3


Trap Door T.S. Road Work
Existing Roads
Optional Construction
Required Construction
Pre-haul Maintenance
Unit Boundary
Waste Area
20ft_contours
N
W
E
S
650 325 0 650 Feet
Sta 185+77
Install 18"X30'
Sta 182+87
Install 18"X40'
Sta 164+08
Install 18"X30'
Sta 180+85
Replace w/ 18"X30'
Sta 147+71
Install 18"X30'
Sta 127+61
Replace w/ 18"X30'
Sta 112+94
Install 18"X30' w/15ft flume
Sta 88+55
Sta 55+99
Sta 57+87
Sta 71+10
T24R03W
USFS 2572
2540
2510
2533
2531
2530
2510
2513
2502
3
2
10
11
14

Page 2 of 3


Trap Door T.S. Road Work
Existing Roads
Optional Construction
Required Construction
Pre-haul Maintenance
Unit Boundary
Waste Area
20ft_contours
N
W
E
S
10
2513
2501
2510
USFS 2572
T24R03W
16
15
59
2550
USFS 25
Sta 0+25
Install 18"X30'
Sta 4+22
Install 18"X30'
Sta 0+00
Sta 1+16
Install 18"X30'
Sta 2+80
Install 18"X30'
Sta 5+70
Install 18"X30'
Sta 7+33
Install 18"X30'
Sta 7+95
Install 18"X30'
Sta 9+14
Spur 3
Sta 0+00
Sta 0+85
Install 18"X30'
Sta 0+00
Sta 2+87
Install 18"X30'
Spur 4
Sta 20+56
UNIT 2
Sta 6+16
Install 18"X30'
Sta 6+88
Spur 5
Sta 3+42
Spur 2
Sta 2+47
Install 18"X30'
Sta 0+81
Install 18"X30'
Sta 0+00
UNIT 4
UNIT 5
Sta 0+00
Sta 1+36
Install 18"X30'
Sta 3+36
Install 18"X30'
UNIT 3
Spur 6
Sta 8+43
Spur 1
Sta 5+99
Sta 0+00
400 200 0 400 Feet
30-091844
Page 6 of 76
10/13/2015
Page 3 of 3

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

TRAP DOOR TIMBER SALE ROAD PLAN
MASON COUNTY
HOOD CANAL DISTRICT

AGREEMENT NO.: 30-091844 STAFF ENGINEER: Heymann
DATE: 6/2/15

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.

Road	Stations	Type
2530ext	0+00 to 55+92	Construction
2510	0+00 to 242+12	Pre-haul Maintenance
2530ext	0+00 to 55+92	Post-haul Maintenance
2510	0+00 to 242+12	Post-haul Maintenance
2530	0+00 to 44+91	Post-haul Maintenance
Spur 1	0+00 to 5+99	Decommission, if built
Spur 2	0+00 to 3+42	Decommission, if built
Spur 3	0+00 to 9+14	Decommission, if built
Spur 4	0+00 to 6+88	Decommission, if built
Spur 5	0+00 to 20+56	Decommission, if built
Spur 6	0+00 to 8+43	Decommission, if built

0-3 OPTIONAL ROADS

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

Road	Stations	Type
Spur 1	0+00 to 5+99	Construction
Spur 2	0+00 to 3+42	Construction
Spur 3	0+00 to 9+14	Construction
Spur 4	0+00 to 6+88	Construction
Spur 5	0+00 to 20+56	Construction
Spur 6	0+00 to 8+43	Construction

0-4 CONSTRUCTION

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

clearing;
grubbing;
right-of-way debris disposal;
excavation and/or embankment to subgrade;
required full bench and end haul locations;
landing construction;
acquisition and installation of drainage structures;
acquisition, manufacture, and application of rock;
grass seeding;
road decommissioning.

0-6 PRE-HAUL MAINTENANCE

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

constructing catch basin and headwall;
cross drain culvert replacement;
acquisition and installation of drainage structures;
grading and shaping existing road surface and turnouts;
maintenance and removal of erosion control materials and sediment removal structures;
spot rocking.

0-7 POST-HAUL MAINTENANCE

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

0-9 DECOMMISSIONING

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

0-12 DEVELOP ROCK SOURCE

Purchaser shall develop an existing rock source. Rock source development will involve crushing from an oversize pile. Work for developing rock sources is listed in Section 6 ROCK AND SURFACING.

SECTION 1 – GENERAL

1-1 ROAD PLAN CHANGES

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

1-2 UNFORESEEN CONDITIONS

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

1-3 ROAD DIMENSIONS

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

1-4 ROAD TOLERANCES

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

Tolerance Class	A	B	C
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.

1-16 CONSTRUCTION STAKES SET BY STATE

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

Road	Stations	Type
2530ext	0+00 to 55+92	Construction

1-18 REFERENCE POINT DAMAGE

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

1-21 HAUL APPROVAL

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

1-23 ROAD WORK PHASE APPROVAL

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

- Drainage installation & Subgrade compaction
- Rock compaction

1-25 ACTIVITY TIMING RESTRICTION

The operation of road construction equipment is not allowed on weekends or state recognized holidays, unless authorized in writing by the Contract Administrator. The specified activities are not allowed during the listed closure period(s) unless authorized in writing by the Contract Administrator. Restrictions for hauling forest products are specified in Contract Clause H-140 SPECIAL HARVEST REQUIREMENTS.

Activity	Closure Period
Road Construction	November 1 to April 30

1-26 OPERATING DURING CLOSURE PERIOD

If permission is granted to operate during November 1 to April 30 as listed in Clause 1-25 ACTIVITY TIMING RESTRICTION or Contract Clause H-140 SPECIAL HARVEST REQUIREMENTS, the Purchaser shall provide a maintenance plan to include further protection of state resources. The Contract Administrator must approve the maintenance plan in writing, and preventative measures shall be put in place, before operation in the closure period. The Purchaser shall be required to maintain all haul roads at their own expense. If other operators are using, or desire to use these designated maintainer roads, a joint operating plan shall be developed. All parties shall follow this plan.

1-29 SEDIMENT RESTRICTION

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

1-30 CLOSURE TO PREVENT DAMAGE

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

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

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

1-32 ASPHALT SURFACE RESTRICTION

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

If tracked equipment is used on 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 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.

Purchaser shall have asphalt surfaces reviewed by a third party, specializing in asphalt construction and repair. The third party's scope of the damage and repairs must be agreed upon between the Purchaser and the Contract Administrator. Damage to the asphalt from transporting equipment will be repaired at the Purchaser's expense.

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.

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.

2-5 MAINTENANCE GRADING – EXISTING ROAD

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

Road	Stations
2510	0+00 to 242+12

2-8 MAINTAINING EROSION CONTROL STRUCTURES

On the following road(s), Purchaser shall clean and maintain all silt fence structures. Work must be completed before timber haul. Silt fence structures shall be removed from state land before the termination of this contract.

Road	Stations	Comments
2510	24+12, 104+85, 173+14, 176+27 & 180+24	Silt fence lengths vary from 75ft to 300ft. (1,650ft total)

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

3-5 CLEARING

Purchaser shall fall all vegetative material larger than 2 inches DBH or over 5 feet high between the marked right-of-way boundaries 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 50 feet of any stream.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Against standing trees unless approved by the Contract Administrator.

3-10 GRUBBING

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

3-20 ORGANIC DEBRIS DEFINITION

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

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.
- 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 in natural openings. Where natural openings are unavailable or restrictive, alternate debris disposal methods are subject to the written approval of the Contract Administrator.

SECTION 4 – EXCAVATION

4-1 EXCAVATOR CONSTRUCTION

On the following road(s), Purchaser shall use a track mounted hydraulic excavator for construction work, unless authorized in writing by the Contract Administrator.

Road	Stations
2530ext	0+00 to 55+92

4-2 PIONEERING

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

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

4-3 ROAD GRADE AND ALIGNMENT STANDARDS

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

- Grade and alignment must have smooth continuity, without abrupt changes in direction.
- Maximum grades may not exceed 18 percent favorable and 12 percent adverse.
- Minimum curve radius is 60 feet at centerline.

4-5 CUT SLOPE RATIO

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

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

4-6 EMBANKMENT SLOPE RATIO

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

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

4-7 SHAPING CUT AND FILL SLOPE

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

4-8 CURVE WIDENING

The minimum widening placed on the inside of curves is:

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

4-9 EMBANKMENT WIDENING

The minimum embankment widening is:

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

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

4-12 FULL BENCH CONSTRUCTION

On the following road(s), where side slopes exceed 45%, Purchaser shall use full bench construction for the entire subgrade width, except as construction staked or designed.

Road	Full Bench Location
2530ext	0+00 to 55+92

4-13 REQUIRED END HAUL LOCATIONS

On the following road(s), Purchaser shall use full bench construction for the entire subgrade width, except as construction staked or designed. Purchaser shall end haul waste material to the location specified in Clause 4-37 WASTE AREA LOCATION.

Road	Stations
2530ext	4+49 to 6+20
2530ext	12+74 to 24+13
2530ext	36+86 to 39+30
2530ext	44+52 to 48+08

4-21 TURNOUTS

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

4-22 TURNAROUNDS

Optional Turnarounds must be no larger than 30 feet long and 30 feet wide. Locations are subject to written approval by the Contract Administrator.

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

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

4-28 DITCH DRAINAGE

Ditches must drain to cross-drain culverts or ditchouts.

4-29 DITCHOUTS

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

4-35 WASTE MATERIAL DEFINITION

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

4-36 DISPOSAL OF WASTE MATERIAL

Purchaser may sidecast waste material on side slopes up to 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

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.

Road	Waste Area Location
2530ext	2+90 to 3+75
2530ext	8+32 to 9+08
2530ext	28+11 to 30+85
2530ext	35+53 to 36+53
2530	21+63

4-38 PROHIBITED WASTE DISPOSAL AREAS

Purchaser shall not deposit waste material in the following areas:

- Within 100 feet of a live stream or wetland.
- Within a riparian management zone.
- On side slopes steeper than 45%.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Within the operational area for cable landings.
- Against standing timber.

4-45 SELECT BORROW

Select borrow consists of granular material, either naturally occurring or processed, and contains no more than 5% clay, organic debris, or trash by volume.

4-46 COMMON BORROW

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

4-47 NATIVE MATERIAL

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

4-55 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. Purchaser shall accomplish all shaping using a motor grader with a minimum of 175 horsepower.

4-56 DRY WEATHER SHAPING

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

4-60 FILL COMPACTION

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

4-61 SUBGRADE COMPACTION

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

SECTION 5 – DRAINAGE

5-1 REMOVAL OF SHOULDER BERMS

Purchaser shall remove berms from road shoulders. The construction of ditchouts is required where ponding could result from the effects of sidecast debris.

5-5 CULVERTS

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

5-6 USED CULVERT MATERIAL

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

Road	Stations
Spur 1	0+00 to 5+99
Spur 2	0+00 to 3+42
Spur 3	0+00 to 9+14
Spur 4	0+00 to 6+88
Spur 5	0+00 to 20+56
Spur 6	0+00 to 8+43

5-11 UNUSED MATERIALS STATE PROPERTY

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

5-15 CULVERT INSTALLATION

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

5-17 CROSS DRAIN SKEW AND SLOPE

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

5-18 CULVERT DEPTH OF COVER

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

5-20 ENERGY DISSIPATERS

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

The type of energy dissipater and the amount of material must be consistent with the specifications listed on the CULVERT LIST. Rock must be set in place by machine.

5-21 DOWNSPOUTS AND FLUMES

Downspouts and flumes longer than 10 feet must be staked on both sides at maximum intervals of 10 feet with 6-foot heavy-duty steel posts, and fastened securely to the posts with No. 10 galvanized smooth wire or 1/2-inch bolts in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL.

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, except for temporary culverts. Rock used for headwalls must be Quarry Spalls. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets. Minimum specifications require that rock be placed at a width of one culvert diameter on each side of the culvert opening, and to a height of one culvert diameter above the top of the culvert. Rock may not restrict the flow of water into culvert inlets or catch basins. Rock must be set in place by machine.

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 150 feet.

SECTION 6 – ROCK AND SURFACING

6-2 ROCK SOURCE ON STATE LAND

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

Source	Location	Rock Type
2510pit	SW1/4, Sec 2 T24N R03W	4 Inch In Place / Quarry Spalls

6-5 ROCK FROM COMMERCIAL SOURCE

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

6-10 ROCK SOURCE DEVELOPMENT PLAN BY STATE

Purchaser shall conduct rock source development and use 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.

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 5% of the total volume mined in that source
- Oversize material is defined as rock fragments larger than two feet in any dimension.
- Oversized rock that exceeds the maximum allowable amount must be stcokpiled.
- Purchaser shall notify the Contract Administrator a minimum of 5 working days before blasting operations.
- Purchaser shall submit an informational drilling and shooting plan to the Contract Administrator 5 working days before any drilling.
- 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.

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.

6-36 4-INCH IN-PLACE ROCK

Purchaser shall manufacture 4-inch in-place rock. In-place processing such as grid rolling, jaw crushing, or other such method as demonstrated by the Purchaser to be effective, shall be required if necessary to achieve the following requirements:

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

6-43 QUARRY SPALLS

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

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

6-55 ROCK APPLICATION MEASURED BY COMPACTED DEPTH

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

6-70 APPROVAL BEFORE ROCK APPLICATION

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

6-71 ROCK APPLICATION

Rock shall be applied in accordance with the specifications and quantities shown on the ROCK LIST. The Contract Administrator shall direct locations for rock that is to be applied as spot patching. Rock shall be spread, shaped, and compacted full width concurrent with rock hauling operations. Rock shall be spread and compacted full width in one lift. 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 9 – POST-HAUL ROAD WORK

9-1 EARTHEN BARRICADES

Purchaser shall construct barricades in accordance with the EARTHEN BARRICADE DETAIL.

Road	Stations
Spur 1	0+25
Spur 2	0+25
Spur 3	0+25
Spur 4	0+25
Spur 5	0+25
Spur 6	0+25

9-3 CULVERT MATERIAL REMOVED FROM STATE LAND

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

9-5 POST-HAUL MAINTENANCE

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

Road	Stations	Additional Requirements
2510	0+00 to 242+12	Grading/Install Drivable Waterbar @ Sta 242+12
2530	0+00 to 44+91	Grading
2530ext	0+00 to 55+92	Grading

9-10 LANDING DRAINAGE

Purchaser shall provide for drainage of the landing surface.

9-20 ROAD DECOMMISSIONING

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

Road	Stations
Spur 1	0+00 to 5+99
Spur 2	0+00 to 3+42
Spur 3	0+00 to 9+14
Spur 4	0+00 to 6+88
Spur 5	0+00 to 20+56
Spur 6	0+00 to 8+43

9-22 DECOMMISSIONING

- Remove road shoulder berms except as directed.
- Construct non-drivable waterbars according to the attached NON-DRIVABLE WATERBAR DETAIL at a maximum spacing that will produce a vertical drop of no more than 10 feet between waterbars or between natural drainage paths and with a maximum spacing of 150 feet.
- Skew waterbars at least 30 degrees from perpendicular to the road centerline on roads in excess of 3 percent grade.
- Key waterbars into the cut-slope to intercept the ditch. Waterbars must be outsloped to provide positive drainage. Outlets must be on stable locations.
- Block roads with earthen barricades in accordance with the attached EARTHEN BARRICADE DETAIL.
- Remove ditch cross drain culverts and leave the resulting trench open.

- Slope all trench walls and approach embankments no steeper than 1.5:1.

SECTION 10 MATERIALS

10-17 CORRUGATED PLASTIC CULVERT

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

10-20 FLUME AND DOWNSPOUT

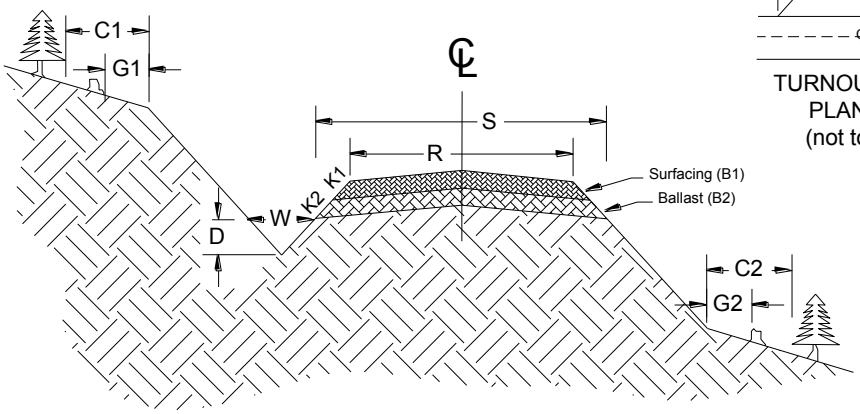
Downspouts and flumes must meet the AASHTO specification designated for the culvert. Plastic downspouts and flumes must be Type S – double walled with a corrugated exterior and smooth interior. Flumes shall have the ribs scored to allow for drainage of ribs.

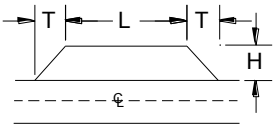
10-22 PLASTIC BAND

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.

TYPICAL SECTION SHEET

ROAD CROSS-SECTION
(not to scale)





TURNOUT DETAIL
PLAN VIEW
(not to scale)

Road Number	From Station	To Station	Tolerance Class	Subgrade Width (feet)	Road Width (feet)	Ditch Width (feet)	Ditch Depth (feet)	Crown in. @ CL	Grubbing Limits (feet)		Clearing Limits (feet)		Cut Slope Ratio	Fill Slope Ratio
				S	R	W	D		G1	G2	C1	C2	%	%
2510	0+00	242+12	C	15	12	2	1	4	0	0	0	0	100	67
2530	0+00	44+91	C	15	12	2	1	4	0	0	0	0	100	67
2530ext	0+00	3+75	A	15	12	2	1	4	5	5	7	7	133	67
2530ext	3+75	17+79	A	15	12	2	1	4	5	5	Tags	Tags	133	67
2530ext	7+57	8+07	A	27	24	2	1	4	5	5	Tags	Tags	133	67
2530ext	8+07	8+32	A	15	12	2	1	4	5	5	Tags	Tags	133	67
2530ext	8+32	9+37	A	17	12	2	1	4	5	5	Tags	Tags	133	67
2530ext	9+37	17+79	A	15	12	2	1	4	5	5	Tags	Tags	133	67
2530ext	17+79	24+38	A	15	12	2	1	4	5	5	7	7	133	67
2530ext	24+38	24+88	A	27	24	2	1	4	5	5	7	7	133	67
2530ext	24+88	27+44	A	15	12	2	1	4	5	5	7	7	133	67
2530ext	27+44	30+85	A	17	12	2	1	4	5	5	7	7	133	67
2530ext	30+85	32+00	A	15	12	2	1	4	5	5	7	7	133	67
2530ext	32+00	32+50	A	27	24	2	1	4	5	5	7	7	133	67
2530ext	32+50	35+92	A	15	12	2	1	4	5	5	7	7	133	67
2530ext	35+92	36+66	A	19	12	2	1	4	5	5	7	7	133	67
2530ext	36+66	41+61	A	15	12	2	1	4	5	5	7	7	133	67
2530ext	41+61	42+11	A	27	24	2	1	4	5	5	7	7	133	67
2530ext	42+11	43+73	A	15	12	2	1	4	5	5	7	7	133	67
2530ext	43+73	44+32	A	23	16	2	1	4	5	5	7	7	133	67

Road Number	From Station	To Station	Tolerance Class	Subgrade Width (feet)	Road Width (feet)	Ditch Width (feet)	Ditch Depth (feet)	Crown in. @ CL	Grubbing Limits (feet)		Clearing Limits (feet)		Cut Slope Ratio	Fill Slope Ratio
2530ext	44+32	55+92	A	15	12	2	1	4	5	5	7	7	133	67
Spur 1	0+00	5+99	C	15	12	2	1	4	5	5	7	7	100	67
Spur 2	0+00	3+42	C	15	12	2	1	4	5	5	7	7	100	67
Spur 3	0+00	9+14	C	15	12	2	1	4	5	5	7	7	100	67
Spur 4	0+00	6+88	C	15	12	2	1	4	5	5	7	7	100	67
Spur 5	0+00	20+56	C	15	12	2	1	4	5	5	7	7	100	67
Spur 6	0+00	8+43	C	15	12	2	1	4	5	5	7	7	100	67

ROCK LIST

BALLAST

Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth	C.Y. Station	# of Stations	C.Y. Subtotal	Rock Source	Turnout Length	Turnout Width	Turnout Taper
			K2	B2				4 Inch In Place/QS	L	H	T
2530ext	0+00	55+92	1 ½ : 1	12”	50	55.92	2796	2510 Pit	50	12	25
2510	55+99	57+87	1 ½ : 1	8”	32	1.88	60				
2510	71+10	88+55	1 ½ : 1	8”	32	17.45	558	2510 Pit			
*Spur 1	0+00	5+99	1 ½ : 1	8”	32	5.99	192	2510 Pit*			
*Spur 2	0+00	3+42	1 ½ : 1	8”	32	3.42	109	2510 Pit*			
*Spur 3	0+00	9+14	1 ½ : 1	8”	32	9.14	293	2510 Pit*			
*Spur 4	0+00	6+88	1 ½ : 1	8”	32	6.88	220	2510 Pit*			
*Spur 5	0+00	20+56	1 ½ : 1	8”	32	20.56	658	2510 Pit*			
*Spur 6	0+00	8+43	1 ½ : 1	8”	32	8.43	270	2510 Pit*			
						Turnout Rock	200	2510 Pit			
			Quarry Spalls for culvert headwalls/energy dissipaters				36	2510 Pit			

*Optional rock

OPTIONAL ROCK 1,742 Cubic Yards
REQUIRED ROCK 3,650 Cubic Yards
BALLAST TOTAL 5,392 Cubic Yards

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

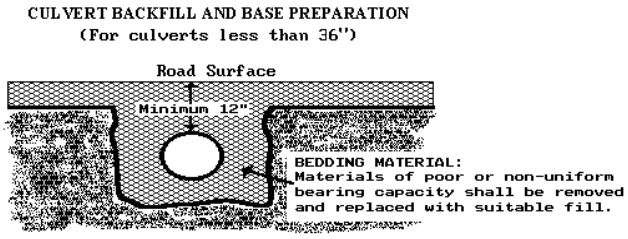
NOTE: Yardages are estimated on a compacted (In-Place) basis. Compliance of required rock will be based on compacted depth measurement.

CULVERT LIST

Road Number	Location	Culvert Dia.	Culvert Type	Length (ft) Culvert	Length (ft) Downspt	Length (ft) Flume	Riprap (C.Y.) Inlet	Riprap (C.Y.) Outlet	Riprap (C.Y.) Type	Backfill Material	Placement Method	Const. Staked	Remarks
2510	112+94	18	PD	30		15	0.5	0.5	QS				
2510	127+61	18	PD	30			0.5	0.5	QS				Replace Existing
2510	147+71	18	PD	30			0.5	0.5	QS				
2510	164+08	18	PD	30			0.5	0.5	QS				
2510	180+85	18	PD	30			0.5	0.5	QS				Replace Existing
2510	182+87	18	PD	40			0.5	0.5	QS				
2510	185+77	18	PD	30			0.5	0.5	QS				
2510	210+72	24	PD	30			1	1	QS				
2510	211+36	18	PD	30			0.5	0.5	QS				
2510	222+12	18	PD	30			0.5	0.5	QS				
2510	224+33	18	PD	30			0.5	0.5	QS				
2510	225+57	18	PD	30			0.5	0.5	QS				
2510	229+52	18	PD	30			0.5	0.5	QS				Replace Existing
2510	237+55	18	PD	30		15	0.5	0.5	QS				Replace Existing
2530ext	4+06	24	PD	40			1	1	QS				
2530ext	6+45	18	PD	38			0.5	0.5	QS				
2530ext	8+69	18	PD	42			0.5	0.5	QS				
2530ext	11+81	24	PD	36			1	1	QS				
2530ext	14+07	18	PD	34			0.5	0.5	QS				
2530ext	16+55	18	PD	32			0.5	0.5	QS				
2530ext	17+80	24	PD	34			1	1	QS				
2530ext	20+90	18	PD	34			0.5	0.5	QS				
2530ext	29+85	18	PD	36			0.5	0.5	QS				
2530ext	39+30	24	PD	36			1	1	QS				
2530ext	42+36	18	PD	46			0.5	0.5	QS				
2530ext	43+99	24	PD	66			0.5	0.5	QS				
2530ext	46+78	18	PD	36			0.5	0.5	QS				
2530ext	49+39	24	PD	40			1	1	QS				
2530ext	52+86	18	PD	30			0.5	0.5	QS				
2530ext	53+77	18	PD	34			0.5	0.5	QS				
Spur 1	1+49	18	TEMP	50									
Spur 1	3+70	18	TEMP	30									
Spur 1	4+61	18	TEMP	30									
Spur 2	0+81	18	TEMP	30									
Spur 2	2+47	18	TEMP	30									
Spur 3	0+25	18	TEMP	40									
Spur 3	1+16	18	TEMP	30									
Spur 3	2+80	18	TEMP	30									
Spur 3	4+22	18	TEMP	30									
Spur 3	5+70	18	TEMP	30									
Spur 3	7+33	18	TEMP	30									
Spur 3	7+95	18	TEMP	30									

Road		Culvert		Length (ft)			Riprap (C.Y.)			Backfill	Placement	Const.	
Spur 4	0+85	18	TEMP	30									
Spur 4	2+87	18	TEMP	30									
Spur 4	6+16	18	TEMP	30									
Spur 5	1+45	18	TEMP	30									
Spur 5	3+44	18	TEMP	30									
Spur 5	7+27	18	TEMP	30									
Spur 5	7+45	18	TEMP	30									
Spur 5	10+49	24	TEMP	30									
Spur 5	11+07	18	TEMP	30									
Spur 5	12+20	18	TEMP	30									
Spur 5	13+78	18	TEMP	30									
Spur 6	1+36	18	TEMP	30									
Spur 6	3+36	18	TEMP	30									

PD = Polyethylene Pipe Dual Wall AASHTO No. M294 Type S or ASTM F2648
GS16 = Galvanized Steel AASHTO No. M36, 16 Gauge
AS12 = Aluminized Steel AASHTO No. M274, 12 Gauge
TEMP = Temporary Culvert

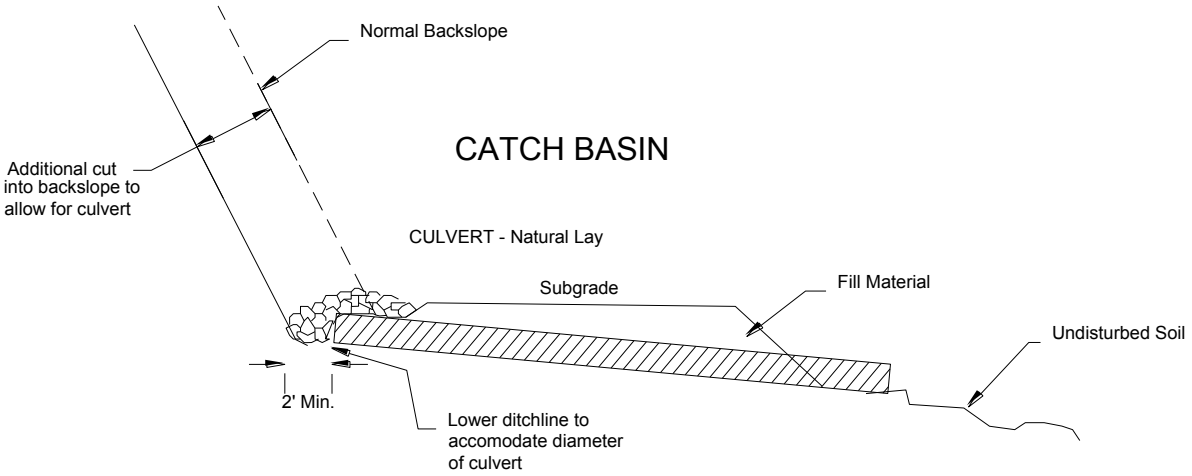


Key:
QS - Quarry Spalls
SR - Shot Rock
NT - Native (bank run)
SL - Select Fill
HL - Heavy Loose Riprap
LL - Light Loose Riprap
Flume - Half round pipe
Downspout - Full round pipe

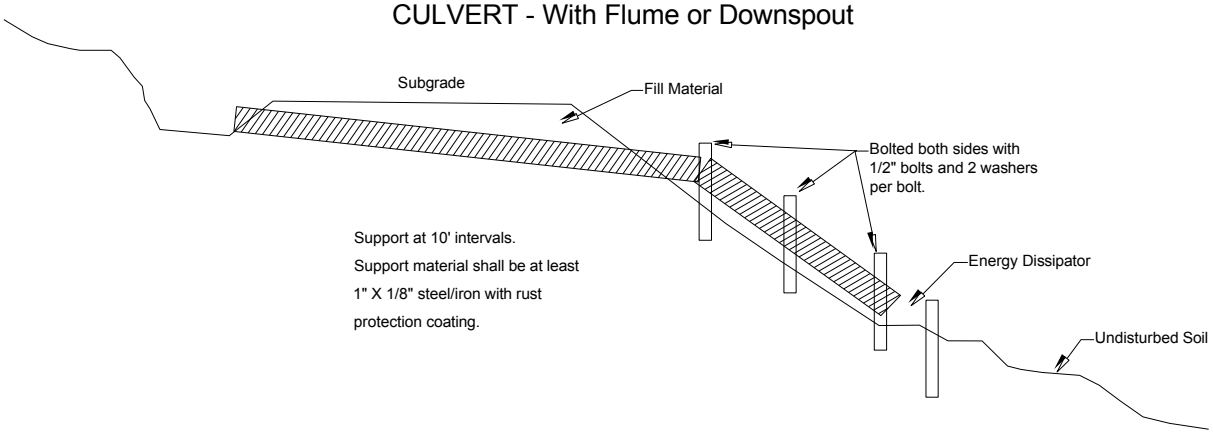
Legal Description: SW1/4, Sec 2 T24N R03W
Rock Pit Name: 2510 Pit

CULVERT AND DRAINAGE SPECIFICATION DETAIL

(Page 1 of 3)



CULVERT - With Flume or Downspout

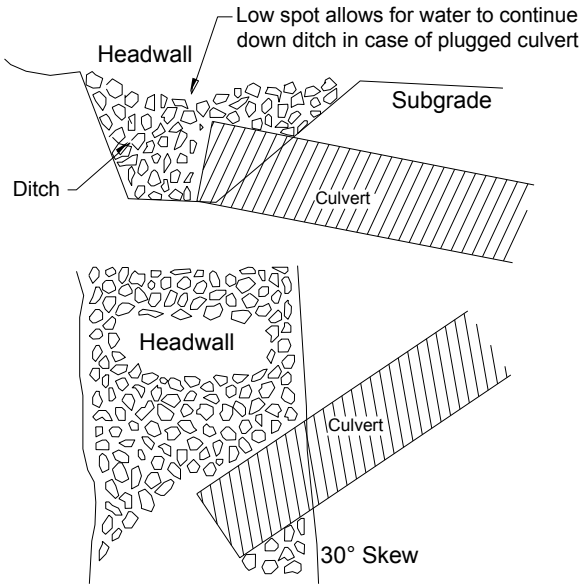


CULVERT AND DRAINAGE SPECIFICATION DETAIL

(Page 2 of 3)

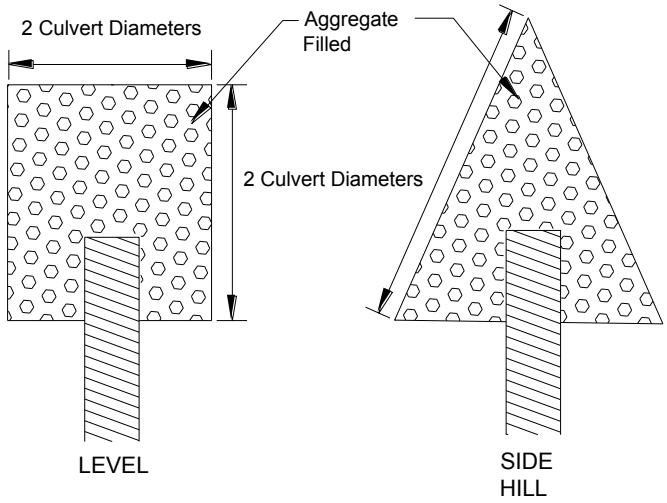
Proper preparation of foundation and placement of bedding material shall precede the installation of all culvert pipe. This includes necessary leveling of the native trench bottom and compaction of required bedding material to form a uniform dense unyielding base. The backfill material shall be placed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

HEADWALLS



Headwalls to be constructed of material that will resist erosion.

ENERGY DISSIPATORS



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

CULVERT AND DRAINAGE SPECIFICATION DETAIL

(Page 3 of 3)

POLYETHYLENE PIPE INSTALLATION

INSTALLATION REQUIREMENTS:

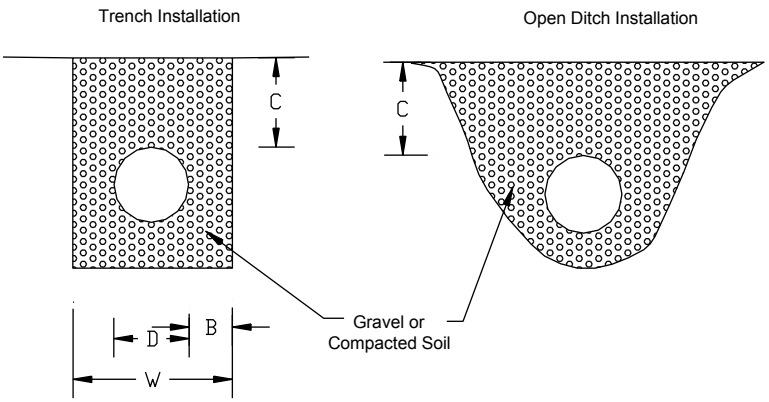
1. Crushed stone, gravel, or compacted soil backfill material shall be used as the bedding and envelope material around the culvert. The aggregate size shall not exceed 1/6 pipe diameter or 4" diameter, whichever is smaller.

2. The corrugated pipe shall be laid on grade, on a layer of bedding material as shown for the two types of installations. If native soil is used as the bedding and backfill material, it shall be well compacted in six inch layers under the haunches, around the sides and above the pipe to the recommended minimum height of cover.

3. Either crushed aggregate or flexible (asphalt) pavement may be laid as part of the minimum cover requirements.

4. Site conditions and availability of bedding materials often dictate the type of installation method used.

5. The load bearing capability of flexible conduits is dependent on the type of backfill material used and the degree of compaction achieved. Crushed stone and gravel backfill materials typically reach a compaction level of 90-95% AASHTO standard density without compaction. When native soils are used as backfill material, a compaction level of 85% is required. This minimum compaction can be achieved by either hand or mechanical tamping.



MINIMUM DIMENSIONS

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

Cuts and Fills

- Maintain slope lines to a stable gradient compatible with the construction materials. 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 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

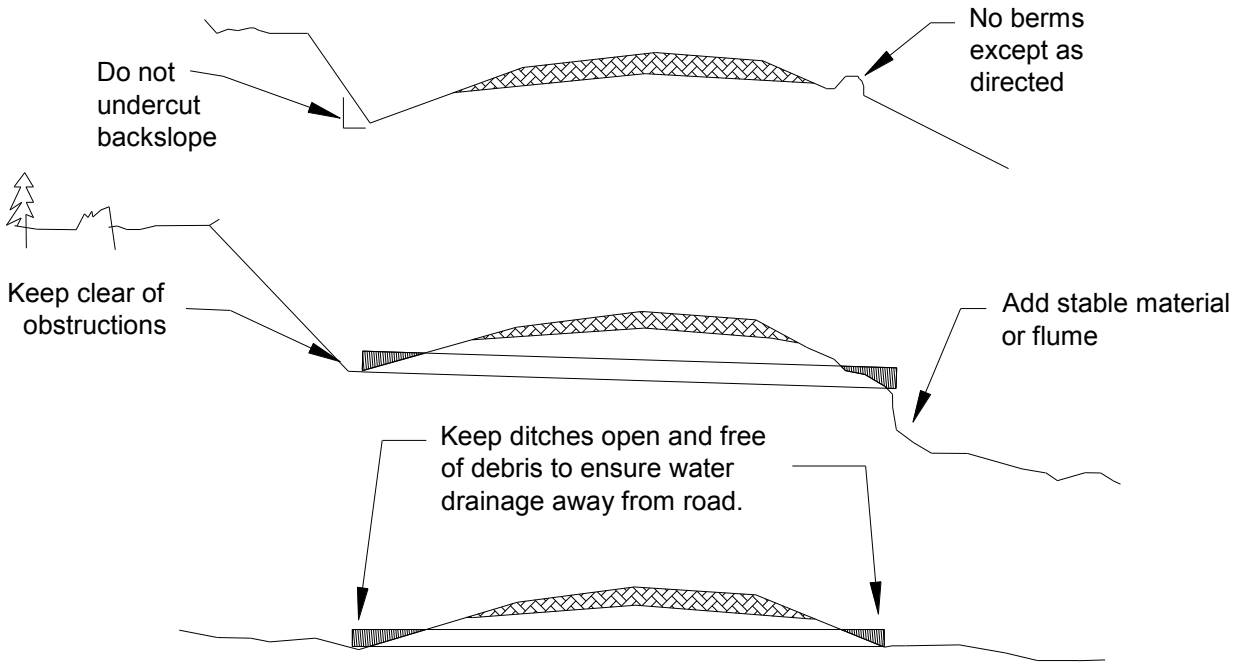
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

Termination of Use or End of Season

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

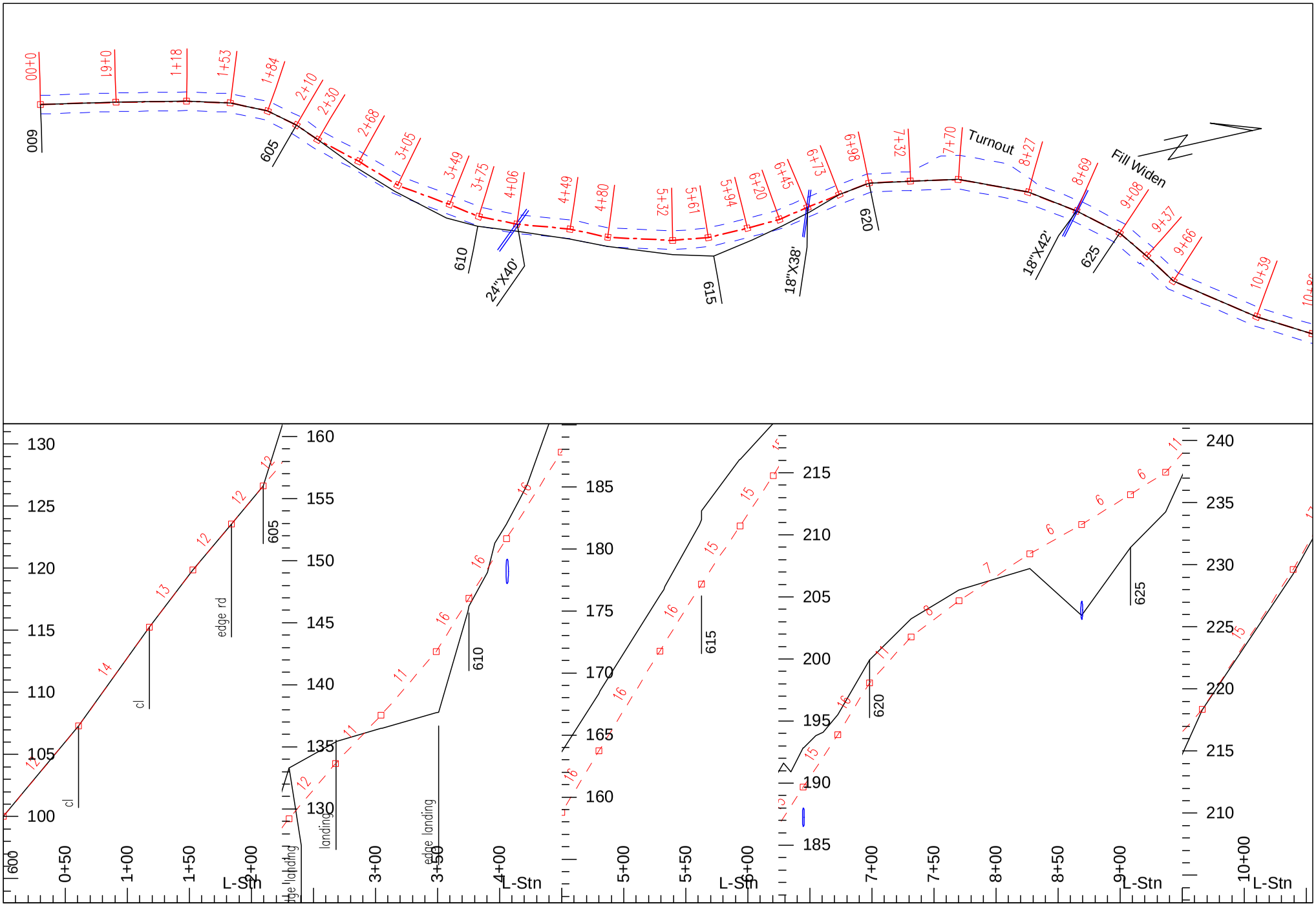
Debris

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


No berms
except as
directed
Do not
undercut
backslope
Keep clear of
obstructions
Add stable material
or flume
Keep ditches open and free
of debris to ensure water
drainage away from 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)
2530ext	0+00	55+92	Embankment Subgrade Rock	12	Vibratory Smooth Drum	14,000	4	3

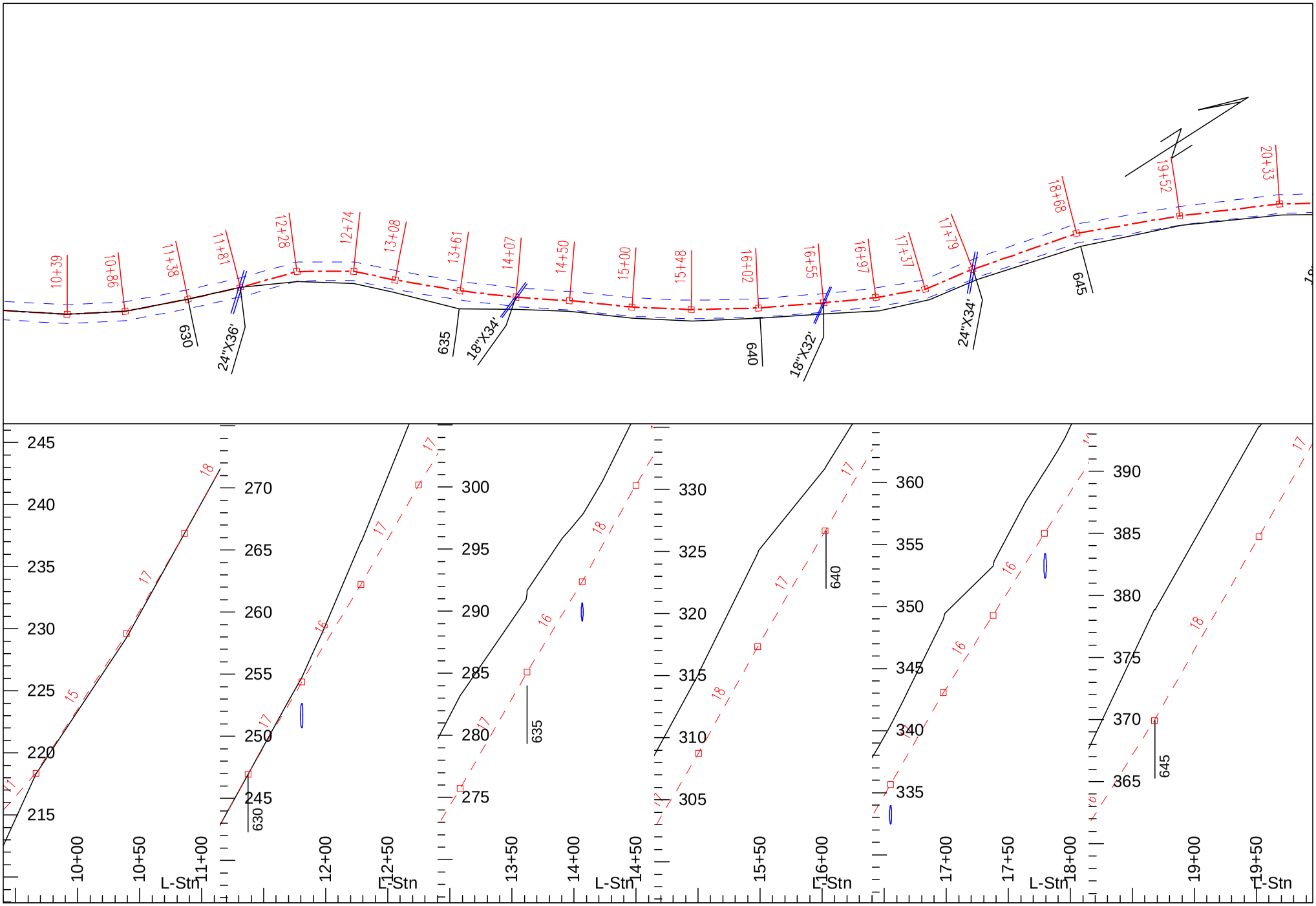


Trap Door Timber Sale
2530ext
Contract #: 30-091844

Washington State Department of Natural Resources
South Puget Sound Region

Plan Scale 1:1200
Profile Vert Scale 1:120
Profile Horz Scale 1:1200

Engineer: Heymann
15/06/02
Page 1 of 6

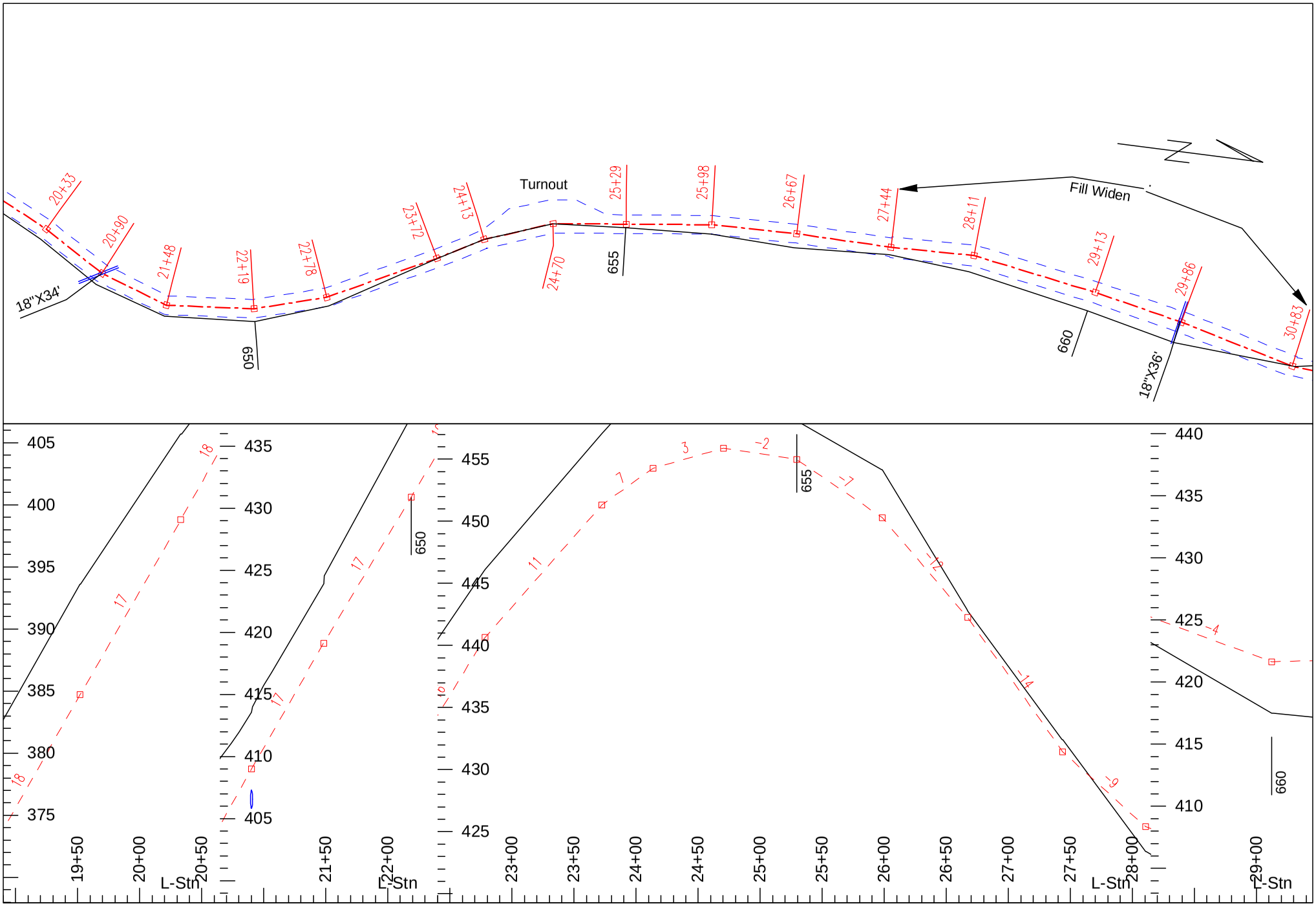


Trap Door Timber Sale
2530ext
Contract #: 30-091844

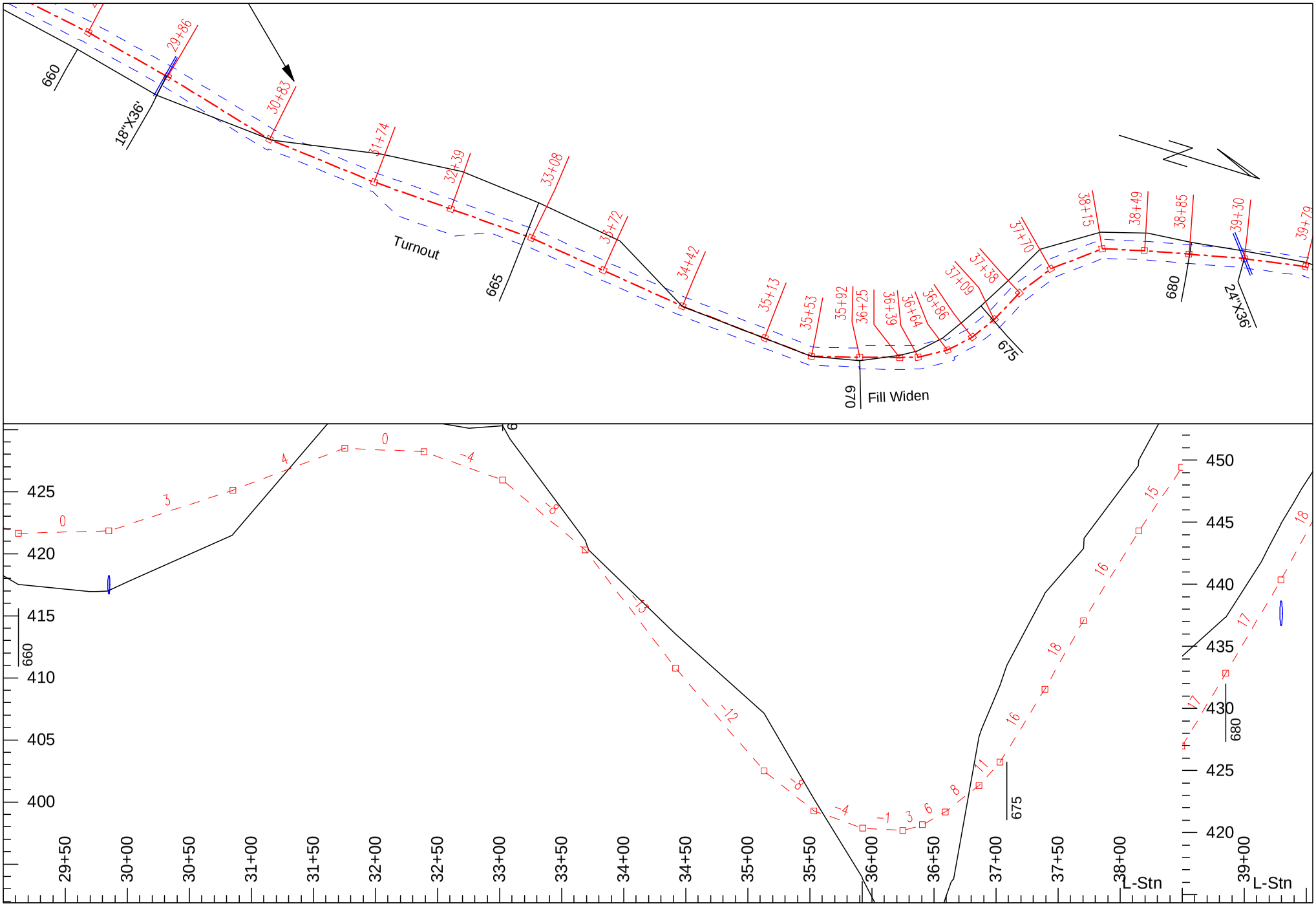
Washington State Department of Natural Resources
South Puget Sound Region

Plan Scale 1:1200
Profile Vert Scale 1:120
Profile Horz Scale 1:1200

Engineer: Heymann
15/06/02
Page 2 of 6



Trap Door Timber Sale 2530ext Contract #: 30-091844	Washington State Department of Natural Resources South Puget Sound Region	Plan Scale 1:1200 Profile Vert Scale 1:120 Profile Horz Scale 1:1200	Engineer: Heymann 15/06/02 Page 3 of 6

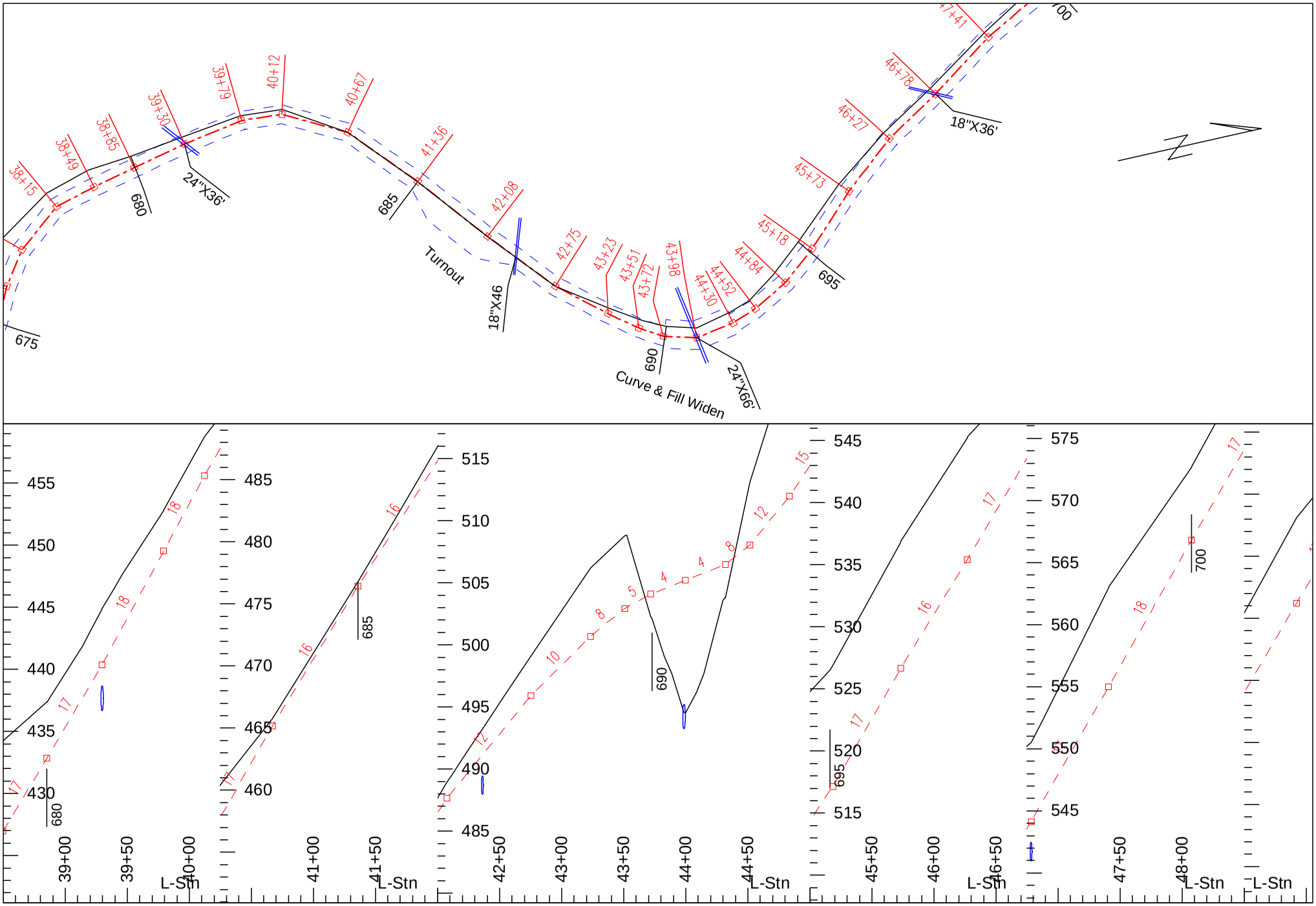


Trap Door Timber Sale
2530ext
Contract #: 30-091844

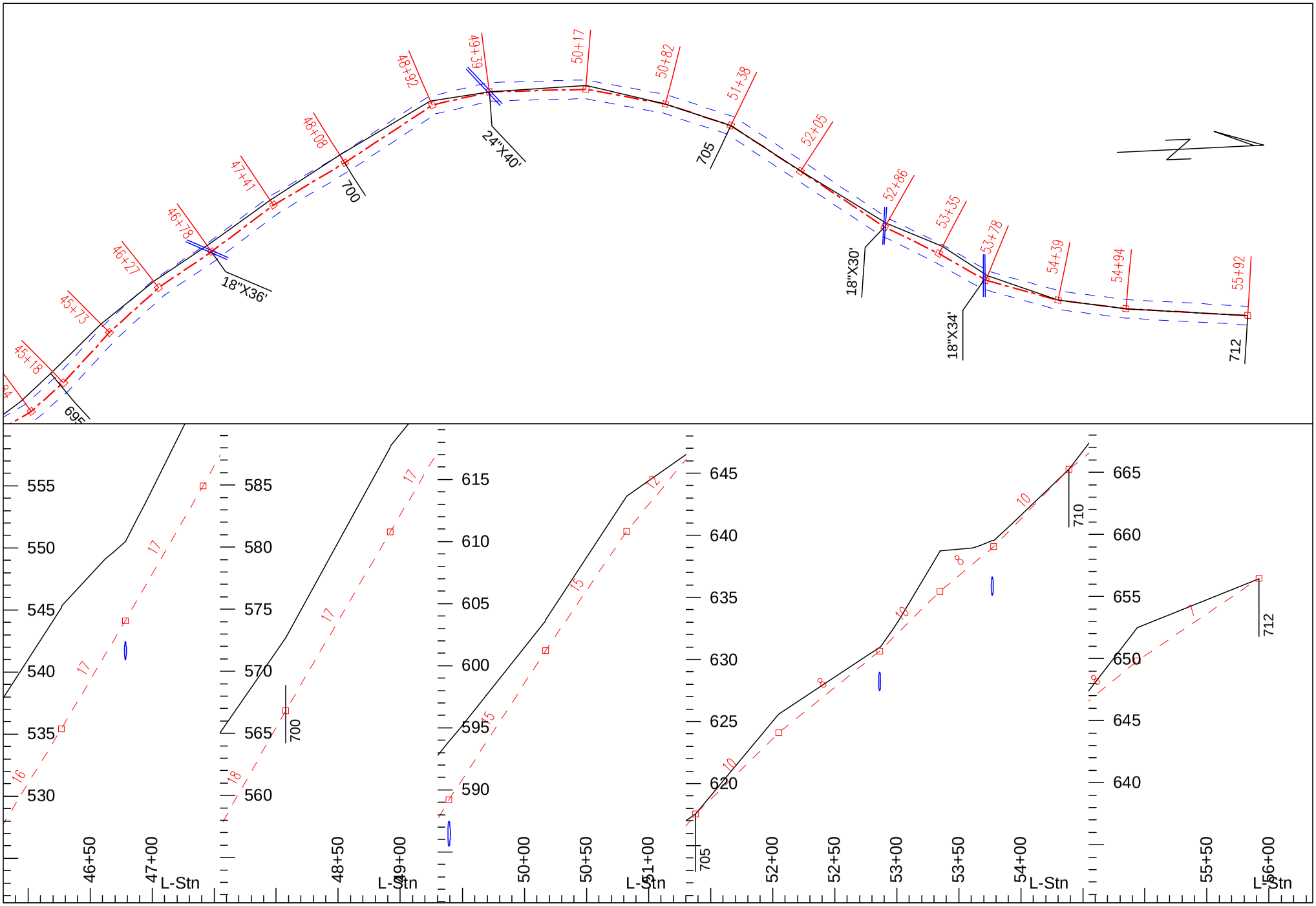
Washington State Department of Natural Resources
South Puget Sound Region

Plan Scale 1:1200
Profile Vert Scale 1:120
Profile Horz Scale 1:1200

Engineer: Heymann
15/06/02
Page 4 of 6



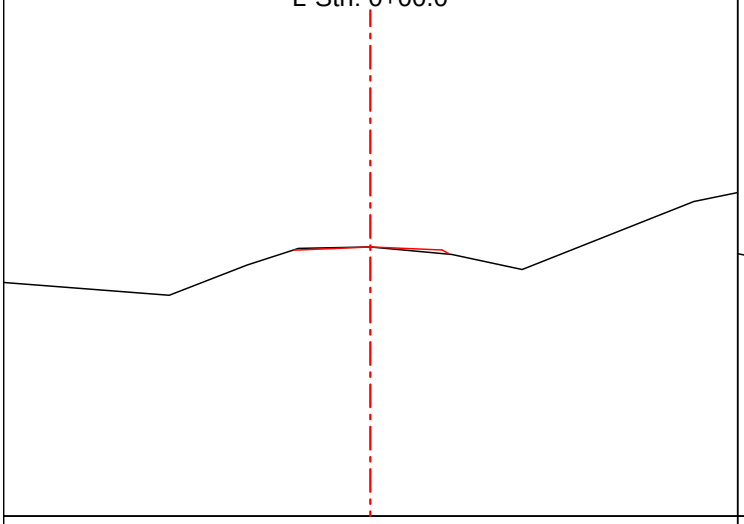
Trap Door Timber Sale 2530ext Contract #: 30-091844	Washington State Department of Natural Resources South Puget Sound Region	Plan Scale 1:1200 Profile Vert Scale 1:120 Profile Horz Scale 1:1200	Engineer: Heymann 15/06/02 Page 5 of 6



Trap Door Timber Sale 2530ext Contract #: 30-091844	Washington State Department of Natural Resources South Puget Sound Region	Plan Scale 1:1200 Profile Vert Scale 1:120 Profile Horz Scale 1:1200	Engineer: Heymann 15/06/02 Page 6 of 6

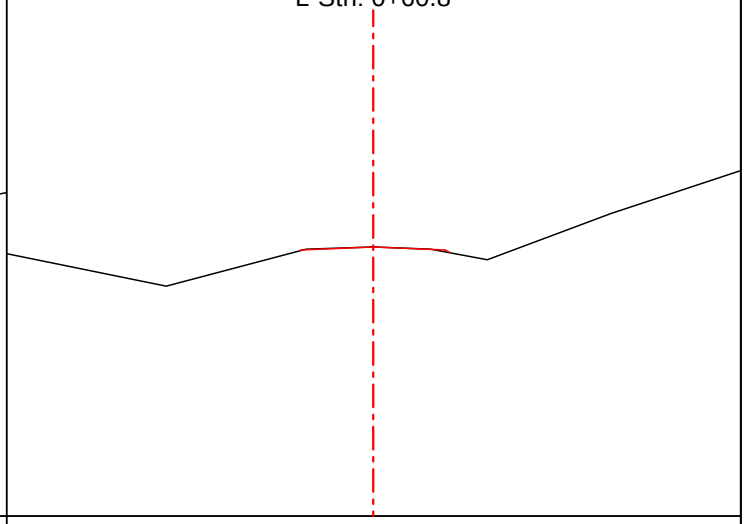
ROADENG Section	Scale 1:240	P. 1
C:\ProgramData\Softree\Data\trapdoor\2530ext		15/06/02

L-Stn: 0+00.0



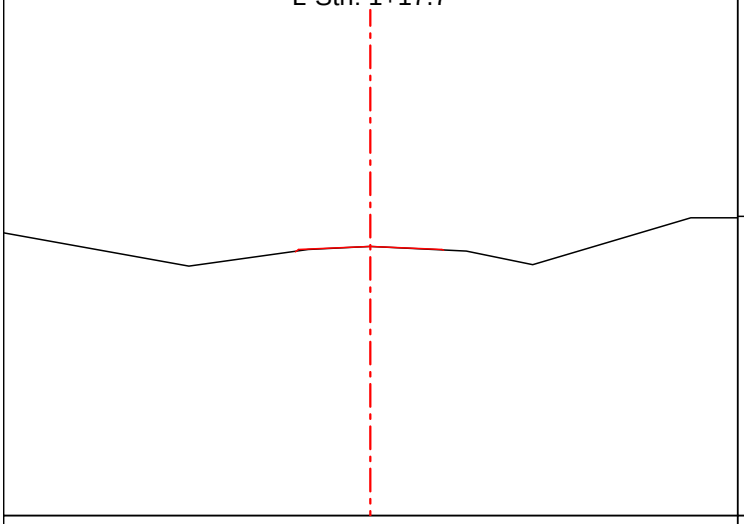
P-Stn:	0+00.0	H. Offset:	0.0	Index:	600
V.Offset:	0.0	CL Elev:	100.0		

L-Stn: 0+60.8



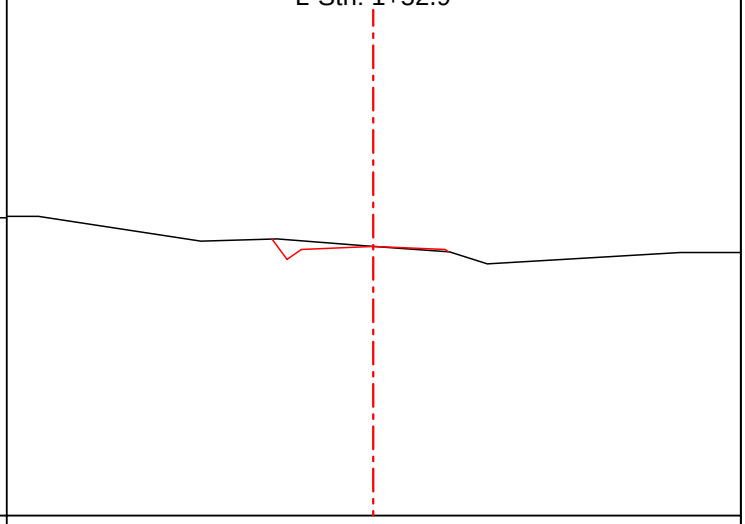
P-Stn:	0+60.8	H. Offset:	0.0	Index:	601
V.Offset:	0.0	CL Elev:	107.3		

L-Stn: 1+17.7



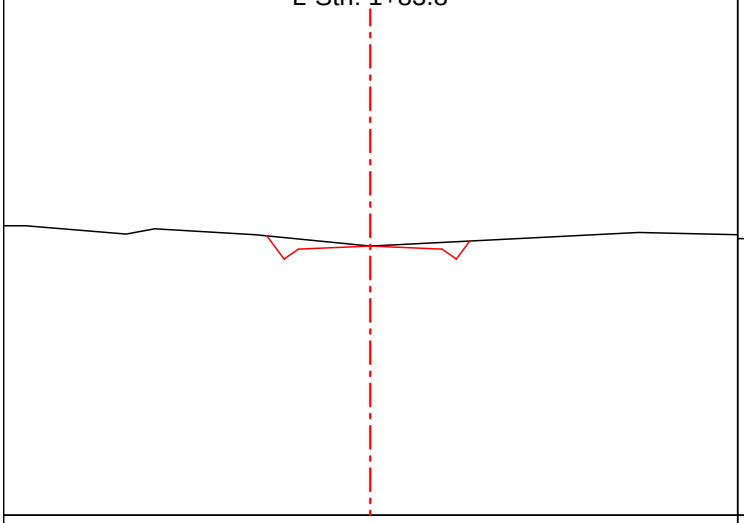
P-Stn:	1+17.7	H. Offset:	0.0	Index:	602
V.Offset:	0.0	CL Elev:	115.3		

L-Stn: 1+52.9



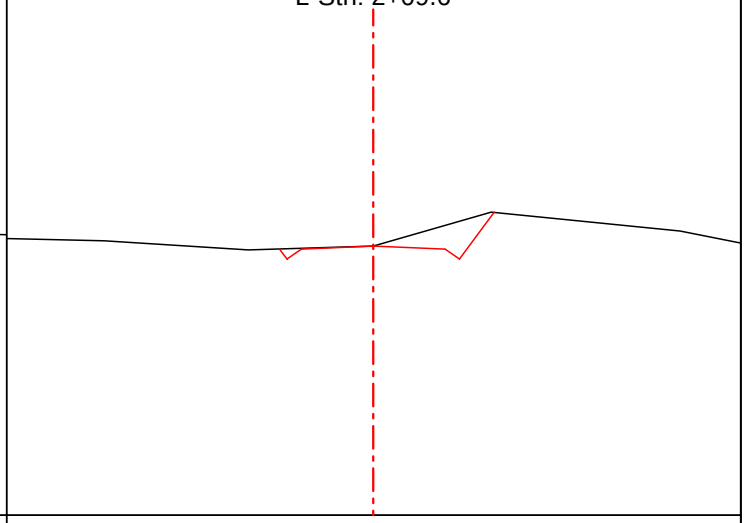
P-Stn:	1+52.9	H. Offset:	0.0	Index:	603
V.Offset:	0.0	CL Elev:	119.8		

L-Stn: 1+83.8



P-Stn:	1+83.8	H. Offset:	0.0	Index:	604
V.Offset:	0.0	CL Elev:	123.5		

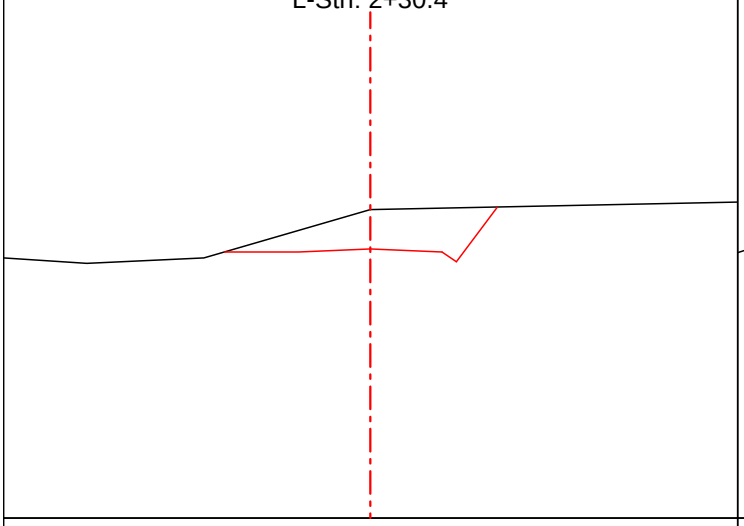
L-Stn: 2+09.6



P-Stn:	2+09.6	H. Offset:	0.0	Index:	605
V.Offset:	0.0	CL Elev:	126.6		

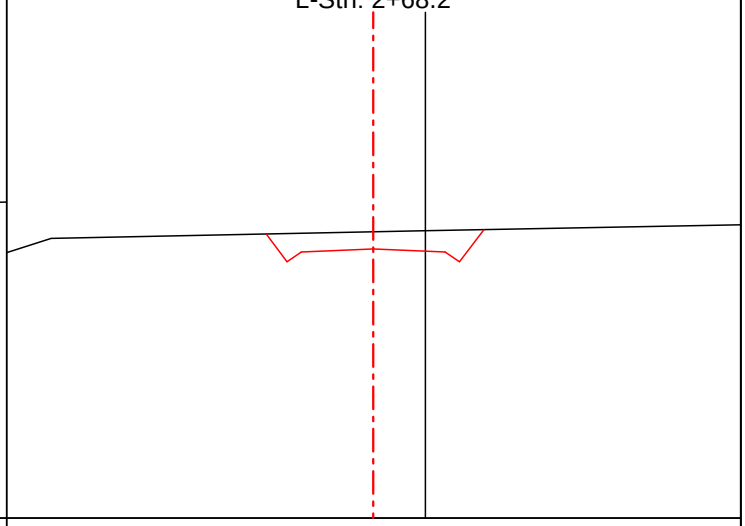
ROADENG Section	Scale 1:240	P. 2
C:\ProgramData\Softree\Data\trapdoor\2530ext		15/06/02

L-Stn: 2+30.4



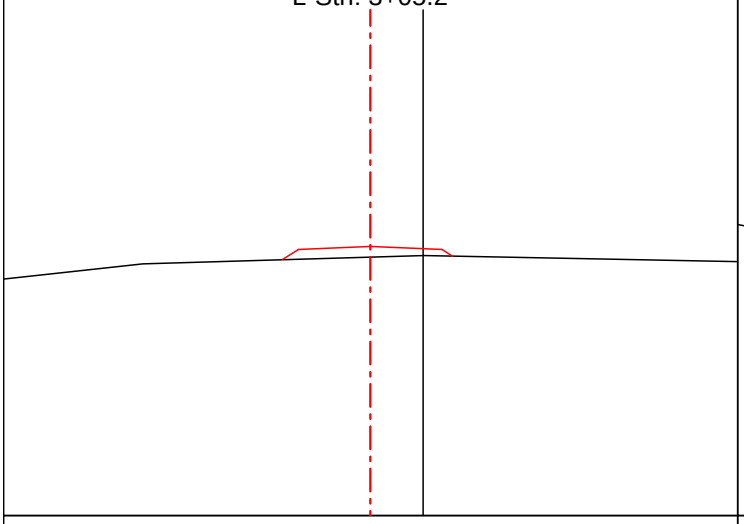
P-Stn:	2+30.4	H. Offset:	0.0	Index:	606
V.Offset:	-4.1	CL Elev:	129.2		

L-Stn: 2+68.2



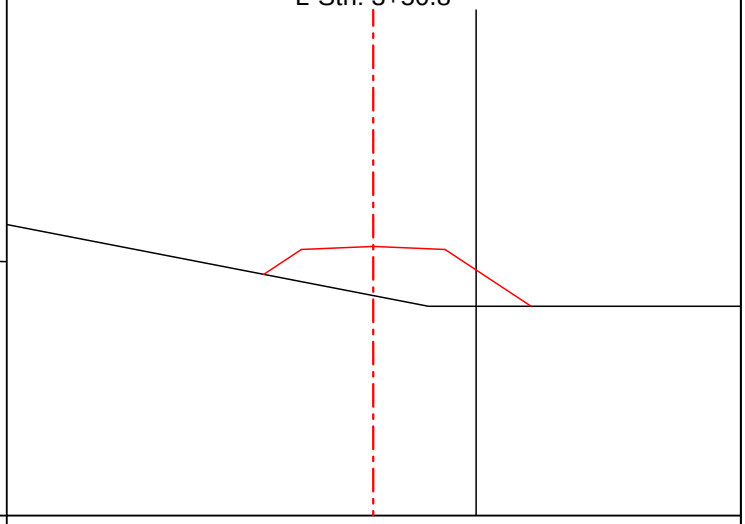
P-Stn:	2+68.0	H. Offset:	-5.5	Index:	607
V.Offset:	-1.9	CL Elev:	133.7		

L-Stn: 3+05.2



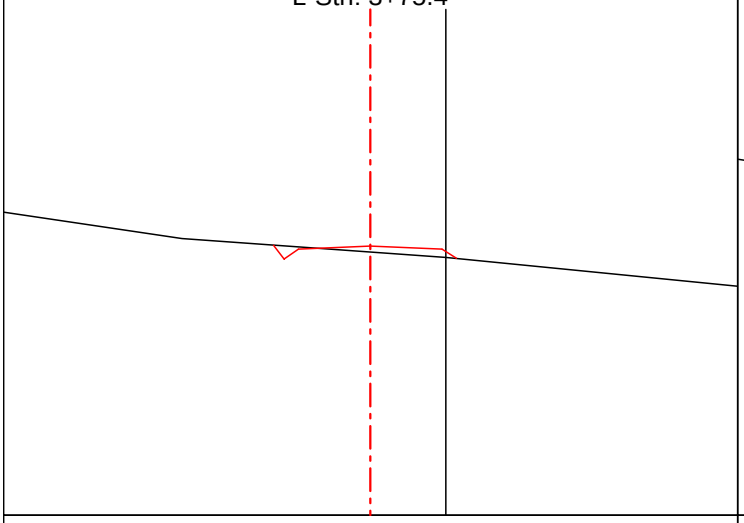
P-Stn:	3+05.5	H. Offset:	-5.5	Index:	608
V.Offset:	0.9	CL Elev:	137.6		

L-Stn: 3+50.8



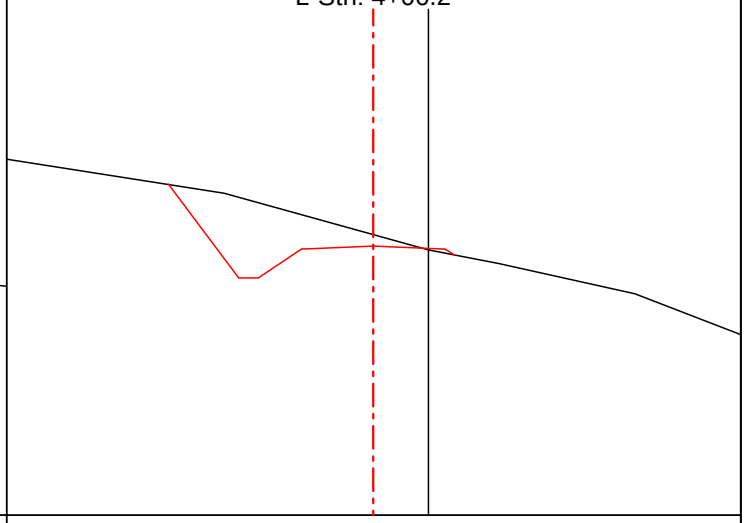
P-Stn:	3+52.1	H. Offset:	-10.8	Index:	609
V.Offset:	6.3	CL Elev:	142.9		

L-Stn: 3+75.4



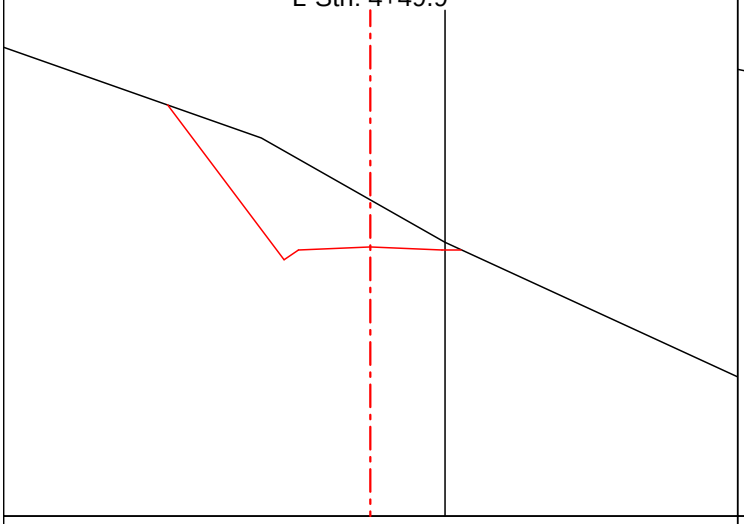
P-Stn:	3+78.1	H. Offset:	-7.8	Index:	610
V.Offset:	1.2	CL Elev:	147.0		

L-Stn: 4+06.2



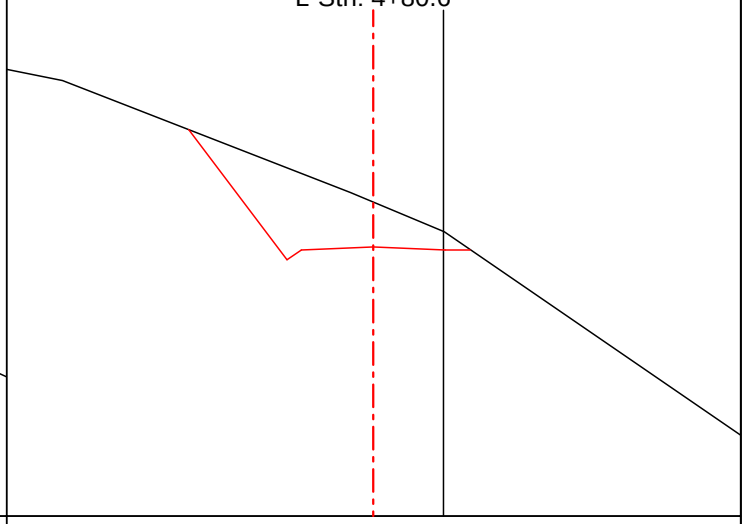
P-Stn:	4+09.4	H. Offset:	-5.7	Index:	611
V.Offset:	0.4	CL Elev:	151.9		

L-Stn: 4+49.9



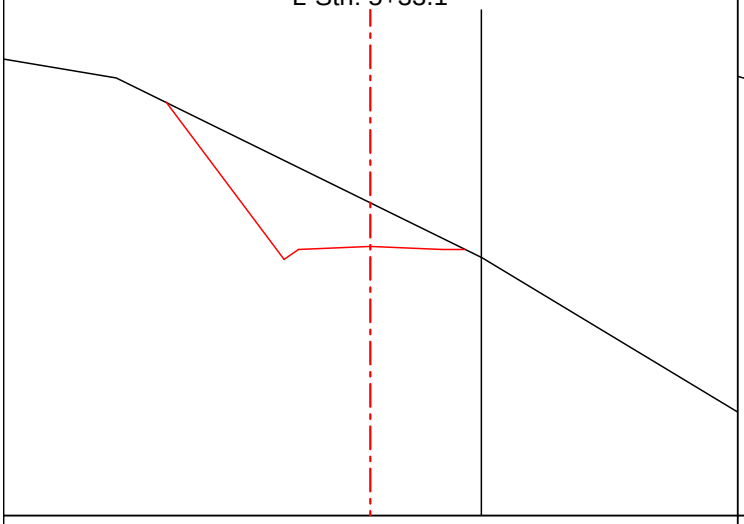
P-Stn:	4+52.7	H. Offset:	-7.8	Index:	612
V.Offset:	-0.5	CL Elev:	158.7		

L-Stn: 4+80.6



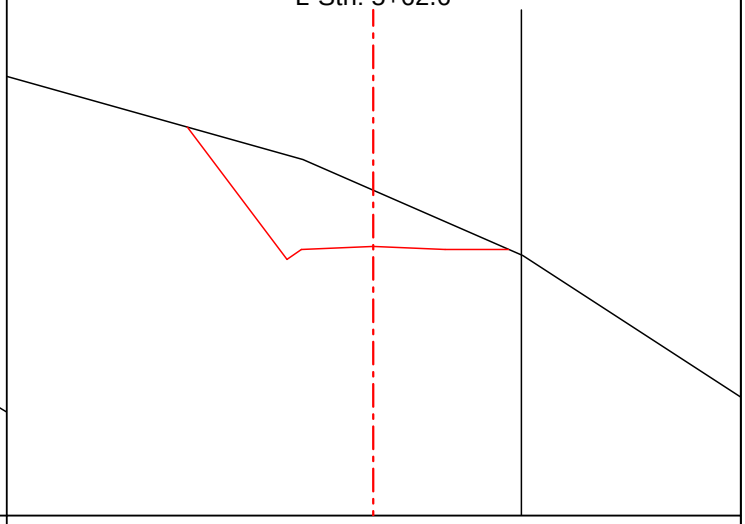
P-Stn:	4+83.5	H. Offset:	-7.3	Index:	613
V.Offset:	-1.6	CL Elev:	163.8		

L-Stn: 5+33.1



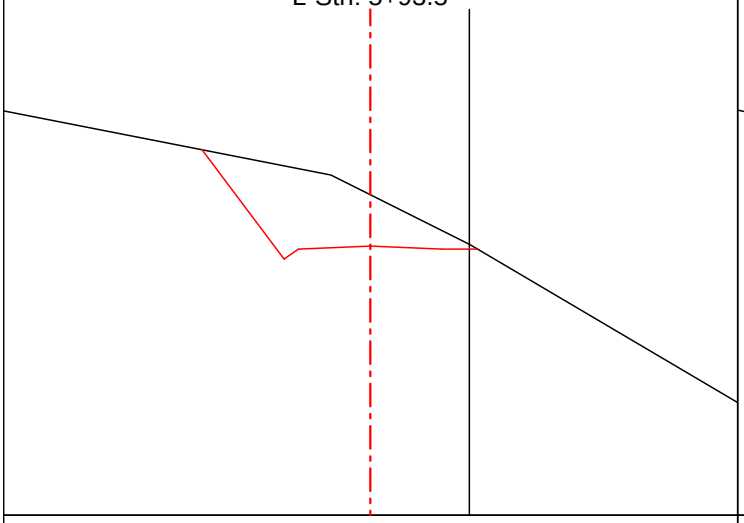
P-Stn:	5+36.6	H. Offset:	-11.5	Index:	614
V.Offset:	1.2	CL Elev:	172.4		

L-Stn: 5+62.6



P-Stn:	5+69.7	H. Offset:	-15.6	Index:	615
V.Offset:	1.0	CL Elev:	177.2		

L-Stn: 5+93.5

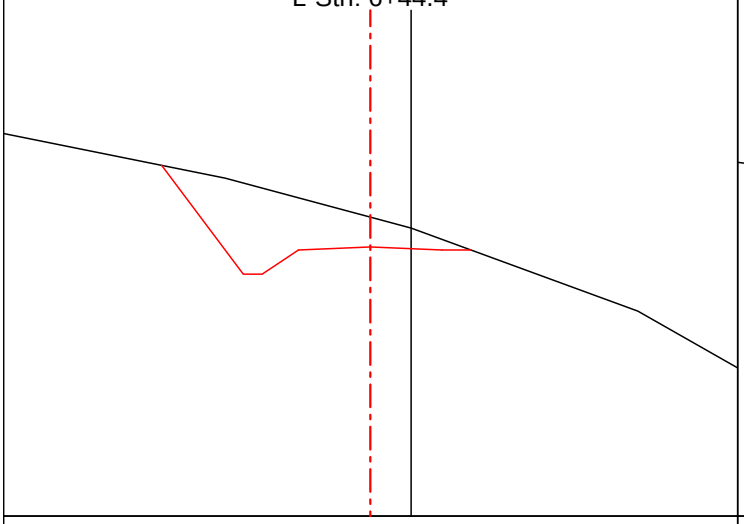


P-Stn:	6+03.7	H. Offset:	-10.2	Index:	616
V.Offset:	-0.1	CL Elev:	181.8		

L-Stn: 6+20.3

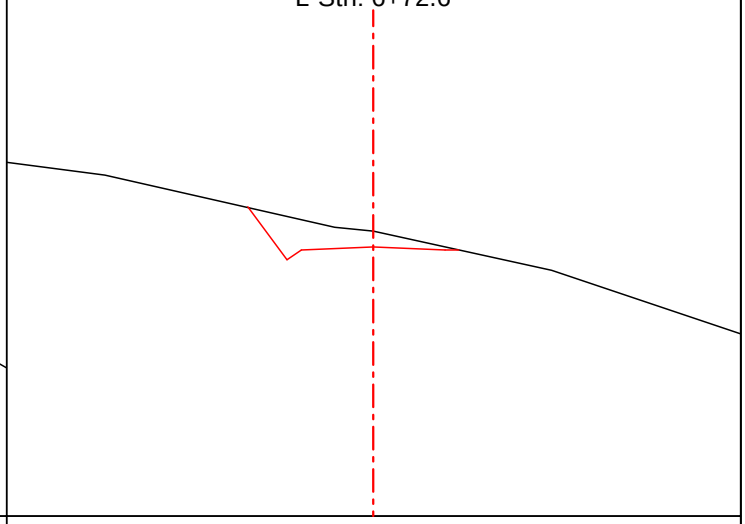
P-Stn:	6+30.5	H. Offset:	-5.7	Index:	617
V.Offset:	-0.6	CL Elev:	185.9		

L-Stn: 6+44.4



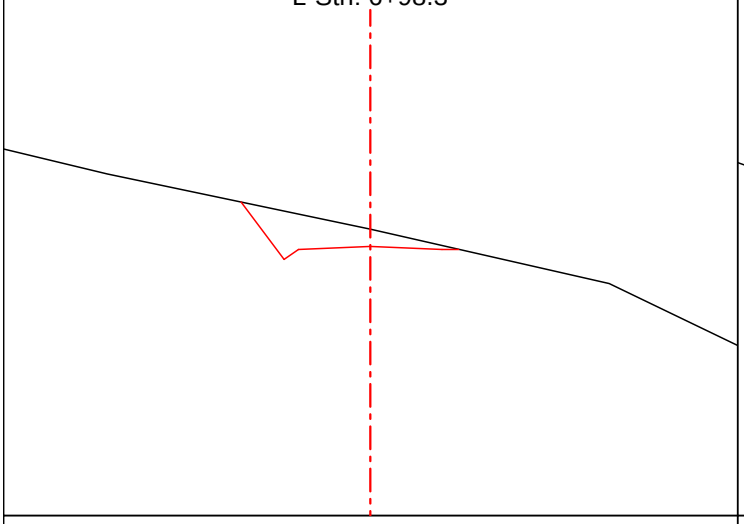
P-Stn:	6+54.7	H. Offset:	-4.3	Index:	618
V.Offset:	-2.0	CL Elev:	189.6		

L-Stn: 6+72.6



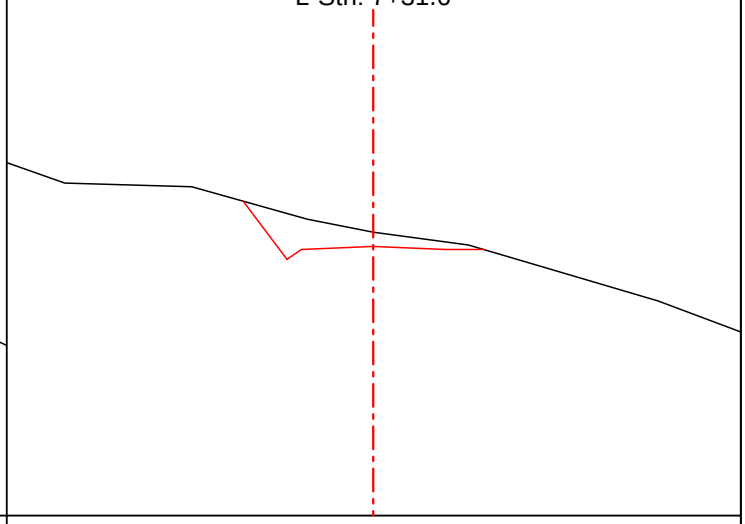
P-Stn:	6+82.8	H. Offset:	0.0	Index:	619
V.Offset:	-1.6	CL Elev:	193.9		

L-Stn: 6+98.3



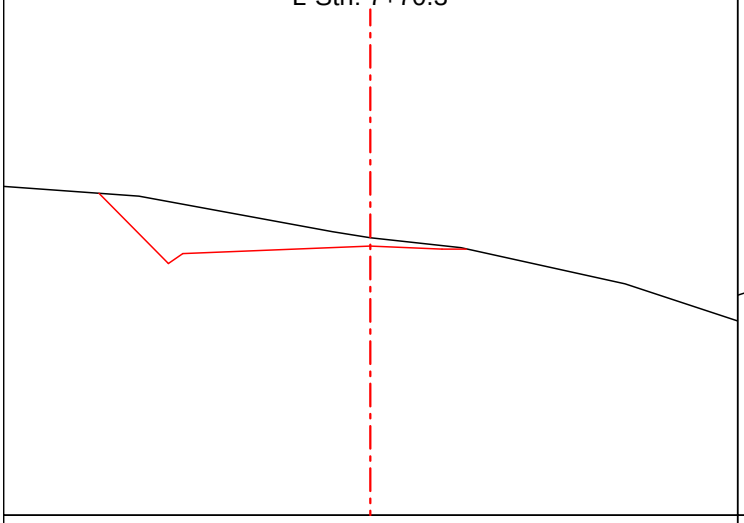
P-Stn:	7+08.5	H. Offset:	0.0	Index:	620
V.Offset:	-1.8	CL Elev:	198.1		

L-Stn: 7+31.6



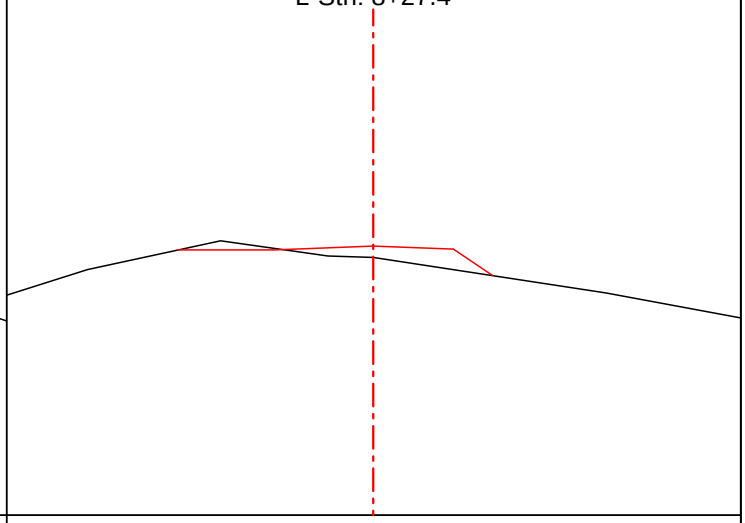
P-Stn:	7+41.8	H. Offset:	0.0	Index:	621
V.Offset:	-1.5	CL Elev:	201.8		

L-Stn: 7+70.3



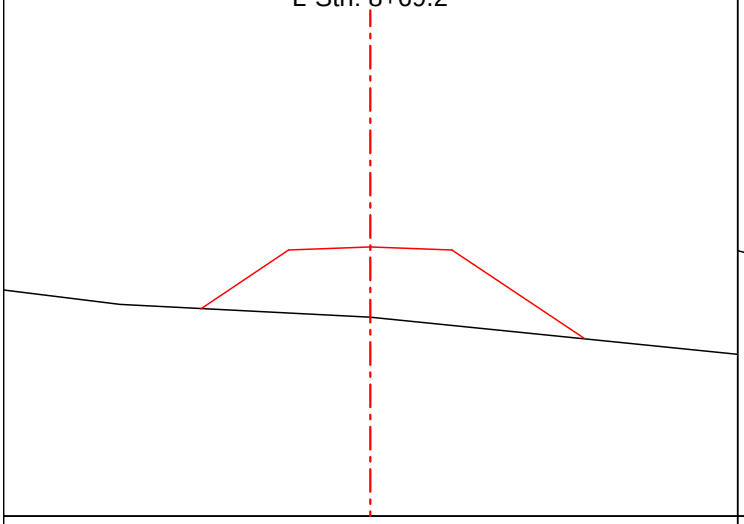
P-Stn:	7+80.5	H. Offset:	0.0	Index:	622
V.Offset:	-0.9	CL Elev:	204.7		

L-Stn: 8+27.4



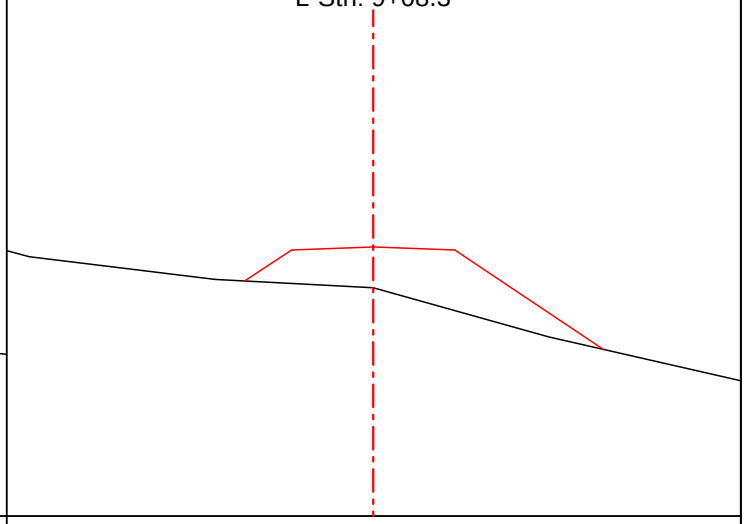
P-Stn:	8+37.6	H. Offset:	0.0	Index:	623
V.Offset:	1.2	CL Elev:	208.5		

L-Stn: 8+69.2



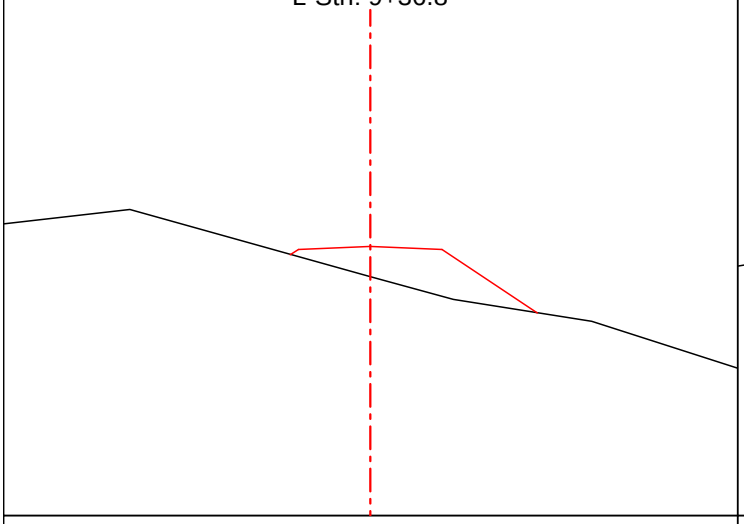
P-Stn:	8+79.4	H. Offset:	0.0	Index:	624
V.Offset:	7.3	CL Elev:	210.8		

L-Stn: 9+08.3



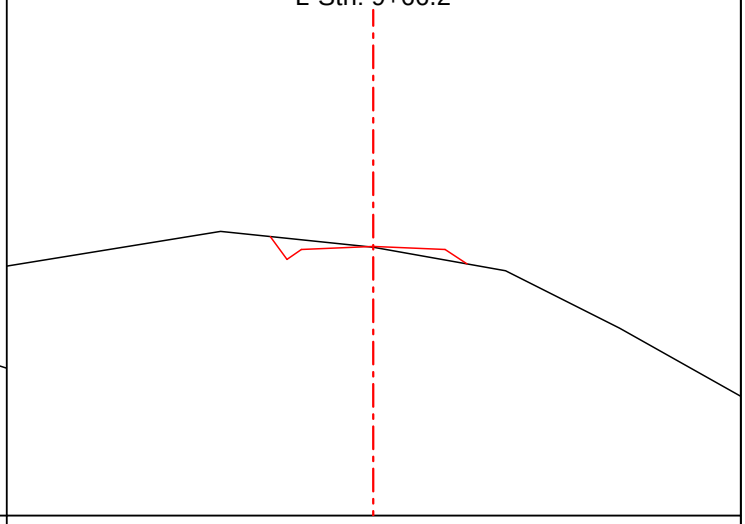
P-Stn:	9+18.5	H. Offset:	0.0	Index:	625
V.Offset:	4.2	CL Elev:	213.2		

L-Stn: 9+36.8



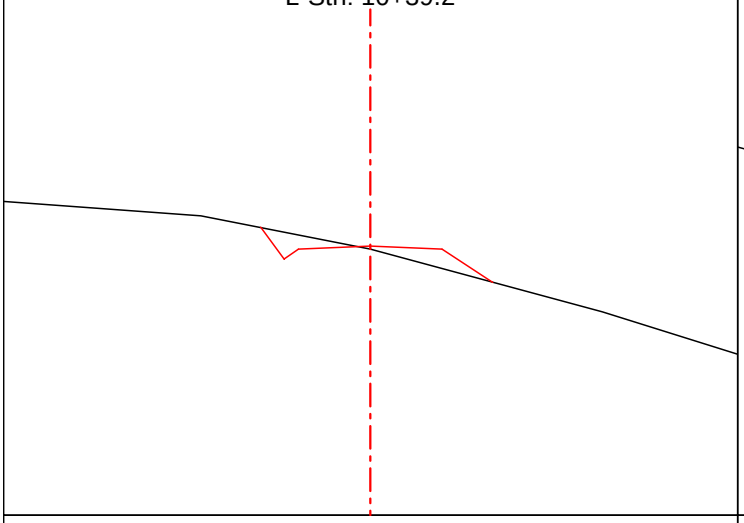
P-Stn:	9+47.0	H. Offset:	0.0	Index:	626
V.Offset:	3.2	CL Elev:	215.0		

L-Stn: 9+66.2



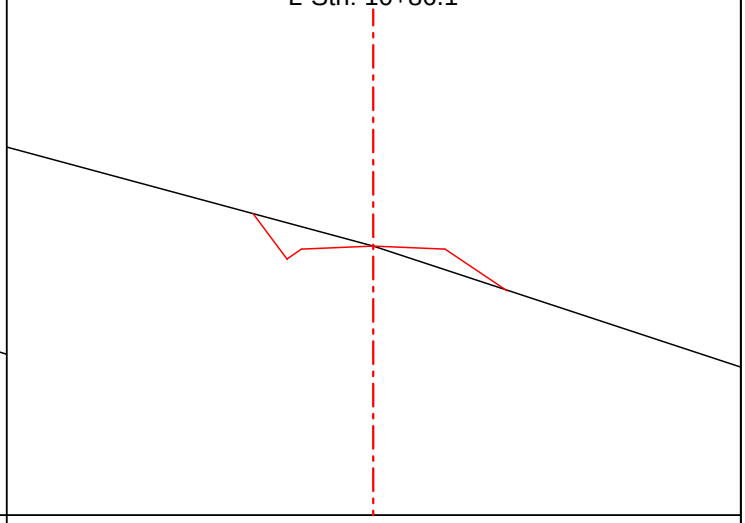
P-Stn:	9+76.4	H. Offset:	0.0	Index:	627
V.Offset:	0.1	CL Elev:	218.4		

L-Stn: 10+39.2



P-Stn:	10+49.4	H. Offset:	0.0	Index:	628
V.Offset:	0.3	CL Elev:	229.6		

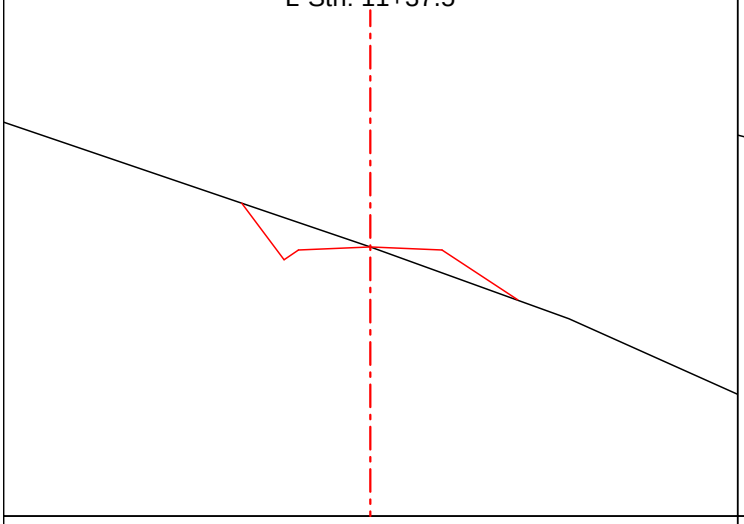
L-Stn: 10+86.1



P-Stn:	10+96.3	H. Offset:	0.0	Index:	629
V.Offset:	0.0	CL Elev:	237.7		

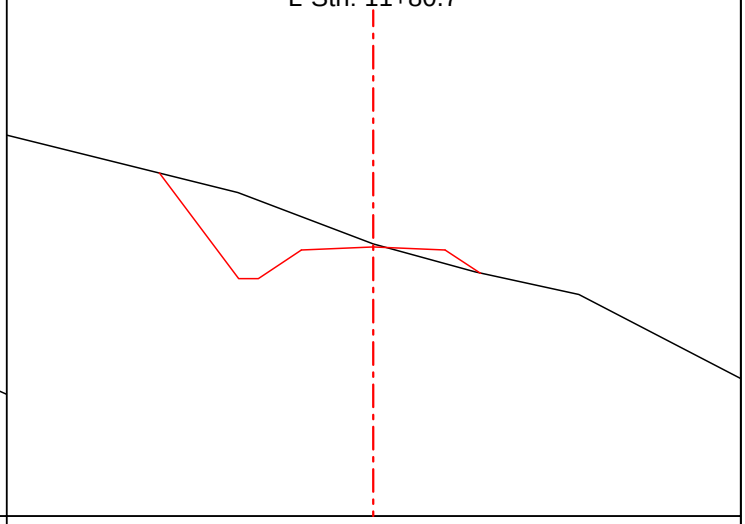
ROADENG Section	Scale 1:240	P. 6
C:\ProgramData\Softree\Data\trapdoor\2530ext		15/06/02

L-Stn: 11+37.5



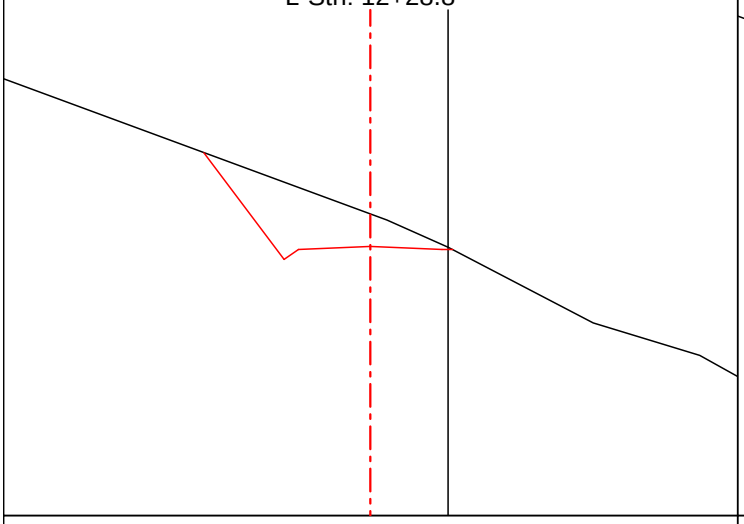
P-Stn:	11+47.7	H. Offset:	0.0	Index:	630
V.Offset:	0.0	CL Elev:	247.0		

L-Stn: 11+80.7



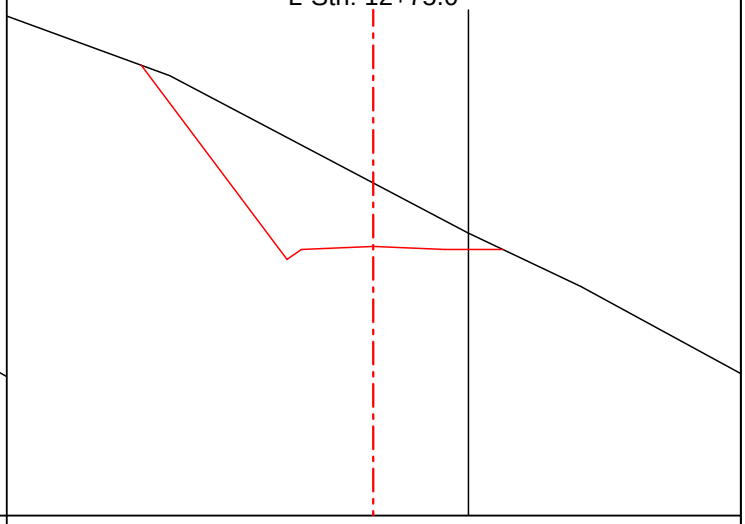
P-Stn:	11+90.9	H. Offset:	0.0	Index:	631
V.Offset:	-0.3	CL Elev:	254.4		

L-Stn: 12+28.8



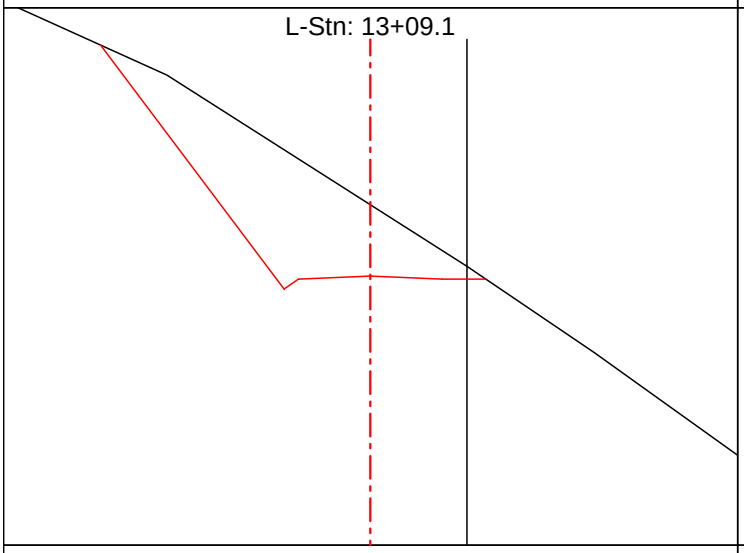
P-Stn:	12+37.7	H. Offset:	-8.1	Index:	632
V.Offset:	0.1	CL Elev:	262.3		

L-Stn: 12+75.0



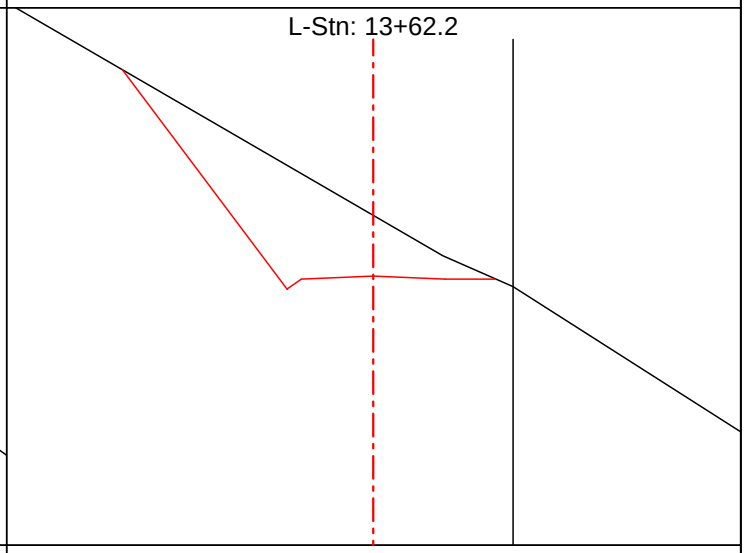
P-Stn:	12+82.5	H. Offset:	-9.8	Index:	633
V.Offset:	-1.4	CL Elev:	270.2		

L-Stn: 13+09.1



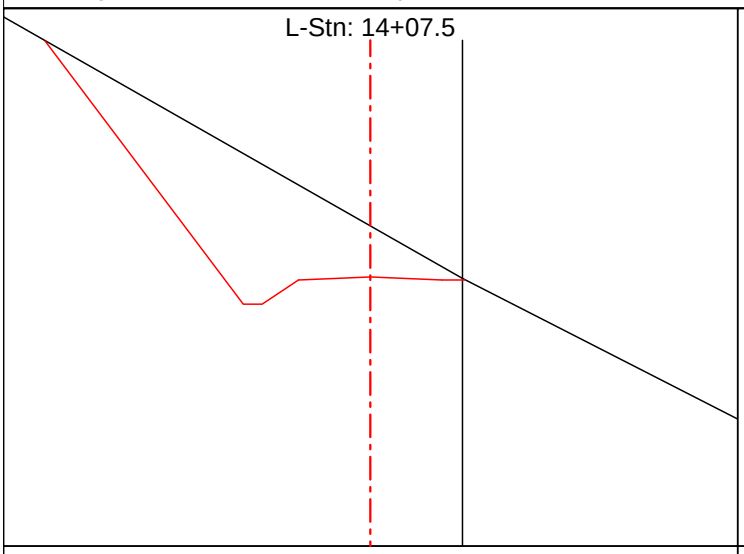
P-Stn:	13+15.6	H. Offset:	-10.1	Index:	634
V.Offset:	-1.0	CL Elev:	275.9		

L-Stn: 13+62.2



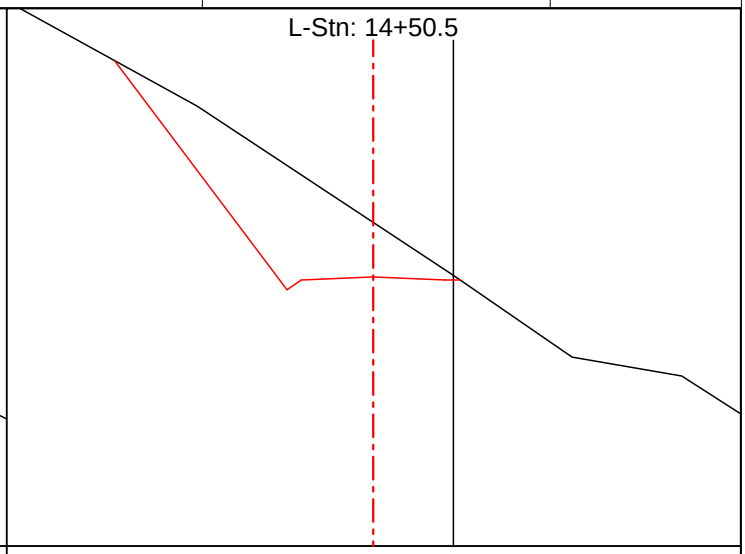
P-Stn:	13+70.0	H. Offset:	-14.6	Index:	635
V.Offset:	1.1	CL Elev:	285.1		

L-Stn: 14+07.5



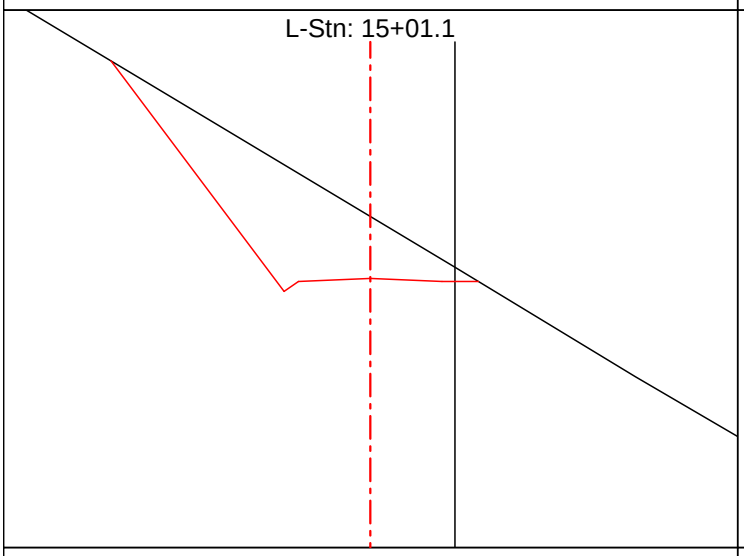
P-Stn:	14+16.6	H. Offset:	-9.6	Index:	636
V.Offset:	0.2	CL Elev:	292.6		

L-Stn: 14+50.5



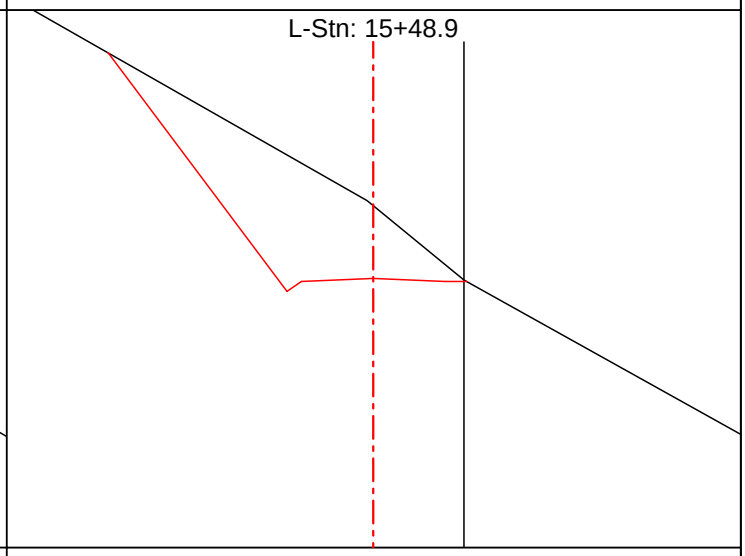
P-Stn:	14+59.2	H. Offset:	-8.3	Index:	637
V.Offset:	-0.2	CL Elev:	300.3		

L-Stn: 15+01.1



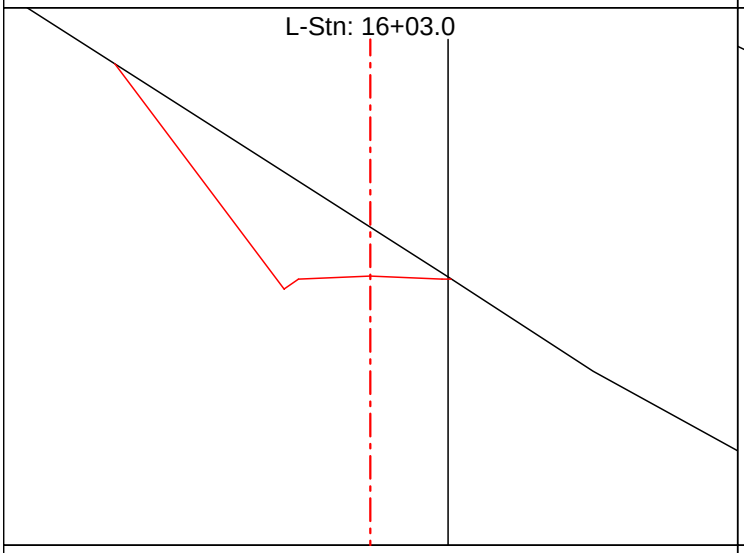
P-Stn:	15+09.8	H. Offset:	-8.8	Index:	638
V.Offset:	-1.2	CL Elev:	308.9		

L-Stn: 15+48.9



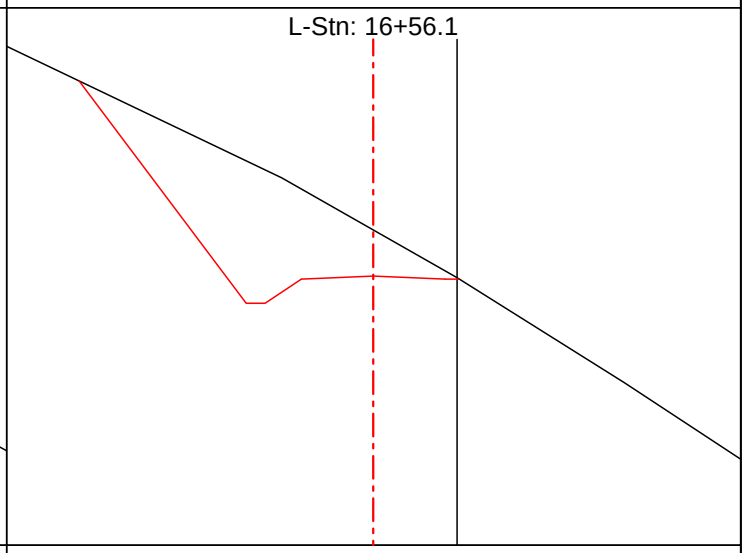
P-Stn:	15+58.2	H. Offset:	-9.4	Index:	639
V.Offset:	0.1	CL Elev:	317.5		

L-Stn: 16+03.0



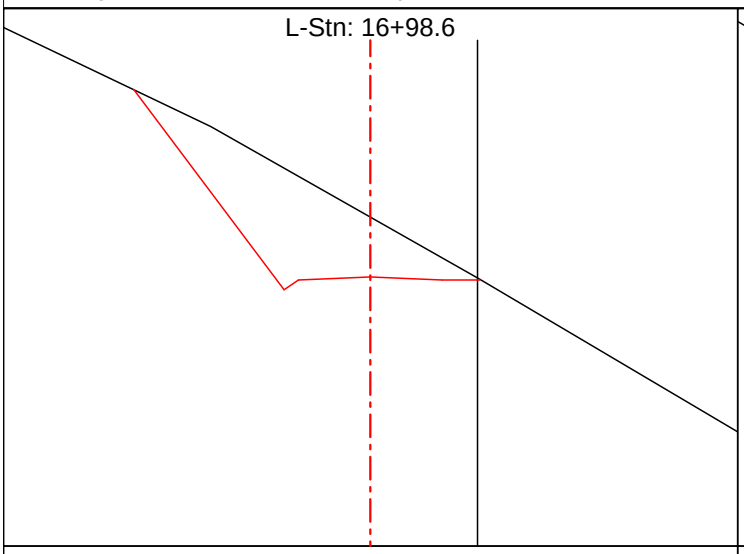
P-Stn:	16+13.0	H. Offset:	-8.1	Index:	640
V.Offset:	0.1	CL Elev:	326.8		

L-Stn: 16+56.1



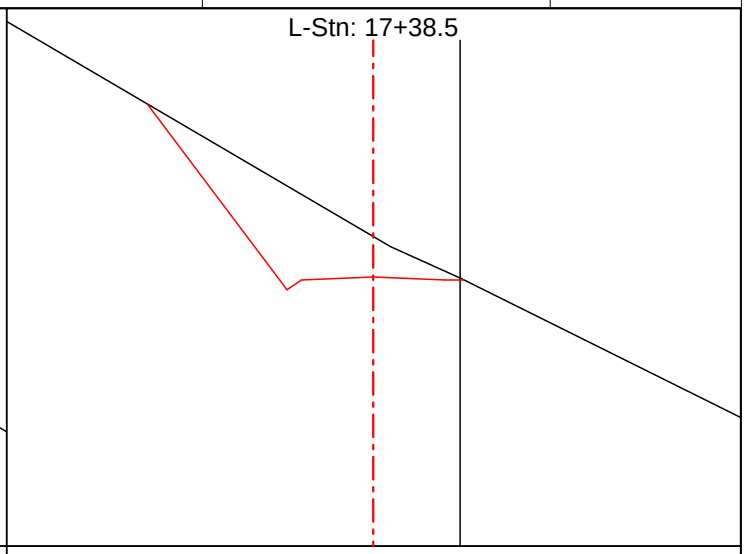
P-Stn:	16+66.0	H. Offset:	-8.7	Index:	641
V.Offset:	0.2	CL Elev:	335.9		

L-Stn: 16+98.6



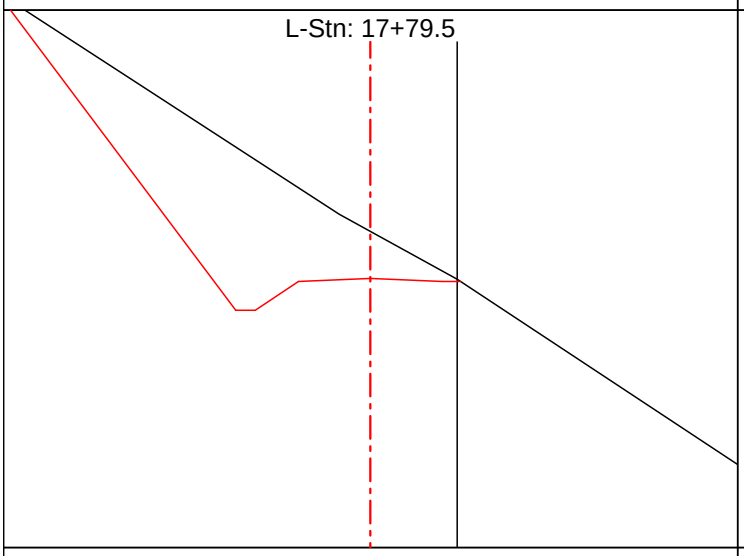
P-Stn:	17+09.4	H. Offset:	-11.2	Index:	642
V.Offset:	0.2	CL Elev:	343.2		

L-Stn: 17+38.5



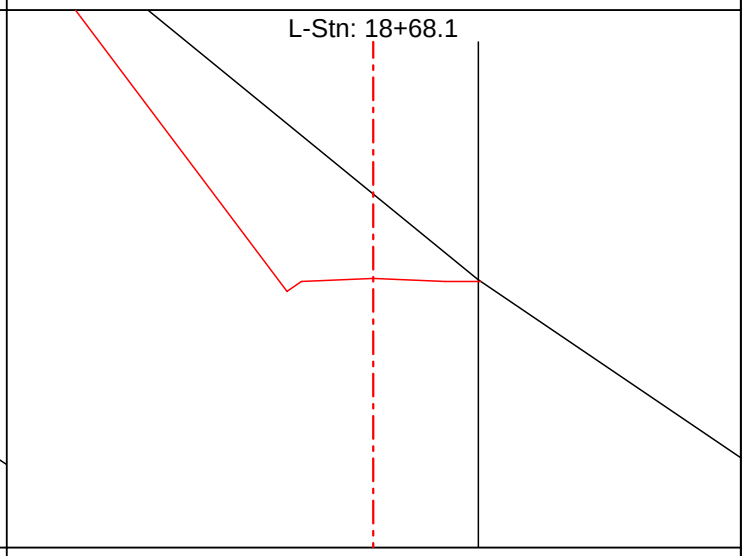
P-Stn:	17+50.9	H. Offset:	-9.1	Index:	643
V.Offset:	0.2	CL Elev:	349.4		

L-Stn: 17+79.5



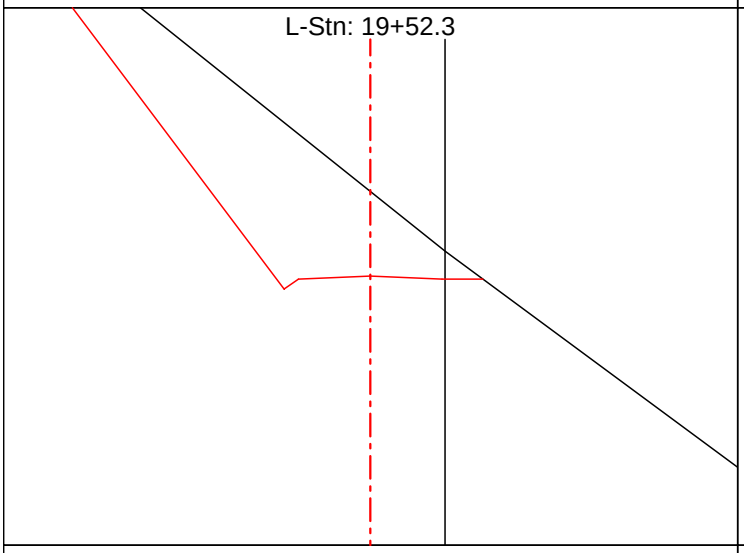
P-Stn:	17+92.3	H. Offset:	-9.1	Index:	644
V.Offset:	0.1	CL Elev:	356.0		

L-Stn: 18+68.1



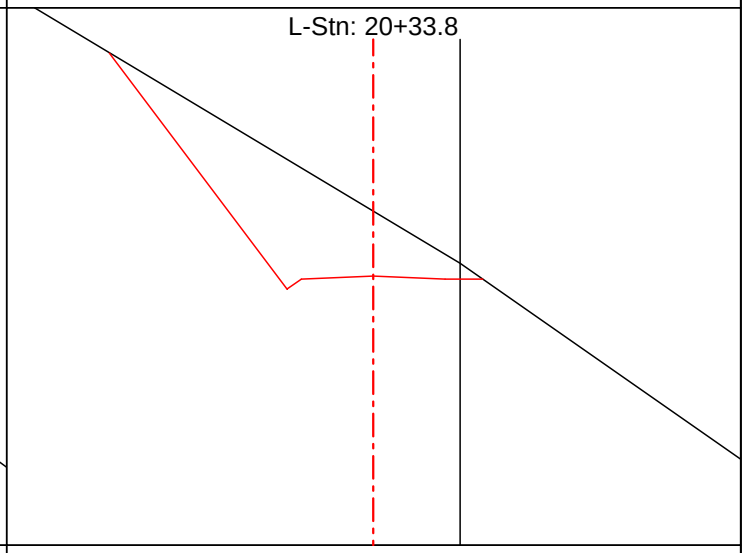
P-Stn:	18+80.0	H. Offset:	-10.9	Index:	645
V.Offset:	0.1	CL Elev:	370.0		

L-Stn: 19+52.3



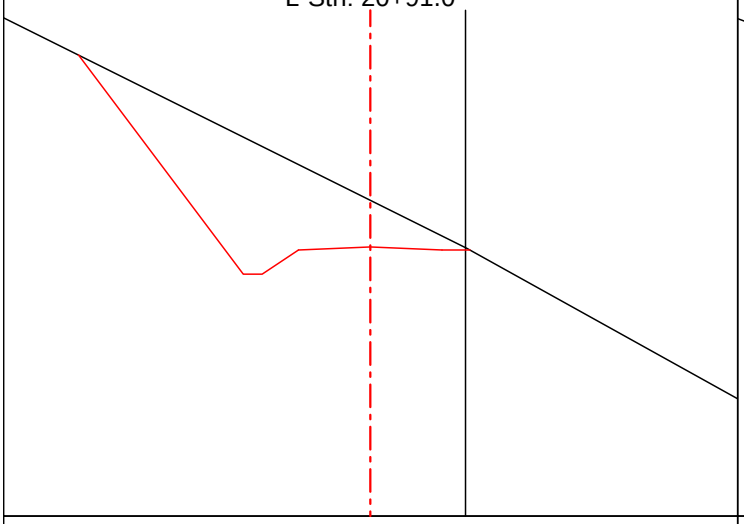
P-Stn:	19+63.1	H. Offset:	-7.8	Index:	646
V.Offset:	-2.6	CL Elev:	384.8		

L-Stn: 20+33.8



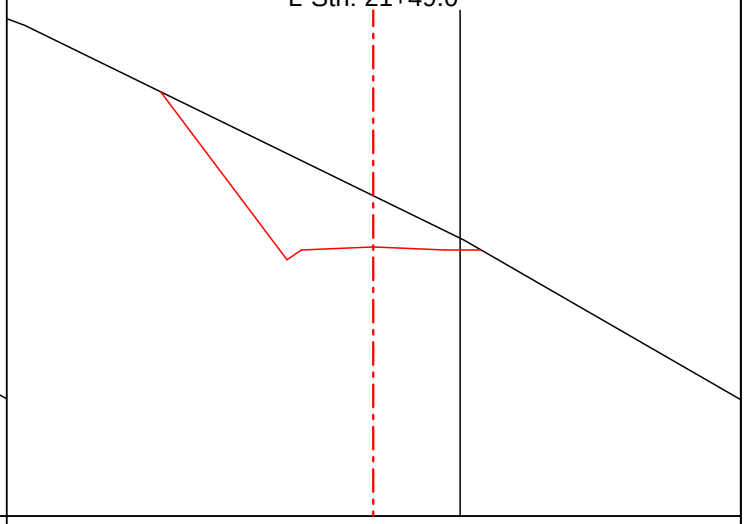
P-Stn:	20+43.8	H. Offset:	-9.0	Index:	647
V.Offset:	-1.4	CL Elev:	398.9		

L-Stn: 20+91.0



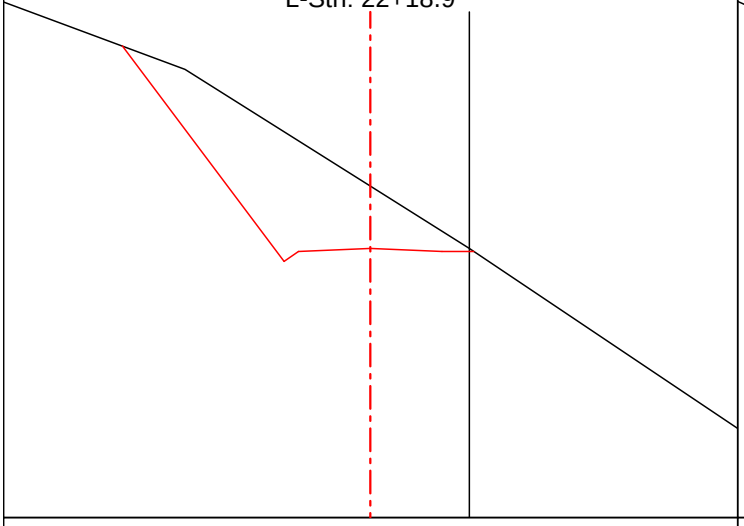
P-Stn:	21+01.8	H. Offset:	-10.0	Index:	648
V.Offset:	0.1	CL Elev:	409.1		

L-Stn: 21+49.0



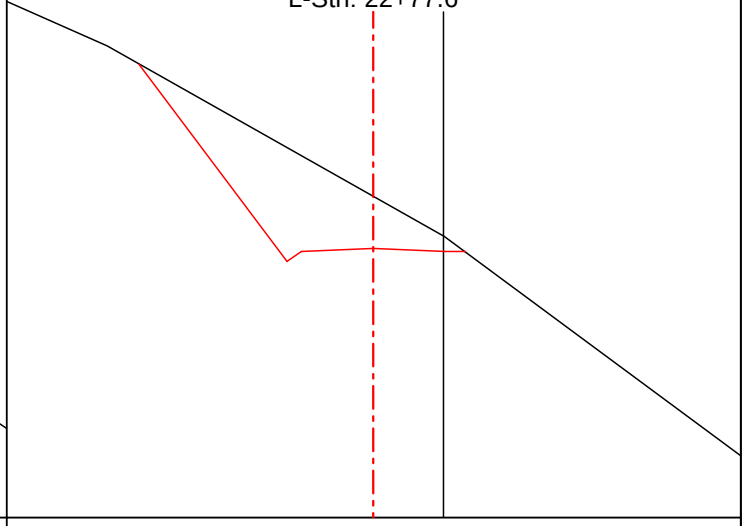
P-Stn:	21+62.7	H. Offset:	-9.2	Index:	649
V.Offset:	-0.7	CL Elev:	419.2		

L-Stn: 22+18.9



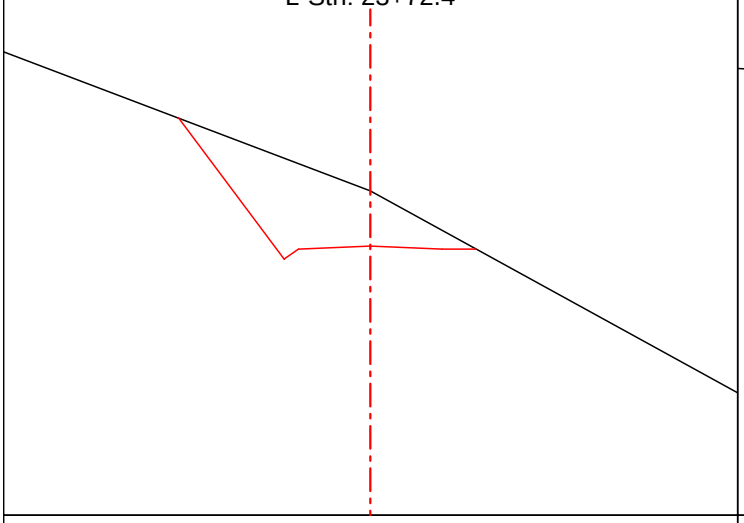
P-Stn:	22+35.7	H. Offset:	-10.3	Index:	650
V.Offset:	0.0	CL Elev:	430.9		

L-Stn: 22+77.6



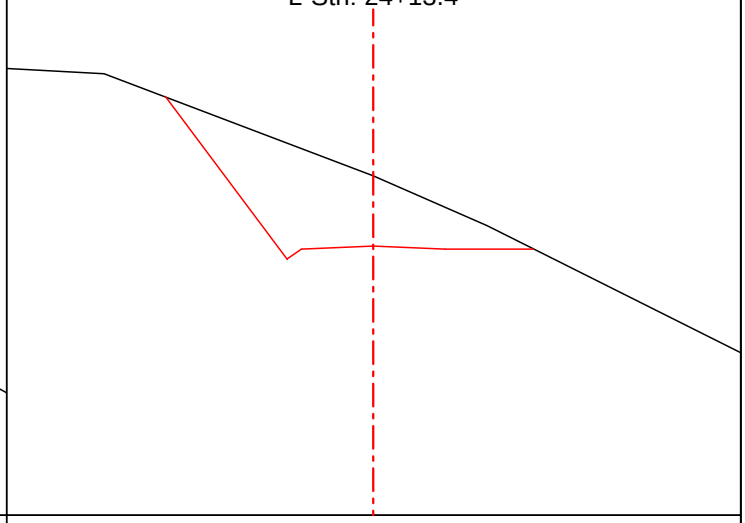
P-Stn:	22+96.4	H. Offset:	-7.3	Index:	651
V.Offset:	-1.3	CL Elev:	440.5		

L-Stn: 23+72.4



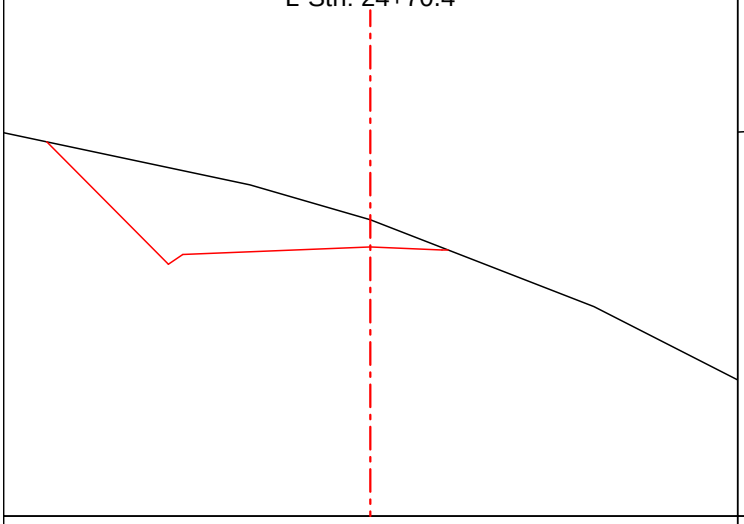
P-Stn:	23+91.7	H. Offset:	0.0	Index:	652
V.Offset:	-5.7	CL Elev:	451.3		

L-Stn: 24+13.4



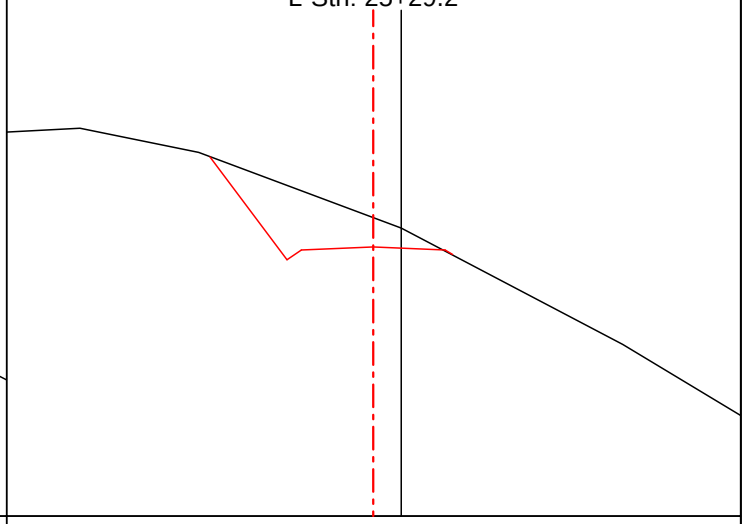
P-Stn:	24+32.7	H. Offset:	0.0	Index:	653
V.Offset:	-7.3	CL Elev:	454.3		

L-Stn: 24+70.4



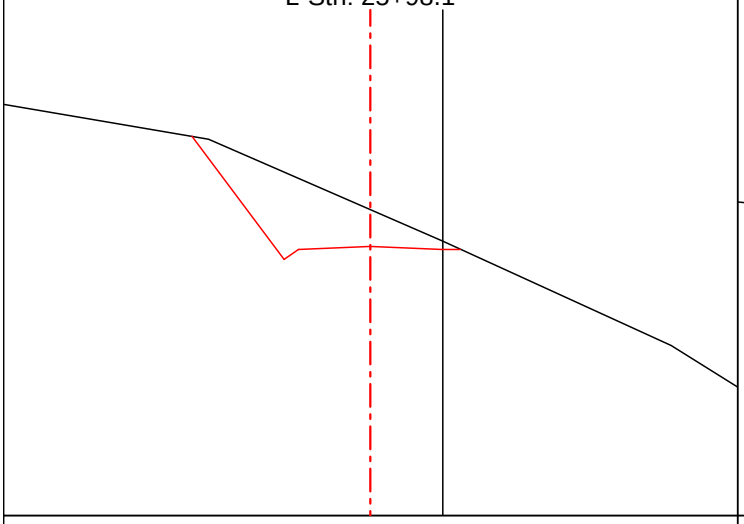
P-Stn:	24+89.7	H. Offset:	0.0	Index:	654
V.Offset:	-2.9	CL Elev:	455.9		

L-Stn: 25+29.2



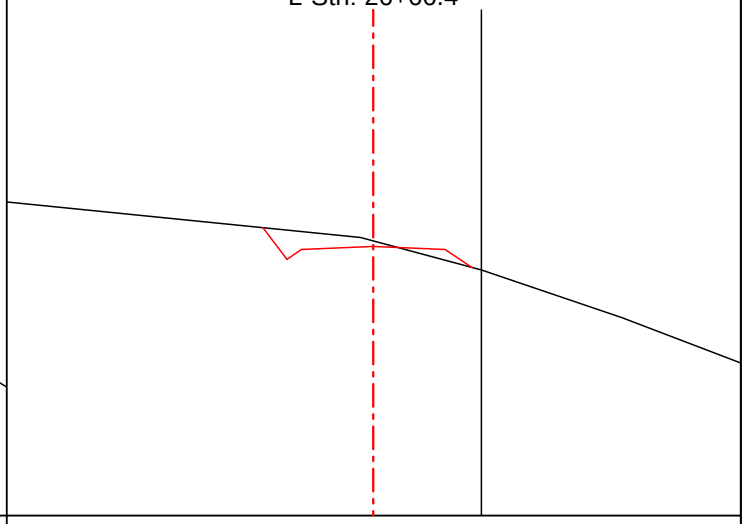
P-Stn:	25+48.4	H. Offset:	-2.9	Index:	655
V.Offset:	-2.0	CL Elev:	455.0		

L-Stn: 25+98.1



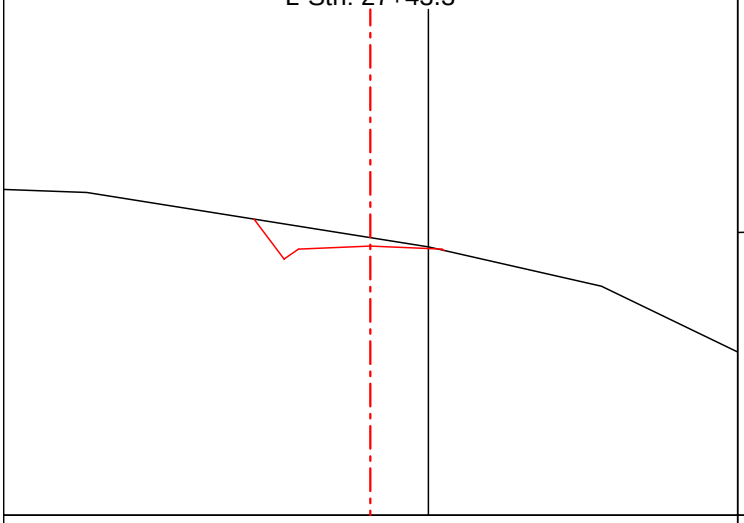
P-Stn:	26+16.8	H. Offset:	-7.5	Index:	656
V.Offset:	-0.5	CL Elev:	450.3		

L-Stn: 26+66.4



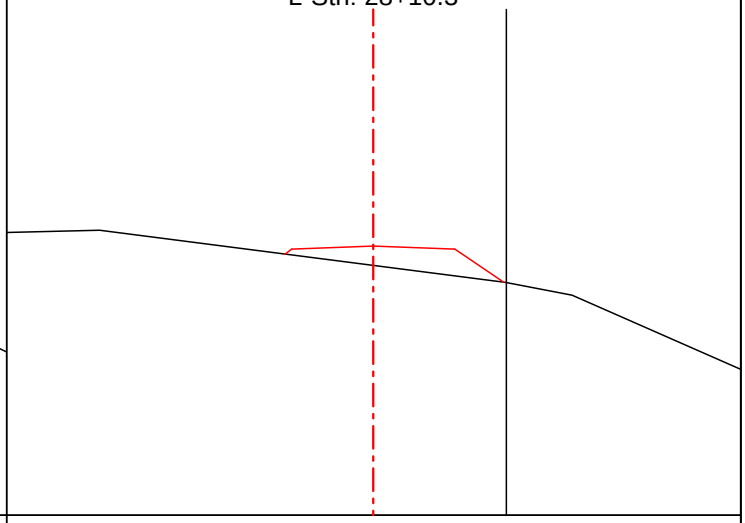
P-Stn:	26+85.2	H. Offset:	-11.2	Index:	657
V.Offset:	2.4	CL Elev:	442.3		

L-Stn: 27+43.3



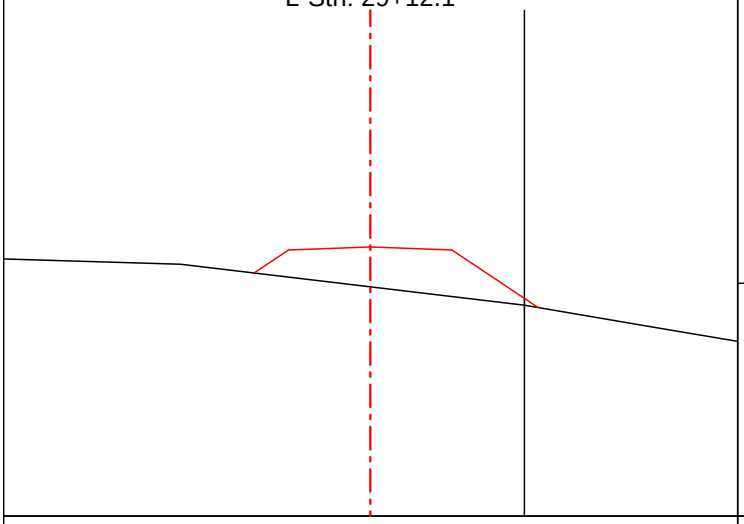
P-Stn:	27+61.9	H. Offset:	-6.0	Index:	658
V.Offset:	0.1	CL Elev:	431.5		

L-Stn: 28+10.3



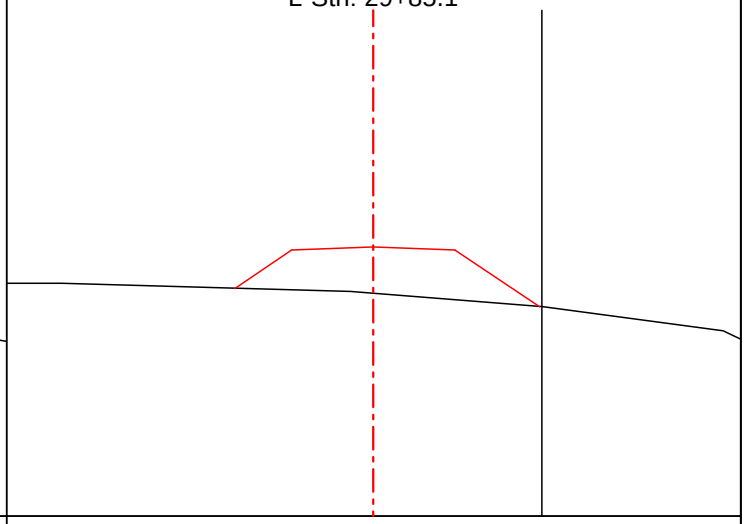
P-Stn:	28+27.4	H. Offset:	-13.6	Index:	659
V.Offset:	3.8	CL Elev:	425.4		

L-Stn: 29+12.1



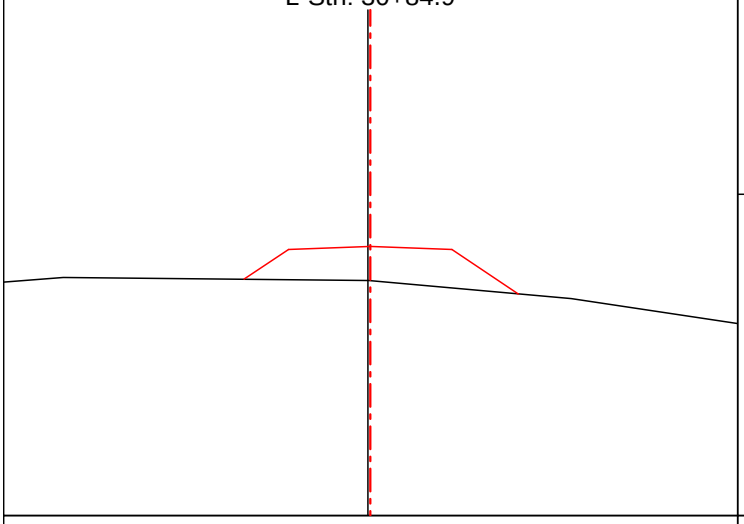
P-Stn:	29+28.2	H. Offset:	-16.0	Index:	660
V.Offset:	6.1	CL Elev:	421.6		

L-Stn: 29+85.1



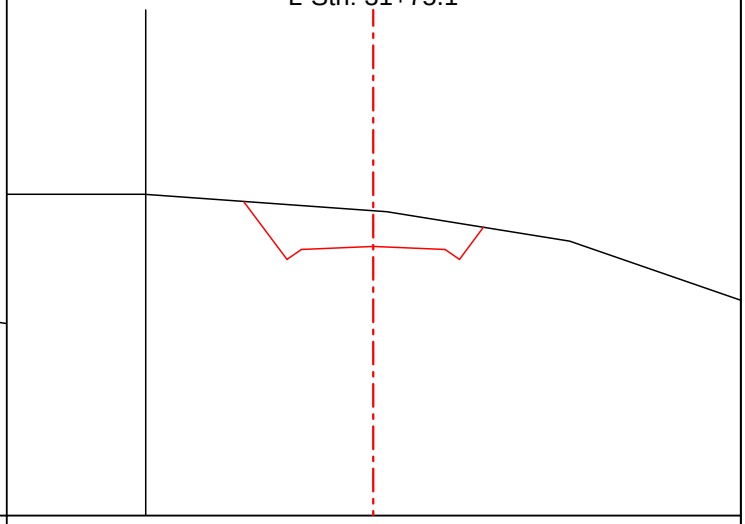
P-Stn:	30+02.2	H. Offset:	-17.6	Index:	661
V.Offset:	6.3	CL Elev:	421.8		

L-Stn: 30+84.9



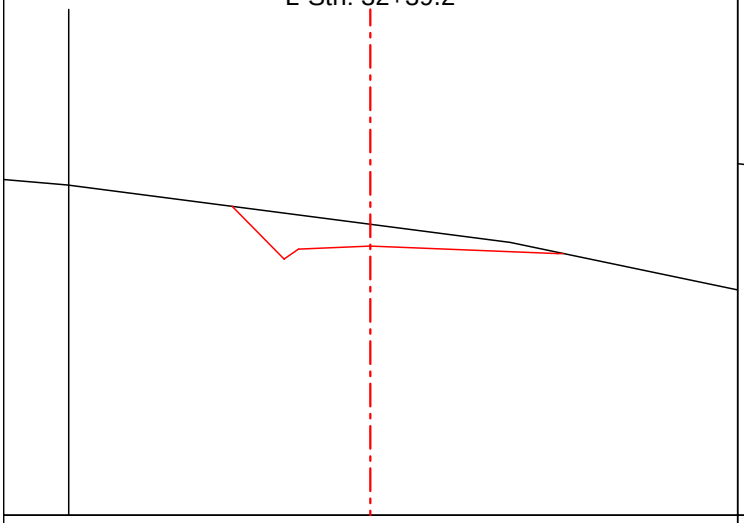
P-Stn:	31+01.8	H. Offset:	0.2	Index:	662
V.Offset:	3.6	CL Elev:	425.1		

L-Stn: 31+75.1



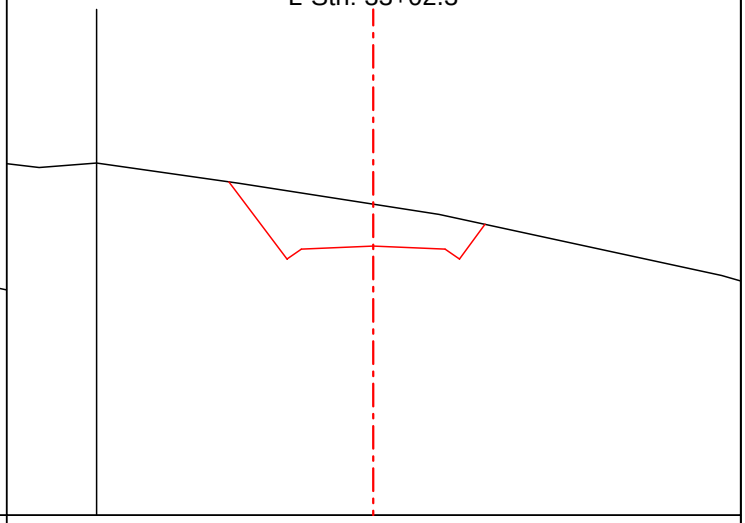
P-Stn:	31+90.0	H. Offset:	23.5	Index:	663
V.Offset:	-5.4	CL Elev:	428.5		

L-Stn: 32+39.2



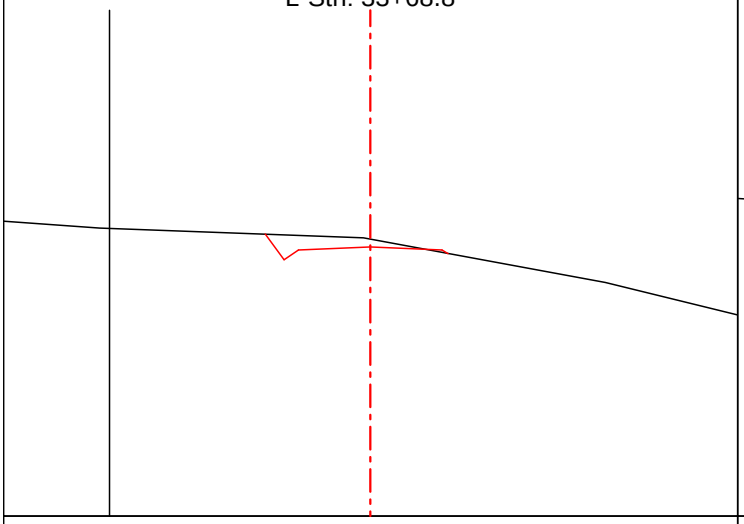
P-Stn:	32+57.3	H. Offset:	31.5	Index:	664
V.Offset:	-6.4	CL Elev:	428.2		

L-Stn: 33+02.3



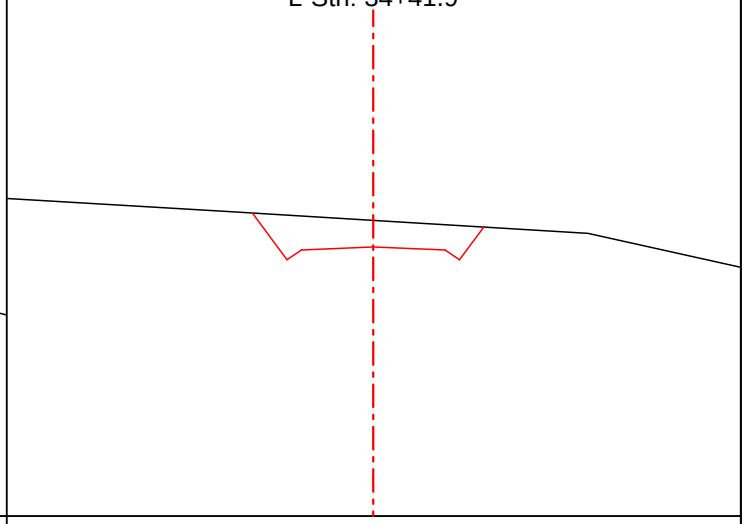
P-Stn:	33+23.9	H. Offset:	28.8	Index:	665
V.Offset:	-8.6	CL Elev:	425.9		

L-Stn: 33+68.8



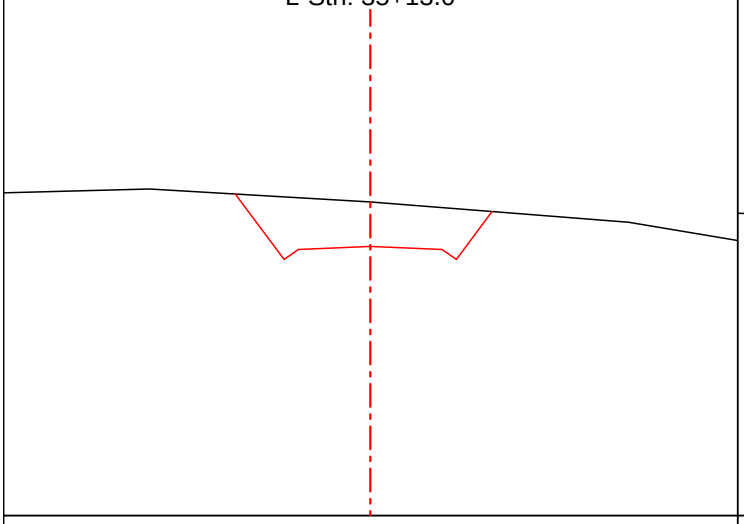
P-Stn:	33+96.1	H. Offset:	27.7	Index:	666
V.Offset:	-2.0	CL Elev:	420.3		

L-Stn: 34+41.9



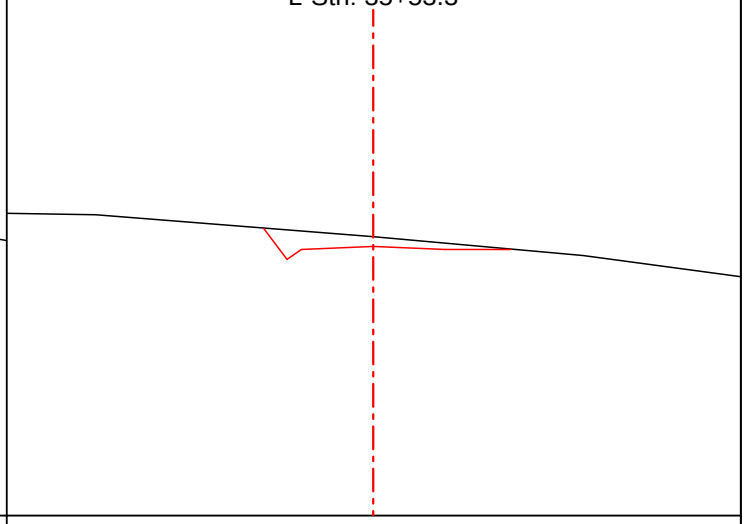
P-Stn:	34+69.0	H. Offset:	0.0	Index:	667
V.Offset:	-2.8	CL Elev:	410.8		

L-Stn: 35+13.0



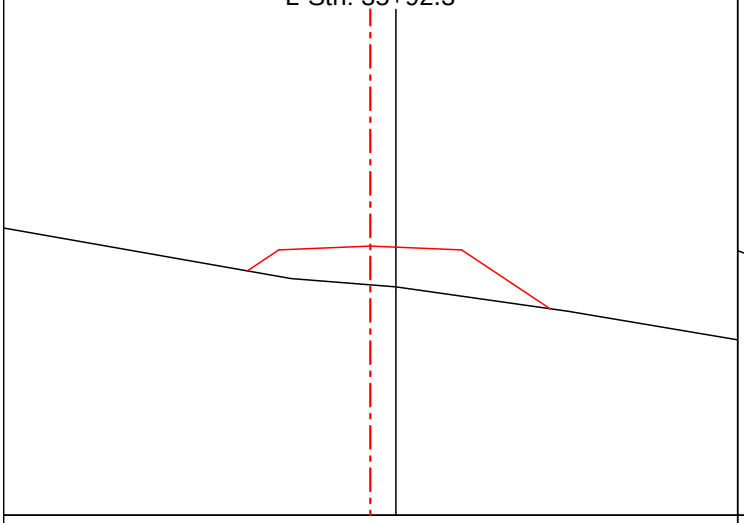
P-Stn:	35+40.1	H. Offset:	0.0	Index:	668
V.Offset:	-4.6	CL Elev:	402.5		

L-Stn: 35+53.3



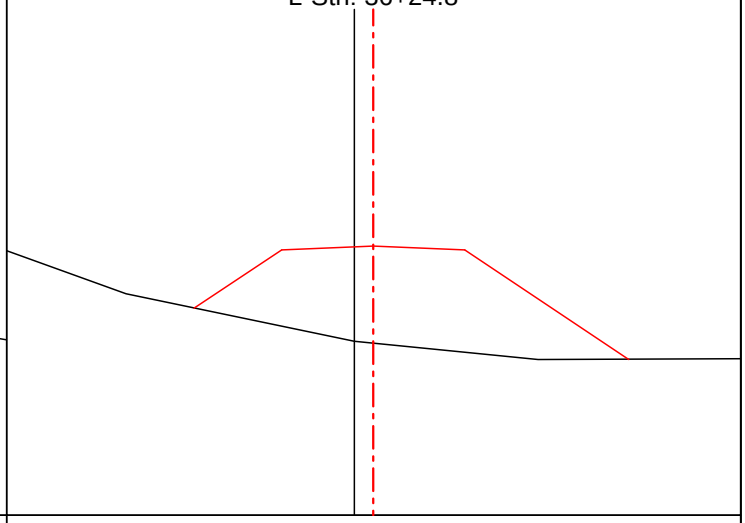
P-Stn:	35+80.5	H. Offset:	0.0	Index:	669
V.Offset:	-1.0	CL Elev:	399.3		

L-Stn: 35+92.3



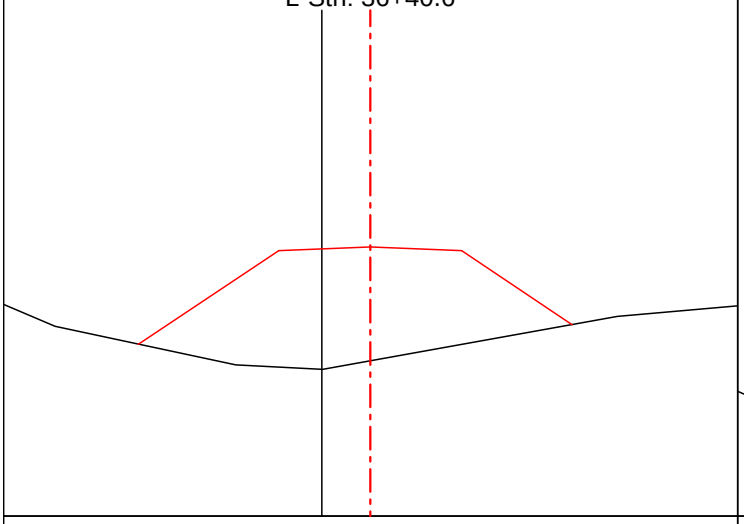
P-Stn:	36+19.6	H. Offset:	-2.7	Index:	670
V.Offset:	4.3	CL Elev:	397.9		

L-Stn: 36+24.8



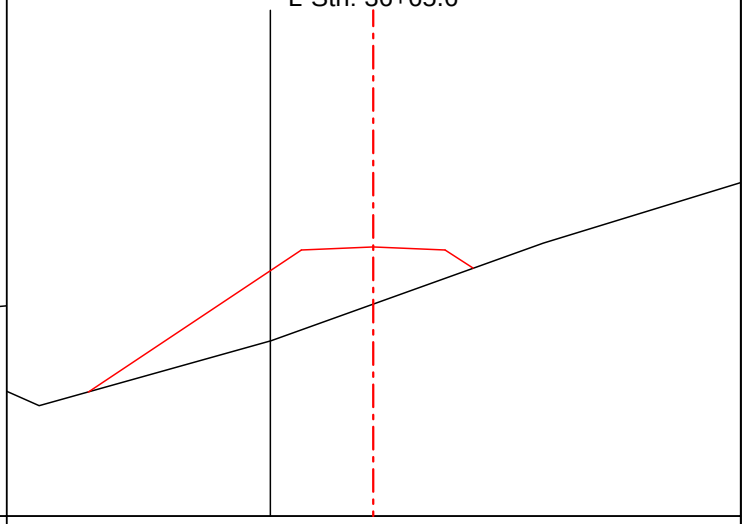
P-Stn:	36+52.1	H. Offset:	1.9	Index:	671
V.Offset:	9.9	CL Elev:	397.7		

L-Stn: 36+40.6



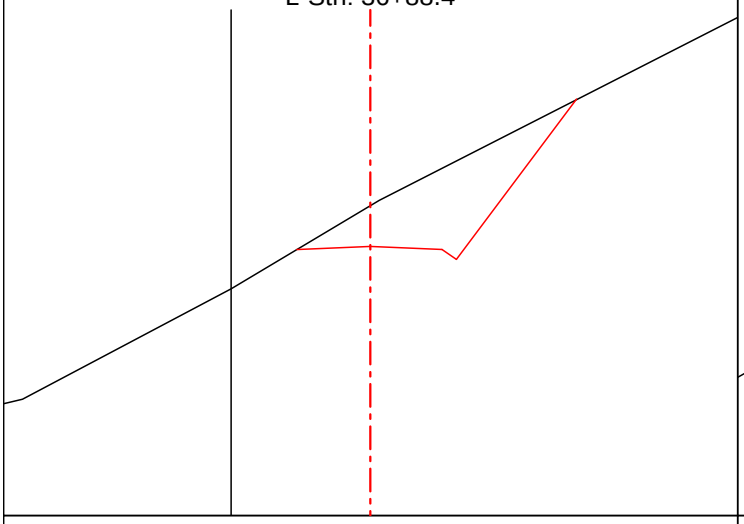
P-Stn:	36+66.8	H. Offset:	4.9	Index:	672
V.Offset:	12.7	CL Elev:	398.2		

L-Stn: 36+65.6



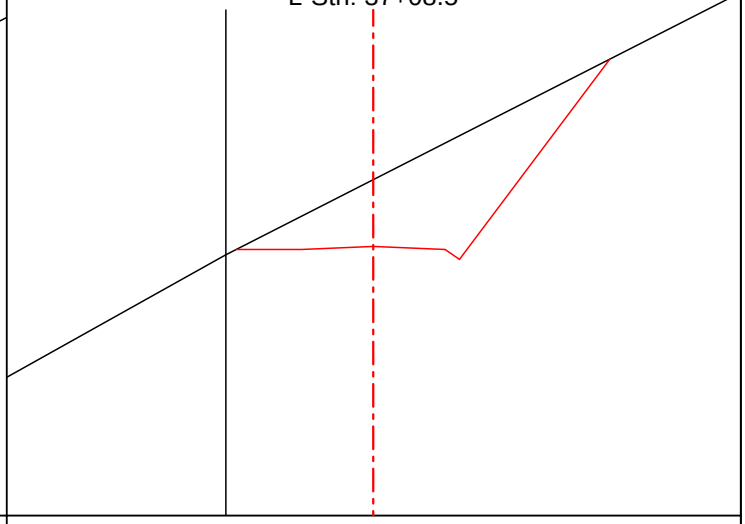
P-Stn:	36+89.4	H. Offset:	10.6	Index:	673
V.Offset:	9.8	CL Elev:	399.7		

L-Stn: 36+88.4



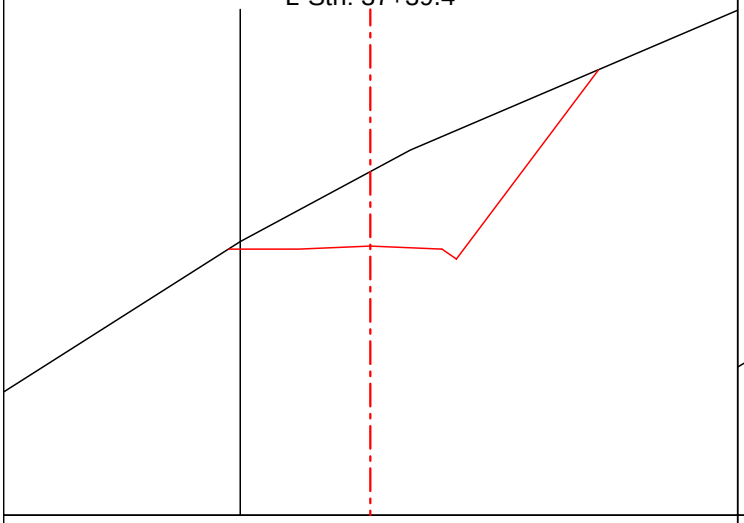
P-Stn:	37+10.5	H. Offset:	14.5	Index:	674
V.Offset:	4.4	CL Elev:	401.6		

L-Stn: 37+08.5



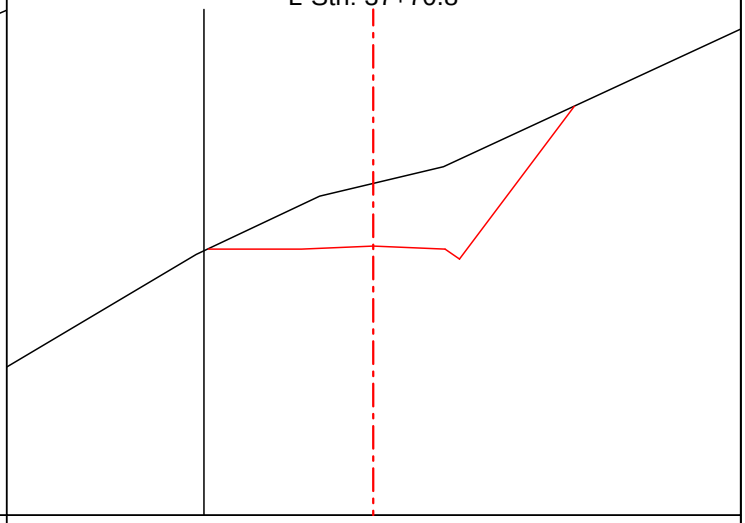
P-Stn:	37+30.1	H. Offset:	15.3	Index:	675
V.Offset:	0.8	CL Elev:	404.1		

L-Stn: 37+39.4



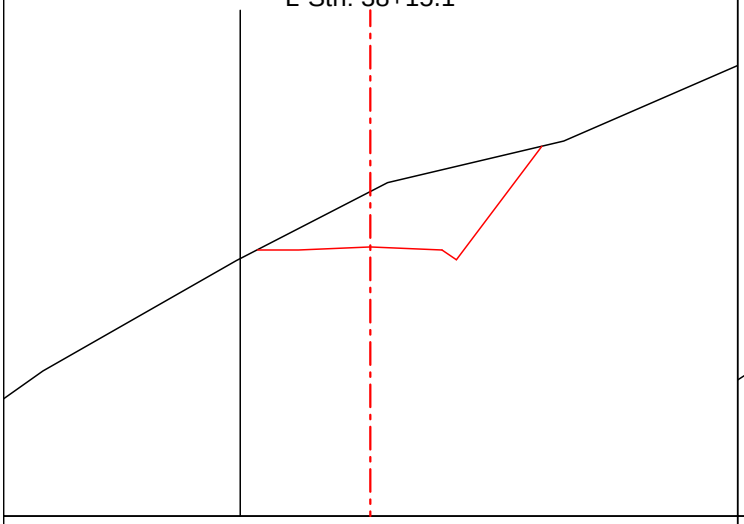
P-Stn:	37+60.5	H. Offset:	13.4	Index:	676
V.Offset:	-0.5	CL Elev:	409.1		

L-Stn: 37+70.8



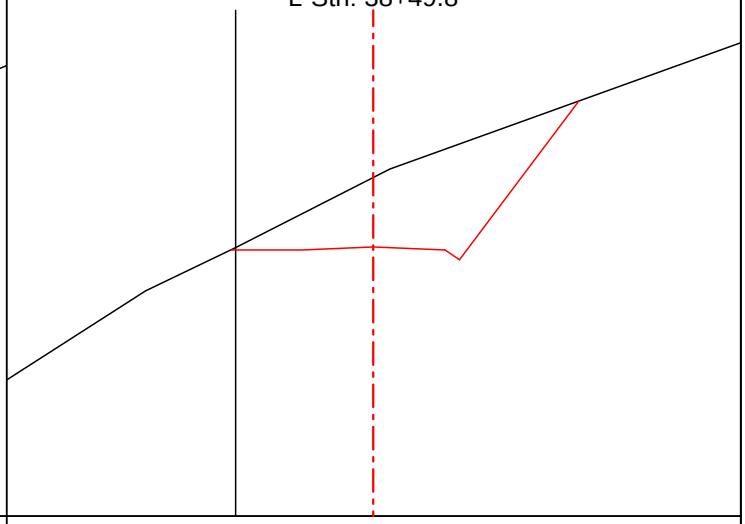
P-Stn:	37+95.9	H. Offset:	18.2	Index:	677
V.Offset:	0.9	CL Elev:	414.7		

L-Stn: 38+15.1



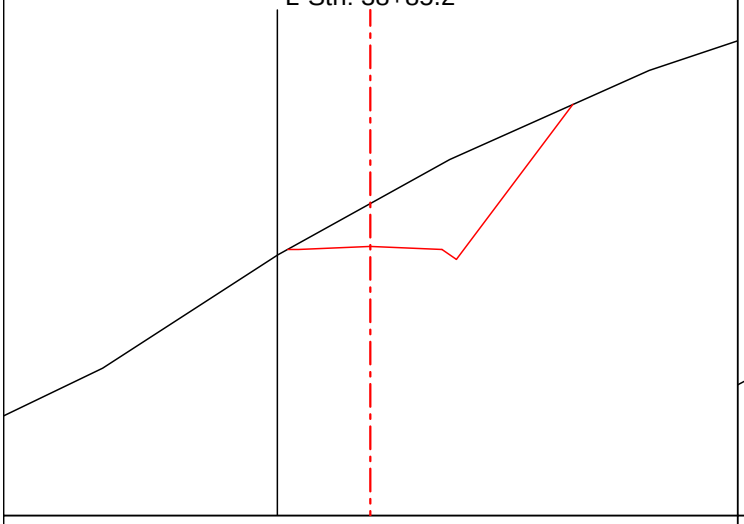
P-Stn:	38+46.6	H. Offset:	13.7	Index:	678
V.Offset:	1.4	CL Elev:	421.8		

L-Stn: 38+49.8



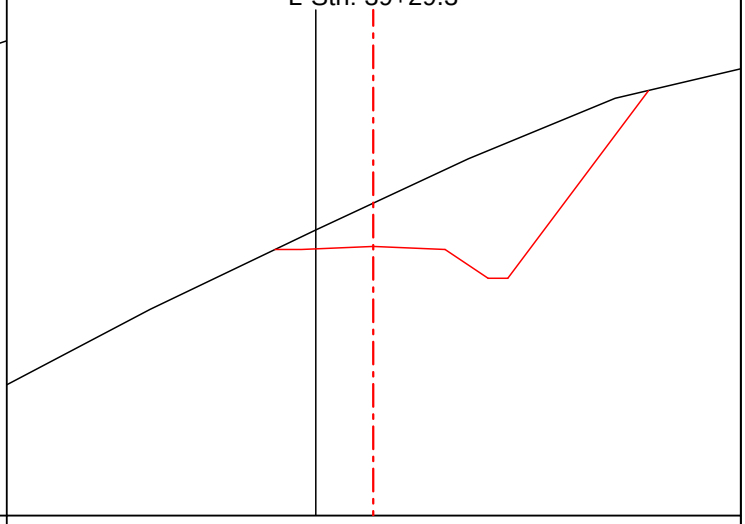
P-Stn:	38+84.6	H. Offset:	14.3	Index:	679
V.Offset:	0.1	CL Elev:	427.0		

L-Stn: 38+85.2



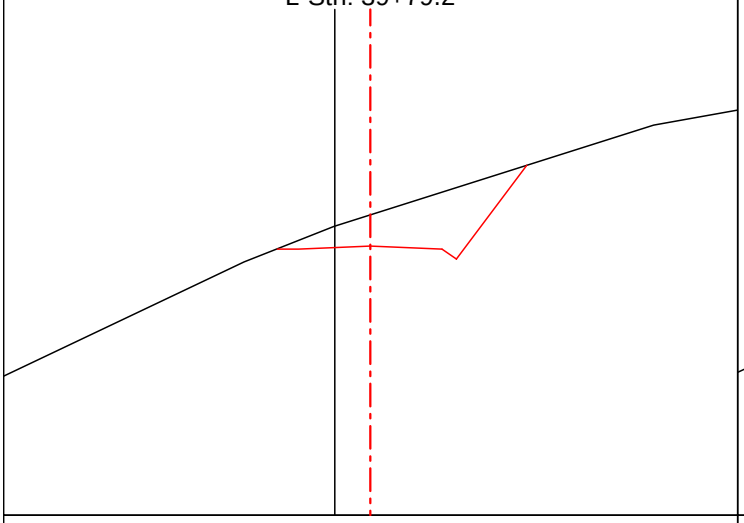
P-Stn:	39+20.9	H. Offset:	9.6	Index:	680
V.Offset:	0.9	CL Elev:	432.9		

L-Stn: 39+29.3



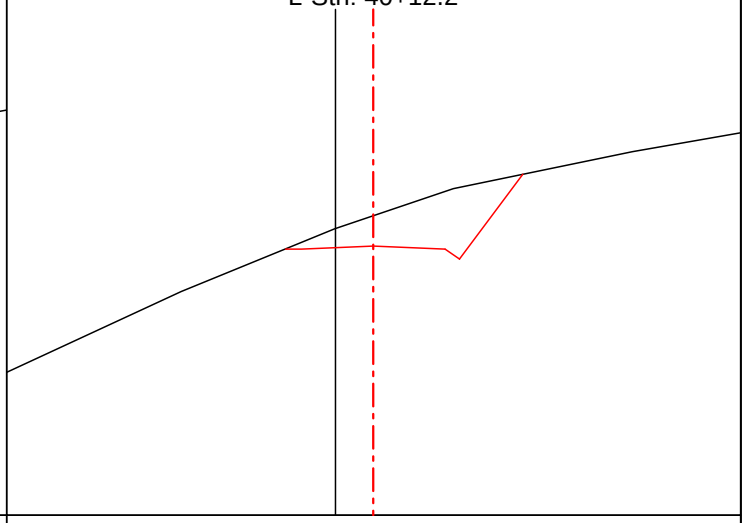
P-Stn:	39+64.6	H. Offset:	6.0	Index:	681
V.Offset:	-1.7	CL Elev:	440.3		

L-Stn: 39+79.2



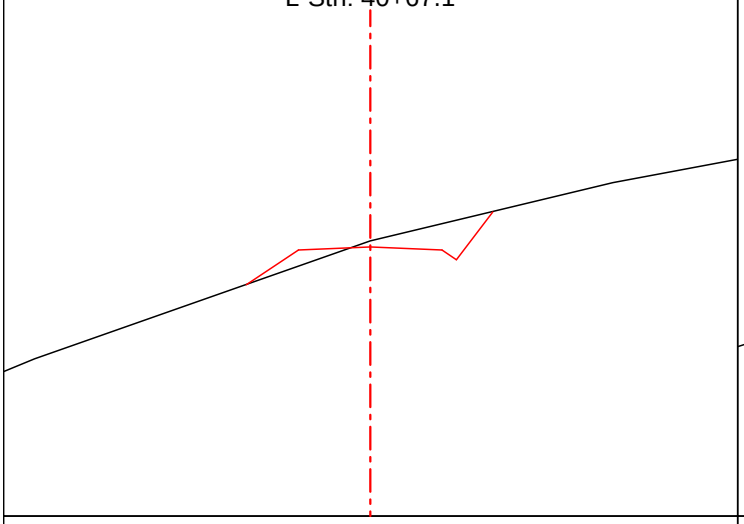
P-Stn:	40+14.8	H. Offset:	3.7	Index:	682
V.Offset:	-2.0	CL Elev:	449.5		

L-Stn: 40+12.2



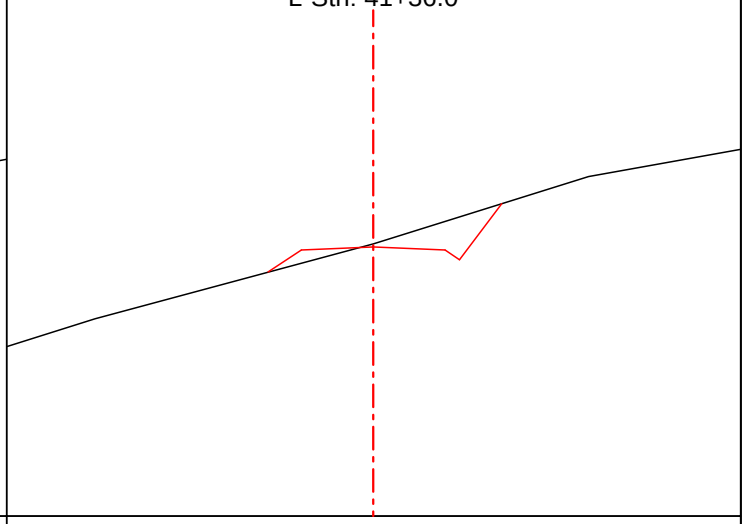
P-Stn:	40+49.2	H. Offset:	4.0	Index:	683
V.Offset:	-1.8	CL Elev:	455.6		

L-Stn: 40+67.1



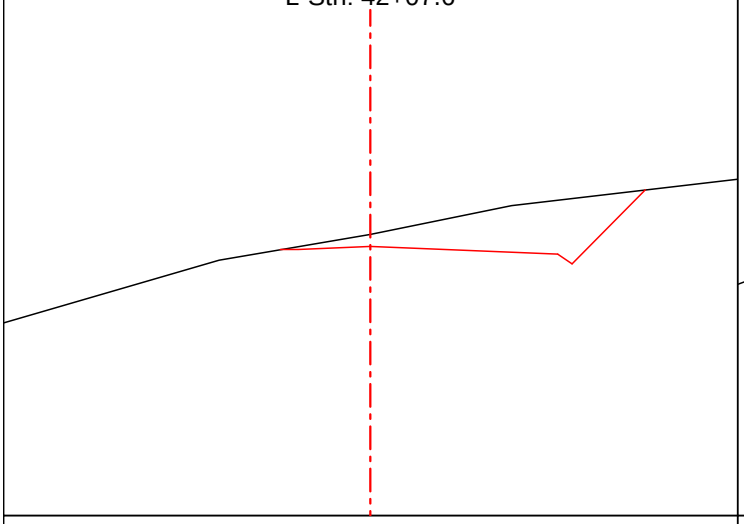
P-Stn:	41+04.9	H. Offset:	0.0	Index:	684
V.Offset:	-0.6	CL Elev:	465.2		

L-Stn: 41+36.0



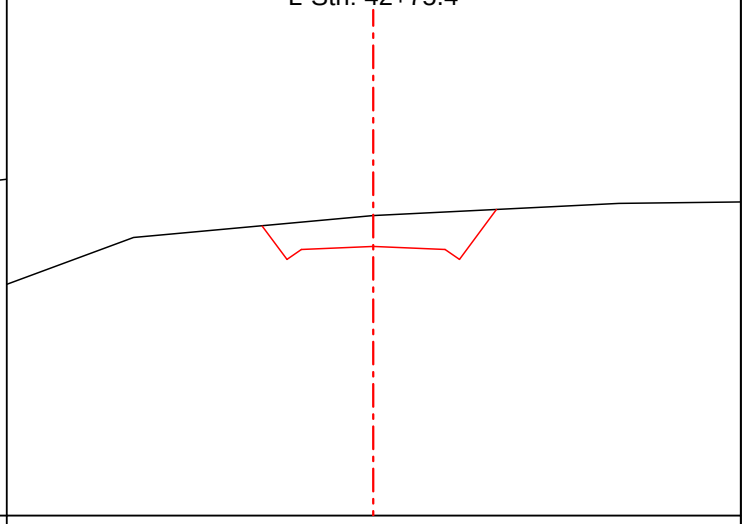
P-Stn:	41+73.9	H. Offset:	0.0	Index:	685
V.Offset:	-0.3	CL Elev:	476.4		

L-Stn: 42+07.6



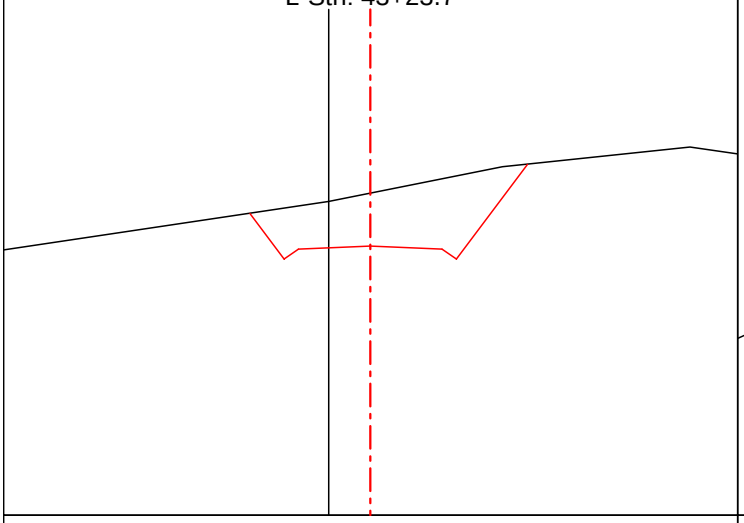
P-Stn:	42+45.4	H. Offset:	0.0	Index:	686
V.Offset:	-1.3	CL Elev:	487.7		

L-Stn: 42+75.4



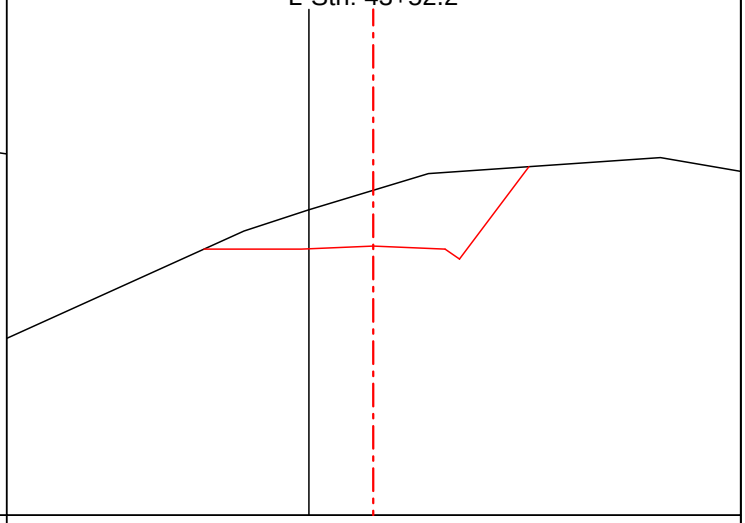
P-Stn:	43+13.2	H. Offset:	0.0	Index:	687
V.Offset:	-3.2	CL Elev:	495.9		

L-Stn: 43+23.7



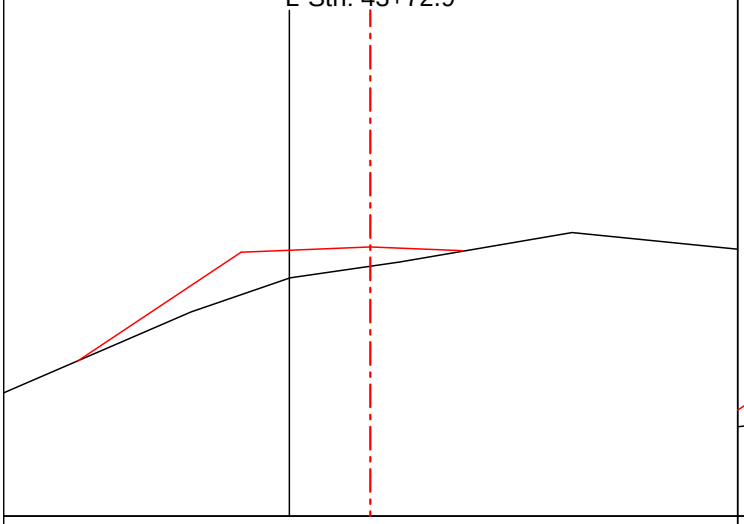
P-Stn:	43+61.3	H. Offset:	4.3	Index:	688
V.Offset:	-4.6	CL Elev:	500.7		

L-Stn: 43+52.2



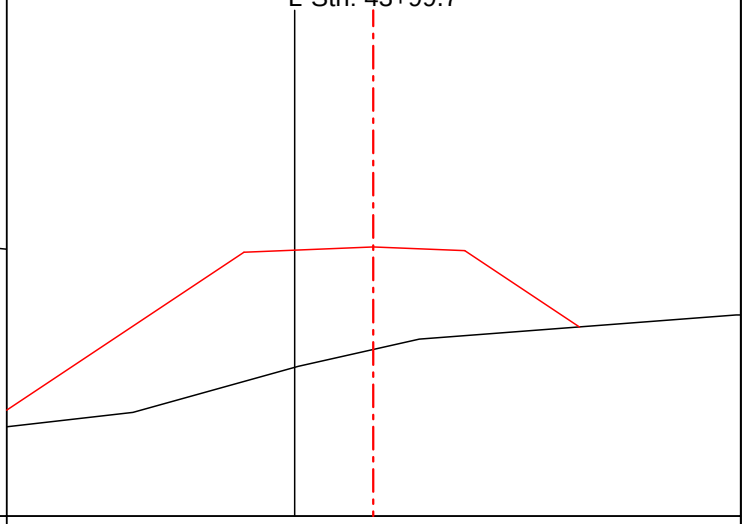
P-Stn:	43+89.1	H. Offset:	6.7	Index:	689
V.Offset:	-3.7	CL Elev:	503.0		

L-Stn: 43+72.9



P-Stn:	44+08.6	H. Offset:	8.3	Index:	690
V.Offset:	3.2	CL Elev:	504.1		

L-Stn: 43+99.7

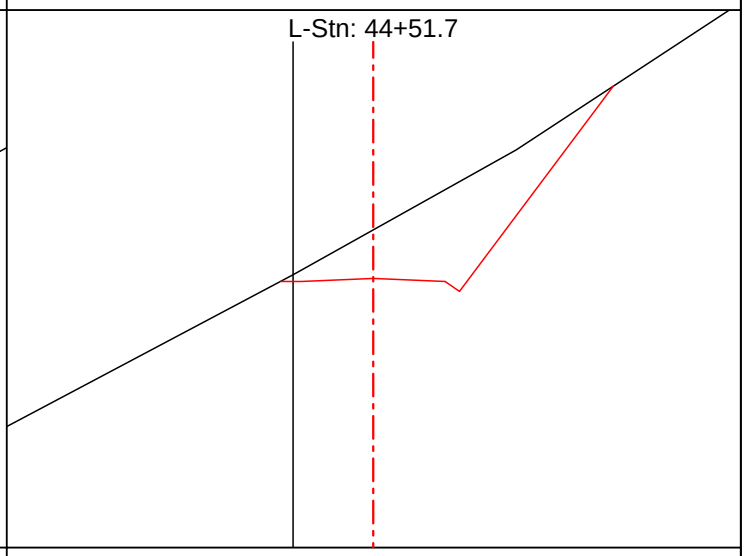


P-Stn:	44+32.7	H. Offset:	7.6	Index:	691
V.Offset:	12.5	CL Elev:	505.2		

L-Stn: 44+31.8

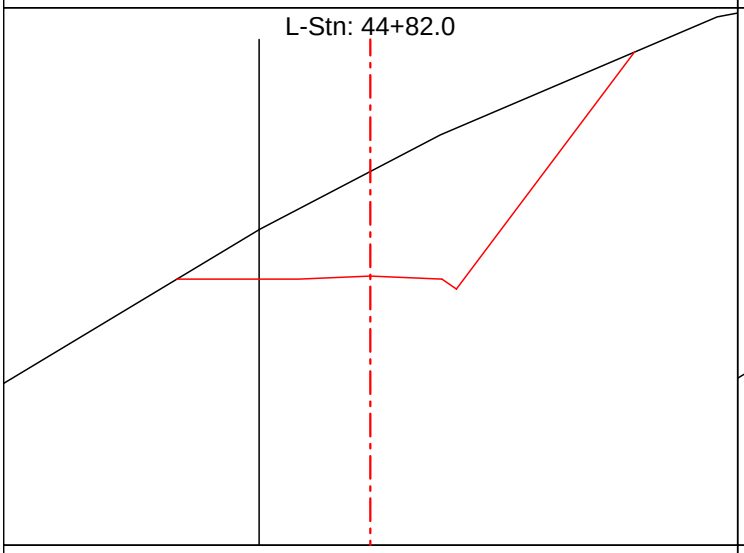
P-Stn:	44+62.4	H. Offset:	8.6	Index:	692
V.Offset:	6.6	CL Elev:	506.5		

L-Stn: 44+51.7



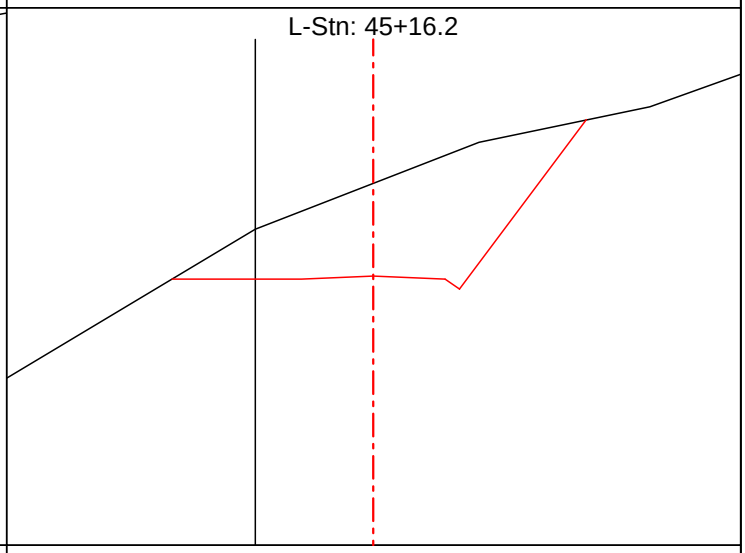
P-Stn:	44+80.7	H. Offset:	8.3	Index:	693
V.Offset:	-0.4	CL Elev:	508.1		

L-Stn: 44+82.0



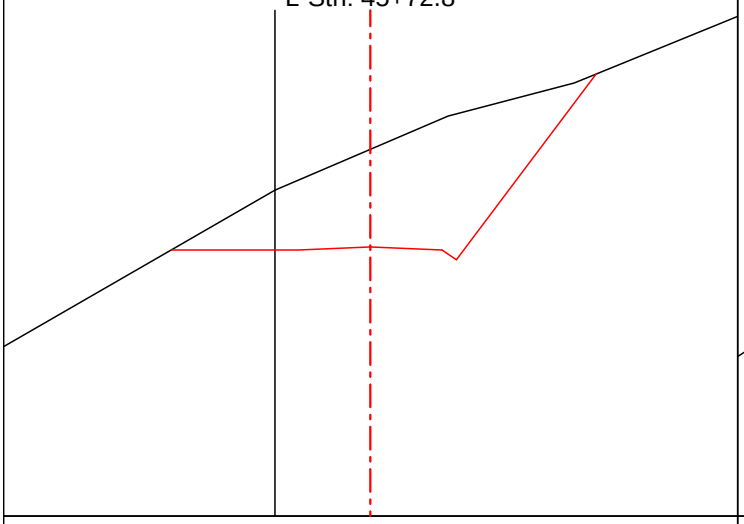
P-Stn:	45+09.2	H. Offset:	11.4	Index:	694
V.Offset:	-4.9	CL Elev:	511.8		

L-Stn: 45+16.2



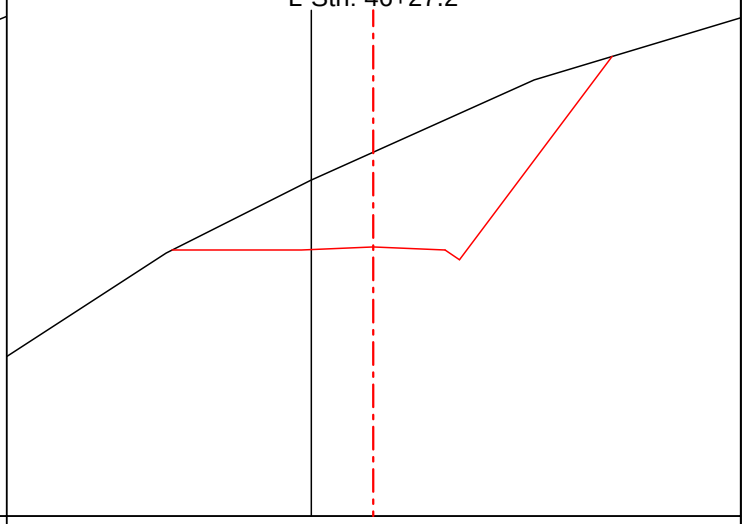
P-Stn:	45+42.5	H. Offset:	12.3	Index:	695
V.Offset:	-4.9	CL Elev:	516.8		

L-Stn: 45+72.8



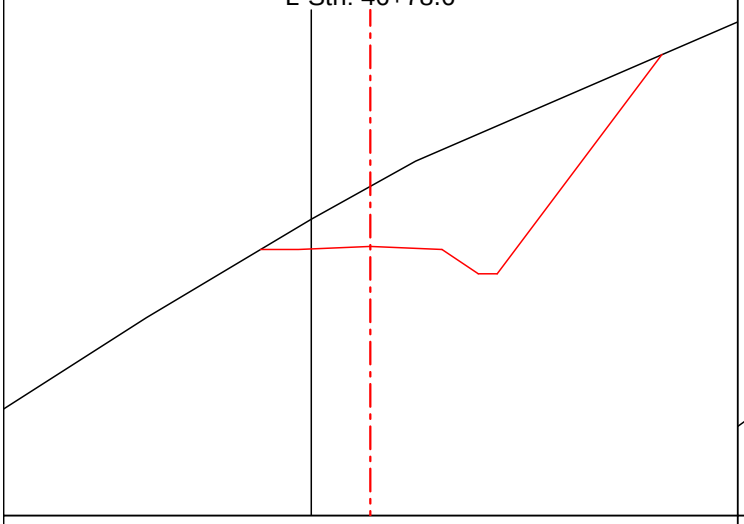
P-Stn:	45+99.3	H. Offset:	9.9	Index:	696
V.Offset:	-5.9	CL Elev:	526.6		

L-Stn: 46+27.2



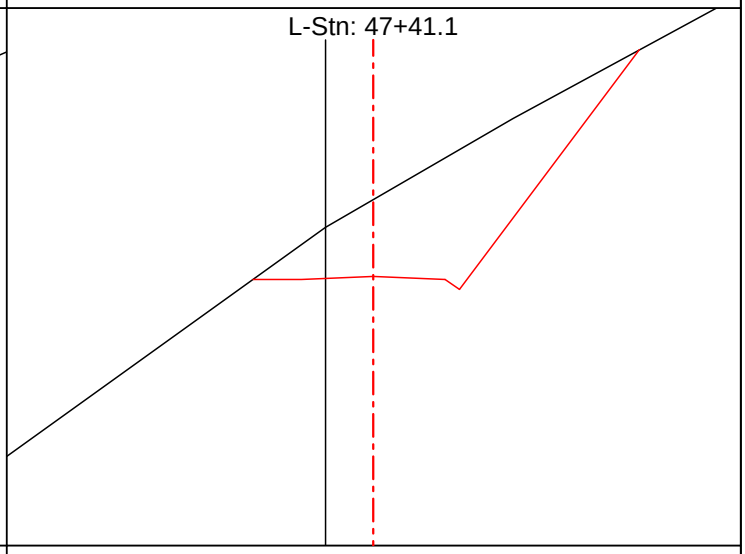
P-Stn:	46+54.4	H. Offset:	6.5	Index:	697
V.Offset:	-6.9	CL Elev:	535.5		

L-Stn: 46+78.6



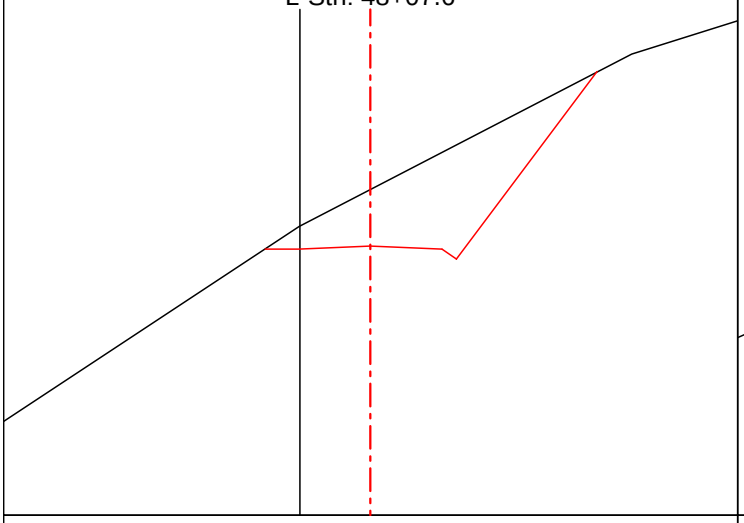
P-Stn:	47+06.0	H. Offset:	6.1	Index:	698
V.Offset:	-2.9	CL Elev:	544.2		

L-Stn: 47+41.1



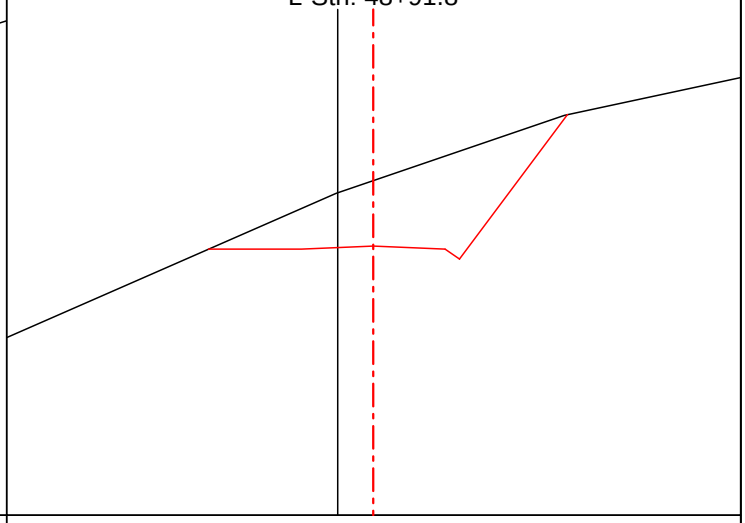
P-Stn:	47+68.5	H. Offset:	4.9	Index:	699
V.Offset:	-5.1	CL Elev:	555.0		

L-Stn: 48+07.6



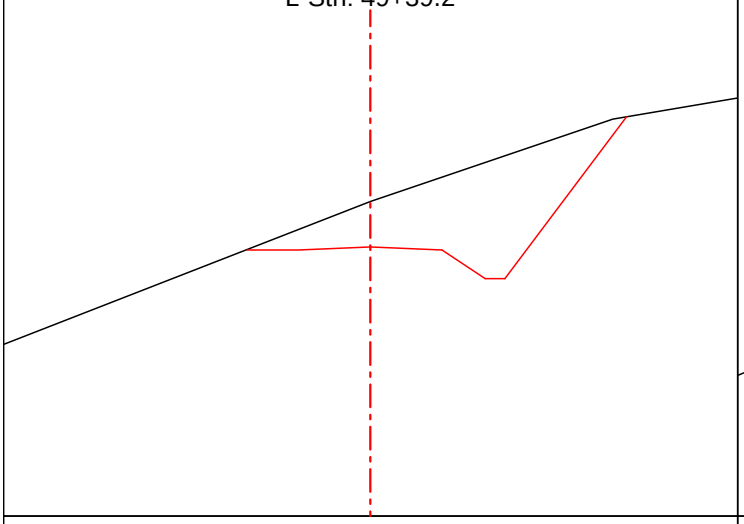
P-Stn:	48+35.3	H. Offset:	7.4	Index:	700
V.Offset:	-2.0	CL Elev:	566.8		

L-Stn: 48+91.8



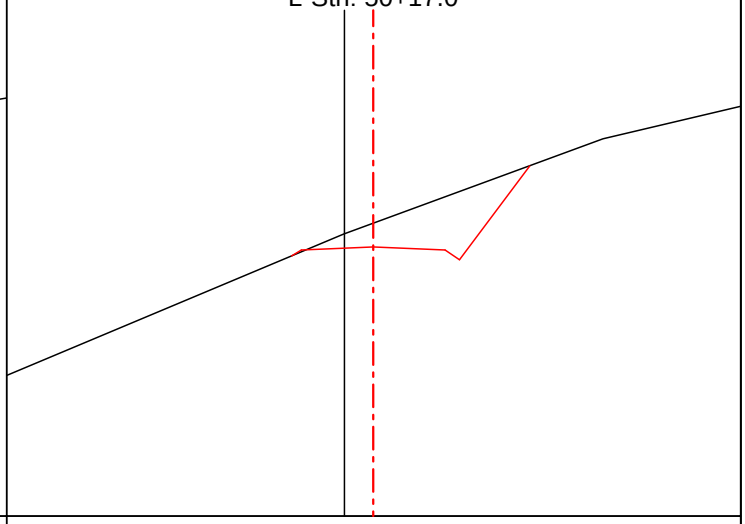
P-Stn:	49+20.2	H. Offset:	3.8	Index:	701
V.Offset:	-5.5	CL Elev:	581.2		

L-Stn: 49+39.2



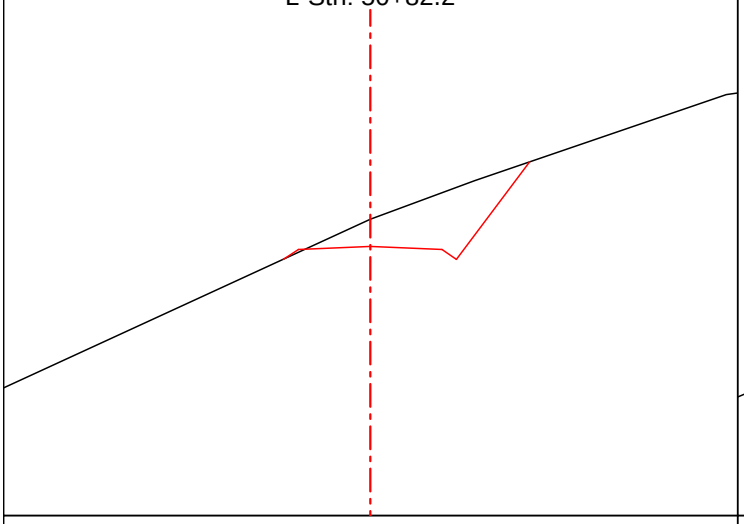
P-Stn:	49+68.2	H. Offset:	0.0	Index:	702
V.Offset:	-4.7	CL Elev:	589.2		

L-Stn: 50+17.0



P-Stn:	50+46.3	H. Offset:	3.1	Index:	703
V.Offset:	-1.3	CL Elev:	601.2		

L-Stn: 50+82.2

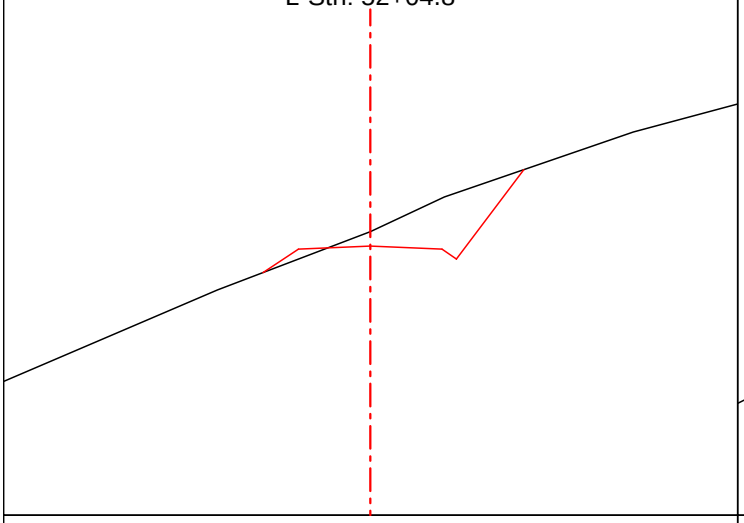


P-Stn:	51+12.0	H. Offset:	0.0	Index:	704
V.Offset:	-2.8	CL Elev:	610.8		

L-Stn: 51+37.8

P-Stn:	51+67.5	H. Offset:	0.0	Index:	705
V.Offset:	0.0	CL Elev:	617.5		

L-Stn: 52+04.8

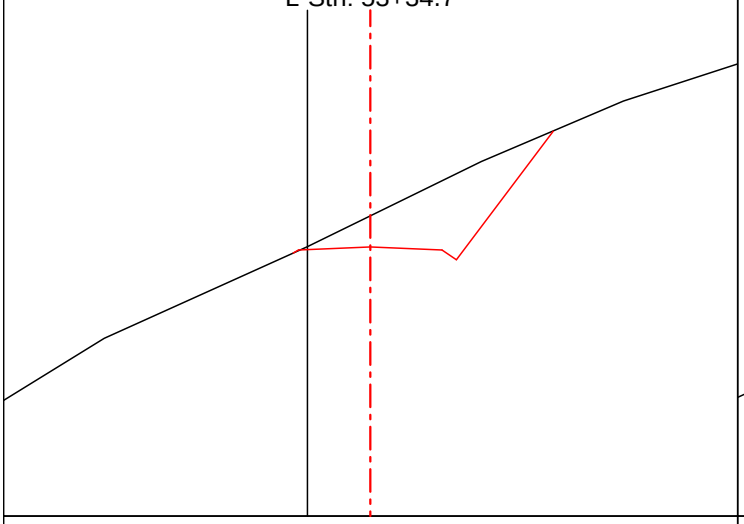


P-Stn:	52+34.6	H. Offset:	0.0	Index:	706
V.Offset:	-1.5	CL Elev:	624.1		

L-Stn: 52+86.4

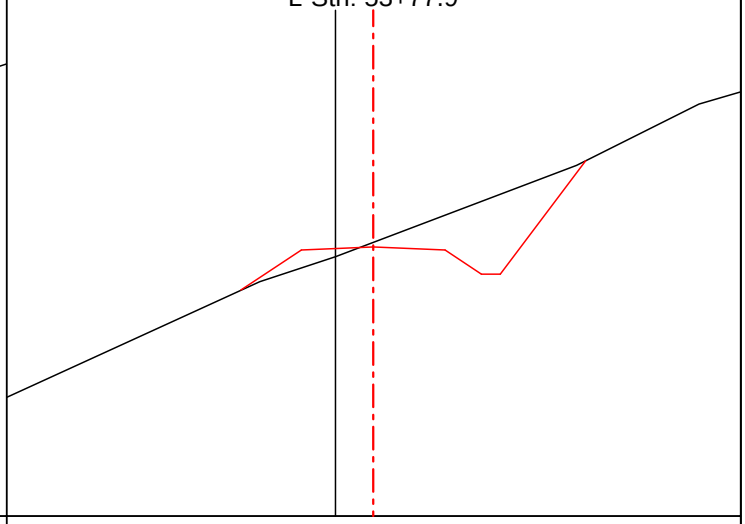
P-Stn:	53+15.7	H. Offset:	3.4	Index:	707
V.Offset:	1.0	CL Elev:	630.7		

L-Stn: 53+34.7



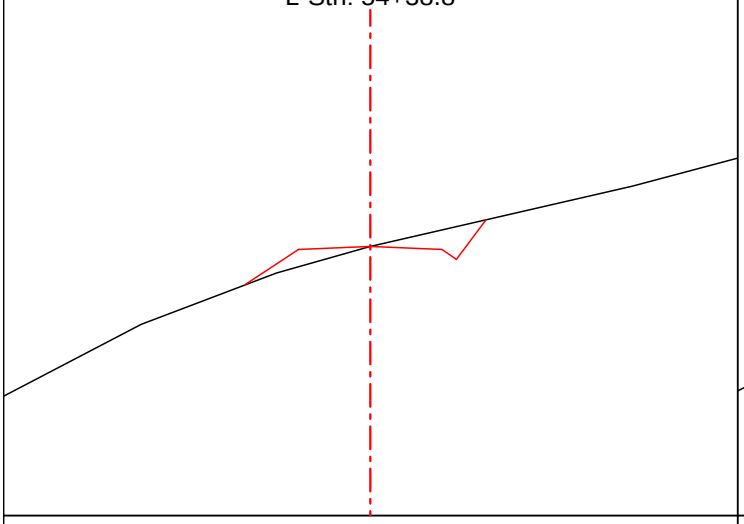
P-Stn:	53+64.4	H. Offset:	6.6	Index:	708
V.Offset:	0.0	CL Elev:	635.5		

L-Stn: 53+77.9



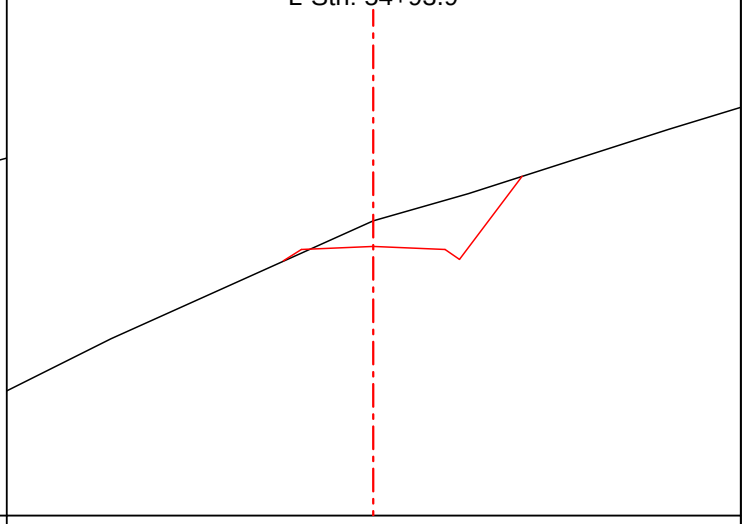
P-Stn:	54+07.6	H. Offset:	3.9	Index:	709
V.Offset:	1.0	CL Elev:	639.1		

L-Stn: 54+38.8



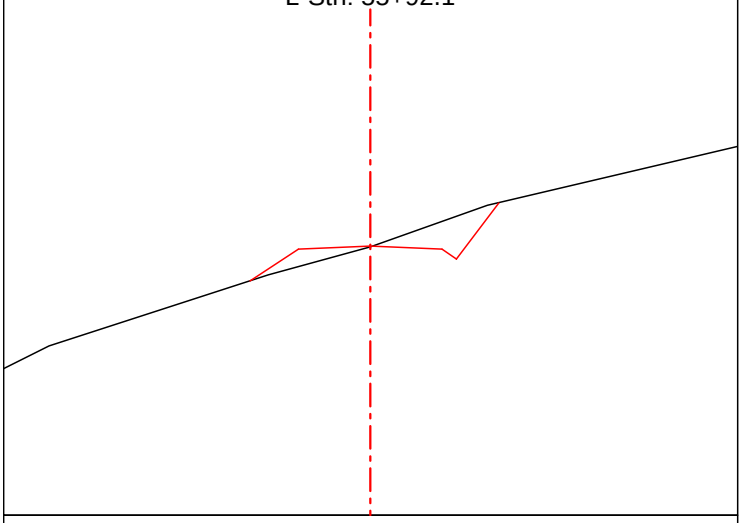
P-Stn:	54+67.9	H. Offset:	0.0	Index:	710
V.Offset:	0.0	CL Elev:	645.3		

L-Stn: 54+93.9

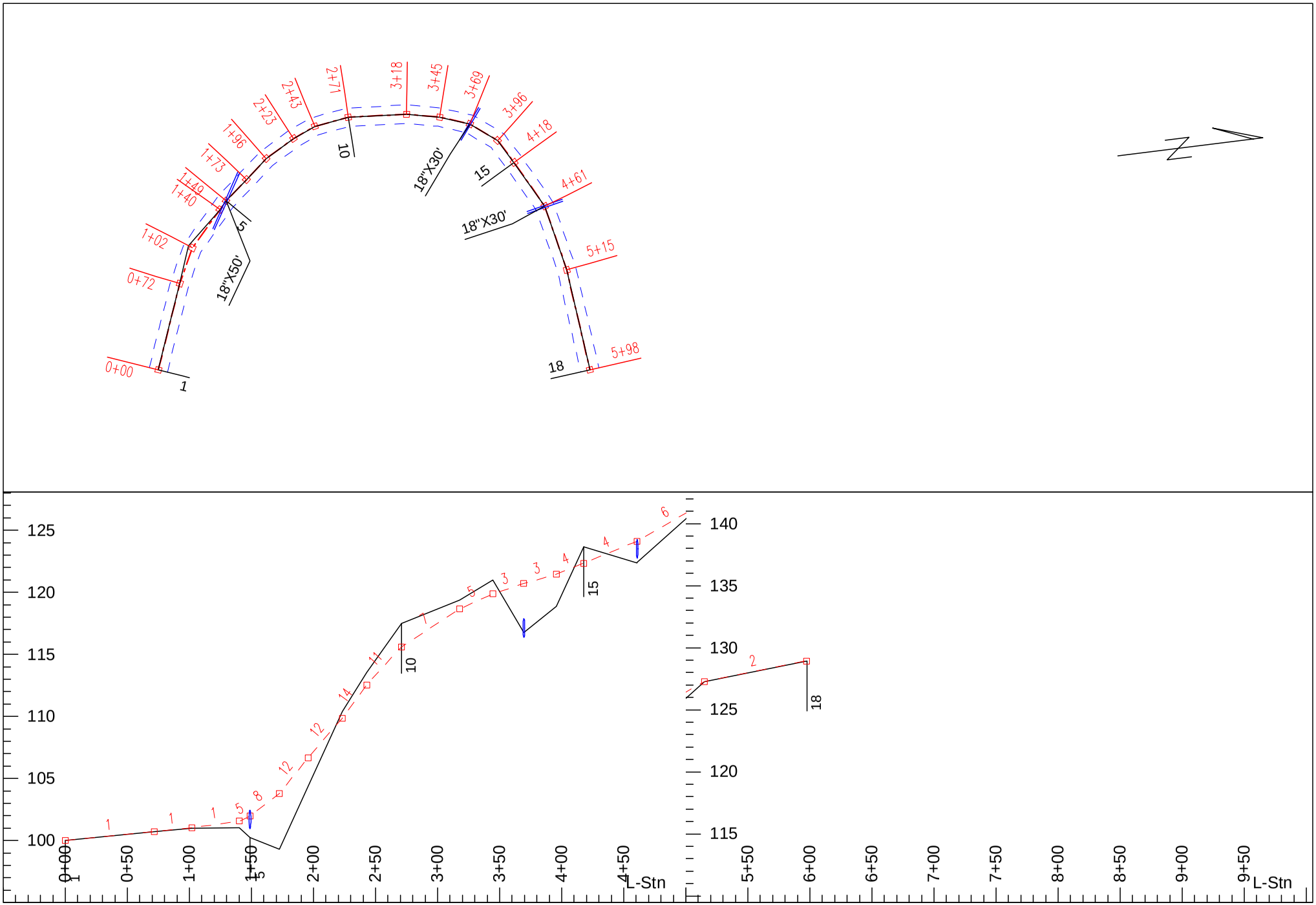


P-Stn:	55+23.0	H. Offset:	0.0	Index:	711
V.Offset:	-2.7	CL Elev:	649.8		

L-Stn: 55+92.1



P-Stn:	56+21.2	H. Offset:	0.0	Index:	712
V.Offset:	0.0	CL Elev:	656.5		



Trap Door Timber Sale
Spur 1
Contract #: 30-091844

Washington State Department of Natural Resources
South Puget Sound Region

Plan Scale 1:1200
Profile Vert Scale 1:120
Profile Horz Scale 1:1200

Engineer: Heymann
15/06/02
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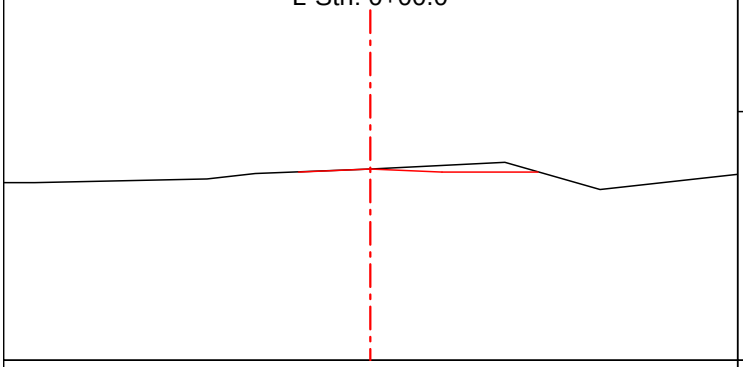
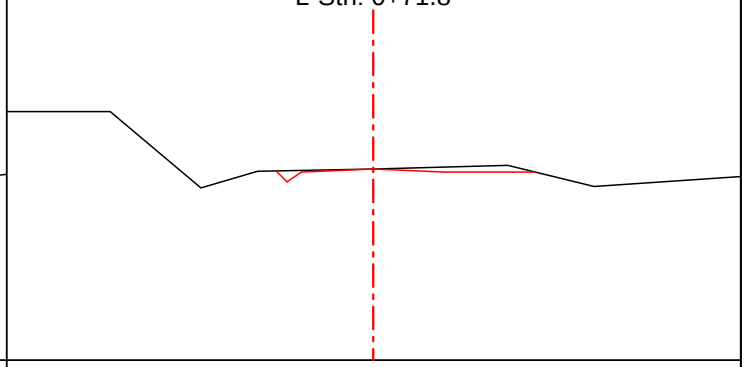
ROADENG Section	Scale 1:240	P. 1
C:\ProgramData\Softree\Data\trapdoor\spur1		15/06/02

L-Stn: 0+00.0



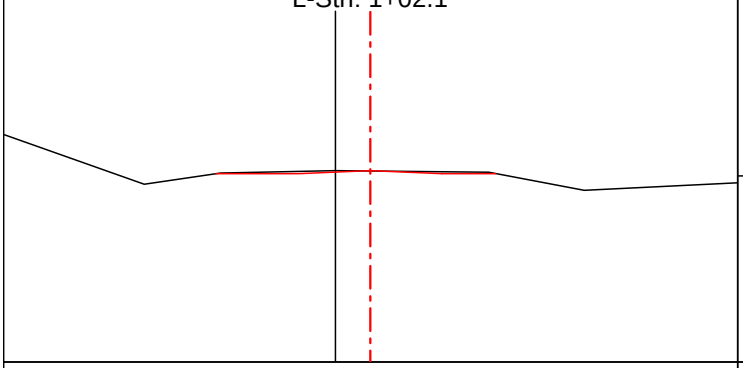
P-Stn:	0+00.0	H. Offset:	0.0	Index:	1
V.Offset:	0.0	CL Elev:	100.0		

L-Stn: 0+71.8



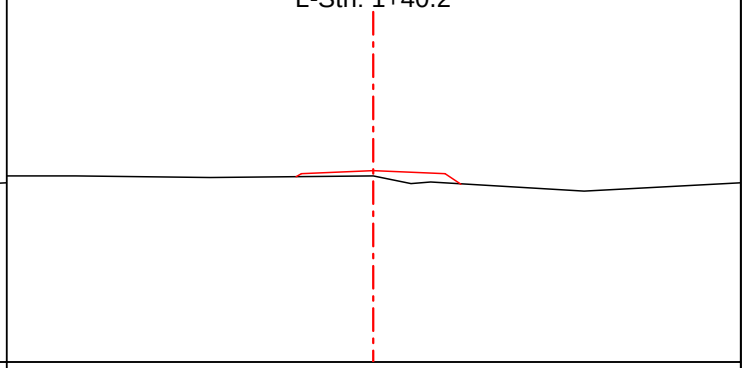
P-Stn:	0+71.8	H. Offset:	0.0	Index:	2
V.Offset:	0.0	CL Elev:	100.7		

L-Stn: 1+02.1



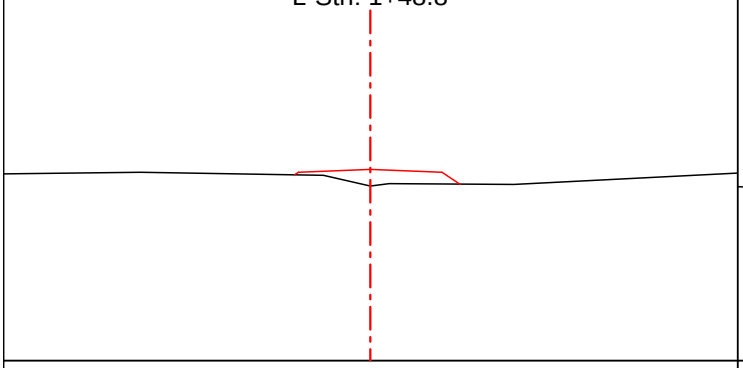
P-Stn:	1+02.8	H. Offset:	3.6	Index:	3
V.Offset:	0.0	CL Elev:	101.0		

L-Stn: 1+40.2



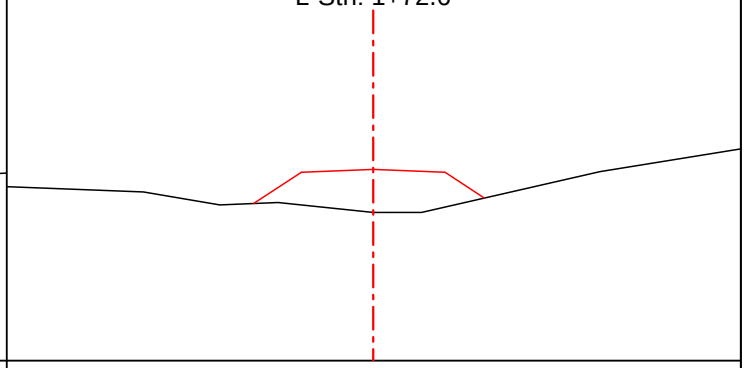
P-Stn:	1+41.6	H. Offset:	0.0	Index:	4
V.Offset:	0.6	CL Elev:	101.6		

L-Stn: 1+48.8



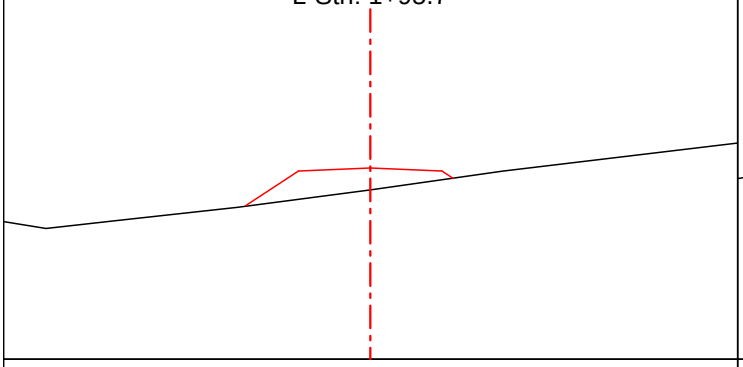
P-Stn:	1+50.2	H. Offset:	0.0	Index:	5
V.Offset:	1.7	CL Elev:	102.0		

L-Stn: 1+72.6



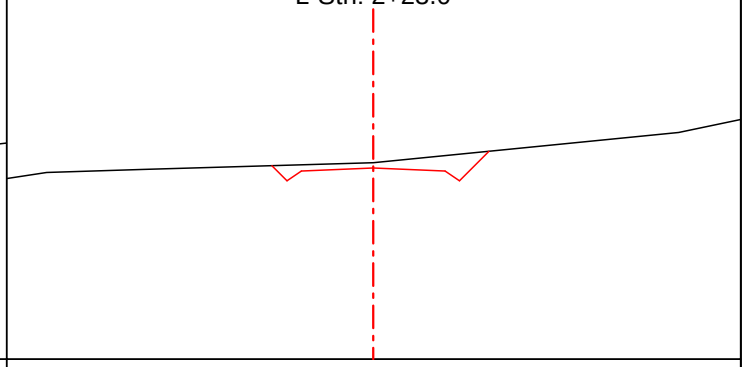
P-Stn:	1+73.9	H. Offset:	0.0	Index:	6
V.Offset:	4.5	CL Elev:	103.8		

L-Stn: 1+95.7



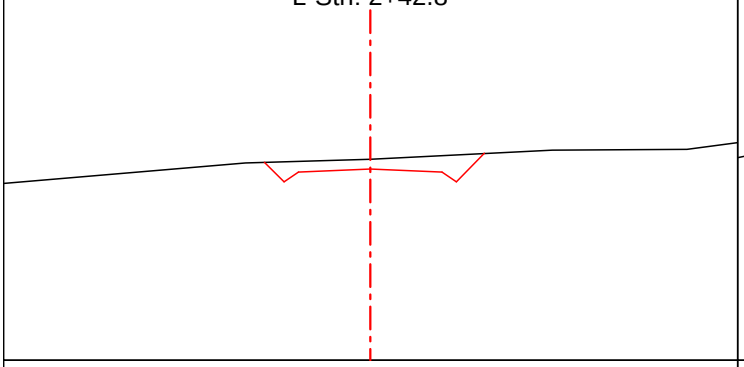
P-Stn:	1+97.1	H. Offset:	0.0	Index:	7
V.Offset:	2.3	CL Elev:	106.7		

L-Stn: 2+23.0



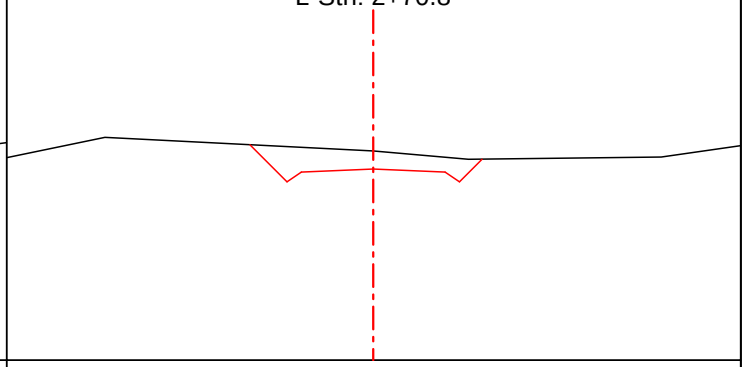
P-Stn:	2+24.4	H. Offset:	0.0	Index:	8
V.Offset:	-0.6	CL Elev:	109.9		

L-Stn: 2+42.8



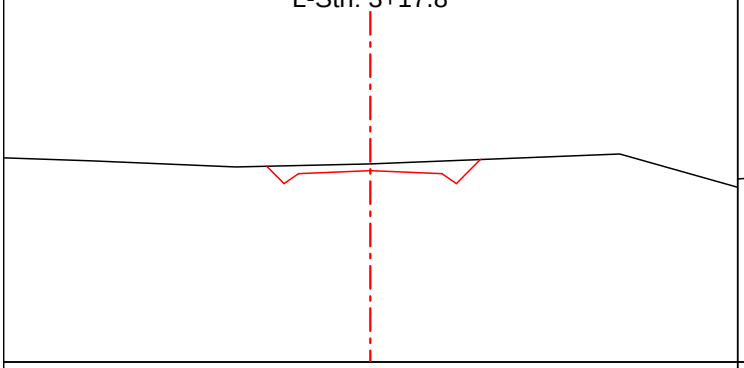
P-Stn:	2+44.2	H. Offset:	0.0	Index:	9
V.Offset:	-1.0	CL Elev:	112.6		

L-Stn: 2+70.8



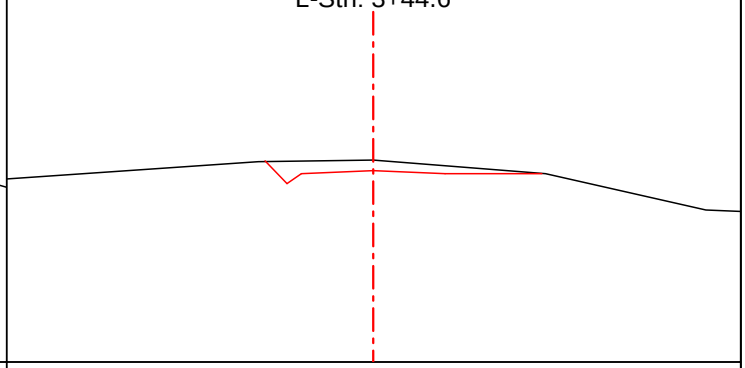
P-Stn:	2+72.2	H. Offset:	0.0	Index:	10
V.Offset:	-1.9	CL Elev:	115.6		

L-Stn: 3+17.8



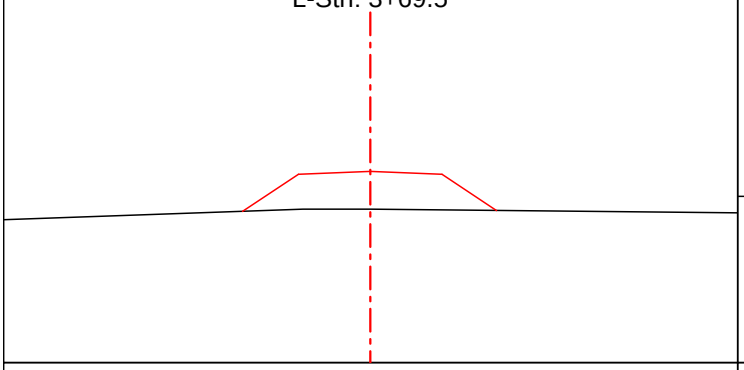
P-Stn:	3+19.2	H. Offset:	0.0	Index:	11
V.Offset:	-0.7	CL Elev:	118.7		

L-Stn: 3+44.6



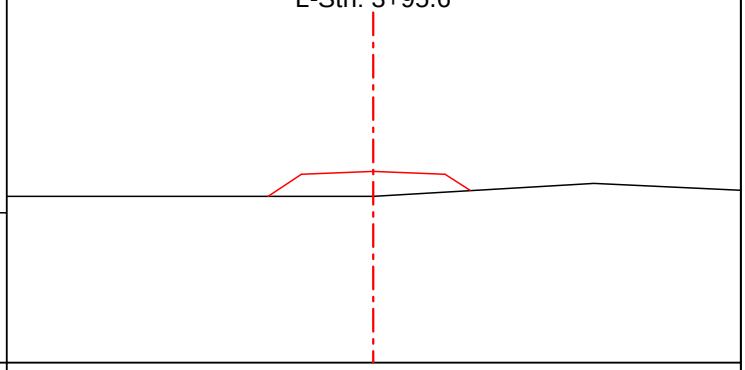
P-Stn:	3+46.0	H. Offset:	0.0	Index:	12
V.Offset:	-1.1	CL Elev:	119.9		

L-Stn: 3+69.5



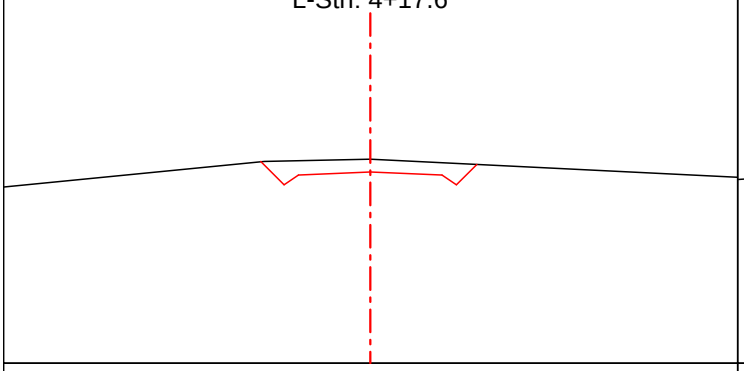
P-Stn:	3+70.9	H. Offset:	0.0	Index:	13
V.Offset:	3.9	CL Elev:	120.7		

L-Stn: 3+95.6



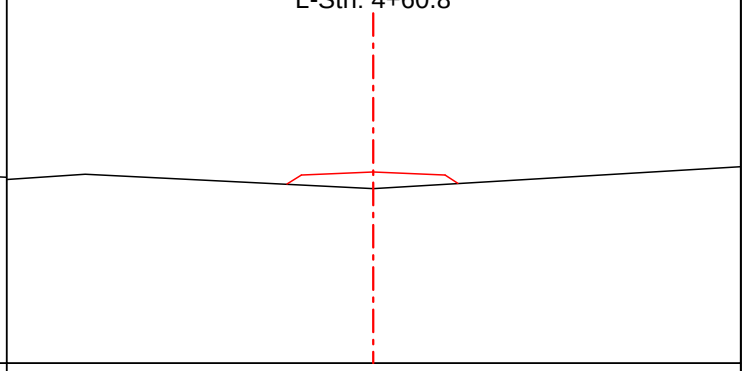
P-Stn:	3+97.0	H. Offset:	0.0	Index:	14
V.Offset:	2.6	CL Elev:	121.5		

L-Stn: 4+17.6



P-Stn:	4+19.0	H. Offset:	0.0	Index:	15
V.Offset:	-1.3	CL Elev:	122.3		

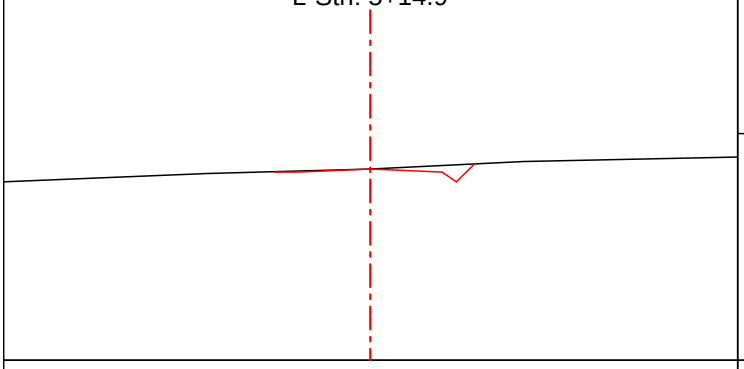
L-Stn: 4+60.8



P-Stn:	4+62.1	H. Offset:	0.0	Index:	16
V.Offset:	1.7	CL Elev:	124.1		

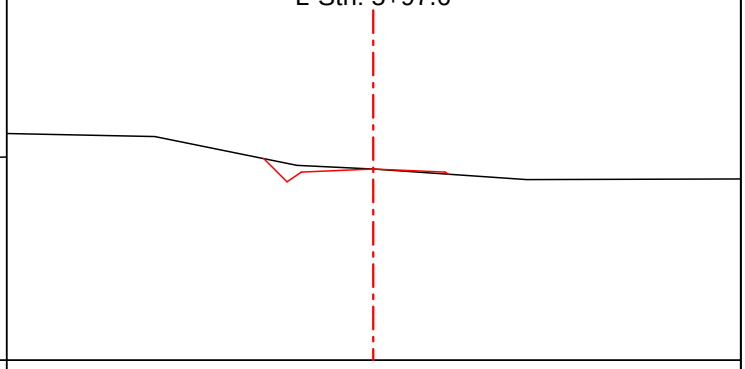
ROADENG Section	Scale 1:240	P. 3
C:\ProgramData\Softree\Data\trapdoor\spur1		15/06/02

L-Stn: 5+14.9

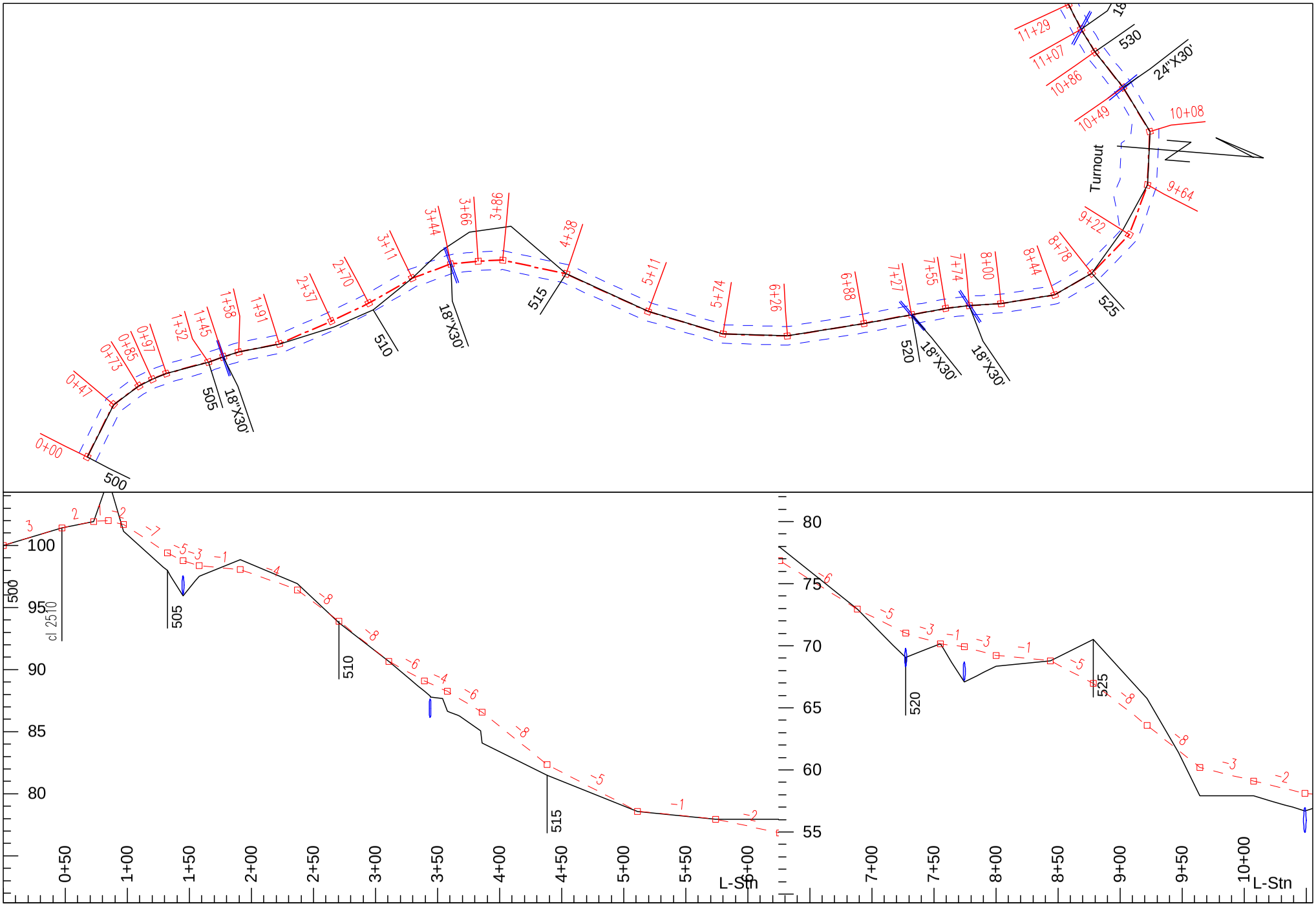


P-Stn:	5+16.3	H. Offset:	0.0	Index:	17
V.Offset:	0.0	CL Elev:	127.3		

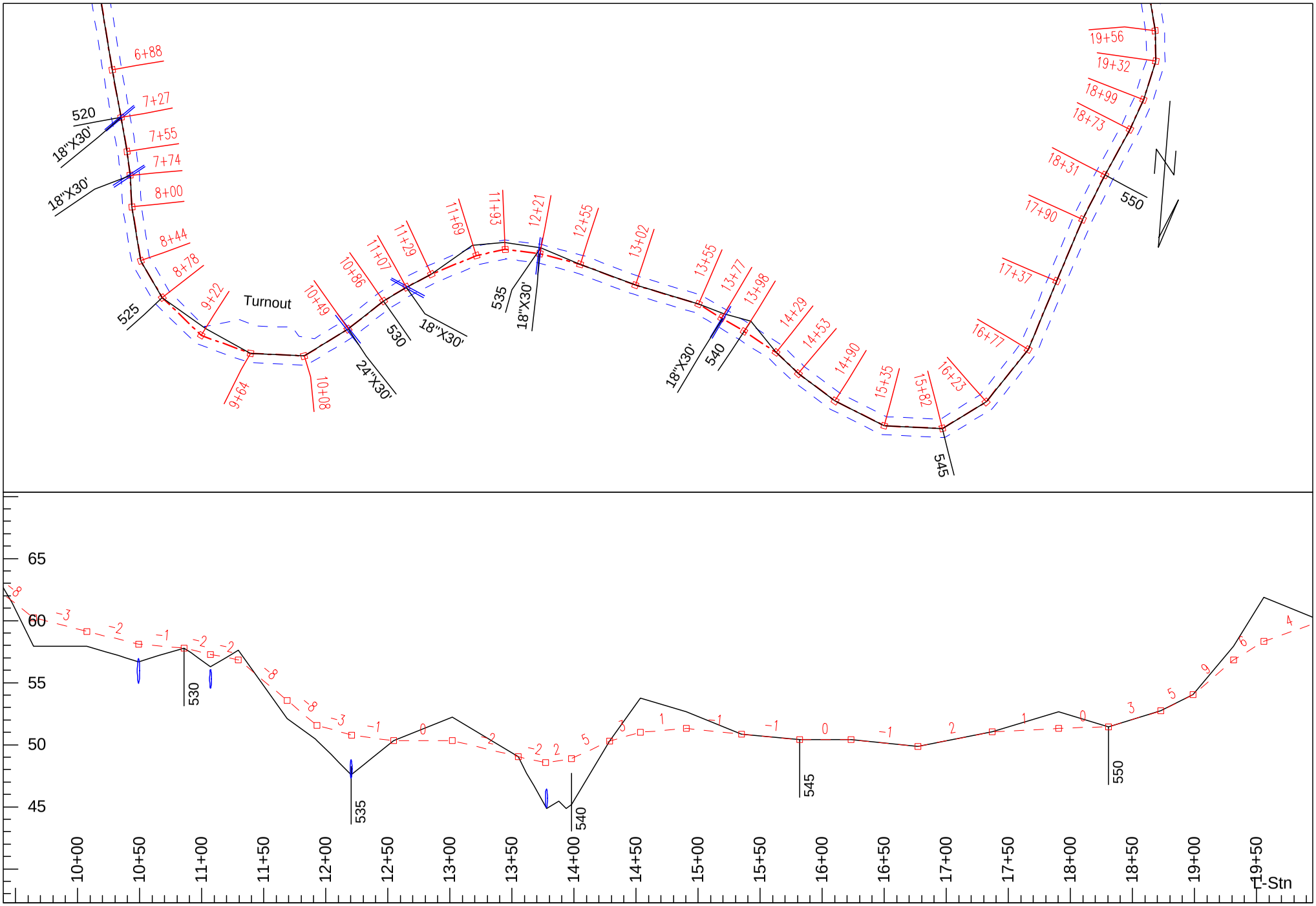
L-Stn: 5+97.6



P-Stn:	5+99.0	H. Offset:	0.0	Index:	18
V.Offset:	0.0	CL Elev:	128.9		



Trap Door Timber Sale Spur 5 Contract #: 30-091844	Washington State Department of Natural Resources South Puget Sound Region	Plan Scale 1:1200 Profile Vert Scale 1:120 Profile Horz Scale 1:1200	Engineer: Heymann 15/06/02 Page 1 of 3



Trap Door Timber Sale
Spur 5
Contract #: 30-091844

Washington State Department of Natural Resources
South Puget Sound Region

Plan Scale 1:1200
Profile Vert Scale 1:120
Profile Horz Scale 1:1200

Engineer: Heymann
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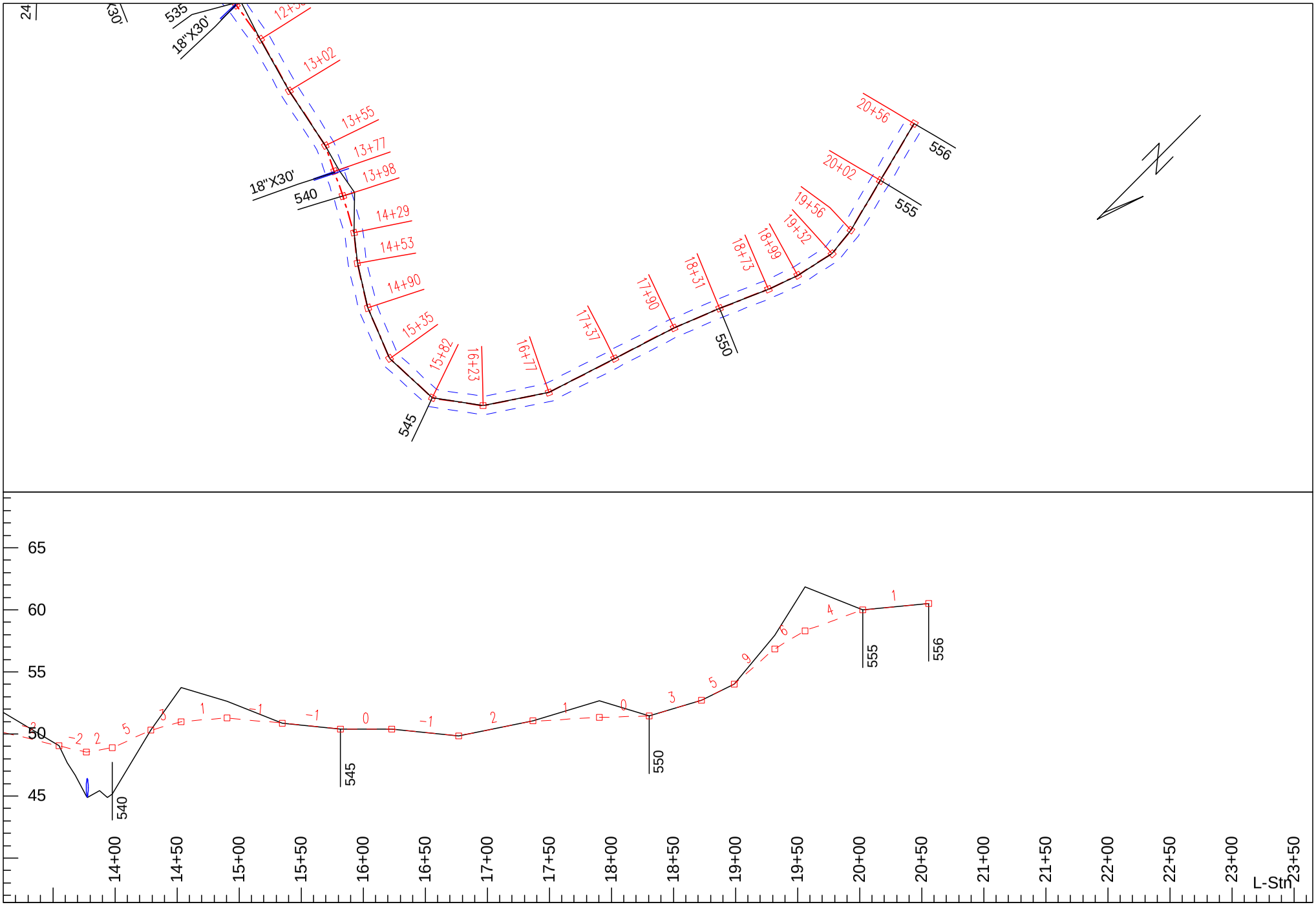
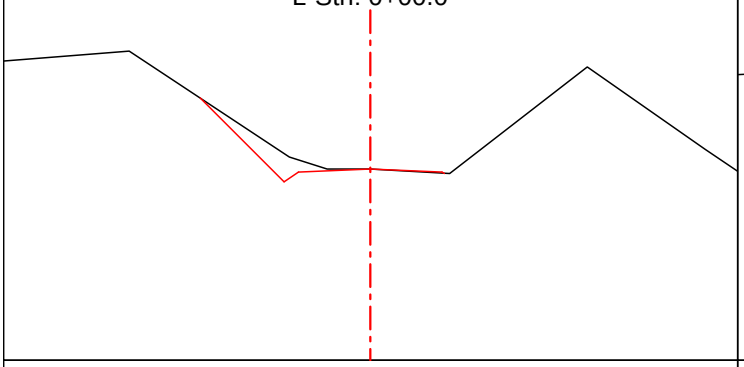


Trap Door Timber Sale Spur 5 Contract #: 30-091844	Washington State Department of Natural Resources South Puget Sound Region	Plan Scale 1:1200 Profile Vert Scale 1:120 Profile Horz Scale 1:1200	Engineer: Heymann 15/06/02 Page 3 of 3

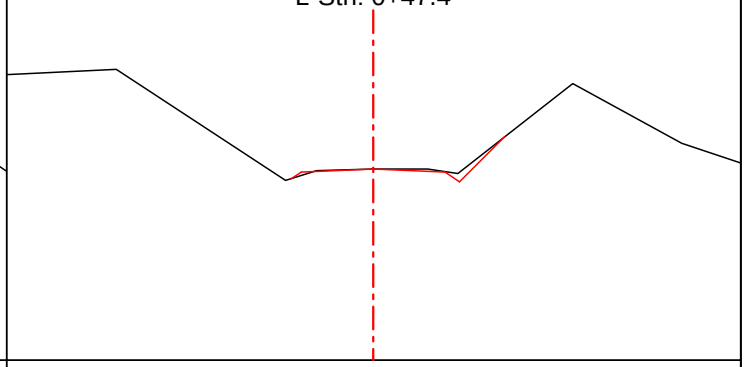
ROADENG Section	Scale 1:240	P. 1
C:\ProgramData\Softree\Data\trapdoor\spur5		15/06/02

L-Stn: 0+00.0



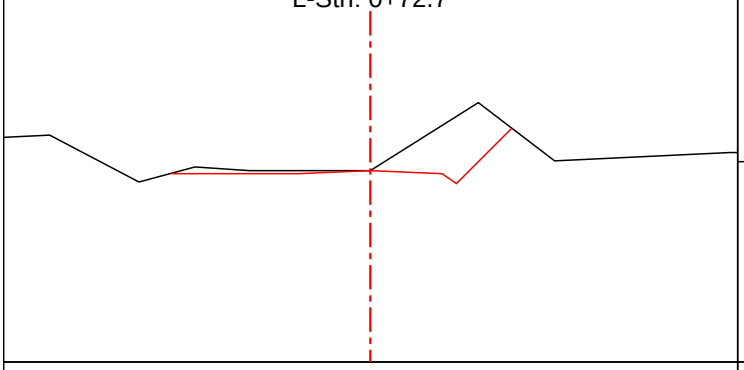
P-Stn: 0+00.0 H. Offset: 0.0 Index: 500
V.Offset: 0.0 CL Elev: 100.0

L-Stn: 0+47.4



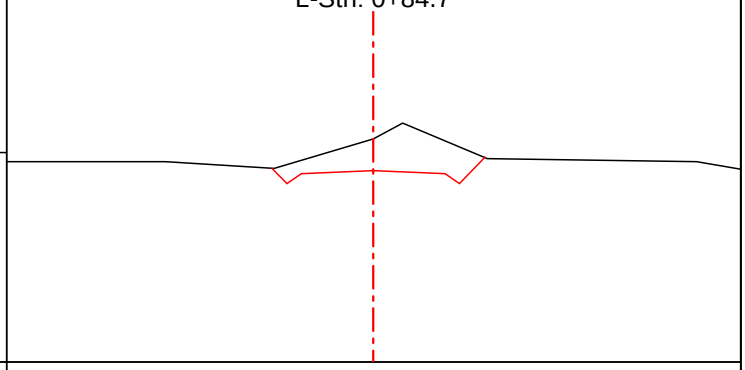
P-Stn: 0+47.4 H. Offset: 0.0 Index: 501
V.Offset: 0.0 CL Elev: 101.4

L-Stn: 0+72.7



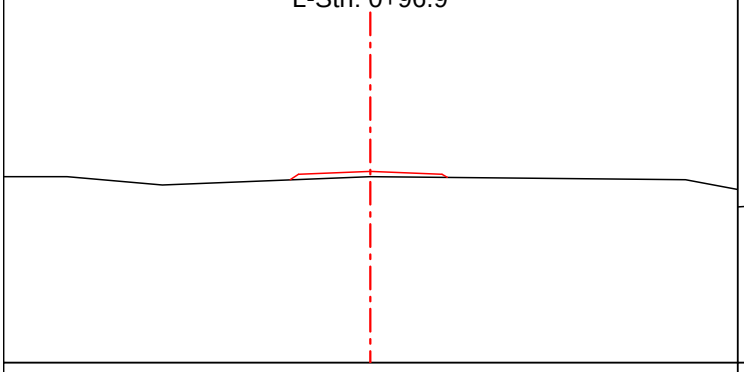
P-Stn: 0+72.7 H. Offset: 0.0 Index: 502
V.Offset: 0.0 CL Elev: 101.9

L-Stn: 0+84.7



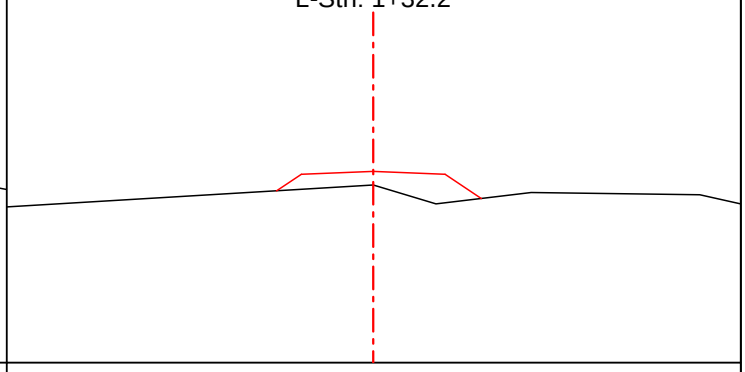
P-Stn: 0+84.7 H. Offset: 0.0 Index: 503
V.Offset: -3.3 CL Elev: 102.0

L-Stn: 0+96.9



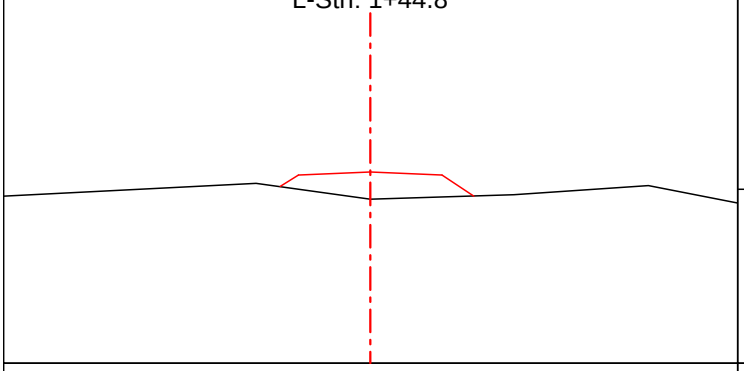
P-Stn: 0+96.9 H. Offset: 0.0 Index: 504
V.Offset: 0.6 CL Elev: 101.7

L-Stn: 1+32.2



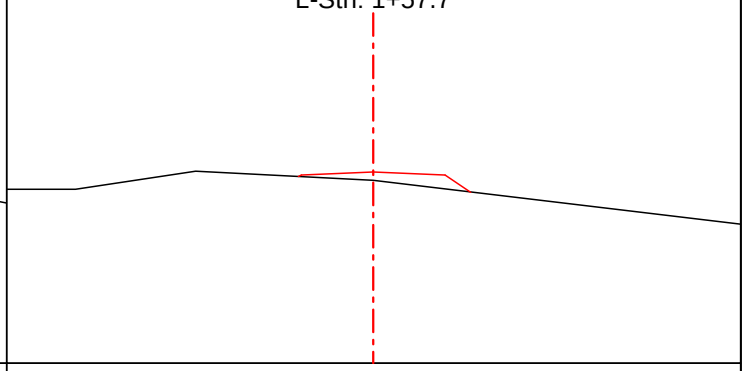
P-Stn: 1+32.2 H. Offset: 0.0 Index: 505
V.Offset: 1.4 CL Elev: 99.4

L-Stn: 1+44.8



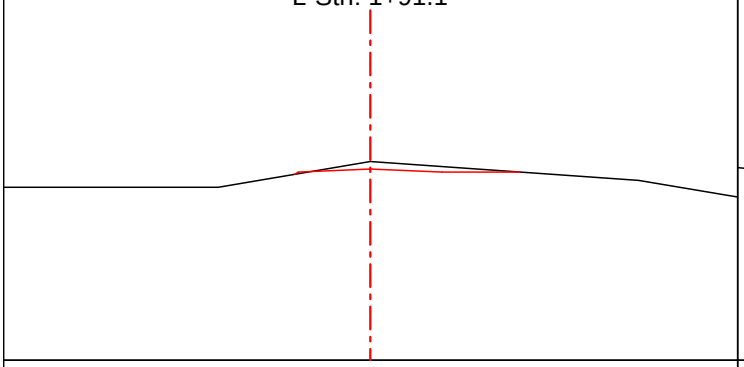
P-Stn: 1+44.8 H. Offset: 0.0 Index: 506
V.Offset: 2.8 CL Elev: 98.8

L-Stn: 1+57.7



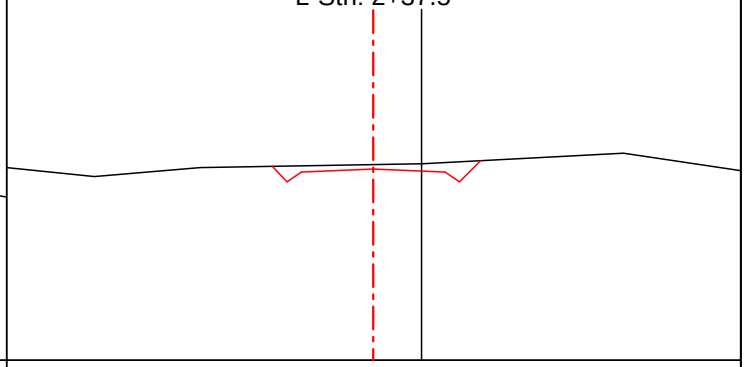
P-Stn: 1+57.7 H. Offset: 0.0 Index: 507
V.Offset: 0.9 CL Elev: 98.4

L-Stn: 1+91.1



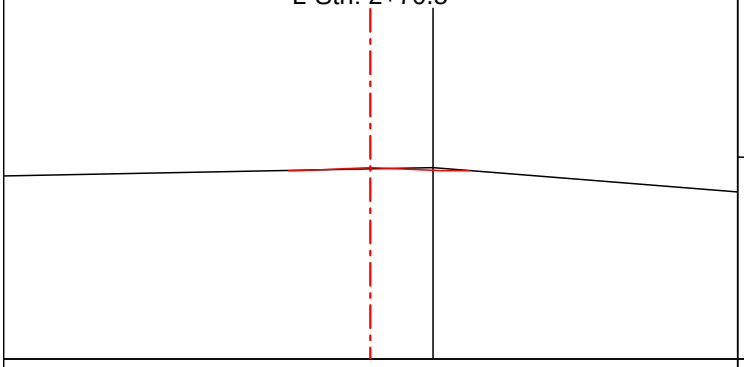
P-Stn: 1+91.1 H. Offset: 0.0 Index: 508
V.Offset: -0.8 CL Elev: 98.0

L-Stn: 2+37.5



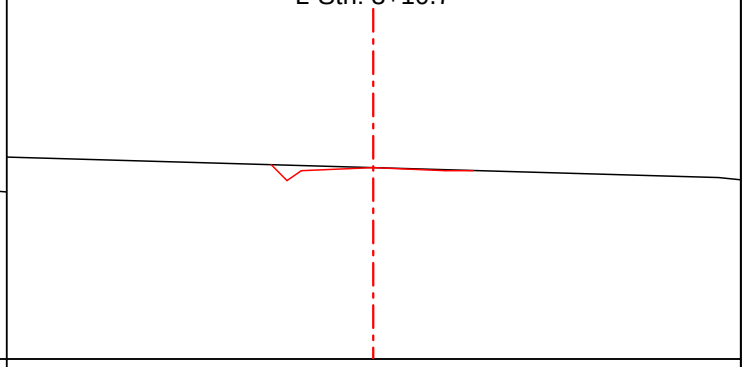
P-Stn: 2+37.5 H. Offset: -5.1 Index: 509
V.Offset: -0.6 CL Elev: 96.4

L-Stn: 2+70.5



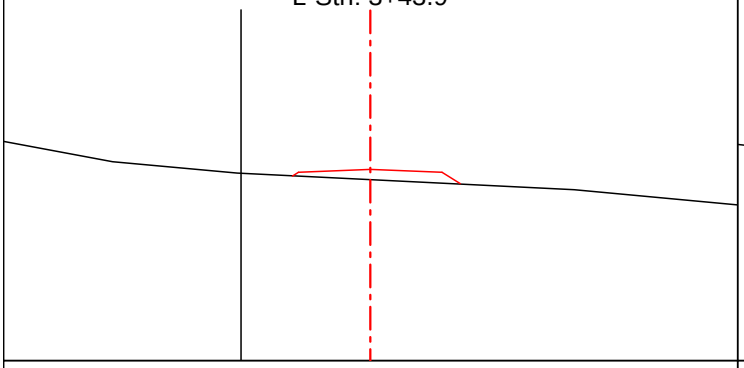
P-Stn: 2+71.6 H. Offset: -6.5 Index: 510
V.Offset: 0.0 CL Elev: 93.9

L-Stn: 3+10.7



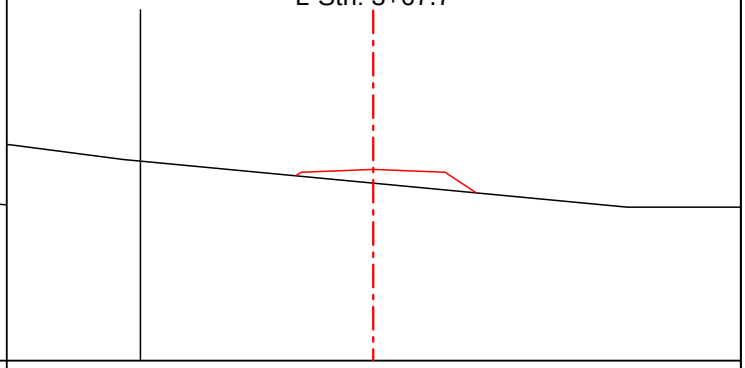
P-Stn: 3+12.2 H. Offset: 0.0 Index: 511
V.Offset: 0.0 CL Elev: 90.7

L-Stn: 3+43.9



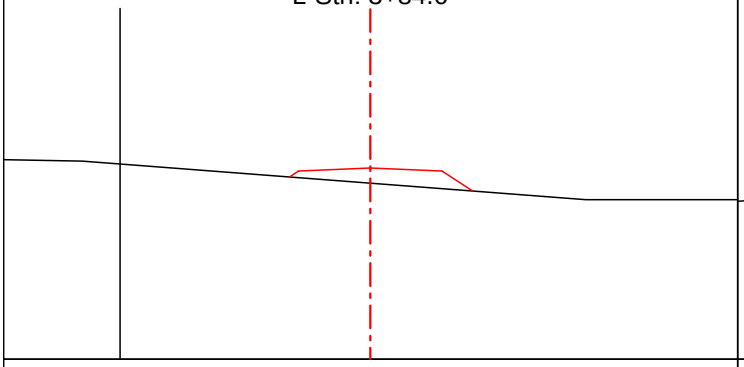
P-Stn: 3+43.9 H. Offset: 13.2 Index: 512
V.Offset: 0.4 CL Elev: 88.9

L-Stn: 3+67.7



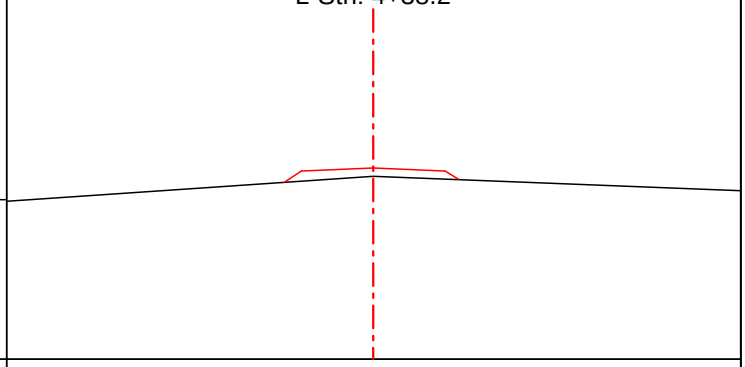
P-Stn: 3+71.5 H. Offset: 24.7 Index: 513
V.Offset: -1.1 CL Elev: 87.7

L-Stn: 3+84.6



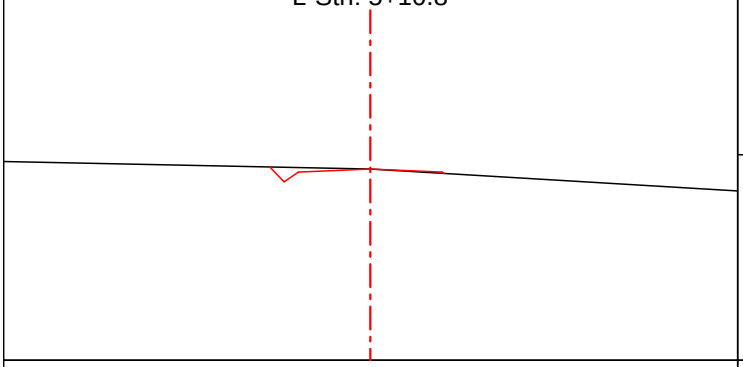
P-Stn: 4+05.4 H. Offset: 28.5 Index: 514
V.Offset: -0.7 CL Elev: 86.7

L-Stn: 4+38.2



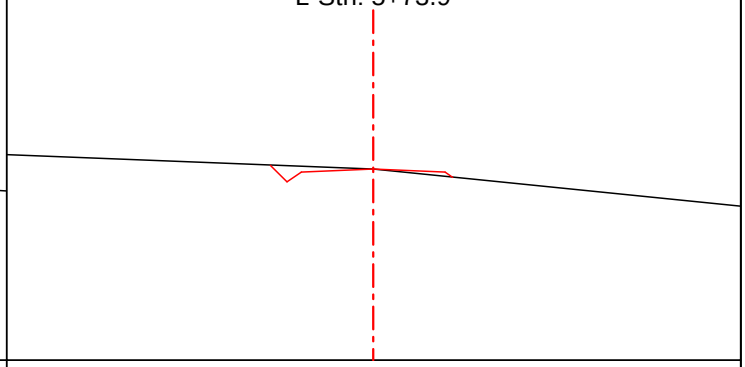
P-Stn: 4+64.1 H. Offset: 0.0 Index: 515
V.Offset: 0.9 CL Elev: 82.4

L-Stn: 5+10.8



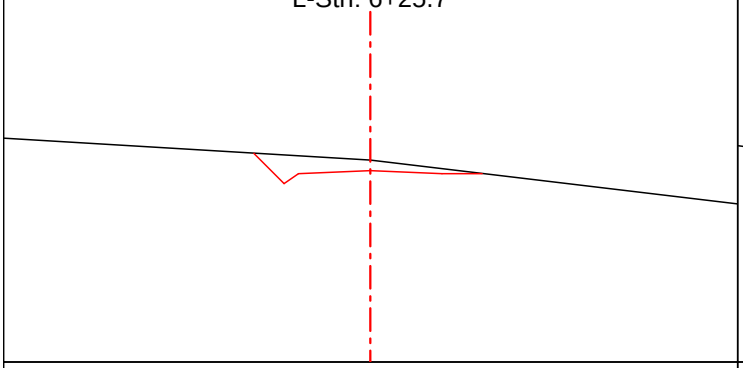
P-Stn: 5+36.7 H. Offset: 0.0 Index: 516
V.Offset: 0.0 CL Elev: 78.6

L-Stn: 5+73.9



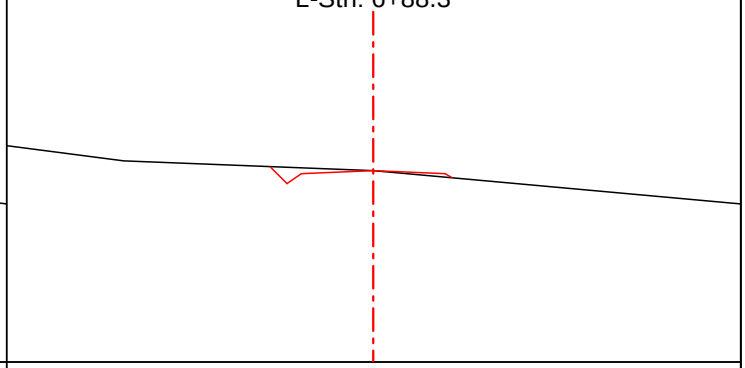
P-Stn: 5+99.8 H. Offset: 0.0 Index: 517
V.Offset: 0.0 CL Elev: 78.0

L-Stn: 6+25.7



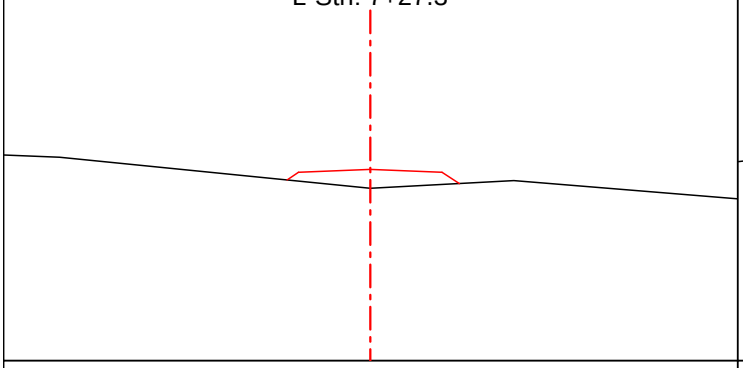
P-Stn: 6+51.6 H. Offset: 0.0 Index: 518
V.Offset: -1.1 CL Elev: 76.8

L-Stn: 6+88.3



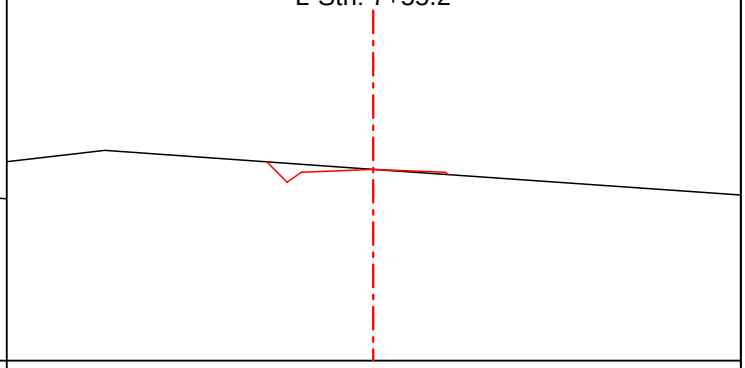
P-Stn: 7+14.2 H. Offset: 0.0 Index: 519
V.Offset: 0.0 CL Elev: 72.9

L-Stn: 7+27.3



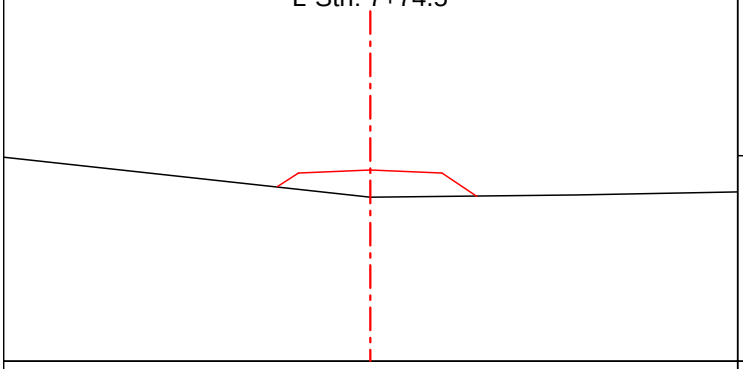
P-Stn: 7+53.2 H. Offset: 0.0 Index: 520
V.Offset: 2.0 CL Elev: 71.0

L-Stn: 7+55.2



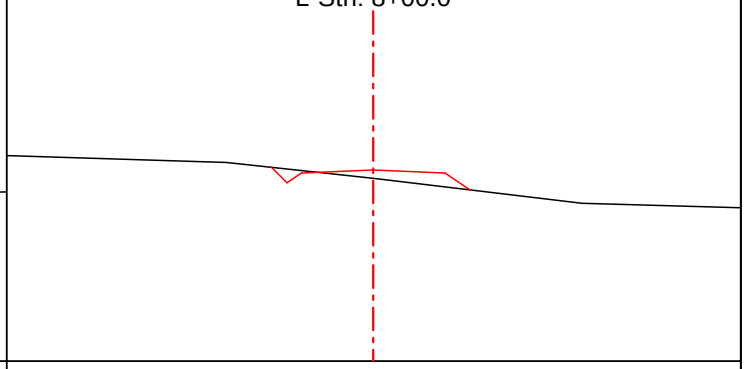
P-Stn: 7+81.1 H. Offset: 0.0 Index: 521
V.Offset: 0.0 CL Elev: 70.2

L-Stn: 7+74.5



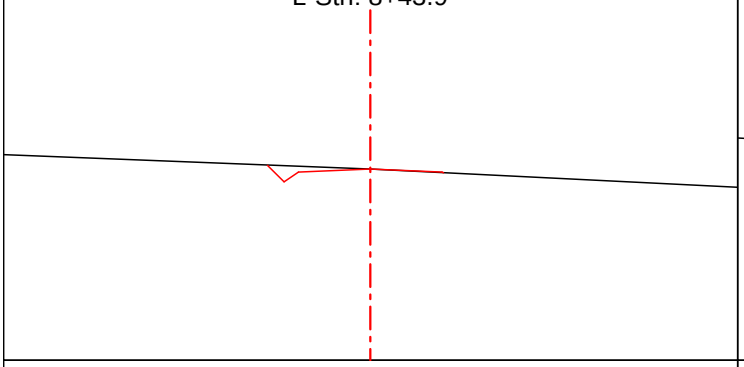
P-Stn: 8+00.4 H. Offset: 0.0 Index: 522
V.Offset: 2.8 CL Elev: 69.9

L-Stn: 8+00.0



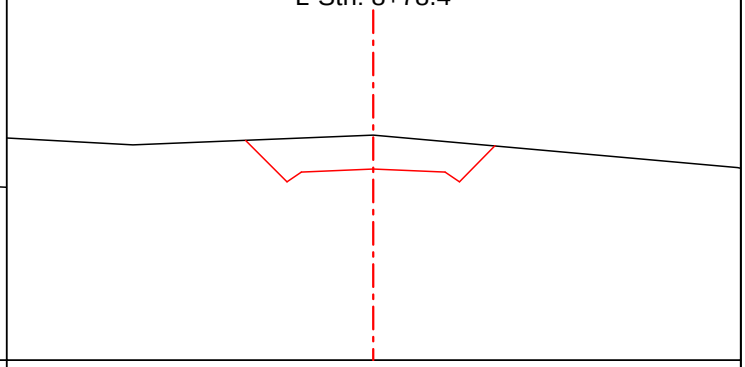
P-Stn: 8+25.9 H. Offset: 0.0 Index: 523
V.Offset: 0.9 CL Elev: 69.2

L-Stn: 8+43.9



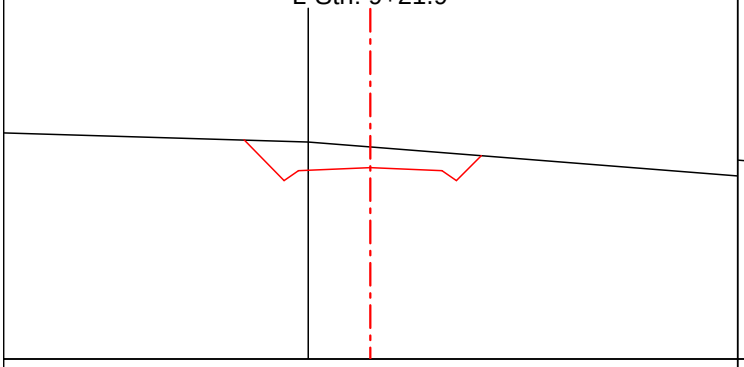
P-Stn: 8+69.8 H. Offset: 0.0 Index: 524
V.Offset: 0.0 CL Elev: 68.8

L-Stn: 8+78.4



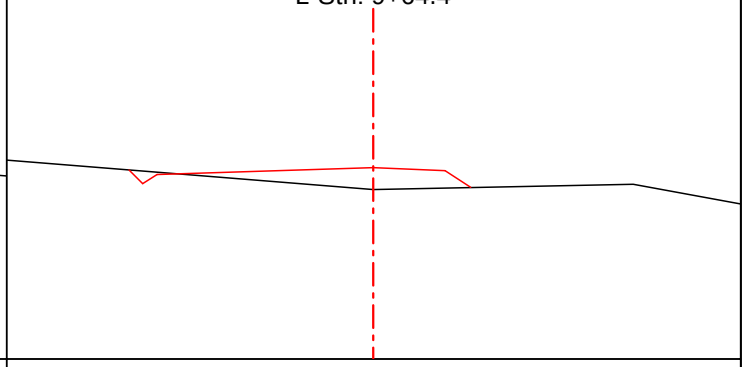
P-Stn: 9+04.3 H. Offset: 0.0 Index: 525
V.Offset: -3.5 CL Elev: 67.0

L-Stn: 9+21.9



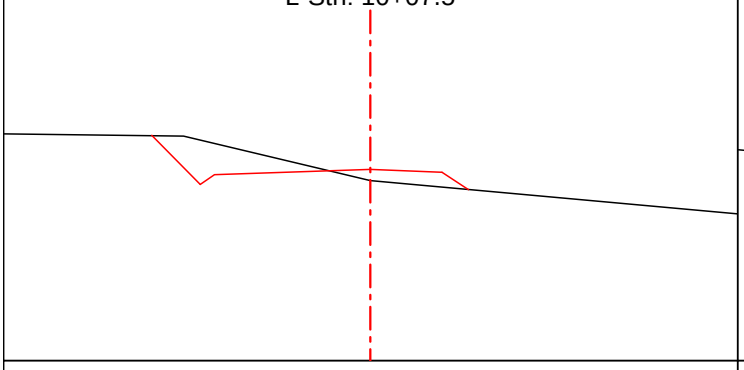
P-Stn: 9+47.0 H. Offset: 6.5 Index: 526
V.Offset: -2.7 CL Elev: 63.6

L-Stn: 9+64.4



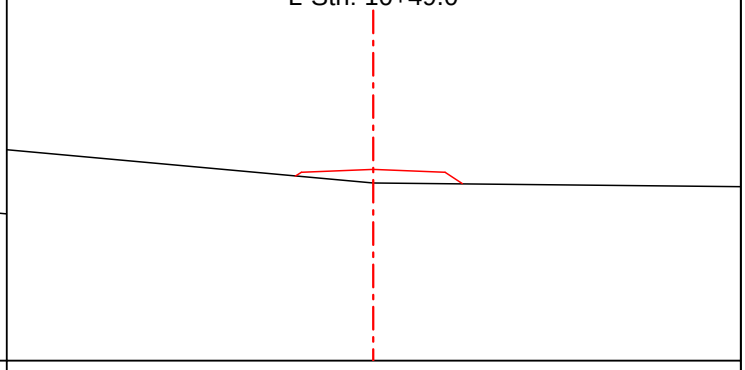
P-Stn: 9+88.6 H. Offset: 0.0 Index: 527
V.Offset: 2.3 CL Elev: 60.2

L-Stn: 10+07.5



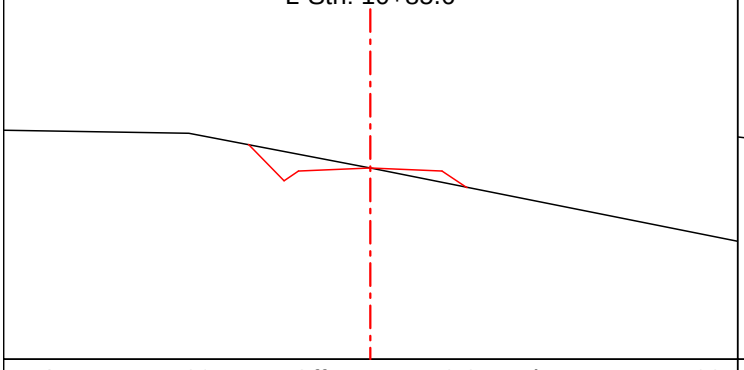
P-Stn: 10+31.7 H. Offset: 0.0 Index: 528
V.Offset: 1.2 CL Elev: 59.1

L-Stn: 10+49.0



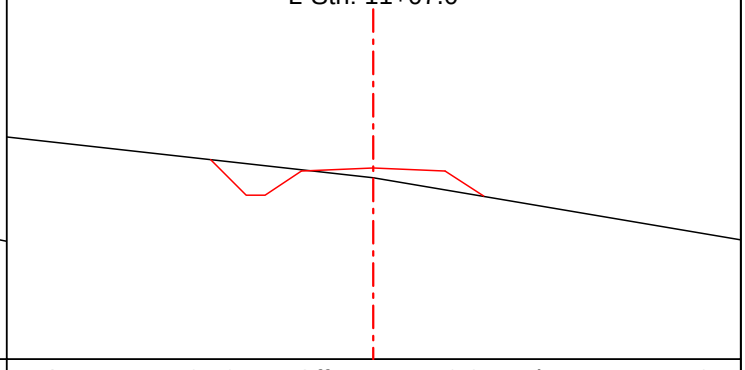
P-Stn: 10+73.1 H. Offset: 0.0 Index: 529
V.Offset: 1.4 CL Elev: 58.1

L-Stn: 10+85.6



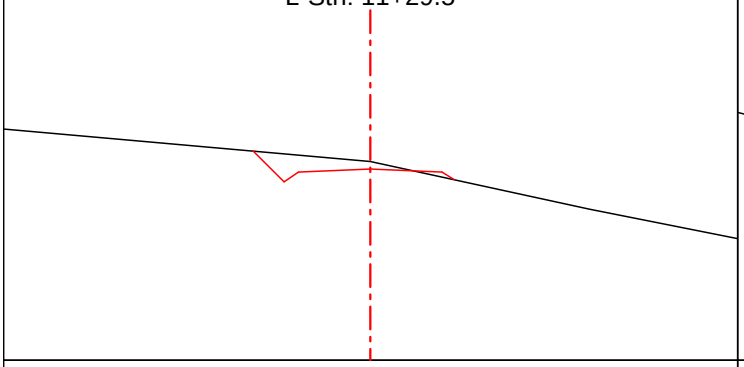
P-Stn: 11+09.7 H. Offset: 0.0 Index: 530
V.Offset: 0.0 CL Elev: 57.8

L-Stn: 11+07.0



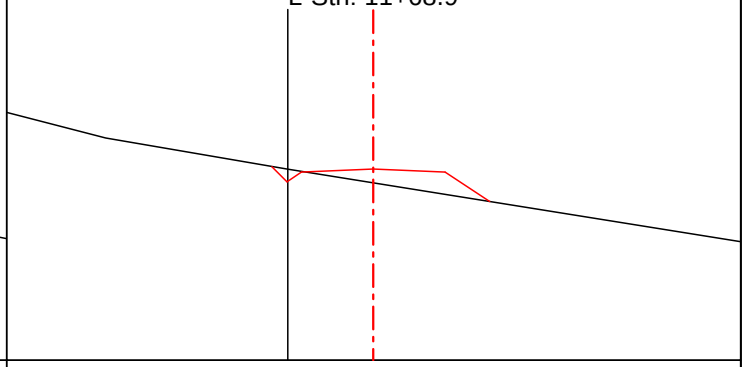
P-Stn: 11+31.2 H. Offset: 0.0 Index: 531
V.Offset: 1.0 CL Elev: 57.3

L-Stn: 11+29.5



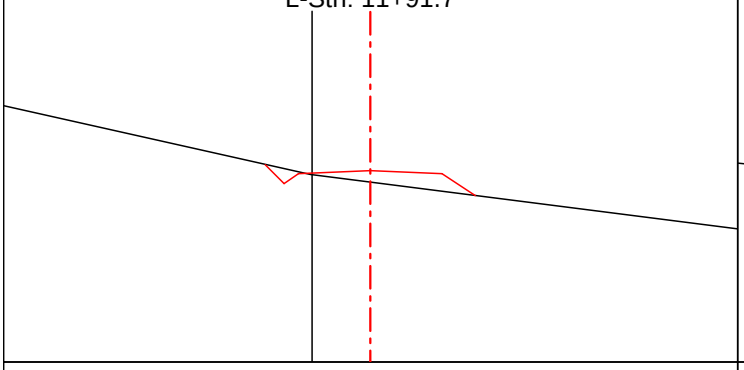
P-Stn: 11+53.6 H. Offset: 0.0 Index: 532
V.Offset: -0.8 CL Elev: 56.8

L-Stn: 11+68.9



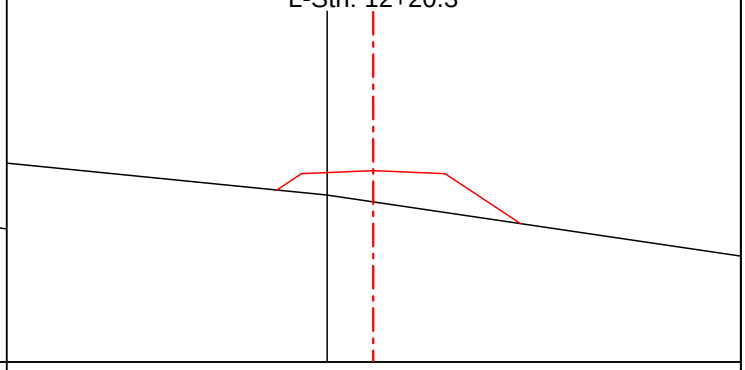
P-Stn: 11+94.4 H. Offset: 9.0 Index: 533
V.Offset: 0.0 CL Elev: 53.6

L-Stn: 11+91.7



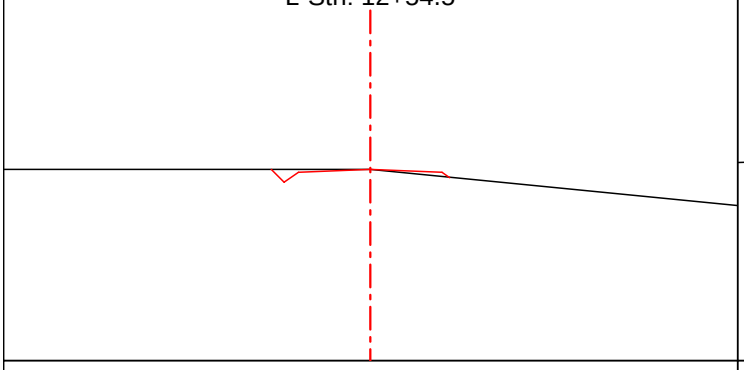
P-Stn: 12+20.1 H. Offset: 6.1 Index: 534
V.Offset: 0.4 CL Elev: 51.6

L-Stn: 12+20.3



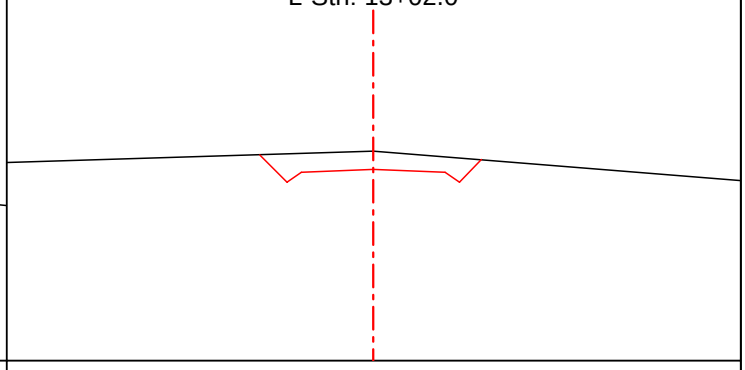
P-Stn: 12+50.0 H. Offset: 4.9 Index: 535
V.Offset: 2.5 CL Elev: 50.8

L-Stn: 12+54.5



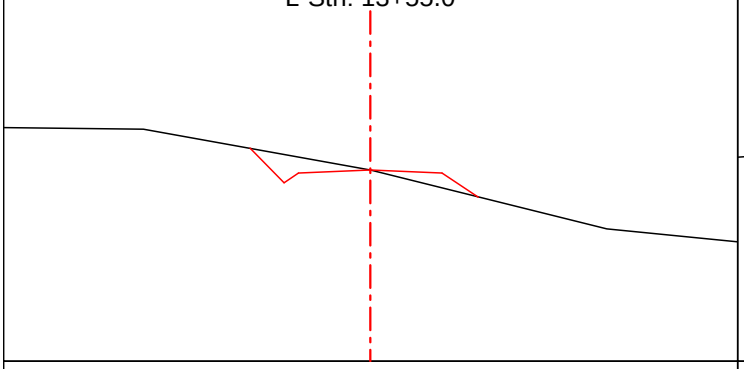
P-Stn: 12+84.4 H. Offset: 0.0 Index: 536
V.Offset: 0.0 CL Elev: 50.3

L-Stn: 13+02.0



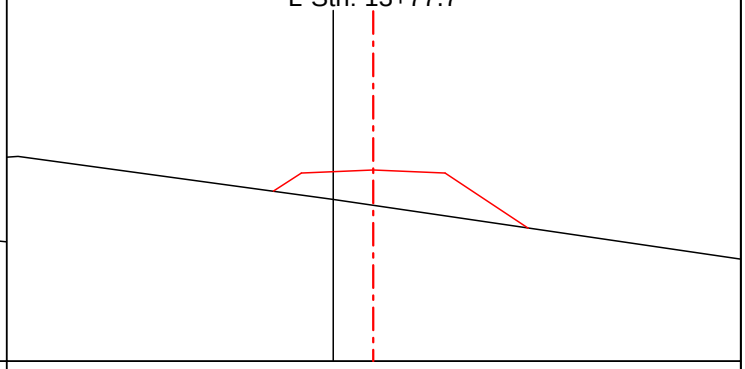
P-Stn: 13+31.9 H. Offset: 0.0 Index: 537
V.Offset: -1.9 CL Elev: 50.3

L-Stn: 13+55.0



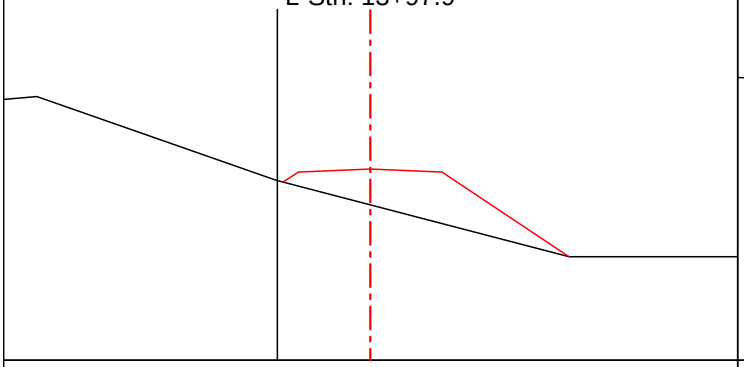
P-Stn: 13+84.9 H. Offset: 0.0 Index: 538
V.Offset: 0.0 CL Elev: 49.0

L-Stn: 13+77.7



P-Stn: 14+07.1 H. Offset: 4.0 Index: 539
V.Offset: 3.1 CL Elev: 48.6

L-Stn: 13+97.9

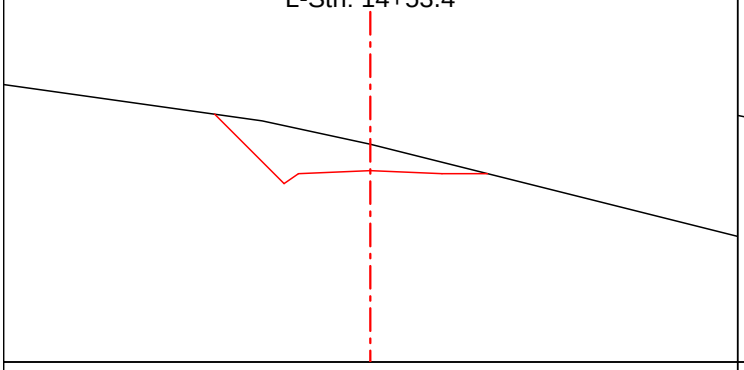


P-Stn:	14+29.3	H. Offset:	9.8	Index:	540
V.Offset:	1.2	CL Elev:	48.9		

L-Stn: 14+28.8

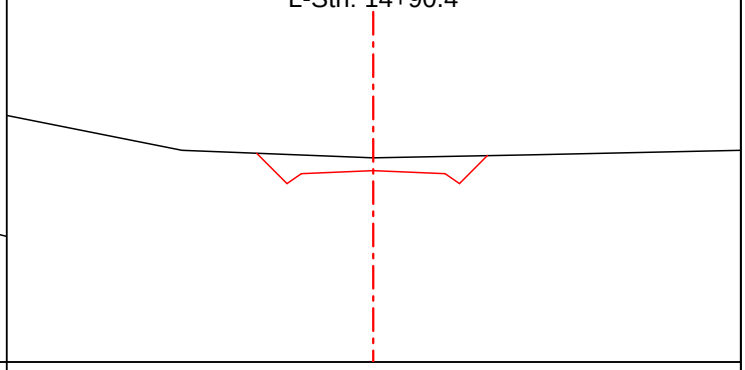
P-Stn:	14+61.7	H. Offset:	0.0	Index:	541
V.Offset:	0.0	CL Elev:	50.3		

L-Stn: 14+53.4



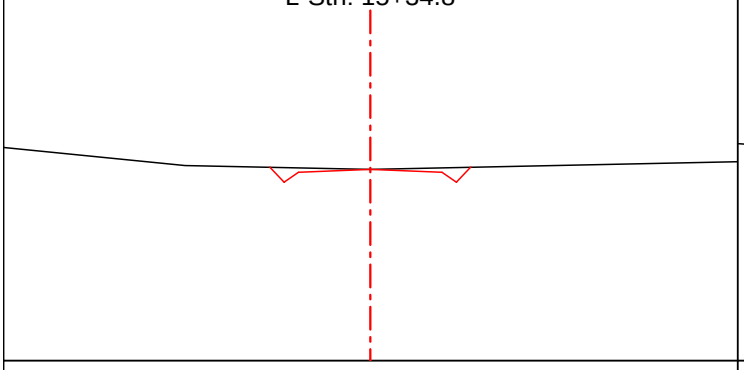
P-Stn:	14+86.3	H. Offset:	0.0	Index:	542
V.Offset:	-2.8	CL Elev:	51.0		

L-Stn: 14+90.4



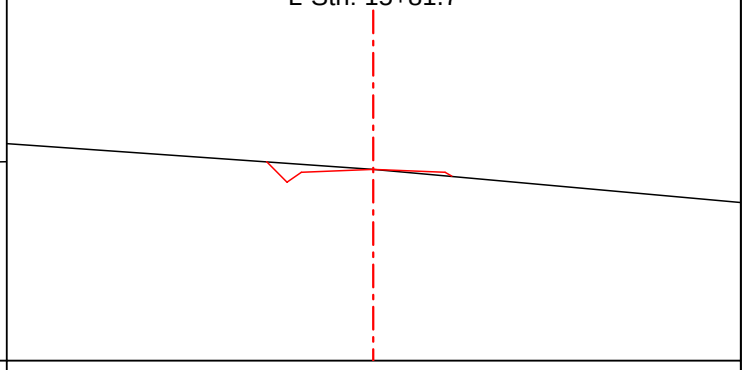
P-Stn:	15+23.3	H. Offset:	0.0	Index:	543
V.Offset:	-1.3	CL Elev:	51.3		

L-Stn: 15+34.8



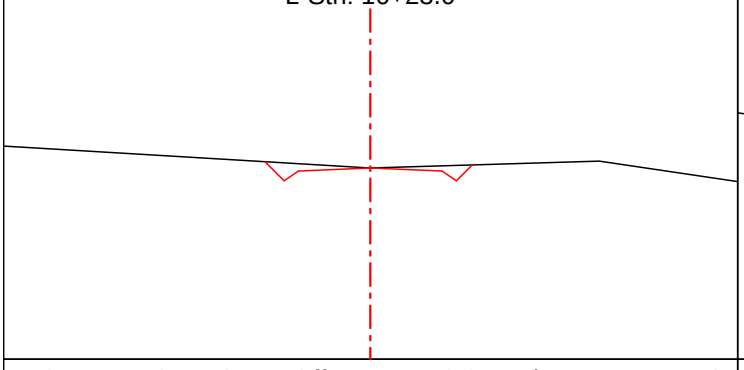
P-Stn:	15+67.7	H. Offset:	0.0	Index:	544
V.Offset:	0.0	CL Elev:	50.9		

L-Stn: 15+81.7



P-Stn:	16+14.6	H. Offset:	0.0	Index:	545
V.Offset:	0.0	CL Elev:	50.4		

L-Stn: 16+23.0



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L-Stn: 16+77.1

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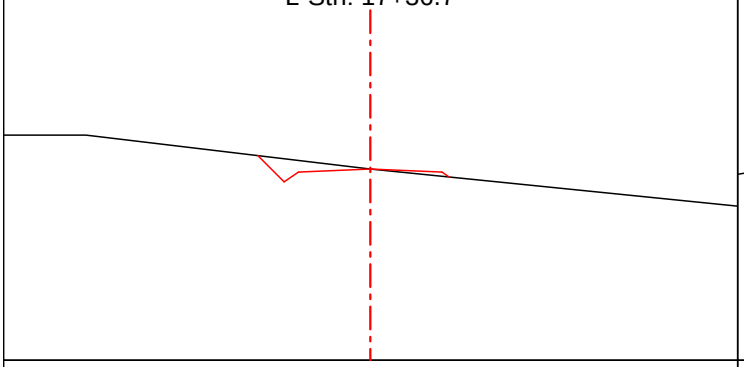
L-Stn: 17+36.7



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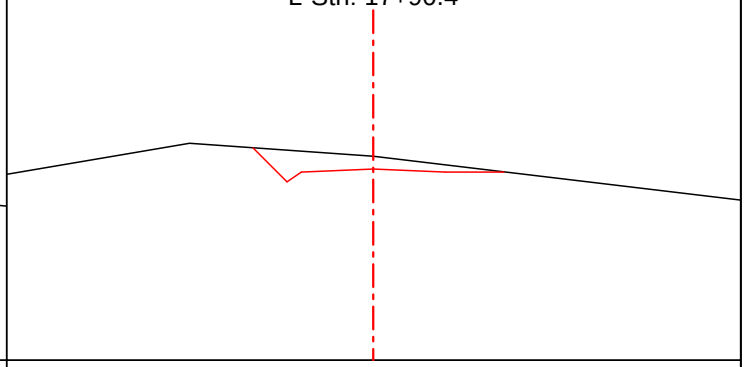
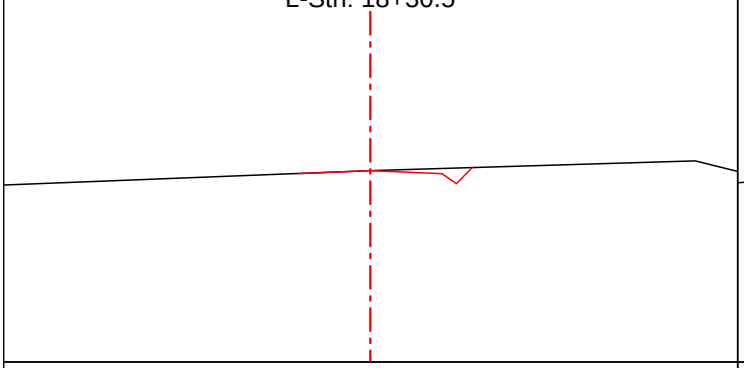
L-Stn: 17+90.4



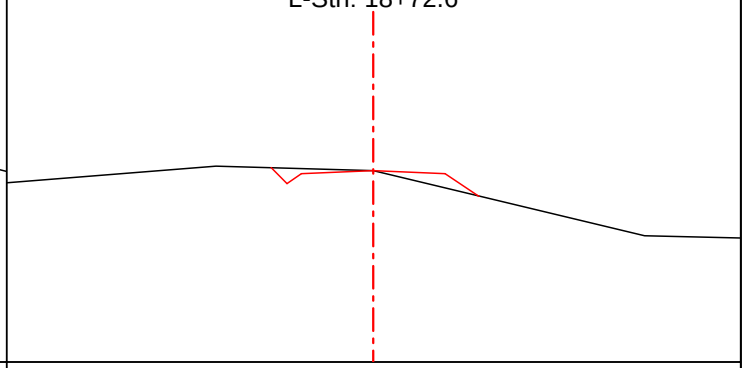
P-Stn: 18+23.4 H. Offset: 0.0 Index: 549
V.Offset: -1.3 CL Elev: 51.3

L-Stn: 18+30.5



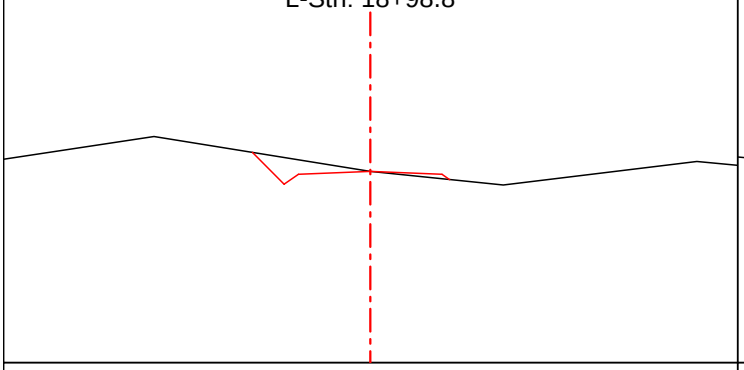
P-Stn: 18+63.4 H. Offset: 0.0 Index: 550
V.Offset: 0.0 CL Elev: 51.5

L-Stn: 18+72.6



P-Stn: 19+05.5 H. Offset: 0.0 Index: 551
V.Offset: 0.0 CL Elev: 52.7

L-Stn: 18+98.8



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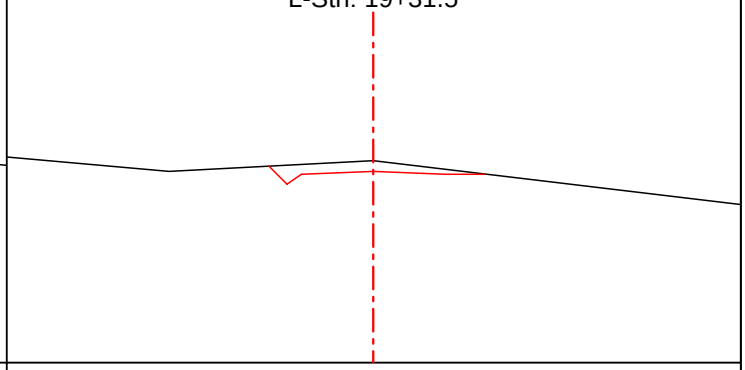
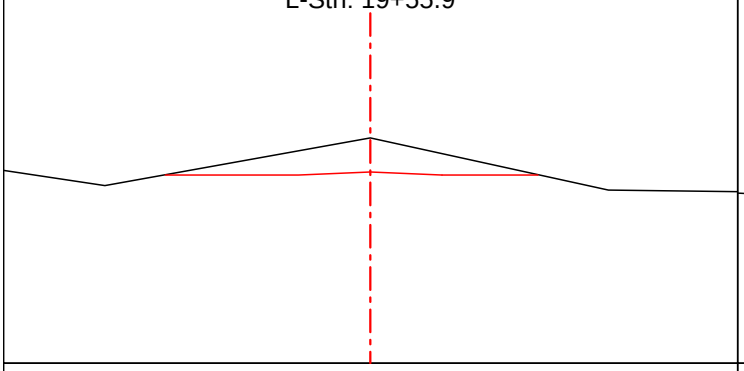
L-Stn: 19+31.5



P-Stn: 19+64.4 H. Offset: 0.0 Index: 553
V.Offset: -1.1 CL Elev: 56.8

L-Stn: 19+55.9



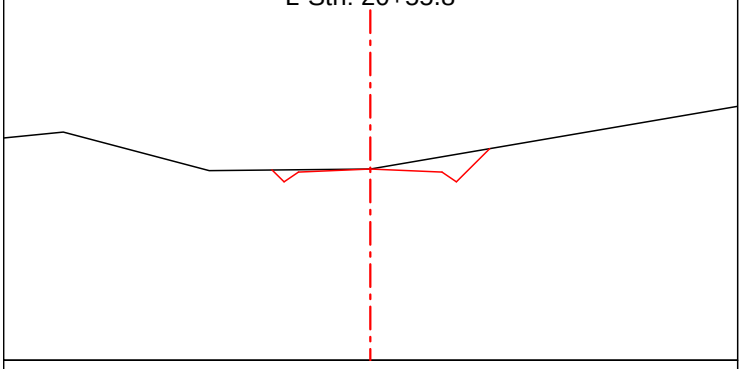
P-Stn: 19+88.8 H. Offset: 0.0 Index: 554
V.Offset: -3.5 CL Elev: 58.3

L-Stn: 20+02.4

P-Stn: 20+35.3 H. Offset: 0.0 Index: 555
V.Offset: 0.0 CL Elev: 60.0

ROADENG Section	Scale 1:240	P. 8
C:\ProgramData\Softree\Data\trapdoor\spur5		15/06/02

L-Stn: 20+55.8



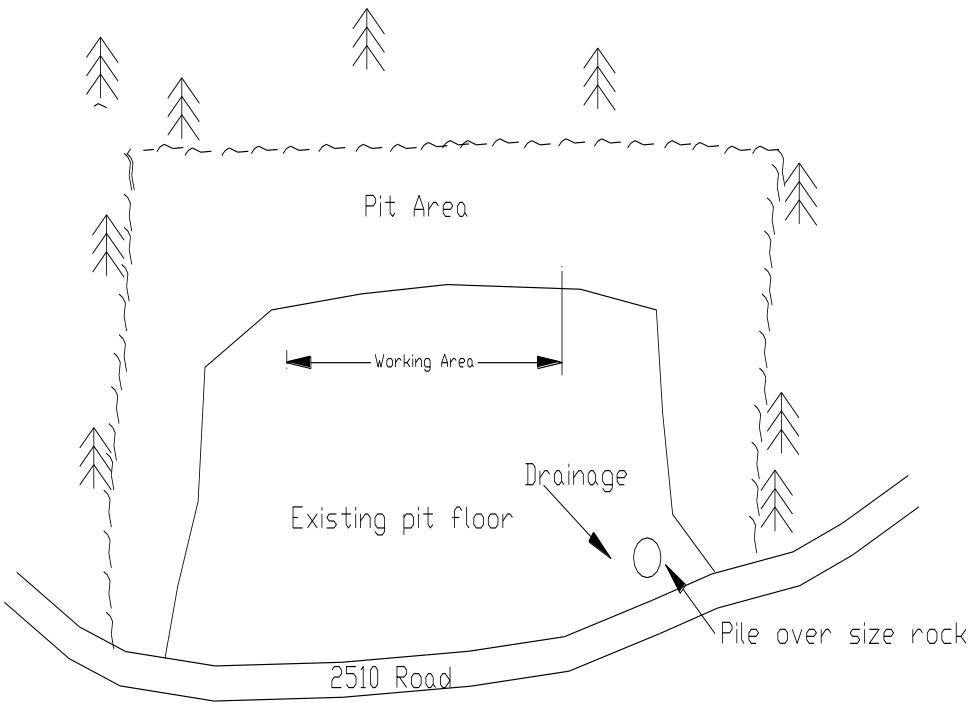
P-Stn:	20+88.7	H. Offset:	0.0	Index:	556
V.Offset:	0.0	CL Elev:	60.5		

PIT DEVELOPMENT PLAN

1. Scatter root wads and organic debris larger than one cubic foot in volume as directed by the Contract Administrator.
2. A minimum stripping width of 20 feet must be maintained from all pit faces and at the termination of operations pit shall be left in said condition.
3. Pile all reject rock and overburden away from pit working area as shown.
4. Pit floor shall be sloped to allow drainage as shown. No ponding will be allowed.
5. Maximum face height shall not exceed 30 feet in height.
6. Pit face shall have a maximum backslope of 1/4:1.
7. Working bench width shall be a minimum of 25 feet.
8. At the completion of operations, Contractor shall request written approval from the Contract Administrator for final rock source condition and compliance with the terms of this plan
9. Quantity and Quality of ballast pit is not guaranteed by the State.

SW SW Section 2 Township 24 North, Range 3 West

App # 30-091844 County: Mason



2510 Pit

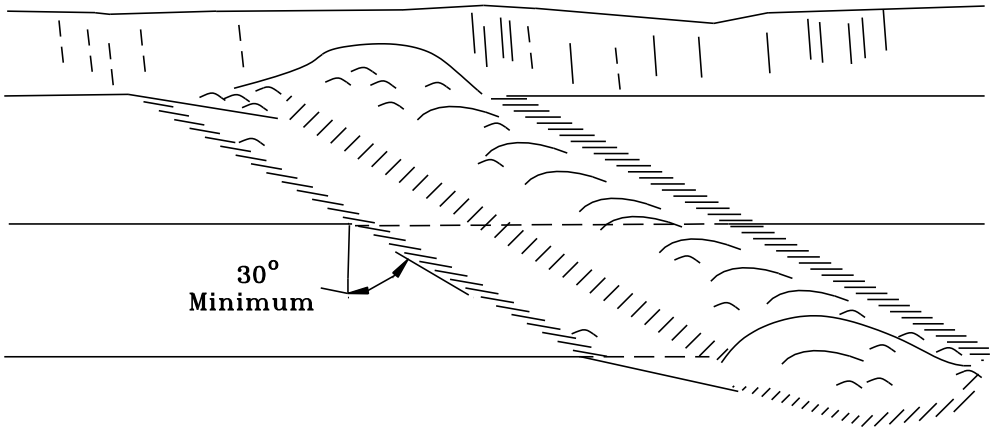
PLAN VIEW

Date: 10/6/09
Scale : NONE
Page : 1 of 1

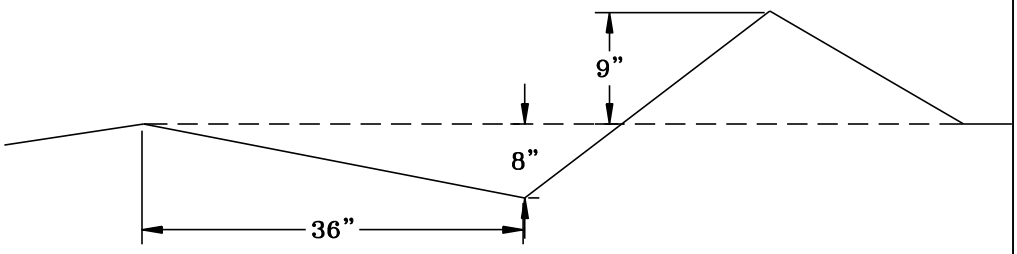
WASHINGTON STATE DEPARTMENT OF
Natural Resources
SPS Region

Drivable Water Bar Detail

Cross Ditch



Cross Section at Centerline



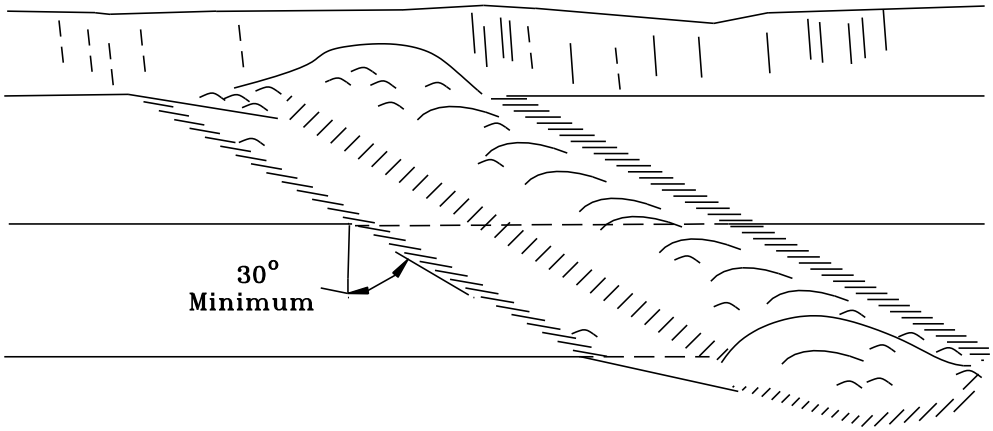
Date:
Scale : None
App#
Drawn by: M.A.D.

Water Bar Detail

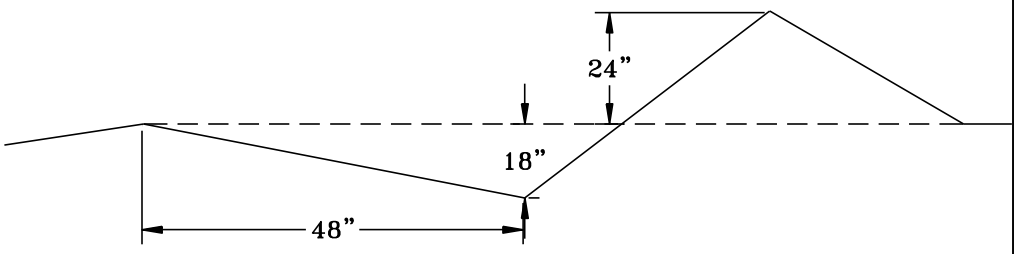
WASHINGTON STATE DEPARTMENT OF
Natural Resources
SPS Region

Non-Drivable Water Bar Detail

Cross Ditch



Cross Section at Centerline

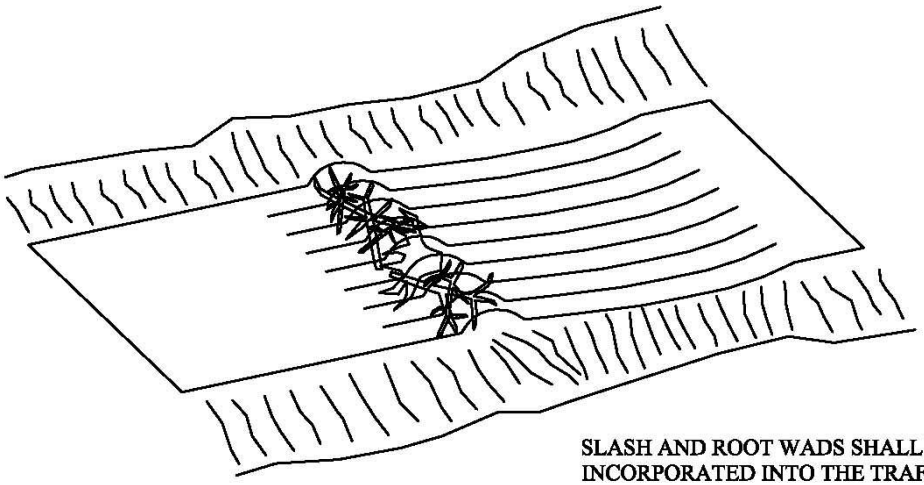


Date:
Scale : None
App#
Drawn by: M.A.D.

Water Bar Detail

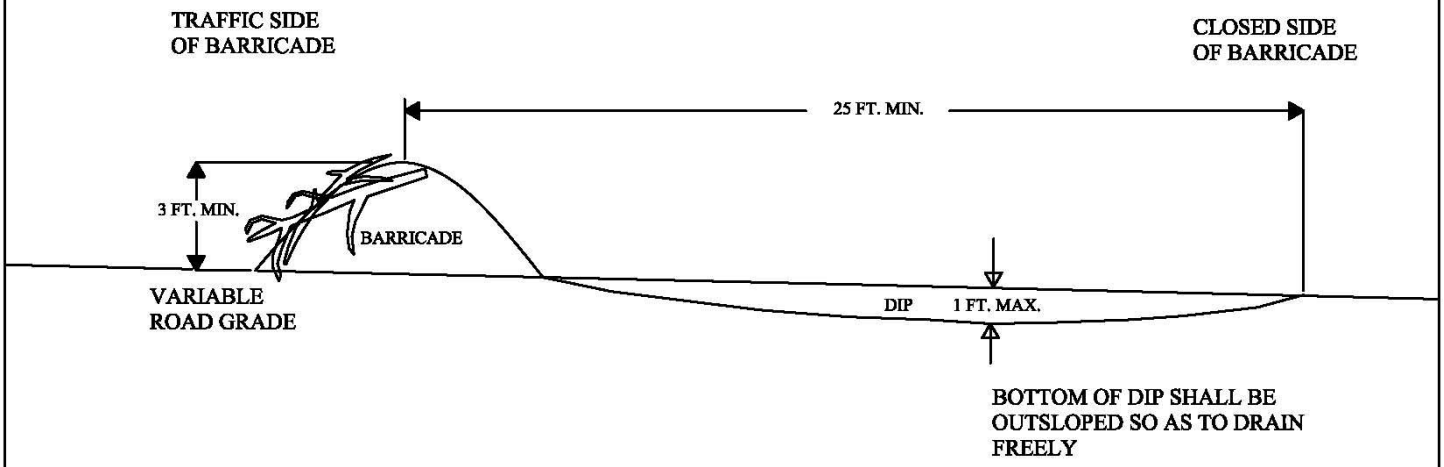
WASHINGTON STATE DEPARTMENT OF
Natural Resources
SPS Region

BARRICADE DETAIL



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

PLAN VIEW



PROFILE VIEW

DEPARTMENT OF NATURAL RESOURCES - SOUTH PUGET SOUND REGION

FORM 9-87(Rev. 01-09)

Road Development Cost Estimate

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

REGION: South Puget Sound
DISTRICT: Hood Canal

SALE/PROJECT NAME: Trap Door
CONTRACT NUMBER: 30-091844
LEGAL DESCRIPTION: Sec 2, 15 & 16 T24N R03W

ROAD NUMBER:	2530ext	Spur1-6		2510	2530	2530ext
ROAD STANDARD:		Construction	Reconstruction	Pre / Post-haul maintenance		
NUMBER OF STATIONS:		110.34	0.00	585.90		
SIDESLOPE:		30-82%	0	0		
CLEARING AND GRUBBING:		$24,914	$0			
EXCAVATION AND FILL:		$101,723	$0			
MISC. MAINTENANCE:				$3,545		
ROCK TOTALS (Cu. Yds.):						
Required Ballast:	4726	$40,653	$0	$9,424		
Optional Ballast:	2340	$27,802	$0	$0		
Quarry Spalls:	34	$336	$0	$0		
CULVERTS AND FLUMES:		$30,228	$0	$8,009		
STRUCTURES:		$0	$0	$413		
GENERAL EXPENSES:		$18,052	$0	$1,925		
MOBILIZATION:		$5,975	$0	$5,975		
TOTAL COSTS:		$249,682	$0	$29,291		
COST PER STATION:		$2,263	$0	$50		

ROAD DEACTIVATION AND ABANDONMENT COSTS: $4,577

NOTE[1]: This appraisal has no allowance for profit and risk.
NOTE[2]: This appraisal does not account for optional rock.

TOTAL (All Roads) = $283,551

SALE VOLUME MBF = 5,339

TOTAL COST PER MBF = $53.11

Date: 06/01/15

SPS REGION - ROAD COST ESTIMATE - CONSTRUCTION

SALE NAME: Trap Door

CONTRACT NUMBER: 30-091844

I. CLEARING AND GRUBBING:

Flat Rate -	% Side Slope	MBF/ac	Disposal Factor	Production Factor	Cost/ Station	Width Factor	Total Stations	Sub Total
2530ext	65	20	1.00	5.67	$50	1.00	55.92	$15,853
Spur1-6	30	20	1.00	3.33	$50	1.00	54.42	$9,061
			1.00	1.00	$50	1.00		$0
			1.00	1.00	$42	0.80		$0
			1.00	1.00	$42	0.80		$0

Clear and Grub TOTAL = $24,914

II. EXCAVATION:

Flat Rate -	% Side Slope	Exc. Type Fact.	Production Factor	Cost/ Station	Width Factor	Total Stations	Sub Total
2530ext	65	1.0	10.00	$100	1.00	55.92	$55,920
Spur1-6	30	1.0	2.50	$100	0.50	54.42	$6,803
	0	1.0	1.00	$78	0.50	0.00	$0
	0	1.0	1.00	$78	0.50	0.00	$0
	0	1.0	1.00	$78	0.50	0.00	$0

*End Haul, Over Haul, Large Fills/Cuts	Estimated Vol. (cy)	No. of Equip. Days	Cost/day	Sub Total
End Haul/ Over Haul	20000	15	$1,600	$24,000
Large Fills/ Cuts		15	$1,000	$15,000

Excavation TOTAL = $101,723

III. BALLAST AND SURFACING :

Ballast source: 2510 Pit
Surface source:
Riprap source :

UNIT COSTS	Ballast	Surfacing	Riprap
Drill & Shoot	$3.75	$3.75	$3.75
Dig and load	$1.50	$1.50	$1.50
Crushing			
Purchase			
Haul *	$2.50	$3.83	$2.50
Spread	$1.36	$1.36	$1.36
Compact	$0.51	$0.51	
Strip			
Reclamation			
Use tax	$0.09	$0.09	$0.09
TOTAL ($/cy)	$10.44	$11.88	$9.88

Description	cu.yds/sta	x stations	= cubic yards
Ballast (4"-)	65	59.92	3,895
Surfacing (2 1/2"-)	43	54.42	2,340
Riprap	34	1.00	34

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

R.T. Miles =	2.5	6.5						
Ave. Speed =	25	25	Ballast (4"-)	3895	Cu. yds @	$10.44	/cu. yd =	$40,653
Delay (Hrs.)=	0.2	0.2	Surfacing (2 1/2	2340	Cu. yds @	$11.88	/cu. yd =	$27,802
Cost / Hour =	$100.00	$100.00	Riprap	34	Cu. yds @	$9.88	/cu. yd =	$336
CY / Load =	12	12						

Rock total = $68,790

IV. CULVERTS AND FLUMES:

Description	Qty.	Gauge	Diameter	No/Length	Installed Cost/ft	Sub-total
18"PD	1			1112	$19.96	$22,196
24"PD	1			252	$29.89	$7,532
30"PD					$40.30	$0
36"PD					$43.30	$0
48"PD					$58.30	$0
Bands & Gaskets	20			1	$25.00	$500

Geotextile 0.08-0.12/ft^2 (purchase only)

Culvert total = $30,228

V. STRUCTURES

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

Structure total = $0

Sub-TOTAL = $225,655

VI. GENERAL EXPENSES:

Overhead & General Exp. Add 8% $18,052

VII. MOBILIZATION:

* Move in costs are averaged over all three sheets.

Description	$ per Move	# of Moves	Sub-total
Dump Trucks	$100	3	$300
Grader	$400	2	$800
Compactor	$450	3	$1,350
Excavator	$500	3	$1,500
Dozer D8)	$1,000		$0
Front end loader	$400		$0
Rock crusher	$4,000	1	$4,000
Drill	$800	3	$2,400
Dozer (D5)	$800	2	$1,600

Total Mobilization = $11,950 Mobilization sub-total = $5,975

Road No. 2530ext Spur1-6
Standard: Construction
Stations: 110.34

SHEET TOTAL = $249,682

By:

Date: 06/01/15

SPS REGION - ROAD COST ESTIMATE - RECONSTRUCTION

SALE NAME: Trap Door

CONTRACT NUMBER: 30-091844

I. CLEARING AND GRUBBING:

Flat Rate -	% Side Slope	MBF/ac	Disposal Factor	Production Factor	Cost/ Station	Width Factor	Total Stations	Sub Total
			1.00	1.00	$40	1		$0
			1.00	1.00	$40	1		$0
			1.00	1.00	$40	1		$0
			1.00	1.00	$40	1		$0
			1.00	1.00	$40	1		$0

Clear and Grub TOTAL = $0

II. EXCAVATION:

Flat Rate -	% Side Slope	Exc. Type Fact.	Production Factor	Cost/ Station	Width Factor	Total Stations	Sub Total
	0	1.0	1.00	$88	1.00	0.00	$0
	0	1.0	1.00	$88	1.00	0.00	$0
	0	1.0	1.00	$88	1.00	0.00	$0
	0	1.0	1.00	$88	1.00	0.00	$0
	0	1.0	1.00	$88	1.00	0.00	$0

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

Excavation TOTAL = $0

III. BALLAST AND SURFACING :

Ballast source:
Surface source:
Riprap source :

Description	cu.yds/sta x stations =	cubic yards
Ballast (4"-)		0
Surfacing (2 1/2"-)		0
Riprap		0

UNIT COSTS	Ballast	Surfacing	Riprap
Drill & Shoot			
Dig and load			
Crushing			
Purchase			
Haul *	$3.33	$3.33	$3.33
Spread			
Compact			
Strip			
Reclamation			
Use tax	$0.09	$0.09	$0.09
TOTAL ($/cy)	$3.61	$3.61	$3.61

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

R.T. Miles =	5.0
Ave. Speed =	25
Delay (Hrs.)=	0.2
Cost / Hour =	$100.00
CY / Load =	12

Ballast (4"-)	0	Cu. yds @	$3.61	/cu. yd =	$0
Surfacing (2 1/2	0	Cu. yds @	$3.61	/cu. yd =	$0
Riprap	0	Cu. yds @	$3.61	/cu. yd =	$0

Rock total = $0

IV. CULVERTS AND FLUMES:

Description	Qty.	Gauge	Diameter (in.)	No/Length (ft)	Installed Cost/ft	Sub-total
18"PD					$19.96	$0
24"PD					$29.89	$0
30"PD					$40.30	$0
36"PD					$43.30	$0
48"PD					$58.30	$0
Bands & Gaskets						$0

Culvert total = $0

V. STRUCTURES

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

Structure total = $0

Sub-TOTAL = $0

VI. GENERAL EXPENSES:

Overhead & General Exp. Add 12% $0

VII. MOBILIZATION:

* Move in costs are averaged over all three sheets.

Description	$ per Move	# of Moves	Sub-total
Dump Trucks	$100	3	$300
Grader	$400	2	$800
Compactor	$450	3	$1,350
Excavator	$500	3	$1,500
Dozer D8)	$1,000	0	$0
Front end loader	$400	0	$0
Rock crusher	$4,000	1	$4,000
Drill	$800	1	$800
Dozer (D5)	$800	2	$1,600

Total Mobilization = $10,350

Mobilization sub-total = $0

Road No.
Standard: Reconstruction
Stations: 0.00

SHEET TOTAL = $0

By:

Date: 06/01/15

SPS REGION - ROAD COST ESTIMATE - PRE-HAUL MAINTENANCE

SALE NAME: Trap Door

CONTRACT NUMBER: 30-091844

Total stations Pre-Haul Maintenance = 585.90

I. MISC. MAINTENANCE ITEMS:

	Cost/ Station	Total Stations	Sub Total
mechanical brushing =	20.00		$0
hand brushing =	12.00		$0
ditch cleaning =	35.00		$0
grading =	6.00	585.90	$3,515
culvert cleanout =	15.00		$0
lock box =	700		$0
water barring =	30.00	1	$30
			$0
			$0
			$0
			$0
			$0
			$0
			$0
			$0

Misc TOTAL = $3,545

III. BALLAST AND SURFACING :

Ballast source: 2510 Pit
Surface source:
Riprap source :

UNIT COSTS	Ballast	Surfacing	Riprap
Drill & Shoot	$3.75		
Dig and load	$1.50		
Crushing			
Purchase			
Haul *	$3.33	$3.33	$3.33
Spread	$1.36		
Compact	$0.51		
Strip			
Reclamation			
Use tax	$0.09	$0.09	$0.09
TOTAL ($/cy)	$11.34	$3.61	$3.61

Description	cu.yds/sta	x stations	= cubic yards
Ballast (4"-)	43	19.33	831
Surfacing (2 1/2"-)			0
Riprap			

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

R.T. Miles =	5.0
Ave. Speed =	25
Delay (Hrs.)=	0.2
Cost / Hour =	$100.00
CY / Load =	12

Ballast (4"-)	831	Cu. yds @	$11.34	/cu. yd =	$9,424
Surfacing (2 1/2	0	Cu. yds @	$3.61	/cu. yd =	$0
Riprap	0	Cu. yds @	$3.61	/cu. yd =	$0

Rock total = $9,424

IV. CULVERTS AND FLUMES:

Description	Qty.	Gauge	Diameter (in.)	No/Length (ft)	Installed Cost/ft	Sub-total
18"PD	1			400	$19.96	$7,984
24"PD					$29.89	$0
30"PD					$40.30	$0
36"PD					$43.30	$0
48"PD					$58.30	$0
Bands & Gaskets	1				25	$25

Culvert total = $8,009

V. STRUCTURES

Description	Type	Width	Length	Cost/ft.	Sub-total
Silt fence Maintenance			1,650	$0	$413
					$0
					$0

Structure total = $413

Sub-TOTAL = $21,391

VI. GENERAL EXPENSES: Overhead & General Exp. Add 9% $1,925

VII. MOBILIZATION:

* Move in costs are averaged over all three sheets.

Description	$ per Move	# of Moves	Sub-total
Dump Trucks	$100	3	$300
Grader	$400	2	$800
Compactor	$450	3	$1,350
Excavator	$500	3	$1,500
Dozer D8)	$1,000	0	$0
Front end loader	$400	0	$0
Rock crusher	$4,000	1	$4,000
Drill	$800	3	$2,400
Dozer (D5)	$800	2	$1,600

Total Mobilization = $11,950 Mobilization sub-total = $5,975

Road No. 2510 2530 2530ext
Standard: Pre / Post-haul maintenance
Stations: 585.90

SHEET TOTAL = $29,291

By: Sheet 4 of 5 Date: 06/01/15

SPS REGION - ROAD COST ESTIMATE - ROAD CLOSURE

SALE NAME: Trap Door

CONTRACT NUMBER: 30-091844

Total stations Road Closure = 54.42

I. MISC. ROAD CLOSURE COSTS:

	Cost/ Station	Total Stations	Sub Total
water barring =	30.00	54.42	$1,633
ripping =	20.00		$0
culvert removal =	35.00	25.00	$875
sidecast pullback =	50.00		$0
grass seeding =	25.00		$0
barricade =	40.00	6.00	$240
slash/ROW debris =	60.00		$0
			$0
			$0
			$0
			$0
			$0
			$0
			$0
			$0
			$0

Misc TOTAL = $2,748

VI. GENERAL EXPENSES:

Overhead & General Exp. Add 12% $330

VII. MOBILIZATION:

* These move in costs are separate since they will occur after logging is done

Description	$ per Move	# of Moves	Sub-total
Dump Trucks	100	1	$100
Grader	400	1	$400
Compactor	450		$0
Excavator	500	2	$1,000
Dozer D8)	1,000		$0
Front end loader	400		$0
Rock crusher	$4,000		$0
Dozer (D5)	$800		$0

Total Mobilization = $1,500

Road No. Spurs 1-6
Standard: Road Closure
Stations: 54.42

SHEET TOTAL = $4,577

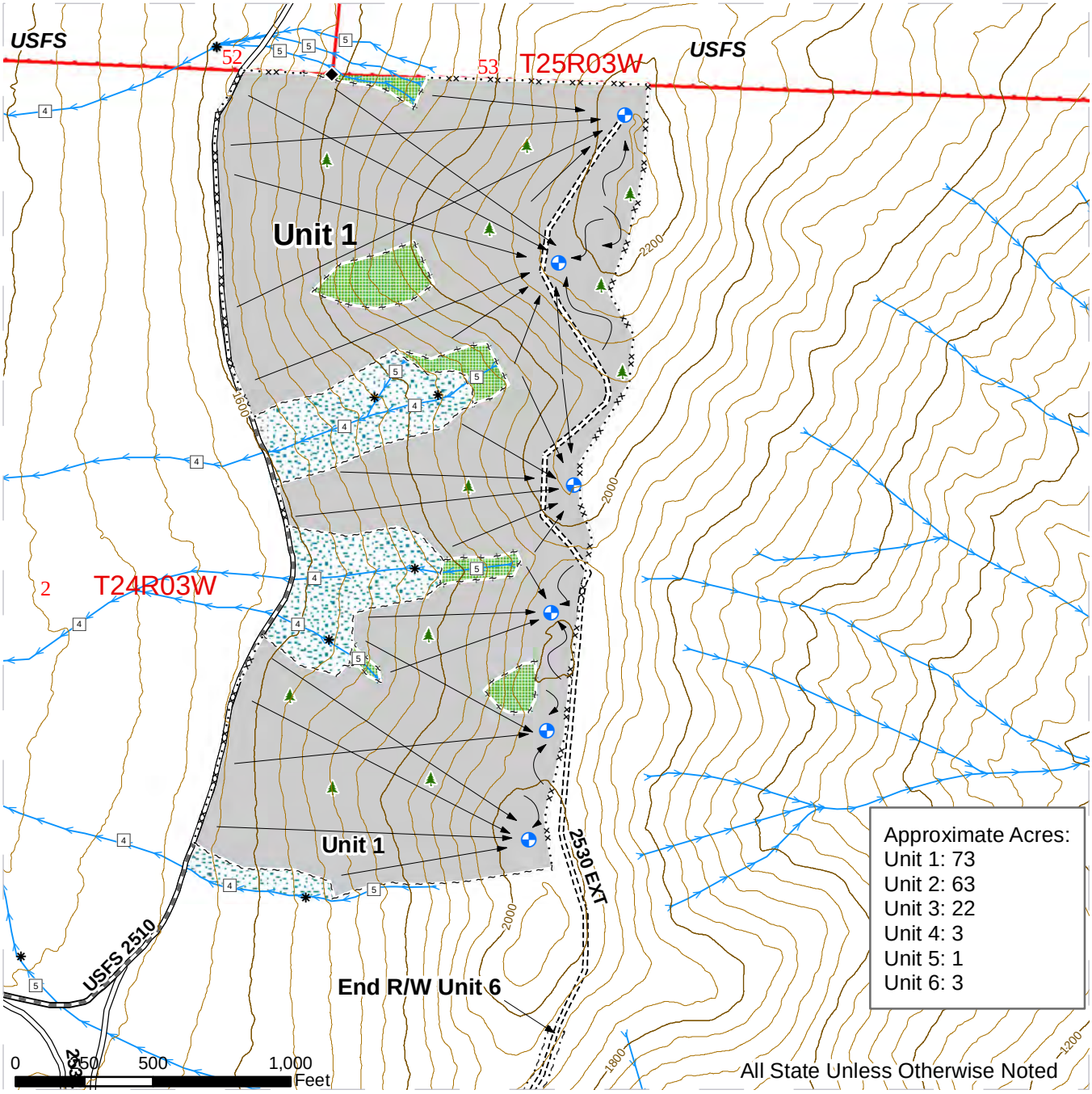
By:

Date: 06/01/15

LOGGING PLAN MAP

SALE NAME: TRAP DOOR VRH & VDT
AGREEMENT#: 30-091844
TOWNSHIP(S): T24R03W
TRUST(S): State Forest Transfer(1), Common School and Indemnity(3), Capitol Grant(7)

REGION: South Puget Sound Region
COUNTY(S): MASON
ELEVATION RGE: 659-2246



- Variable Retention Harvest
- WMZ Thinning
- Riparian Mgt Zone
- Leave Tree Area
- Forested Wetland
- Optional Construction
- Required Construction
- Required Pre-Haul Maintenance
- Existing Road
- Streams
- Public Land Survey Sections
- Public Land Survey Townships
- DNR Managed Lands
- Stream Type
- Stream Type Break
- Monumented Corners
- Leave Trees
- Sale Boundary Tags
- Pink Flagging
- Leave Tree Tags
- Landings
- Contours 40 ft
- Ground Based Yarding
- Cable Based Yarding
- Right of Way Tags

N

Prepared By: cbgs490

Creation Date: 5/26/2015

Modification Date: 5/26/2015
kfry490 - 10/13/2015

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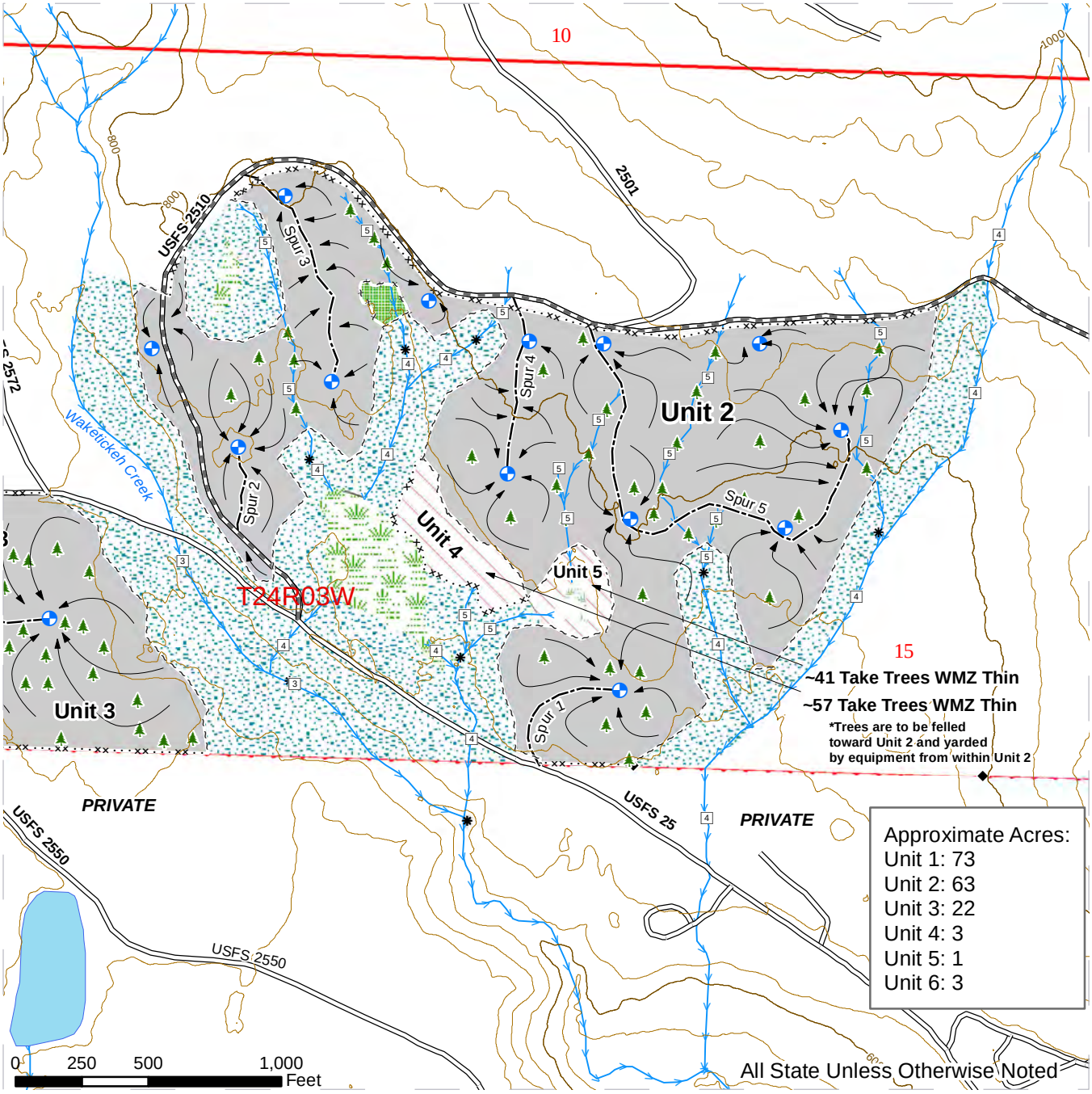

Variable Retention Harvest	Streams	Sale Boundary Tags
WMZ Thinning	Public Land Survey Sections	Pink Flagging
Riparian Mgt Zone	Public Land Survey Townships	Leave Tree Tags
Leave Tree Area	DNR Managed Lands	Landings
Forested Wetland	Stream Type	Contours 40 ft
Optional Construction	Stream Type Break	Ground Based Yarding
Required Construction	Monumented Corners	Cable Based Yarding
Required Pre-Haul Maintenance	Leave Trees	Right of Way Tags
Existing Road		

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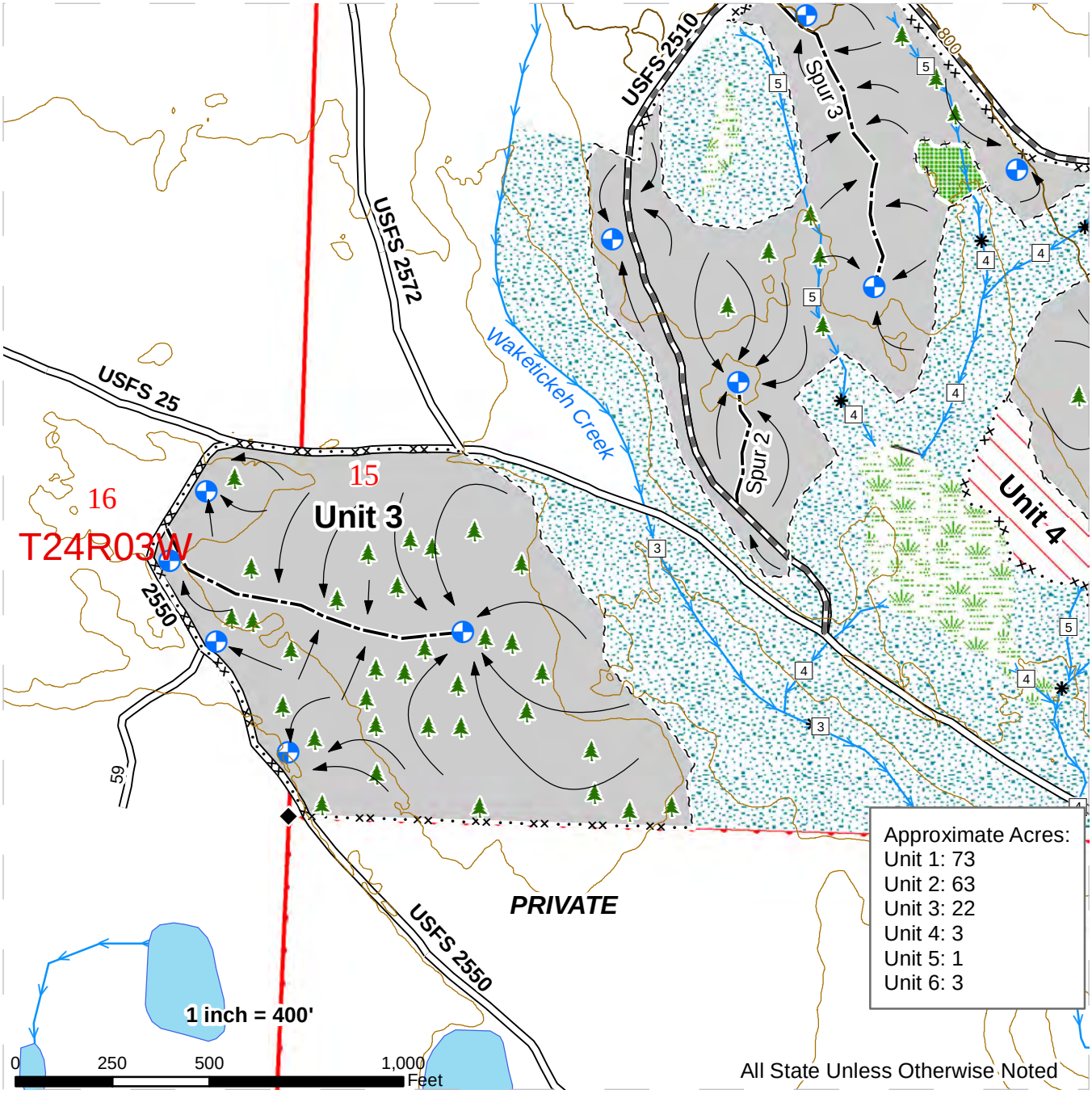

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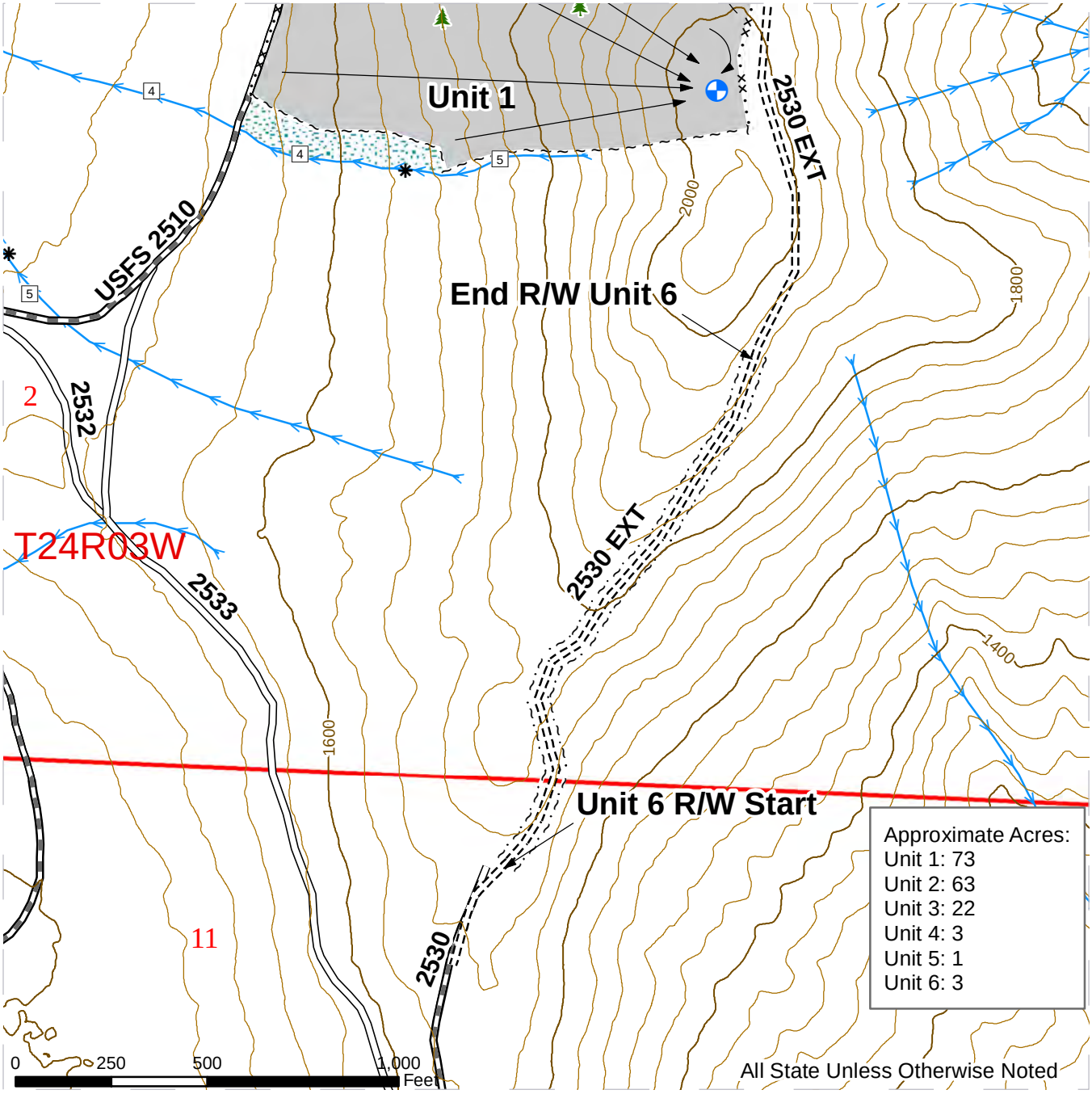

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