

Washington DNR Timber Sales Program

Updated information is being provided for **Foot Trail** timber sale documents as follows:

Documents amended:

Brief Description	DATE	Initials
Harvest Method: Ground Base 56% Cable 44%	3/18/2020	kp

Commented [t1]: This word should be changed to reflect if a document is being:
1.added,
2.amended, or
3.deleted



TIMBER NOTICE OF SALE

SALE NAME: FOOT TRAIL

AGREEMENT NO: 30-97642

AUCTION: March 25, 2020 starting at 10:00 a.m.,
Olympic Region Office, Forks, WA

COUNTY: Clallam

SALE LOCATION: Sale located approximately 4 miles south of Port Angeles, WA

**PRODUCTS SOLD
AND SALE AREA:**

All timber except trees marked with a band of blue paint or bounded out by leave tree area tags and all downed red cedar or any timber that has been on the ground for 5 years or more (5 years is defined by more than 1.5 inches of sap rot), bounded by timber sale boundary tags in Unit 1 and Unit 4; timber sale boundary tags and distinct timber type change in Unit 2; timber sale boundary tags and the PA-H-1020, PA-H-1021 and the PA-H-1051 in Unit 3; all timber bounded by right of way boundary tags on part(s) of Sections 29, 31, 32 and 34 all in Township 30 North, Range 6 West, W.M., containing 232 acres, more or less.

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

ESTIMATED SALE VOLUMES AND QUALITY:

Species	Avg DBH	Ring Count	Total MBF	MBF by Grade								
				1P	2P	3P	SM	1S	2S	3S	4S	UT
Douglas fir	15.2	7	5,277						1,956	2,455	838	28
Hemlock	12.3		721						85	463	127	46
Red cedar	13		345							209	136	
Maple	14.9		69						11	34	24	
Red alder	13		61							44	17	
Sale Total			6,473									

MINIMUM BID: \$1,269,000.00

BID METHOD: Sealed Bids

PERFORMANCE

SECURITY: \$100,000.00

SALE TYPE: Lump Sum

EXPIRATION DATE: October 31, 2022

ALLOCATION: Export Restricted

BID DEPOSIT: \$126,900.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: 56% ground, 44% cable. 30' Equipment limitation zones on all typed water unless approved by the Contract Administrator. Tracked skidders are limited to D-5 or smaller. No rubber tired skidders unless approved by the State. Designated crossings are to be approved by the Contract Administrator. On areas mapped as "Cable" shovels and feller-bunchers with self-leveling cabs are allowed on slopes up to 60%.

Timber haul will not be permitted from November 1 to April 30, on weekends or State recognized holidays, or from 8:00 p.m and 6:00 a.m., unless authorized in writing by the Contract Administrator. Falling and Yarding will not be permitted from November 1 to April 30 unless authorized in writing by the Contract Administrator on weekends or State



TIMBER NOTICE OF SALE

recognized holidays, or from 8:00 p.m. to 6:00 a.m., unless authorized in writing by the Contract Administrator.

ROADS: 105.60 stations of required construction. 14.25 stations of required reconstruction. 48.25 stations of optional construction. 1.30 stations of optional reconstruction. 15.40 stations of required decommissioning. 176.95 stations of required maintenance. 19.30 stations of optional maintenance. Road construction, reconstruction, maintenance and rock haul will not be permitted on the PA-H-500 from ST 36+65-77+60, the PA-H-540 and the PA-H-550 from November 1 through April 30, on weekends or State recognized holidays or from 8:00 p.m. to 6:00 a.m. unless authorized in writing by the Contract Administrator. The hauling of forest products will not be permitted from November 1 to April 30 unless authorized in writing by the Contract Administrator.

ACREAGE DETERMINATION

CRUISE METHOD: Sale area was 100% GPS'd. Sale units were cruised using a variable plot sample.

FEES: \$110,041.00 is due on day of sale. \$9.00 per MBF is due upon removal. These are in addition to the bid price.

SPECIAL REMARKS: There are locked gates on the PA-H-1000 and the PA-H-1050 - contact the Olympic Region Dispatch Center at 360-374-2811 to obtain an AA-1 key.

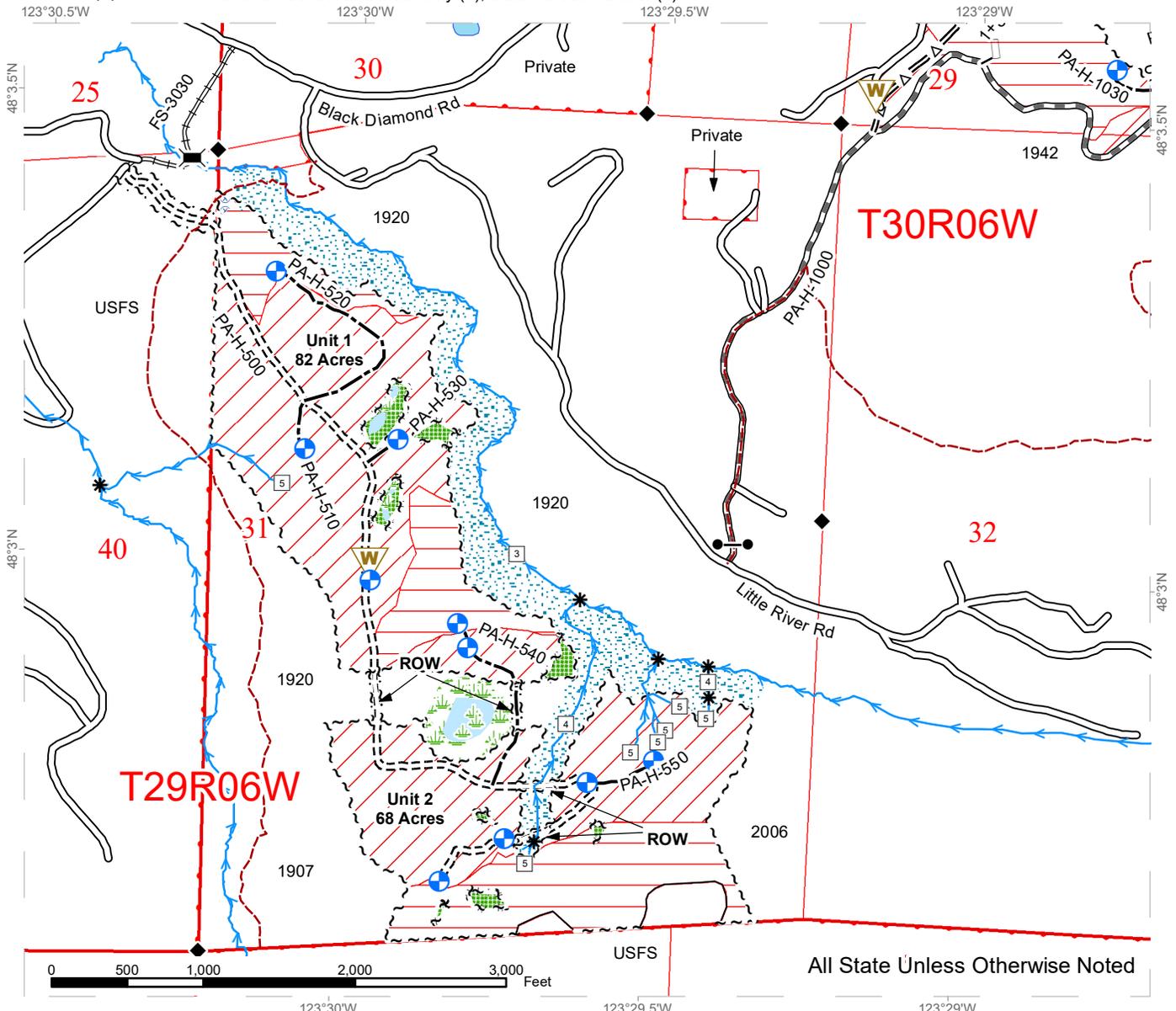
No haul will be allowed through the Lake Dawn community.

Purchaser shall provide and construct bridge, see road plan for details.

TIMBER SALE MAP

SALE NAME: FOOT TRAIL
AGREEMENT #: 30-097642
TOWNSHIP(S): T30R6W
TRUST(S): Common School and Indemnity (3), State Forest Transfer (1)

REGION: Olympic Region
COUNTY(S): Clallam
ELEVATION RGE: 1,000-2,640'



All State Unless Otherwise Noted

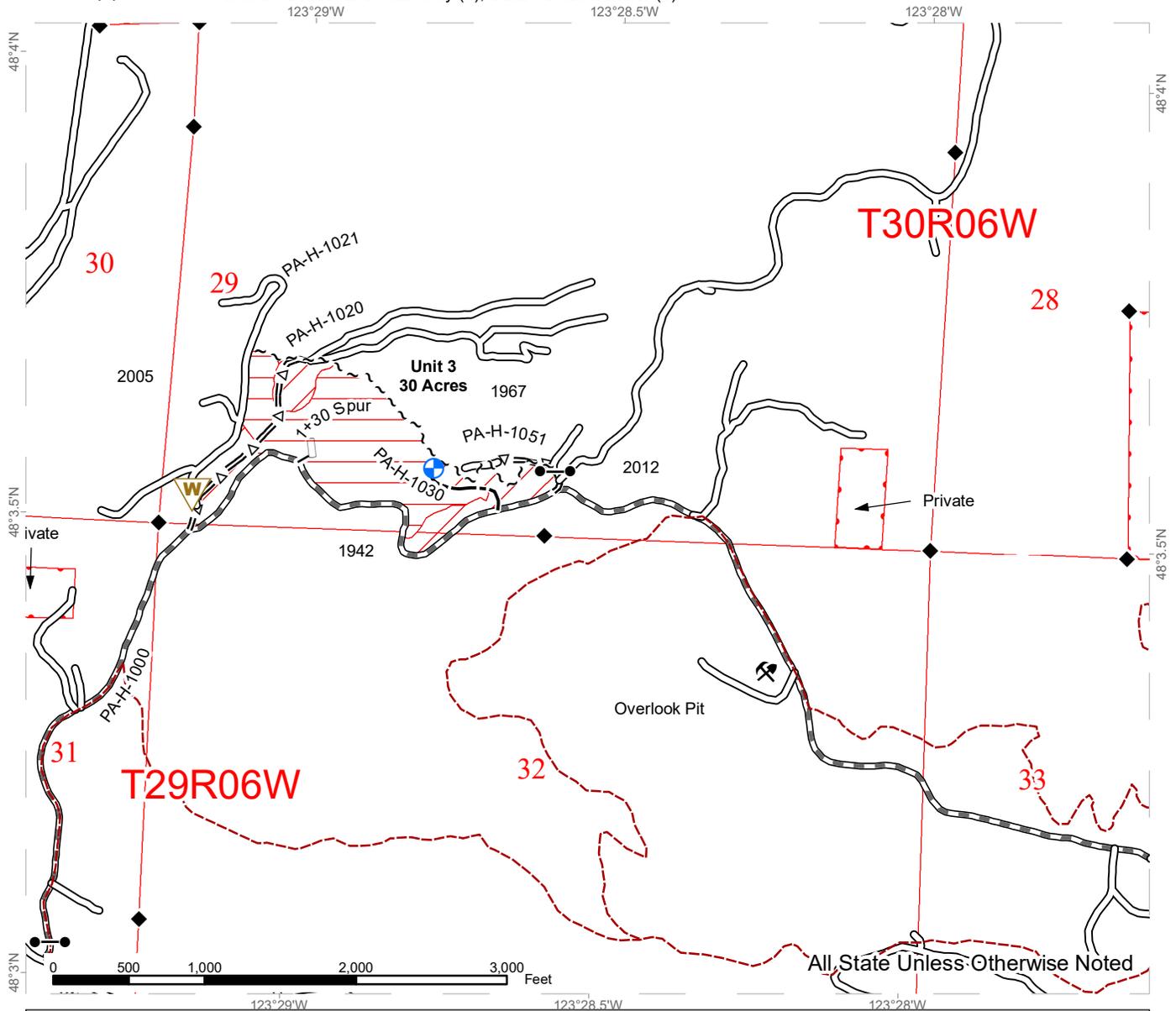
Ground	Leave Tree Tags	Survey Monument
Cable	Right of Way Tags	Stream Type
Riparian Mgt Zone	Right of Way Tags	Stream Type Break
Hazard Abatement Area	Timber Type Change	Bridge Installation
Leave Tree Area	Existing Roads	Gate (AA-1 Lock)
Non-Forested Wetland	Optional Construction	Landing
Wetland Mgt Zone	Optional Pre-haul Maintenance	Waste Area
Open Water	Optional Reconstruction	
Recreation Trail	Required Construction	
Streams	Required Pre-haul Maintenance	
Sale Boundary Tags	Required Reconstruction	



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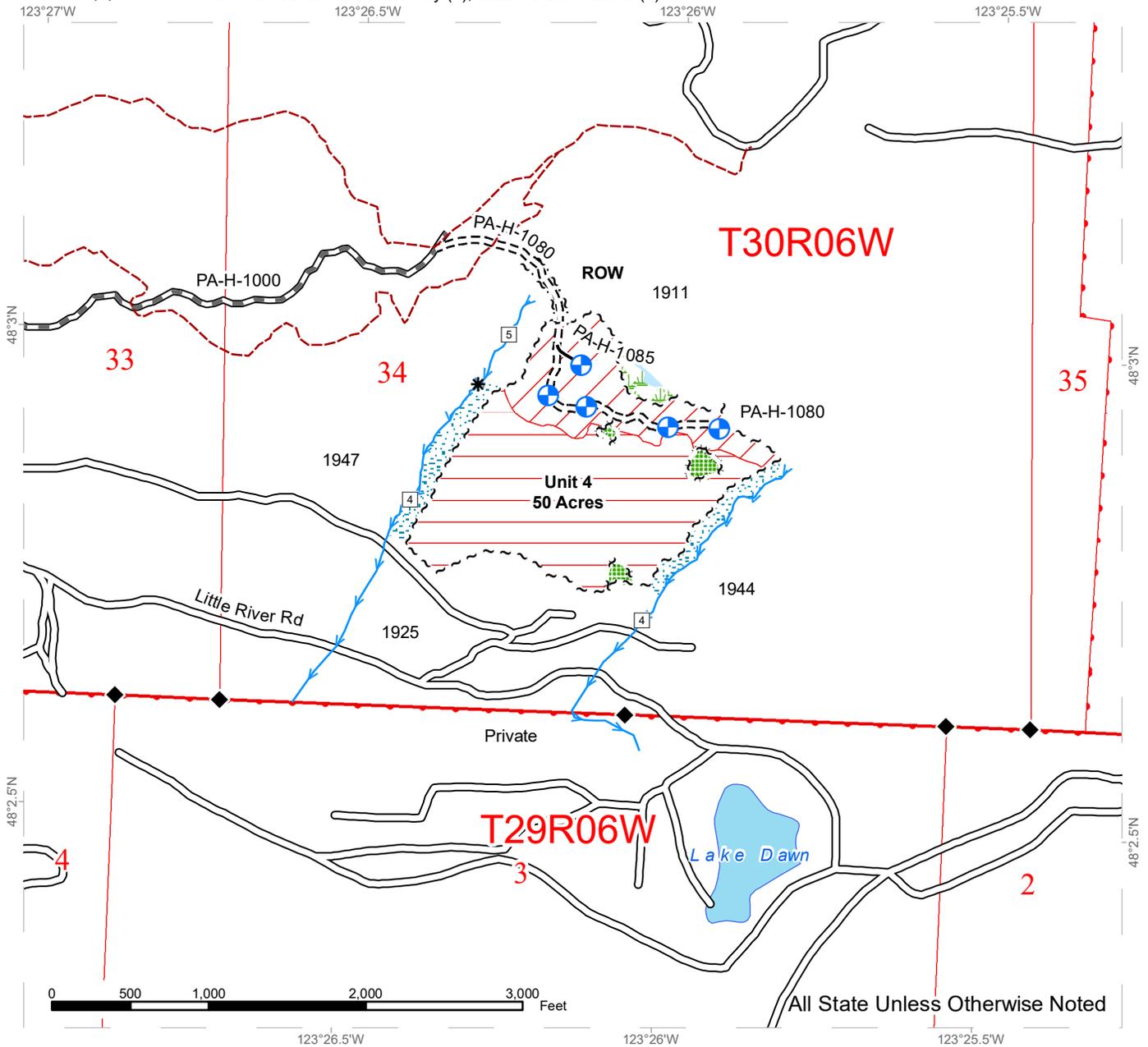
Ground	Survey Monument
Cable	Stream Type
Recreation Trail	Stream Type Break
Sale Boundary Tags	Gate (AA-1 Lock)
Existing Roads	Rock Pit
Optional Construction	Landing
Optional Pre-haul Maintenance	Waste Area
Optional Reconstruction	
Required Pre-haul Maintenance	



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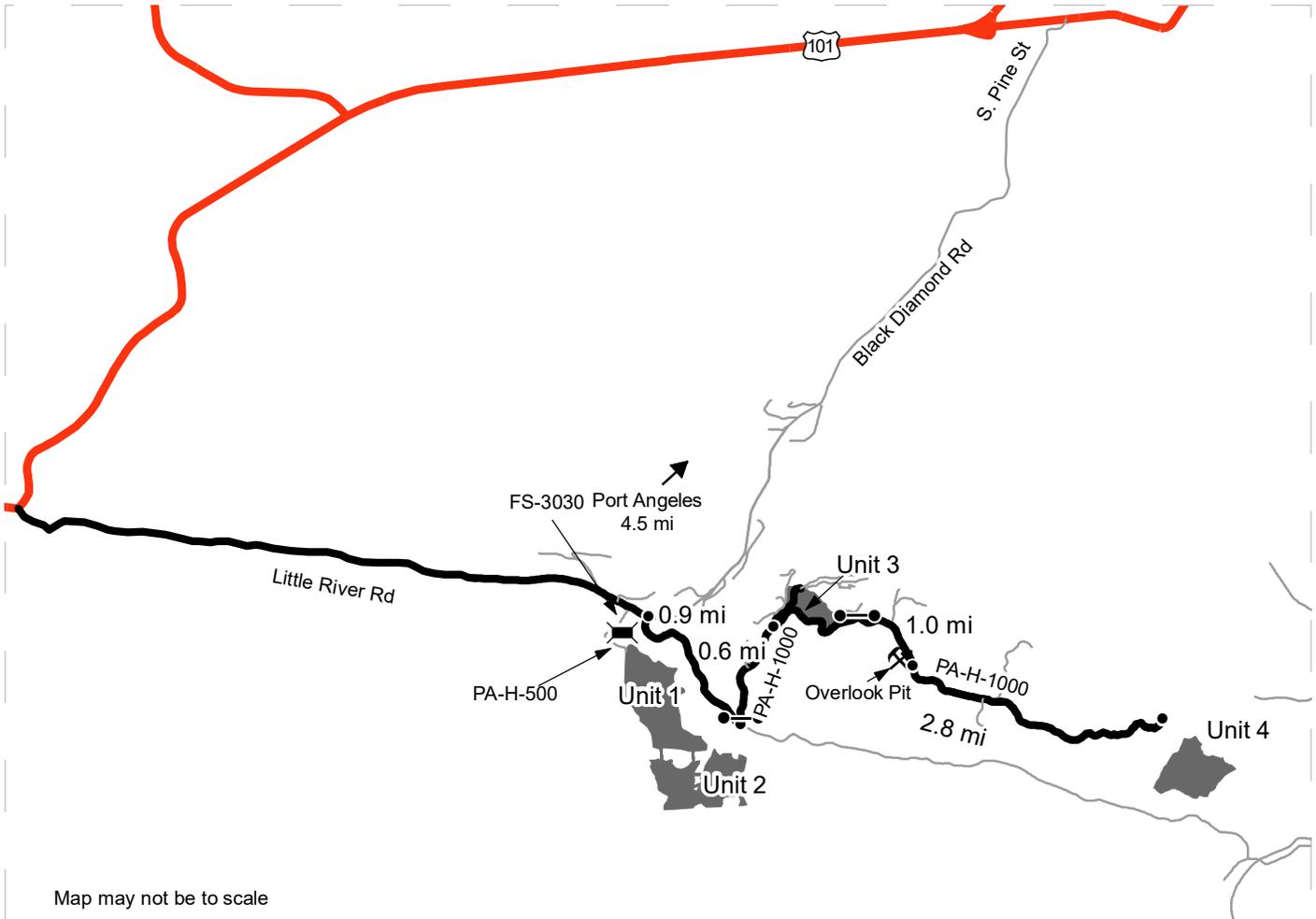
	Ground		Leave Tree Tags		Stream Type
	Cable		Right of Way Tags		Stream Type Break
	Riparian Mgt Zone		Existing Roads		Survey Monument
	Leave Tree Area		Optional Construction		Landing
	Non-Forested Wetland		Required Construction		
	Wetland Mgt Zone		Required Pre-haul Maintenance		
	Open Water				
	Recreation Trail				
	Streams				
	Sale Boundary Tags				



DRIVING MAP

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AGREEMENT#: 30-097642
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REGION: Olympic Region
COUNTY(S): Clallam
ELEVATION RGE: 1,000-2,640'



Map may not be to scale

	Timber Sale Unit
	Haul Route
	Road
	Bridge Installation
	Distance Indicator
	Gate
	Rock Pit

DRIVING DIRECTIONS:

All Units:
 From Hwy 101, turn right (N) onto S. Pine St. Turn left (SW) onto S. Pine St, which becomes Black Diamond Rd. Drive 4.5 miles on Black Diamond Rd, then turn left (SW) onto Little River Rd.

Unit 1:
 Unit 1 is due south of the intersection of Black Diamond Rd and Little River Rd. To access the unit on foot, park at the Little River Trailhead, on Little River Rd near the junction, and cross the river via the trail.

Unit 2:
 For direct access to Unit 2, drive southeast on Little River Rd for 0.9 miles from the intersection with Black Diamond Rd. To reach the unit by foot, park at a turnout near the junction with Rd PA-H-1000 and head southwest, crossing Little River. Alternatively, Unit 2 can be reached indirectly via the Little River Trail (see above).

Unit 3 & Overlook Pit:
 To access Unit 3, continue on Little River Rd 0.9 miles (SE) from its intersection with Black Diamond Rd and turn left (N) onto the PA-H-1000. Proceed through the gate (AA-1 key required) and drive 0.6 miles to reach the southwest edge of the unit. Continue 1.0 mile to access Overlook Pit.

Unit 4:
 To access Unit 4 from the north, drive Little River Rd for 0.9 miles (SE) from the intersection with Black Diamond Rd, then turn left (N) onto Rd PA-H-1000. Proceed through the gate (AA1 key required), and drive 3.8 miles (past Unit 3) to road end.



**STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES**

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

Export Restricted Lump Sum AGREEMENT NO. 30-097642

SALE NAME: FOOT TRAIL

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

Section G: General Terms

G-001 Definitions

The following definitions apply throughout this contract;

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

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

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

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

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

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

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

G-011 Right to Remove Forest Products and Contract Area

Purchaser was the successful bidder on March 25, 2020 and the sale was confirmed on _____. The State, as owner, agrees to sell to Purchaser, and Purchaser agrees to purchase as much of the following forest products as can be cut and removed during the term of this contract: All timber except trees marked with a band of blue paint or bounded out by leave tree area tags and all downed red cedar or any timber that has been on the ground for 5 years or more (5 years is defined by more than 1.5 inches of sap rot), bounded by timber sale boundary tags in Unit 1 and Unit 4; timber sale boundary tags and distinct timber type change in Unit 2; timber sale boundary tags and the PA-H-1020, PA-H-1021 and the PA-H-1051 in Unit 3; all timber bounded by right of way boundary tags, located on approximately 232 acres on part(s) of Sections 29, 31, 32, and 34 all in Township 30 North, Range 6 West W.M. in Clallam County(s) as designated on the sale area and as shown on the attached timber sale map.

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

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

G-020 Inspection By Purchaser

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

G-025 Schedules

The following attached schedules are hereby incorporated by reference:

Schedule	Title
A	Specifications for Landing Slash Piling
B	Green Tree Retention Plan
C	Biomass Removal Schedule

G-031 Contract Term

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

G-040 Contract Term Adjustment - No Payment

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

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

G-051 Contract Term Extension - Payment

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

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

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

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

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

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

- e. Payment of \$522.00 per acre per annum for the acres on which an operating release has not been issued .
- f. In no event will the extension charge be less than \$200.00.
- g. Extension payments are non-refundable.

G-053 Surveys - Sensitive, Threatened, Endangered Species

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

G-060 Exclusion of Warranties

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

- a. The MERCHANTABILITY of the forest products. The use of the term "merchantable" in any document is not intended to vary the foregoing.
- b. The CONDITION of the forest products. The forest products will be conveyed "AS IS."
- c. The ACREAGE contained within any sale area. Any acreage descriptions appearing in the timber notice of sale, timber sale contract, or other documents are estimates only, provided solely for administrative and identification purposes.
- d. The VOLUME, QUALITY, OR GRADE of the forest products. The State neither warrants nor limits the amount of timber to be harvested. The descriptions of the forest products to be conveyed are estimates only, made solely for administrative and identification purposes.

- e. The CORRECTNESS OF ANY SOIL OR SURFACE CONDITIONS, PRE-SALE CONSTRUCTION APPRAISALS, INVESTIGATIONS, AND ALL OTHER PRE-BID DOCUMENTS PREPARED BY OR FOR THE STATE. These documents have been prepared for the State's appraisal purposes only.
- f. THAT THE SALE AREA IS FREE FROM THREATENED OR ENDANGERED SPECIES or their habitat. The State is not responsible for any interference with forestry operations that result from the presence of any threatened or endangered species, or the presence of their habitat, within the sale area.
- g. THAT THE FORESTRY OPERATIONS to be performed under this contract WILL BE FREE FROM REGULATORY ACTIONS by governmental agencies. The State is not responsible for actions to enforce regulatory laws, such as the Washington Forest Practices Act (chapter 76.09 RCW), taken by the Department of Natural Resources or any other agency that may affect the operability of this timber sale.
- h. Items contained in any other documents prepared for or by the State.

G-062 Habitat Conservation Plan

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

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

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

G-063 Incidental Take Permit Notification Requirements

- a. Purchaser shall immediately notify the Contract Administrator of new locations of permit species covered by the Incidental Take Permits (ITP) that are discovered within the area covered by the State's Habitat Conservation Plan (HCP), including, but not limited to: locations of occupied murrelet habitat; spotted owl nest sites; wolves; grizzly bears; nests, communal roosts, or feeding concentrations of bald eagles; peregrine falcon nests; Columbian white-tailed deer; Aleutian Canada geese; Oregon silverspot butterflies; and additional stream reaches found to contain bull trout. Purchaser is required to notify the Contract Administrator upon discovery of any fish species found in streams or bodies of water classified as non-fish bearing. In all circumstances, notification must occur within a 24 hour time period.
- b. Upon locating any live, dead, injured, or sick specimens of any permit species covered by the ITP, Purchaser shall immediately notify the Contract Administrator. Purchaser shall notify the Contract Administrator if there is any doubt as to the identification of a discovered permit species. Purchaser may be required to take certain actions to help the Contract Administrator safeguard the well-being of any live, injured or sick specimens of any permit species discovered, until the proper disposition of such specimens can be determined by the Contract Administrator. Any such requirements will be explained to Purchaser by the Contract Administrator during the Pre-Work Conference. In all circumstances, notification must occur within a 24 hour time period.
- c. Purchaser shall refer to a specific ITP number, ITP TE812521-1 or ITP 1168 (copies which are located in the region office) in all correspondence and reports concerning permit activities.
- d. Provisions and requirements of the ITP shall be clearly presented and explained to Purchaser by Contract Administrator during the Pre-Work Conference as per contract clause G-330. All applicable provisions of the ITP and this schedule must be presented and clearly explained by Purchaser to all authorized officers, employees, contractors, or agents of Purchaser conducting authorized activities in the timber sale area. Any questions Purchaser may have about the ITP should be directed to the Contract Administrator.

G-064 Permits

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

G-065 Regulatory Disclaimer

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

G-066 Governmental Regulatory Actions

a. Risk

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

b. Sale Area

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

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

c. Adjustment of Price

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

G-070 Limitation on Damage

In the event of a breach of any provision of this contract by the State, the exclusive remedy available to Purchaser will be limited to a return of the initial deposit, unapplied payments, and credit for unamortized improvements made by Purchaser.

The State shall not be liable for any damages, whether direct, incidental or consequential.

G-080 Scope of State Advice

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

G-091 Sale Area Adjustment

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

G-101 Forest Products Not Designated

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

The pricing schedule has not been set for the sale.

G-106 Adding Naturally Damaged Forest Products

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

G-111 Title and Risk of Loss

Title to the forest products under this contract passes to the Purchaser after they are removed from the sale area, if adequate advance payment or payment security has been provided to the State under this contract. Purchaser bears all risk of loss of, or damage to, and has an insurable interest in, the forest products described in this contract from

the time the sale is confirmed under RCW 79.15.120. Breach of this contract shall have no effect on this provision.

G-116 Sustainable Forestry Initiative® (SFI) Certification

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

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

G-120 Responsibility for Work

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

G-121 Exceptions

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

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

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

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

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

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

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

G-140 Indemnity

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

G-150 Insurance

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

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

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

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

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

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

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

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

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

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

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

that include, but are not limited to, fire suppression expenses, accidental timber trespasses, and wildfire property damage with limits of not less than \$2,000,000.00 each occurrence.

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

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

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

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

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

G-160 Agents

The State's rights and duties will be exercised by the Region Manager at Forks, Washington. The Region Manager will notify Purchaser in writing who is responsible for administering the contract. The Region Manager has sole authority to waive,

modify, or amend the terms of this contract in the manner prescribed in clause G-180. No agent, employee, or representative of the State has any authority to bind the State to any affirmation, representation, or warranty concerning the forest products conveyed beyond the terms of this contract.

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

G-170 Assignment and Delegation

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

G-180 Modifications

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

G-190 Contract Complete

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

G-200 Notice

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

G-210 Violation of Contract

G-220 State Suspends Operations

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

G-210 Violation of Contract

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

State may terminate the rights of Purchaser under this contract and collect damages.

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

G-220 State Suspends Operation

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

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

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

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

G-230 Unauthorized Activity

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

G-240 Dispute Resolution

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

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

G-250 Compliance with All Laws

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

G-260 Venue

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

G-270 Equipment Left on State Land

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

G-280 Operating Release

An operating release is a written document, signed by the State and Purchaser, indicating that Purchaser has been relieved of certain rights or responsibilities with regard to the entire or a portion of the timber sales contract. Purchaser and State may agree to an operating release for this sale, or portion of this sale, prior to the contract

expiration, when all contract requirements pertaining to the release area have been satisfactorily completed. Upon issuance of a release, Purchaser's right to cut and remove forest products on the released area will terminate.

G-310 Road Use Authorization

Purchaser is authorized to use the following State roads and roads for which the State has acquired easements and road use permits; Little River Road, FS-3030, PA-H-500, PA-H-510, PA-H-520, PA-H-530, PA-H-540, PA-H-550, PA-H-1000, PA-H-1020, 1+30 Spur, PA-H-1030, PA-H-1050, PA-H-1051, PA-H-1080 and PA-H-1085. 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 PA-H-1000, PA-H-1050, FS-3030, 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:

USFS

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-440 Sanitary Facilities

Purchaser shall provide, use, and maintain portable toilets on the sale area at all times during operations under this contract.

G-450 Encumbrances

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

Easement, including the terms and provisions thereof,
For: Ditch and Flume
In Favor of: Clyde E. Shore
Disclosed by Application No.: 50-000970
Granted: 4/9/1957
Expires: Indefinite

Easement, including the terms and provisions thereof,
For: Road
In Favor of: United States Department of Agriculture
Disclosed by Application No.: 50-041347
Granted: 1/2/1934
Expires: Indefinite

Easement, including the terms and provisions thereof,
For: County Road
In Favor of: Clallam County
Disclosed by Application No.: 50-CR3197
Granted: 7/13/1983
Expires: Indefinite

Lease, including the terms and provisions thereof,
For: Special Use
In Favor of: Black Diamond Water District
Disclosed by Application No.: 60-C61862
Granted: 9/1/2015
Expires: Indefinite

No Pending Applications of Record

No Region Encumbrances of Record

Lease, including the terms and provisions thereof,

For: Minor Forest Products
In Favor of: DNR – Olympic Region
Disclosed by Application No.: 35-FPLR01
Granted: 9/16/2014
Expires: Indefinite

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 \$168,298.00. The total contract price consists of a \$0.00 contract bid price plus \$168,298.00 in fees. Fees collected shall be retained by the state unless the contract is adjusted via the G-066 clause. Purchaser shall be liable for the entire purchase price, and will not be entitled to any refunds or offsets unless expressly stated in this contract.

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

P-045 Guarantee of Payment

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

P-050 Billing Procedure

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

P-080 Payment Account Refund

Advance payments made under P-045 or P-045.2 remaining on account above the value for the charges shall be returned to Purchaser within 30 days following the final report

of charges. Refunds not made within the 30 day period will accrue interest at the interest rate, as established by WAC 332-100-030, computed on a daily basis until paid.

P-090 Performance Security

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

P-100 Performance Security Reduction

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

Section H: Harvesting Operations

H-010 Cutting and Yarding Schedule

Falling and Yarding will not be permitted from November 1 to April 30, on weekends or State recognized holidays and from 8:00 PM - 6:00 AM unless authorized in writing by the Contract Administrator.

H-013 Reserve Tree Damage Definition

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

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

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

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

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

H-016 Skid Trail Requirements

A skid trail is defined as an area that is used for more than three passes by any equipment.

Purchaser shall comply with the following during the yarding operation:

- a. A skid trail will not exceed 15 feet in width, including rub trees.
- b. Skid trails shall not cover more than 20 percent of the total acreage on one unit.
- c. Location of the skid trails must be marked by Purchaser and approved by the Contract Administrator.
- d. Except for rub trees, skid trails shall be felled and yarded prior to the felling of adjacent timber.
- e. Rub trees shall be left standing until all timber tributary to the skid trail has been removed.
- f. Excessive soil damage is not permitted. Excessive soil damage is described in clause H-017.
- g. Purchaser will not have more than two skid trails open to active skidding at any one time. All other skid trails used for skidding timber will be closed.
- h. Once a skid trail is closed, Purchaser will not reopen a skid trail unless approved in writing by the Contract Administrator.
- i. Skid trails will be water barred at the time of completion of yarding, if required by the Contract Administrator.

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

H-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-051 Branding and Painting

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

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

H-080 Snags Not to be Felled

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

H-120 Harvesting Equipment

Forest products sold under this contract shall be harvested and removed using cable and ground methods with tracked skidders limited to a D-5 or smaller. No rubber tired skidders. Authority to use other equipment or to operate outside the equipment specifications detailed above must be approved in writing by the State.

H-125 Log Suspension Requirements

Lead-end suspension is required for all yarding activities. Purchaser shall fully suspend one end of log, above ground during logging operations over streams

H-130 Hauling Schedule

The hauling of forest products will not be permitted from November 1 to April 30 on weekends and State recognized holidays, and between 8:00 PM and 6:00 AM unless authorized in writing by the Contract Administrator.

H-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

1. Purchaser must have utility and water lines located before beginning operation, road construction/reconstruction or digging next to the FS-3030 and Little River Road.
2. Purchaser shall immediately repair all gate damage resulting from operations to an equal or better condition than existed at the time of the sale.

3. While felling timber, two warning signs must be posted on the PA-H-1000 road and the PA- H-500.
4. Timber Falling Ahead or Logging Operations Ahead warning signs must be posted on the Little River Trail at the intersection of the trail and the PA-H-500.
5. Yarding equipment shall not cross live streams without an FPHP.
6. Purchaser is required to deck all right of way timber from the USFS portion of the FS-3030 and PA-H-500 road. This timber is to remain on site.
7. The Purchaser shall notify all employees and contractors working on this sale that any danger tree, marked or unmarked, may be felled. Any felled marked danger tree shall be replaced with a suitable tree of similar size and species as approved by the Contract Administrator.
8. Within shovel logged areas, in order to facilitate proper reforestation, logging debris will be dispersed as necessary to create clear, plantable spots with an 11'x11' average spacing. Planting spots will be created concurrently with yarding.
9. Weed washing required on all equipment before moving into Unit 1 and 2.
10. No haul will be allowed through the Lake Dawn Community.

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

H-190 Completion of Settings

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

H-220 Protection of Residual or Adjacent Trees

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

H-230 Tops and Limbs Outside the Sale Boundary

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

H-240 Lop and Scatter

The tops of all felled trees shall be lopped and slash scattered away from leave trees.

Section C: Construction and Maintenance

C-040 Road Plan

Road construction and associated work provisions of the Road Plan for this sale, dated 6/11/2018 are hereby made a part of this contract.

C-050 Purchaser Road Maintenance and Repair

Purchaser shall perform work at their own expense on FS-3030, PA-H-500, PA-H-510, PA-H-520, PA-H-530, PA-H-540, PA-H-550, PA-H-1000, PA-H-1020, 1+30 Spur, PA-H-1030, PA-H-1050, PA-H-1051, PA-H-1080 and PA-H-1085. All work shall be completed to the specifications detailed in the Road Plan.

C-080 Landing Locations Approved Prior to Construction

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

C-130 Dust Abatement

Purchaser shall abate dust on the USFS 3030.

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-040 Noxious Weed Control

Purchaser shall notify the Contract Administrator in advance of moving equipment onto State lands. Purchaser shall thoroughly clean all off road equipment prior to entry onto State land to remove contaminated soils and noxious weed seed. If equipment is moved from one DNR project area to another, the Contract Administrator reserves the right to require the cleaning of equipment. Equipment shall be cleaned at a location approved by the Contract Administrator.

S-050 Cessation of Operations for Low Humidity

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

S-060 Pump Truck or Pump Trailer

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

S-070 Water Supply

Purchaser shall provide, during the "closed season", a water supply with a minimum capacity of 250 gallons for rapid filling of pump trucks or trailers at a location designated by the Contract Administrator.

S-100 Stream Cleanout

Slash or debris which enters any typed water 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 30' of any typed waters unless authority is granted in writing by the Contract Administrator.

S-120 Stream Protection

No timber shall be felled into, across, or yarded through any streams.

S-130 Hazardous Materials

a. Hazardous Materials and Waste - Regulatory Compliance

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

and waste disposal. Purchaser shall be responsible for restoring the site in the event of a spill.

b. Hazardous Materials Spill Prevention

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

c. Hazardous Materials Spill Containment, Control and Cleanup

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

d. Hazardous Material Release Reporting

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

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

DNR Contract Administrator

ECY - Northwest Region:

1-425-649-7000

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

ECY - Southwest Region:

1-360-407-6300

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

ECY - Central Region:

1-509-575-2490

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

ECY - Eastern Region:

1-509-329-3400

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

S-131 Refuse Disposal

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

S-150 Recreation Trail Cleanout

At the completion of logging operations, Purchaser shall repair any damage to and clean out all logging debris from recreational trail(s).

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 \$500.00 per tree for all damaged reserve trees that are not replaced in Units 1,2,3,4.

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

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

Purchaser

Mona Griswold
Olympic Region Manager

Print Name

Date: _____

Date: _____

Address:

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

STATE OF _____)

COUNTY OF _____)

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

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

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

Notary Public in and for the State of

My appointment expires _____

Schedule A
Specifications for Landing Slash Piling

The area shall be piled by creating circular piles of slash and brush conforming to the following specifications:

A. Piles shall be a minimum of 12 feet tall by 8 feet wide to a maximum of 40 feet tall and 50 feet wide. Piles shall be cone shaped and stable.

B. Piles shall be free of topsoil, large rotten logs, and large stumps. Any unburnable material shall be well scattered.

C. Piles shall not be placed on large stumps, logs, or against standing snags.

D. Piles shall be stacked a minimum of 50 feet from all unit boundaries, Riparian Management Zones, leave trees, culverts, and any standing timber; a minimum of 100 feet from any public roads and highways; and a minimum of 200 feet from any structures.

E. Piling shall be completed using an approved hydraulic shovel and grapples.

F. Slash and displaced soil shall be removed from swales and natural drainage channels concurrent with yarding.

G. Purchaser may remove landing slash piles from State Land.

H. Slash generated during cable yarding shall be stacked in dirt free piles and shall not block roads or interfere with functioning of drainage structures, ditches, or stream channels.

Schedule B
Green Tree Retention Plan

Leave the following:

1. All trees banded with blue paint and all leave tree area clumps shall remain standing. The perimeter of the leave tree clumps are designated by Leave Tree Area Tags. The tags face outward from the leave tree clumps.

Unit #	# of Individually Marked Trees	# of Clumps	# of Trees Clumped	Total # of Leave Trees
1	262	4	426	688
2	412	4	140	552
3	240	0	0	240
4	317	3	99	416

Schedule C
Biomass Removal Schedule

Purchaser may remove biomass within 100 feet of roads and landings within the sale area. If Biomass is removed from optional construction roads, those roads are to be decommissioned as listed in Clause 9-20 of the road plan. This includes blocking roads with stumps, removing culverts and constructing water bars as directed by the Contract Administrator.

Biomass is defined as the 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, and is eligible for removal under the terms of this contract.



WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOREST EXCISE TAX ROAD SUMMARY SHEET

Region:

Timber Sale Name:

Application Number:

EXCISE TAX APPLICABLE ACTIVITIES

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

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

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

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

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

EXCISE TAX EXEMPT ACTIVITIES

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

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

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

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

(Revised 1/17)

PRE-CRUISE NARRATIVE

Sale Name: Foot Trail	Region: Olympic
Agreement #: 30-XXXXXX	District: Straits
Contact Forester: Eric Davis Phone / Location: 360-460-1020	County(s): Choose a county, Clallam
Alternate Contact: Brian Turner Phone / Location: 360-457-2570	Other information: Click here to enter text.

Type of Sale: Lump Sum	
Harvest System: Ground based Click here to enter text.	56.3%
Harvest System: Downhill Cable Click here to enter text.	10.7%
Harvest System: Uphill Cable Click here to enter text.	33.0%

UNIT ACREAGES AND METHOD OF DETERMINATION:

Unit # Harvest R/W or RMZ WMZ	Legal Description (Enter only one legal for each unit) Sec/Twp/Rng	Grant or Trust	Gross Proposal Acres	Deductions from Gross Acres (No harvest acres)				Net Harvest Acres	Acreage Determination (List method and error of closure if applicable)
				RMZ/WMZ Acres	Leave Tree Acres	Existing Road Acres	Other Acres (describe)		
1	Sec 31 T30N R06W	01	111.8	26.3	3.9	0		81.6	GPS (Garmin)
2	Sec 31 T30N R06W	01	83.7	14.3	0.9	0		68.5	GPS (Garmin)
3	Sec 29 & 32 T30N R06W	01	30.5	0	0	1.0		29.5	GPS (Garmin)
4	Sec 34 T30N R06W	01 03	59.7	8.0	1.3	0		50.4	GPS (Garmin)
5 R/W	Sec 31 T30N R06W Sec 34 T30N R06W	01	2.0	0	0	0		2.0	GPS (Garmin)
TOTAL ACRES			287.7	48.6	6.1	1.0		232	

HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription: (Leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
1	The entire sale boundary is marked with white timber sale boundary tags, pink flashers, pink ribbon, and blue paint. The ROW boundary is marked with orange right-of-way tags, orange ribbon, orange		There are 426 trees in leave tree areas and 262 scattered individual leave trees.

	<p>flashers, and orange paint.</p> <p>Leave tree areas are marked with yellow leave tree tags, pink flashers, pink ribbon, and blue paint. Individual leave trees are marked with a single blue band around the tree at eye level and blue paint at the base of the tree.</p>		
2	<p>The northern and western boundaries are marked with white timber sale boundary tags, pink flashers, pink ribbon, and blue paint. The eastern boundary is marked by a distinct timber type change. A combination of both a distinct timber type change and white timber sale boundary tags, pink flashers, pink ribbon, and blue paint mark the southern boundary.</p> <p>The ROW boundary is marked with orange right-of-way tags, orange ribbon, orange flashers, and orange paint.</p> <p>Leave tree areas are marked with yellow leave tree tags, pink flashers, pink ribbon, and blue paint. Individual leave trees are marked with a single blue band around the tree at eye level and blue paint at the base of the tree.</p>		There are 140 trees in leave tree areas and 412 scattered individual leave trees.
3	<p>The southern boundary is the PA-H-1000 road. The western boundary is the PA-H-1021 road. Most of the northern boundary is marked with white timber sale boundary tags, pink flashers, pink ribbon, and blue paint. The west end of the northern boundary is marked by a distinct timber type change. The PA-H-1050_89 road forms the eastern boundary and the east end of the northern boundary.</p> <p>Individual leave trees are marked with a single blue band around the tree at eye level and blue paint at the base of the tree.</p>		There are 240 scattered individual leave trees.
4	<p>The entire sale boundary is marked with white timber sale boundary tags, pink flashers, pink ribbon, and blue paint.</p>		There are 99 trees in leave tree areas and 317 scattered individual leave trees.

	<p>The ROW boundary is marked with orange right-of-way tags, orange ribbon, orange flashers, and orange paint.</p> <p>Leave tree areas are marked with yellow leave tree tags, pink flashers, pink ribbon, and blue paint. Individual leave trees are marked with a single blue band around the tree at eye level and blue paint at the base of the tree.</p>		
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OTHER PRE-CRUISE INFORMATION:

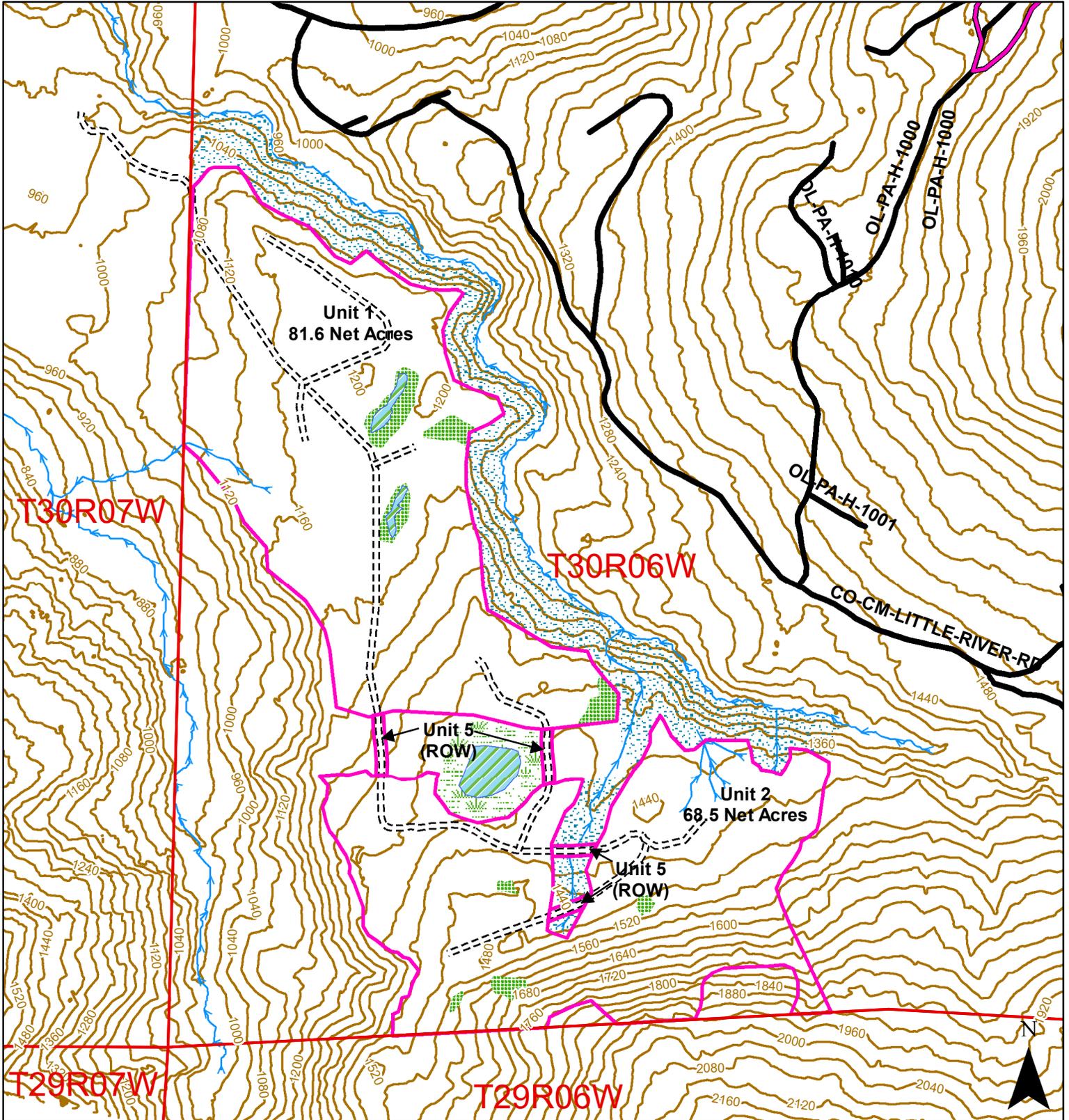
Unit #	Primary,secondary Species / Estimated Volume (MBF)	Access information (Gates, locks, etc.)	Photos, traverse maps required
1	DF, WH, RC, RA Vol: 2,853	Access: Little River Rd, via Black Diamond Rd or Hurricane Ridge Rd. Park at Little River Trailhead and access unit by trail.	Cruise map
2	DF, WH, RC, RA Vol: 2,395	Access: Little River Rd, via Black Diamond Rd or Hurricane Ridge Rd. Unit can be accessed by crossing Little River opposite intersection of Little River Rd and Rd PA-H-1000.	Cruise map
3	DF, WH, RC, RA Vol: 945	Access: Rd PA-H-1000, via Little River Rd and either Black Diamond Rd or Hurricane Ridge Rd. AA1 key required at gate.	Cruise map
4	DF, WH, RC, RA Vol: 1,576	Access: Little River Rd, via Hurricane Ridge Rd or Black Diamond Rd.	Cruise map
5 R/W	DF, WH, RC, RA Vol: 70	Access: Little River Rd, via Black Diamond Rd or Hurricane Ridge Rd. Park at Little River Trailhead and access unit by trail.	Cruise map
TOTAL MBF	7,839		

REMARKS:

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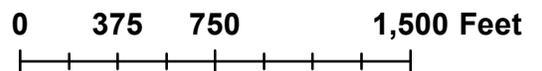
Prepared By: Paul Dunnette Date: 04/26/2018	Title: Forester 1	CC:
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Foot Trail Cruise Map

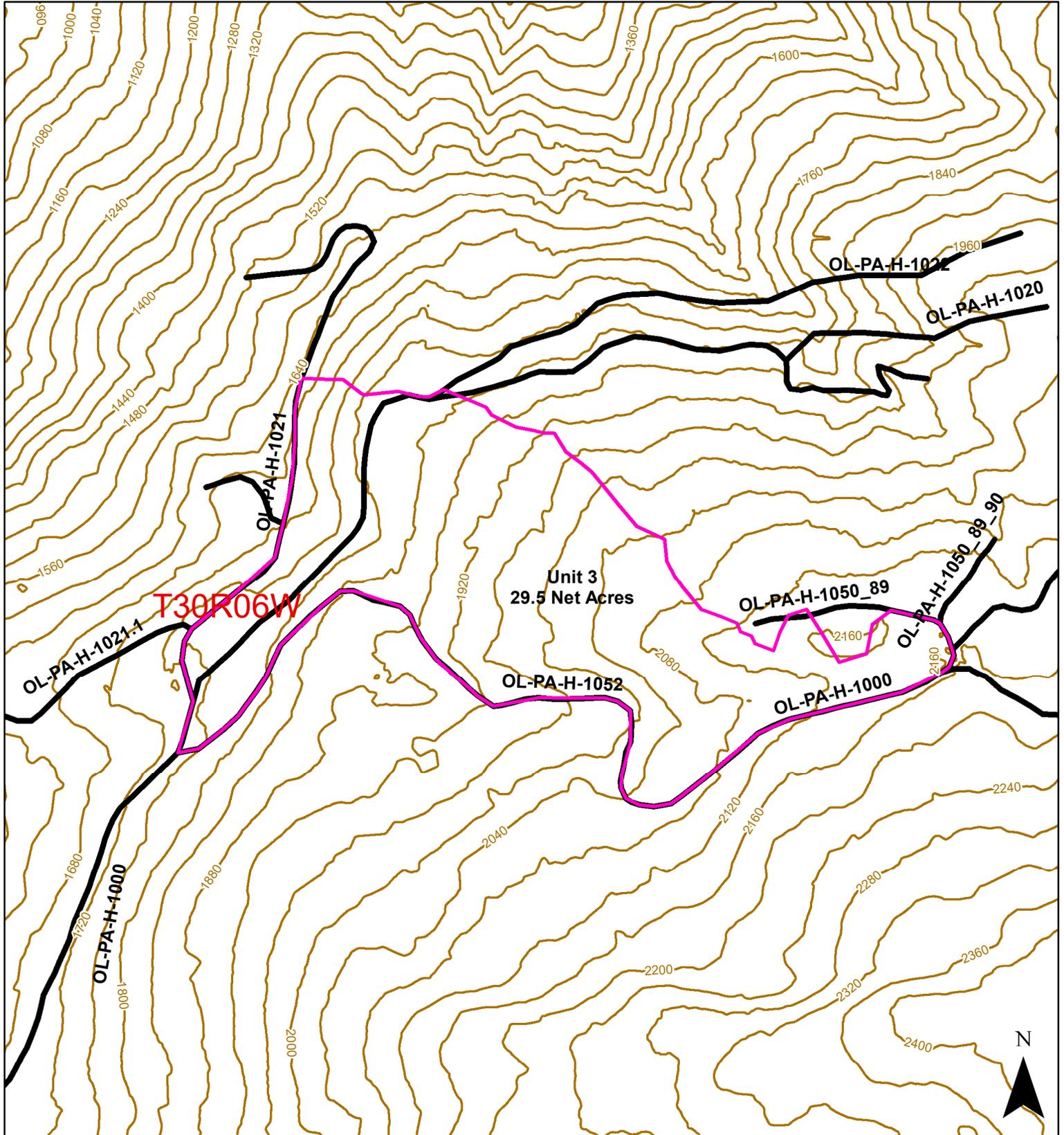


Shapefile location: K:\dist_straits\timber_sales\Foot_Trail_18\Forester\Sale_boundary_032618\Sale_boundary.shp

- Unit Boundary
- Streams
- Proposed Roads
- Wetland
- Riparian Management Zone
- Leave Tree Area
- Wetland Management Zone
- Contours 40 ft



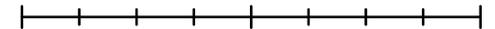
Foot Trail Cruise Map



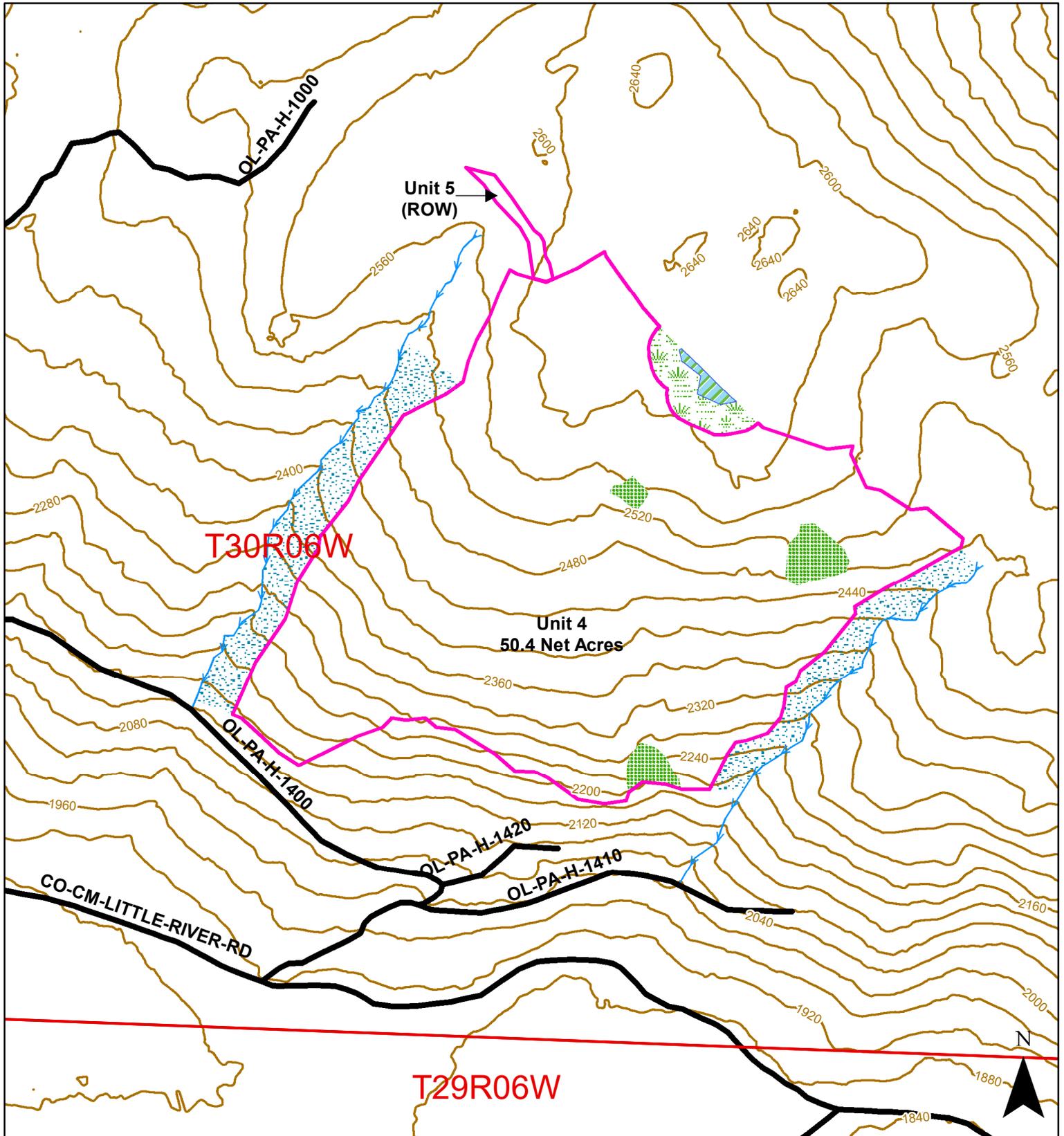
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-  Unit Boundary
-  Wetland
-  Contours 40 ft
-  Leave Tree Area
-  Wetland Buffer (WMZ)
-  Streams
-  RMZ

0 250 500 1,000 Feet

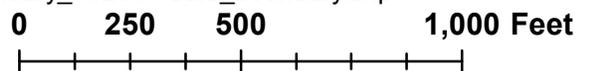


Foot Trail Cruise Map



Shapefile location: K:\dist_straits\timber_sales\Foot_Trail_18\Forester\Sale_boundary_032618\Sale_boundary.shp

- | | |
|--------------------------|-----------------|
| Unit Boundary | Streams |
| Proposed Roads | Wetland |
| Riparian Management Zone | Leave Tree Area |
| Wetland Management Zone | Contours 40 ft |



Cruise Narrative

Sale Name: Foot Trails	Region: Olympic
Agreement #: 30-	District: Straits
Lead Cruiser: Kevin Peterson	Completion Date: 8/6/18
Other Cruisers: none	

Unit acreage specifications:

Unit #	Cruised Acres	Cruised acres agree with sale acres? Y/N	If acres do not agree explain why.
1	81.6	Y	
2	68.5	Y	
3	29.5	Y	
4	50.4	Y	
5 R/W	2	Y	
Total	232	Y	

Unit cruise specifications:

Unit #	Sample Type (VP,FP,ITS,100%)	Expansion Factor (baf,full/half)	Sighting Height (4.5', 16')	Grid Size (plot spacing)	Plot Ratio (cruise/count)	Number of plots
1	VP	54.44/40	4.5'	290x290	1:2	41
2	VP	54.44/40	4.5'	290x290	1:2	34
3	VP	54.44/40	4.5'	290x290	1:1	15
4	VP	54.44/40	4.5'	290x290	2:3	25
5	VP	54.44/40	4.5'	Random	All Cruise	1

Sale/Cruise Description:

Minor species cruise intensity	Minor species sampled using same cruise plots. Red Cedar and Red Alder were cruised at a 40 BAF					
Minimum cruise spec:	40% of Form Factor at 16 ft. D.O.B or 5 inch top.					
Average ring count:	DF =	7	WH =		SS =	
Leave/take tree description:	Leave tree clumps are bounded out with yellow tags, pink flashers and blue paint. Individual leave trees are marked with blue bands and two blue butt marks.					
Other conditions:	Exterior boundaries are marked with white tags and pink flashers					

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

Foot Trails is a DNR timber sale that is located off the PA-H-1000 and Little River Rd. The sale is made up of 4 units and a right of way and has a total sale volume of 6,472 MBF.

The timber is comprised of 82% Douglas-fir, 11% Western Hemlock and 5% Western red Cedar, with traces of Red Alder and Bigleaf Maple in the sale. The average DF in the sale has a DBH of 15.2” and a bole height of 66’, common defects were sweep and forks. The average WH has a DBH of 12.3 and a bole height of 50’.

This sale is 56% ground based harvest, 33% uphill cable and 11% downhill cable. Access is pretty good to all units. An AA1 key is needed to access units 3 and 4

Grants: 03, 01

Prepared By: Kevin Peterson – Olympic Region Cruiser

T000 R000 S00 TyU1 THRU T000 R000 S00 TyU5RW	Project: FOOT Acres 232.00	Page 1 Date 8/6/2018 Time 9:05:35AM
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Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre Def% Gross Net			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre	
									Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf		
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99						
DF	CU	CU															5			0.00	2.2	
DF	HQ	2S		1		350	350	81			44	56					100	40	14	306	2.08	1.1
DF	HQ	3S		2	9.2	374	340	79		100					33	67		37	9	93	0.93	3.6
DF	D	2S		35	2.9	8,325	8,083	1,875			54	46			9	91		39	14	305	2.11	26.5
DF	D	3S		45	1.4	10,384	10,241	2,376	26	74			0	0	18	81		38	8	93	0.73	110.4
DF	D	4S		16		3,611	3,611	838	95	5			20	42	31	7		25	5	29	0.30	126.0
DF	D	UT		1		120	120	28	100				87	13				11	5	4	0.08	33.3
DF	Totals			82	1.8	23,164	22,745	5,277	27	36	20	17	4	7	17	73		30	7	75	0.72	303.1
RC	CU	CU															3	5		0.00	10.3	
RC	D	3S		60	18.5	1,107	902	209	29	33	16	22		2	3	95		36	9	95	1.09	9.5
RC	D	4S		40	.0	584	584	135	100				30	21	10	39		25	5	27	0.36	21.7
RC	Totals			5	12.1	1,691	1,486	345	57	20	10	13	12	9	6	73		22	6	36	0.62	41.5
WH	D	2S		11	15.0	433	368	85			100					100		40	13	189	1.70	1.9
WH	D	3S		65	.4	2,005	1,998	463	53	47					30	70		37	7	80	0.62	24.9
WH	D	4S		17		546	546	127	83	17			53	36	10			20	5	24	0.30	22.8
WH	D	UT		7		197	197	46	100				100					13	5	12	0.18	15.8
WH	Totals			11	2.3	3,180	3,108	721	55	33	12		16	6	21	57		25	6	47	0.53	65.4
BM	D	2S		14		44	44	10			100		100					20	12	100	1.18	.4
BM	D	3S		50	3.7	153	147	34		100			62	38				23	10	83	0.94	1.8
BM	D	4S		36	9.4	116	105	24	69	31				50	29	22		32	6	37	0.45	2.9
BM	D	UT																11	5		0.00	.6
BM	Totals			1	5.3	312	296	69	24	61	15		45	37	10	8		26	8	52	0.61	5.7
RA	D	3S		71		189	189	44		100			100					20	9	50	0.68	3.8
RA	D	4S		29	33.3	113	75	17	100					100				25	5	20	0.29	3.8
RA	Totals			1	12.5	302	264	61	29	71			71	29				23	7	35	0.46	7.5
Totals					2.6	28,649	27,898	6,472	32	35	18	15	7	7	16	70		28	7	66	0.68	423.3

TC PSTATS											PROJECT STATISTICS					PAGE	1
											PROJECT		FOOT			DATE	8/6/2018
TWP	RGE	SC	TRACT	TYPE		ACRES		PLOTS	TREES	CuFt	BdFt						
000	000	00	TRAILS	UI	THR	232.00		116	576	S	W						
000	000	00	TRAILS	U5RW													
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES										
TOTAL			116	576	5.0												
CRUISE			50	244	4.9	52,484	.5										
DBH COUNT REFOREST COUNT			66	320	4.8												
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		166	156.2	15.2	66	50.5	197.1	23,164	22,745	6,467	6,467						
WHEMLOCK		30	38.2	12.3	50	9.0	31.4	3,180	3,108	876	876						
WR CEDAR		36	25.2	13.0	43	6.4	23.2	1,691	1,486	588	564						
R ALDER		2	3.8	13.0	51	1.0	3.5	302	264	79	79						
BL MAPLE		10	2.9	14.9	56	0.9	3.5	312	296	91	91						
TOTAL		244	226.2	14.5	60	68.0	258.7	28,649	27,898	8,100	8,077						
CONFIDENCE LIMITS OF THE SAMPLE																	
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR																	
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		64.2	6.0	147	156	166											
WHEMLOCK		156.6	14.5	33	38	44											
WR CEDAR		155.5	14.4	22	25	29											
R ALDER		392.1	36.4	2	4	5											
BL MAPLE		651.4	60.5	1	3	5											
TOTAL		39.1	3.6	218	226	234	61	31	15								
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		47.5	4.4	188	197	206											
WHEMLOCK		141.1	13.1	27	31	36											
WR CEDAR		152.6	14.2	20	23	26											
R ALDER		392.1	36.4	2	3	5											
BL MAPLE		623.8	57.9	1	3	5											
TOTAL		28.8	2.7	252	259	266	33	17	8								
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		47.3	4.4	21,746	22,745	23,744											
WHEMLOCK		144.4	13.4	2,691	3,108	3,524											
WR CEDAR		161.0	14.9	1,264	1,486	1,709											
R ALDER		392.1	36.4	168	264	360											
BL MAPLE		627.5	58.3	123	296	468											
TOTAL		33.1	3.1	27,041	27,898	28,756	44	22	11								
CL	68.1	COEFF	V_BAR/ACRE				# OF PLOTS REQ.		INF. POP.								
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10								
DOUG FIR				110	115	120											
WHEMLOCK		51.7	4.8	86	99	112											
WR CEDAR		93.9	8.7	55	64	74											
R ALDER		115.4	10.7	48	76	104											
BL MAPLE		627.5	58.3	36	85	135											
TOTAL		32.4	3.0	105	108	111	42	21	10								

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	FOOT		DATE	8/6/2018		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
000	000	00	TRAILS	U1	81.60	41	195	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		41	195	4.8						
CRUISE		14	62	4.4	16,091	.4				
DBH COUNT REFOREST COUNT		27	133	4.9						
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	36	149.6	15.5	68	49.9	196.5	25,401	24,813	6,838	6,838
WR CEDAR	16	21.7	15.5	47	7.2	28.3	2,245	1,977	785	786
WHEMLOCK	8	24.6	12.6	53	6.0	21.2	1,829	1,829	526	526
BL MAPLE	2	1.2	17.0	56	0.5	2.0	173	161	49	49
TOTAL	62	197.2	15.2	64	63.6	248.0	29,648	28,779	8,198	8,198
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
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	61.8	9.6		135	150	164				
WR CEDAR	142.6	22.3		17	22	27				
WHEMLOCK	151.6	23.7		19	25	30				
BL MAPLE	447.1	69.8		0	1	2				
TOTAL	36.9	5.8		186	197	209	55	28	14	
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	46.7	7.3		182	197	211				
WR CEDAR	142.2	22.2		22	28	35				
WHEMLOCK	150.3	23.5		16	21	26				
BL MAPLE	447.1	69.8		1	2	3				
TOTAL	30.0	4.7		236	248	260	36	18	9	
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	46.1	7.2		23,025	24,813	26,600				
WR CEDAR	147.4	23.0		1,522	1,977	2,432				
WHEMLOCK	150.9	23.6		1,398	1,829	2,260				
BL MAPLE	447.1	69.8		49	161	273				
TOTAL	34.9	5.5		27,210	28,779	30,348	49	25	12	
CL:	68.1 %	COEFF	V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR				117	126	135				
WR CEDAR	96.0	15.0		54	70	86				
WHEMLOCK	55.5	8.7		66	86	106				
BL MAPLE	447.1	69.8		25	82	140				
TOTAL	350.8	54.8		110	116	122	4,923	2,512	1,231	

T000 R000 S00 TU2 T000 R000 S00 TU2
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt
 000 000 00 TRAILS U2 68.50 34 60 S W

Spp	So	Gr	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre	
				Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf		
								5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99						
DF	D	2S	33	3.4	7,608	7,346	503			40	60			14	86	38	15	308	2.11	23.8	
DF	D	3S	55	.7	11,766	11,687	801	13	87					1	17	82	38	9	105	0.81	110.8
DF	D	4S	12		2,591	2,591	177	100					27	48	25	24	5	27	0.29	94.4	
DF	D	UT														11	5		0.00	5.5	
DF	Totals		73	1.6	21,965	21,623	1,481	19	47	14	20		3	6	17	74	32	8	92	0.80	234.6
WH	D	2S	11	25.0	879	659	45			100					100	40	13	180	1.78	3.7	
WH	D	3S	64		3,612	3,612	247	46	54						19	81	38	8	89	0.65	40.6
WH	D	4S	16		885	885	61	100				51	28	21		21	5	24	0.26	37.0	
WH	D	UT	9		505	505	35	100				100				16	5	20	0.24	25.2	
WH	Totals		19	3.7	5,880	5,660	388	54	34	12		17	4	15	64	27	6	53	0.55	106.5	
RC	D	3S	62		858	858	59	48	52						100	36	8	76	0.80	11.3	
RC	D	4S	38		517	517	35	100				83	17			17	5	18	0.24	29.3	
RC	Totals		5		1,375	1,375	94	67	33			31	7	62		22	6	34	0.50	40.6	
BM	D	3S	61	3.7	518	499	34			100		62	38			23	10	83	0.94	6.0	
BM	D	4S	39	6.6	332	310	21	65	35				57	19	25	32	6	38	0.45	8.2	
BM	D	UT														11	5		0.00	2.2	
BM	Totals		3	4.8	851	809	55	25	75			38	45	7	9	26	7	49	0.58	16.5	
Type Totals				2.0	30,071	29,468	2,019	28	45	12	15	8	7	15	70	29	7	74	0.71	398.2	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	FOOT		DATE	8/6/2018		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
000	000	00	TRAILS	U2	68.50	34	161	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		34	161	4.7						
CRUISE		12	60	5.0	14,292	.4				
DBH COUNT										
REFOREST										
COUNT		22	101	4.6						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	34	105.3	17.0	76	40.4	166.5	21,965	21,623	5,980	5,980
WHEMLOCK	12	65.9	12.1	49	15.2	52.8	5,880	5,660	1,557	1,556
WR CEDAR	6	29.3	10.9	38	5.7	18.8	1,375	1,375	449	449
BL MAPLE	8	8.2	14.5	56	2.5	9.4	851	809	249	249
TOTAL	<i>60</i>	<i>208.6</i>	<i>14.8</i>	<i>61</i>	<i>64.5</i>	<i>247.6</i>	<i>30,071</i>	<i>29,468</i>	<i>8,234</i>	<i>8,233</i>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
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		57.4	9.9	95	105	116				
WHEMLOCK		111.2	19.1	53	66	78				
WR CEDAR		151.0	25.9	22	29	37				
BL MAPLE		406.0	69.6	3	8	14				
TOTAL		<i>37.8</i>	<i>6.5</i>	<i>195</i>	<i>209</i>	<i>222</i>	<i>57</i>	<i>29</i>	<i>14</i>	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		54.6	9.4	151	167	182				
WHEMLOCK		103.0	17.7	44	53	62				
WR CEDAR		140.7	24.1	14	19	23				
BL MAPLE		406.0	69.6	3	9	16				
TOTAL		<i>31.2</i>	<i>5.4</i>	<i>234</i>	<i>248</i>	<i>261</i>	<i>39</i>	<i>20</i>	<i>10</i>	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		54.1	9.3	19,618	21,623	23,627				
WHEMLOCK		103.7	17.8	4,654	5,660	6,667				
WR CEDAR		141.5	24.3	1,042	1,375	1,709				
BL MAPLE		406.0	69.6	246	809	1,373				
TOTAL		<i>32.8</i>	<i>5.6</i>	<i>27,808</i>	<i>29,468</i>	<i>31,128</i>	<i>43</i>	<i>22</i>	<i>11</i>	
CL:	68.1 %	COEFF	V-BAR/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR				118	130	142				
WHEMLOCK				88	107	126				
WR CEDAR				55	73	91				
BL MAPLE		406.0	69.6	26	86	146				
TOTAL		<i>276.9</i>	<i>47.5</i>	<i>112</i>	<i>119</i>	<i>126</i>	<i>3,067</i>	<i>1,565</i>	<i>767</i>	

T000 R000 S00 TU3 T000 R000 S00 TU3
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt
 000 000 00 TRAILS U3 29.50 15 39 S W

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre	
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf		
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99						
DF		D	2S	21	3.3	3,565	3,449	102			81	19			7	93	39	14	269	2.08	12.8	
DF		D	3S	57	1.8	9,075	8,909	263	27	73				1		27	73	37	8	90	0.78	99.0
DF		D	4S	21		3,262	3,262	96	100					25	75			22	5	24	0.28	137.2
DF		D	UT	1		118	118	3	100						100			13	5	4	0.10	29.2
DF	Totals			72	1.8	16,021	15,738	464	37	41	18	4		6	16	17	62	27	6	57	0.63	278.2
WH		D	3S	80	1.8	3,369	3,309	98	48	52					22	78	37	7	82	0.63	40.6	
WH		D	4S	20		780	780	23	100					69	31			21	5	20	0.27	39.0
WH		D	UT															10	5		0.00	28.6
WH	Totals			19	1.4	4,149	4,089	121	58	42				13	6	17	63	24	6	38	0.45	108.2
RC		CU	CU															1	5		0.00	21.8
RC		D	3S	41	15.5	989	836	25		100					28	72	35	9	82	1.08	10.1	
RC		D	4S	59		1,166	1,166	34	100					27	9	64	28	5	31	0.36	37.1	
RC	Totals			9	7.1	2,155	2,002	59	58	42				16	17	67	21	6	29	0.53	69.1	
Type Totals					2.2	22,325	21,829	644	43	42	13	3		8	13	17	62	26	6	48	0.58	455.5

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	FOOT		DATE	8/6/2018		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
000	000	00	TRAILS	U3	29.50	15	73	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		15	73	4.9						
CRUISE		8	39	4.9	8,176	.5				
DBH COUNT										
REFOREST										
COUNT		7	34	4.9						
BLANKS										
100 %										
STAND SUMMARY										
SAMPLE		TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
TREES		/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR		28	169.2	13.7	52	47.0	174.2	16,021	15,738	4,786
WHEMLOCK		5	67.6	11.3	47	14.0	47.2	4,149	4,089	1,170
WR CEDAR		6	40.4	12.2	43	9.4	33.0	2,155	2,002	760
TOTAL		39	277.2	13.0	50	70.6	254.4	22,325	21,829	6,716
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
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		87.9	23.5	129	169	209				
WHEMLOCK		125.4	33.5	45	68	90				
WR CEDAR		143.9	38.5	25	40	56				
TOTAL		51.9	13.9	239	277	316	116	59	29	
CL:	68.1 %	COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		58.1	15.5	147	174	201				
WHEMLOCK		114.3	30.6	33	47	62				
WR CEDAR		147.4	39.4	20	33	46				
TOTAL		37.3	10.0	229	254	280	60	30	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		52.9	14.1	13,513	15,738	17,964				
WHEMLOCK		114.2	30.5	2,840	4,089	5,338				
WR CEDAR		156.2	41.7	1,166	2,002	2,838				
TOTAL		35.6	9.5	19,751	21,829	23,907	54	28	14	
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR				78	90	103				
WHEMLOCK				60	87	113				
WR CEDAR		80.3	21.5	35	61	86				
TOTAL		174.8	46.7	78	86	94	1,310	668	328	

T000	R000	S00	TU4							T000	R000	S00	TU4
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt				
000	000	00	TRAILS	U4	50.40	25	78	S	W				

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre	
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf		
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99						
DF		HQ	2S	6		1,612	1,612	81			44	56					100	40	14	306	2.08	5.3
DF		HQ	3S	6	9.2	1,722	1,564	79		100						33	67	37	9	93	0.93	16.8
DF		D	2S	18	3.4	4,812	4,648	234			85	15				6	94	39	13	252	1.87	18.4
DF		D	3S	49		12,335	12,335	622	42	58						19	81	38	7	79	0.65	157.1
DF		D	4S	19		4,786	4,786	241	99	1			18	45	31	6		24	5	29	0.31	167.5
DF		D	UT	2		406	406	20	100								100	11	5	4	0.08	99.1
DF	Totals			90	1.3	25,674	25,351	1,278	41	35	18	6	5	9	18	68		27	6	55	0.60	464.2
RA		D	3S	71		868	868	44		100			100					20	9	50	0.68	17.4
RA		D	4S	29	33.3	521	347	17	100					100				25	5	20	0.29	17.4
RA	Totals			4	12.5	1,389	1,215	61	29	71			71	29				23	7	35	0.46	34.7
RC		CU	CU															3	5		0.00	11.8
RC		D	3S	36	72.4	577	160	8	100							100		36	8	25	0.45	6.4
RC		D	4S	64		283	283	14	100				17	41	41			26	5	28	0.35	10.2
RC	Totals			2	48.6	860	443	22	100				11	27	27	36		19	6	16	0.37	28.5
WH		D	2S	76		799	799	40		100						100		40	12	200	1.60	4.0
WH		D	3S	24		240	240	12	100							100		36	6	60	0.49	4.0
WH	Totals			4		1,038	1,038	52	23	77						100		38	9	130	1.07	8.0
Type Totals					3.2	28,961	28,047	1,414	40	34	19	6	8	9	17	66		27	6	52	0.60	535.3

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	FOOT		DATE	8/6/2018		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
000	000	00	TRAILS	U4	50.40	25	142	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		25	142	5.7						
CRUISE		15	78	5.2	13,553	.6				
DBH COUNT										
REFOREST										
COUNT		10	52	5.2						
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	66	233.3	14.2	62	68.1	256.7	25,674	25,351	7,605	7,607
R ALDER	2	17.4	13.0	51	4.4	16.0	1,389	1,215	362	362
WR CEDAR	6	14.2	12.8	46	3.6	12.8	860	443	305	198
WHEMLOCK	4	4.0	20.0	78	1.9	8.7	1,038	1,038	325	325
TOTAL	78	268.9	14.2	61	78.2	294.2	28,961	28,047	8,598	8,492
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
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		32.1	6.5	218	233	249				
R ALDER		161.4	32.9	12	17	23				
WR CEDAR		186.3	38.0	9	14	20				
WHEMLOCK		233.9	47.7	2	4	6				
TOTAL		20.3	4.1	258	269	280	17	9	4	
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		26.9	5.5	243	257	271				
R ALDER		161.4	32.9	11	16	21				
WR CEDAR		196.0	40.0	8	13	18				
WHEMLOCK		233.9	47.7	5	9	13				
TOTAL		15.6	3.2	285	294	304	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		29.6	6.0	23,821	25,351	26,881				
R ALDER		161.4	32.9	815	1,215	1,615				
WR CEDAR		185.7	37.9	275	443	610				
WHEMLOCK		233.9	47.7	543	1,038	1,534				
TOTAL		23.7	4.8	26,687	28,047	29,406	23	12	6	
CL:	68.1 %	COEFF	V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR				93	99	105				
R ALDER				51	76	101				
WR CEDAR		162.3	33.1	21	35	48				
WHEMLOCK		233.9	47.7	62	119	176				
TOTAL		155.9	31.8	91	95	100	1,013	517	253	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	FOOT		DATE	8/6/2018		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
000	000	00	TRAILS	U5RW	2.00	1	5	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		1	5	5.0						
CRUISE		1	5	5.0	371		1.3			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	2	35.3	23.8	85	22.3	108.9	15,109	14,485	4,141	4,141
WR CEDAR	2	80.8	13.5	47	21.8	80.0	3,981	3,981	1,833	1,833
WHEMLOCK	1	69.3	12.0	56	15.7	54.4	5,545	5,545	1,391	1,391
TOTAL	5	185.5	15.5	58	61.8	243.3	24,635	24,012	7,365	7,365
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										

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

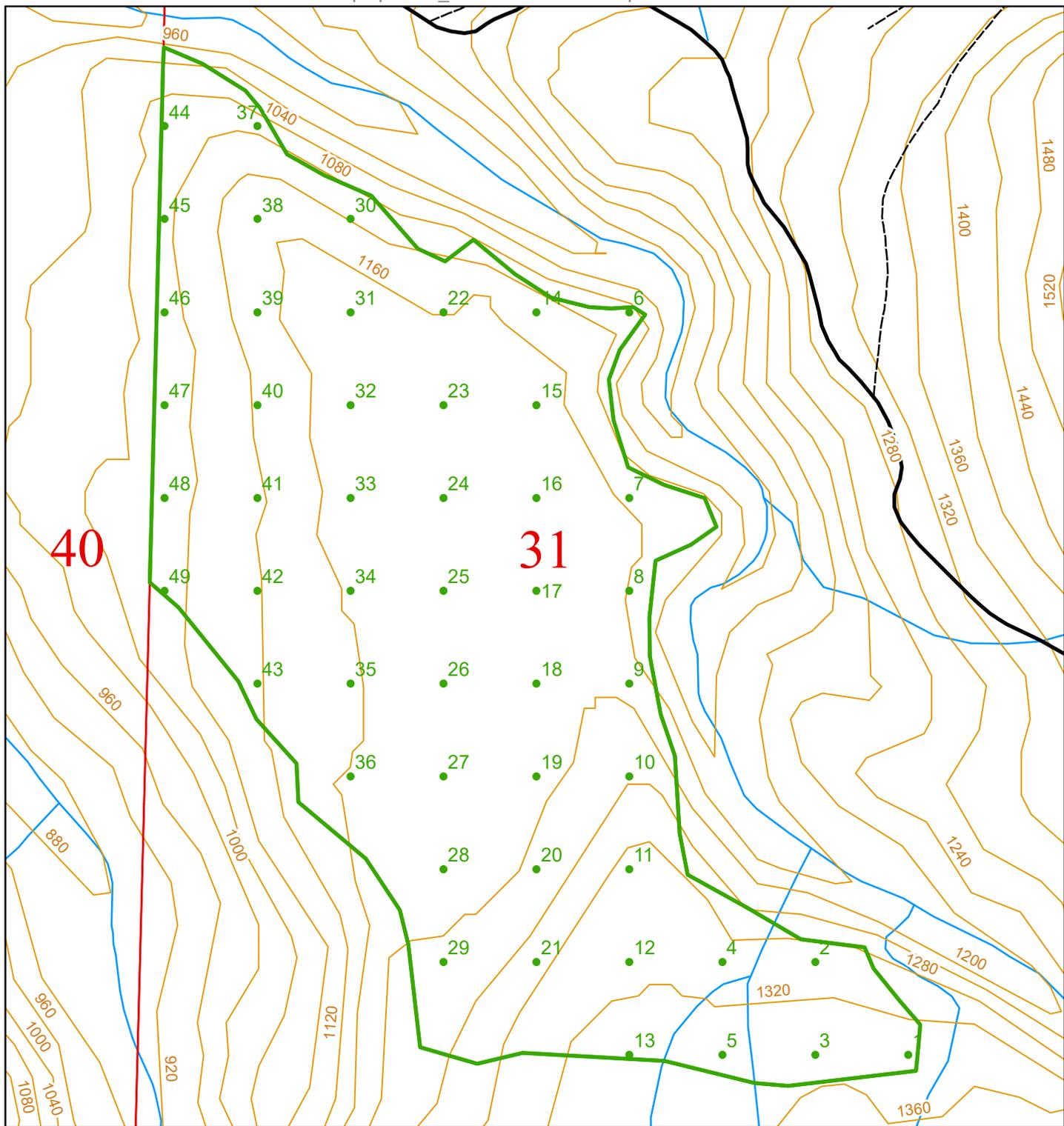
T000 R000 S00 TyU1	81.6
T000 R000 S00 TyU2	68.5
T000 R000 S00 TyU5R	2.0

Project FOOT
Acres 232.00

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Date: 8/6/2018
Time 9:22:56AM

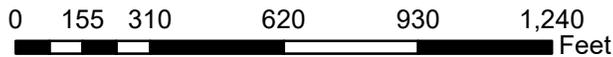
Species	Total	Total	Total	Net Cubic Ft/		CF/	Total CCF		Total MBF	
	Trees	Logs	Tons	Tree	Log	LF	Gross	Net	Gross	Net
DOUG FIR	36,243	69,809	42,760	41.40	21.49	0.73	15,004	15,004	5,374	5,277
WHEMLOCK	8,854	15,183	6,504	22.95	13.38	0.52	2,032	2,032	738	721
WR CEDAR	5,847	7,235	3,203	22.39	18.09	0.65	1,363	1,309	392	345
BL MAPLE	665	1,330	557	31.57	15.79	0.60	210	210	72	69
R ALDER	875	1,750	502	20.86	10.43	0.47	183	183	70	61
Totals	52,484	95,308	53,526	35.70	19.66	0.69	18,792	18,738	6,647	6,472

Wood Type Species	Total	Total	Total	Net Cubic Ft/		CF/	Total CCF		Total MBF	
	Trees	Logs	Tons	Tree	Log	LF	Gross	Net	Gross	Net
C	50,944	92,227	52,467	36.01	19.89	0.70	18,399	18,345	6,504	6,343
H	1,540	3,080	1,058	25.49	12.74	0.54	393	393	142	130
Totals	52,484	95,308	53,526	35.70	19.66	0.69	18,792	18,738	6,647	6,472



Cruiser Sample Point Locations

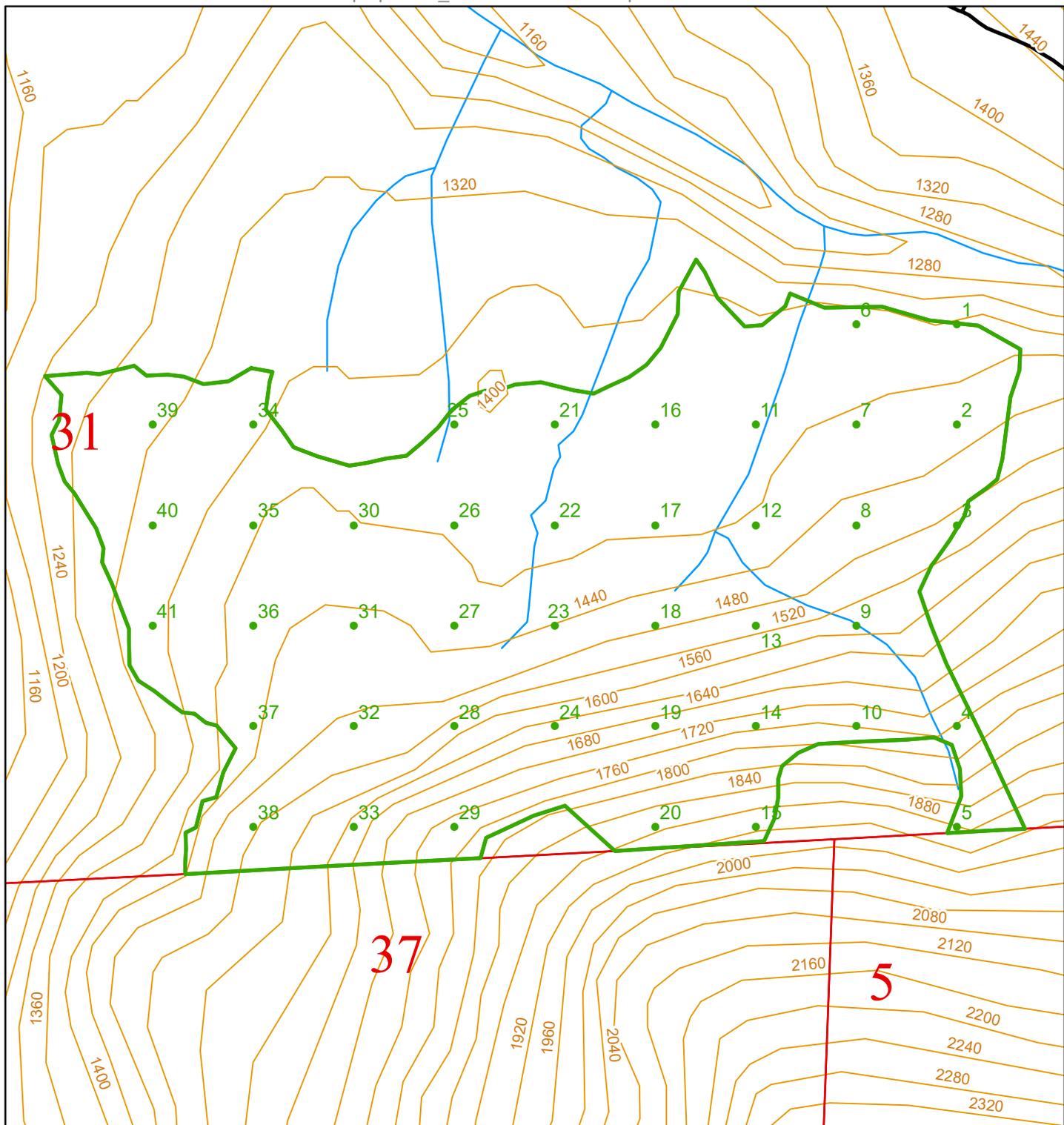
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POLY ID:	1	Total Sample Points:	49
Acres:	86	Spacing Between Points:	Width: 290 Height: 290
		Point Rotation Degrees:	0



Scale 1:5,300

Legend

- Sample Points
- Unit
- Public Land Survey Sections
- Contours 40-foot



Cruiser Sample Point Locations

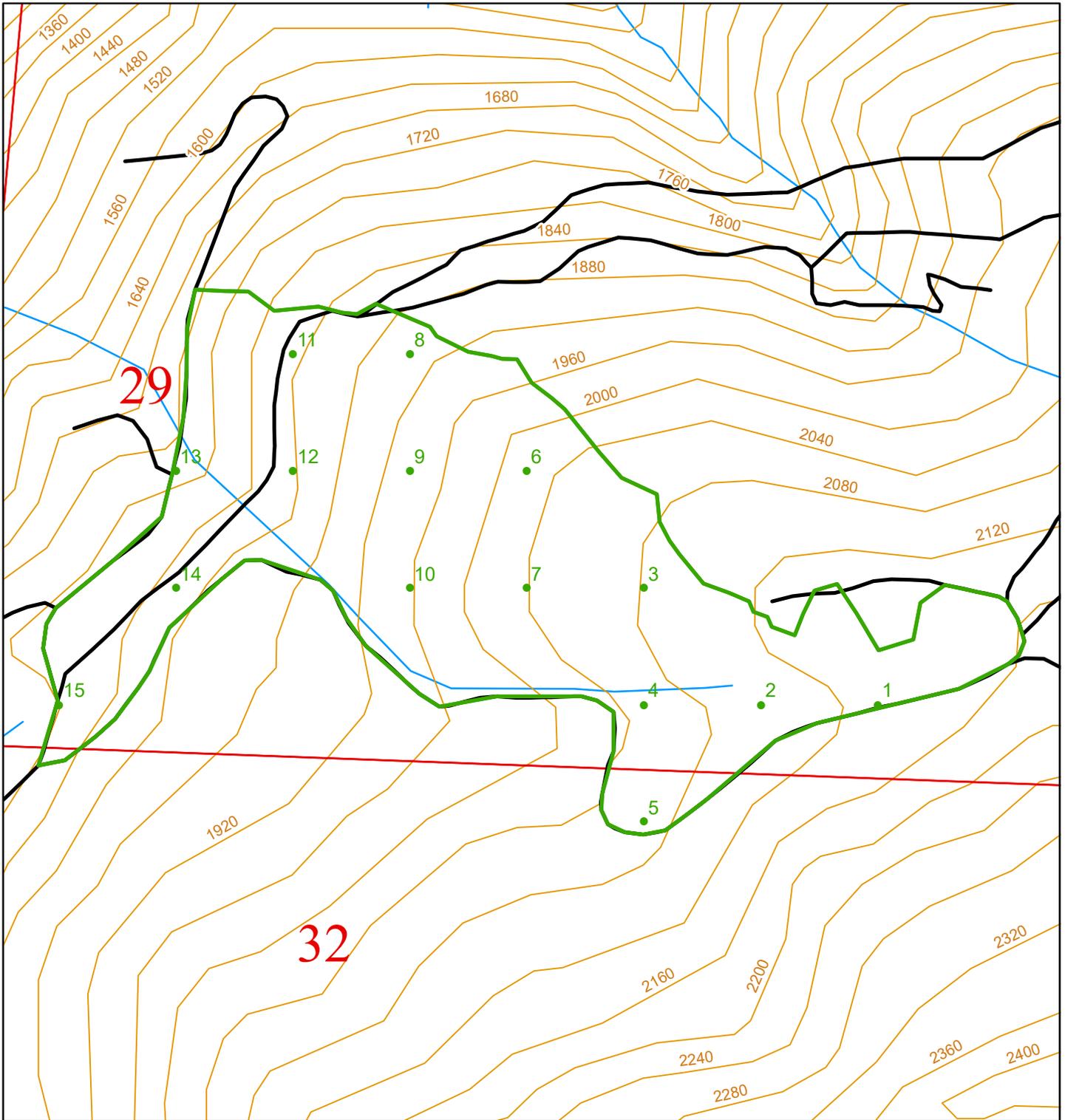
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POLY ID:	1	Total Sample Points:	41
Acres:	74	Spacing Between Points:	Width: 290 Height: 290
		Point Rotation Degrees:	0



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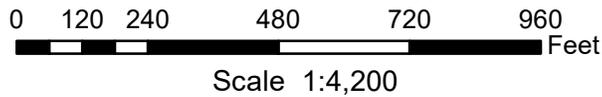
Legend

- Sample Points
- Unit
- Public Land Survey Sections
- Contours 40-foot



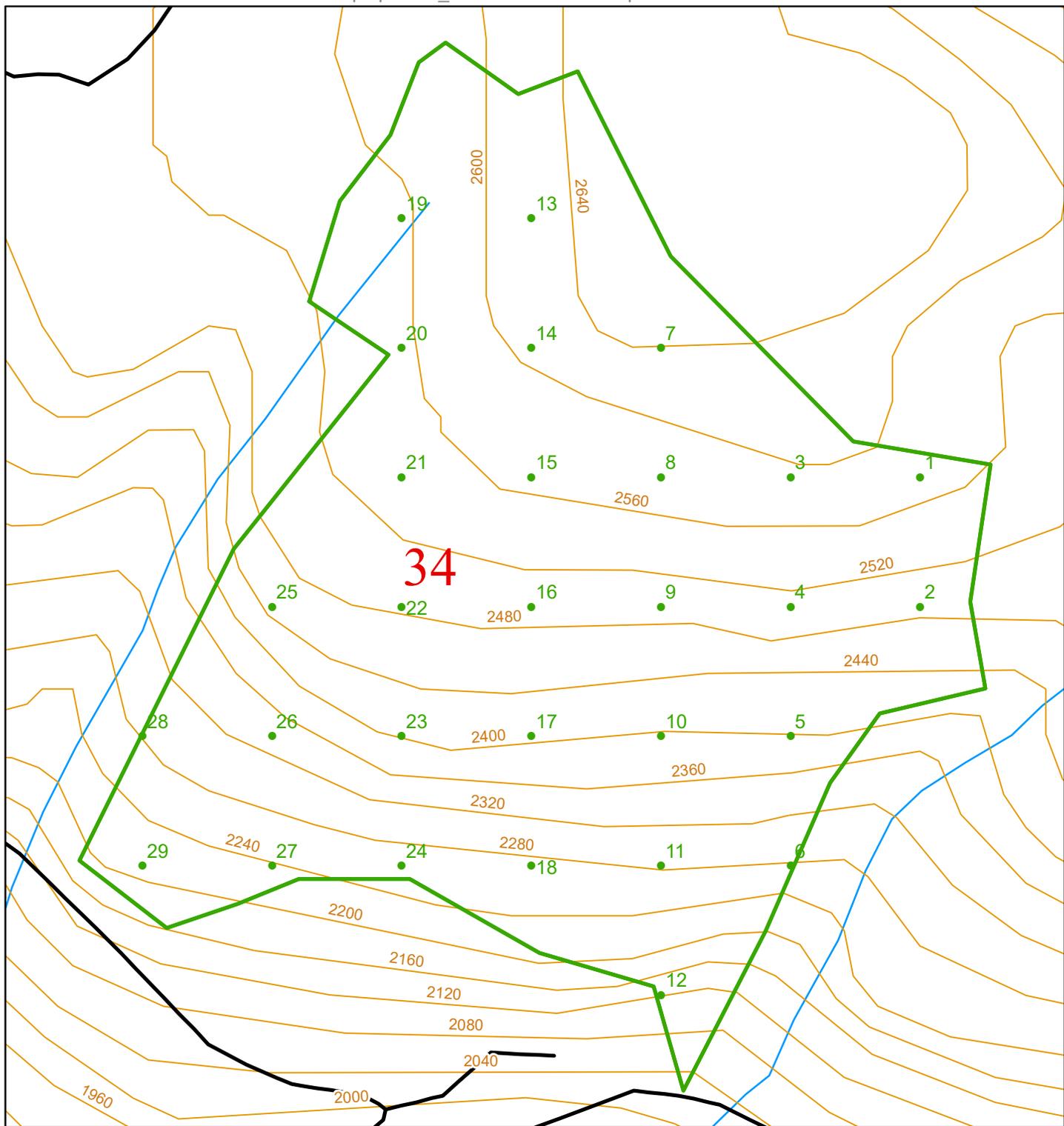
Cruiser Sample Point Locations

LAYER NAME:	sale_boundary	Township:	T30R06W
POLY ID:	1	Total Sample Points:	15
Acres:	30	Spacing Between Points:	Width: 290 Height: 290
		Point Rotation Degrees:	0



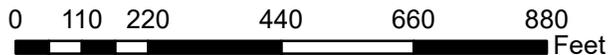
Legend

- Sample Points
- Unit
- Public Land Survey Sections
- Contours 40-foot



Cruiser Sample Point Locations

LAYER NAME:	sale_boundary	Township:	T30R06W
POLY ID:	1	Total Sample Points:	29
Acres:	55	Spacing Between Points:	Width: 290 Height: 290
		Point Rotation Degrees:	0



Scale 1:3,800

Legend

- Sample Points
- Unit
- Public Land Survey Sections
- Contours 40-foot



Forest Practices Application/Notification Notice of Decision

FPA/N No: 2615664
 Effective Date: 10/11/2018
 Expiration Date: 10/11/2021
 Shut Down Zone: 653S
 EARR Tax Credit: Eligible Non-eligible
 Reference: DNR
Foot Trail VRH

Decision

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

FPA/N Classification

Class II Class III Class IVG Class IVS

Number of Years Granted on Multi-Year Request

4 years 5 years

Conditions on Approval / Reasons for Disapproval

Issued By: Ross Goodwin Region: Olympic

Title: Forest Practice Forester Date: 10/11/2018

Copies to: Landowner, Timber Owner and Operator.

Issued in person: Landowner Timber Owner Operator By: Christine Fouts

Christine Fouts
Christine Fouts

Appeal Information

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

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

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

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

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

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

And

Department Of Natural Resources
Olympic Region
411 Tillicum Lane
Forks, WA 98331

Other Applicable Laws

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

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

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

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

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

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

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

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

DNR affidavit of mailing:

On this day _____, I placed in the United States mail at _____, WA,
(date) (post office location)
postage paid, a true and accurate copy of this document. Notice of Decision FPA # <u>2615664</u>
_____ (Printed name) _____ (Signature)

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

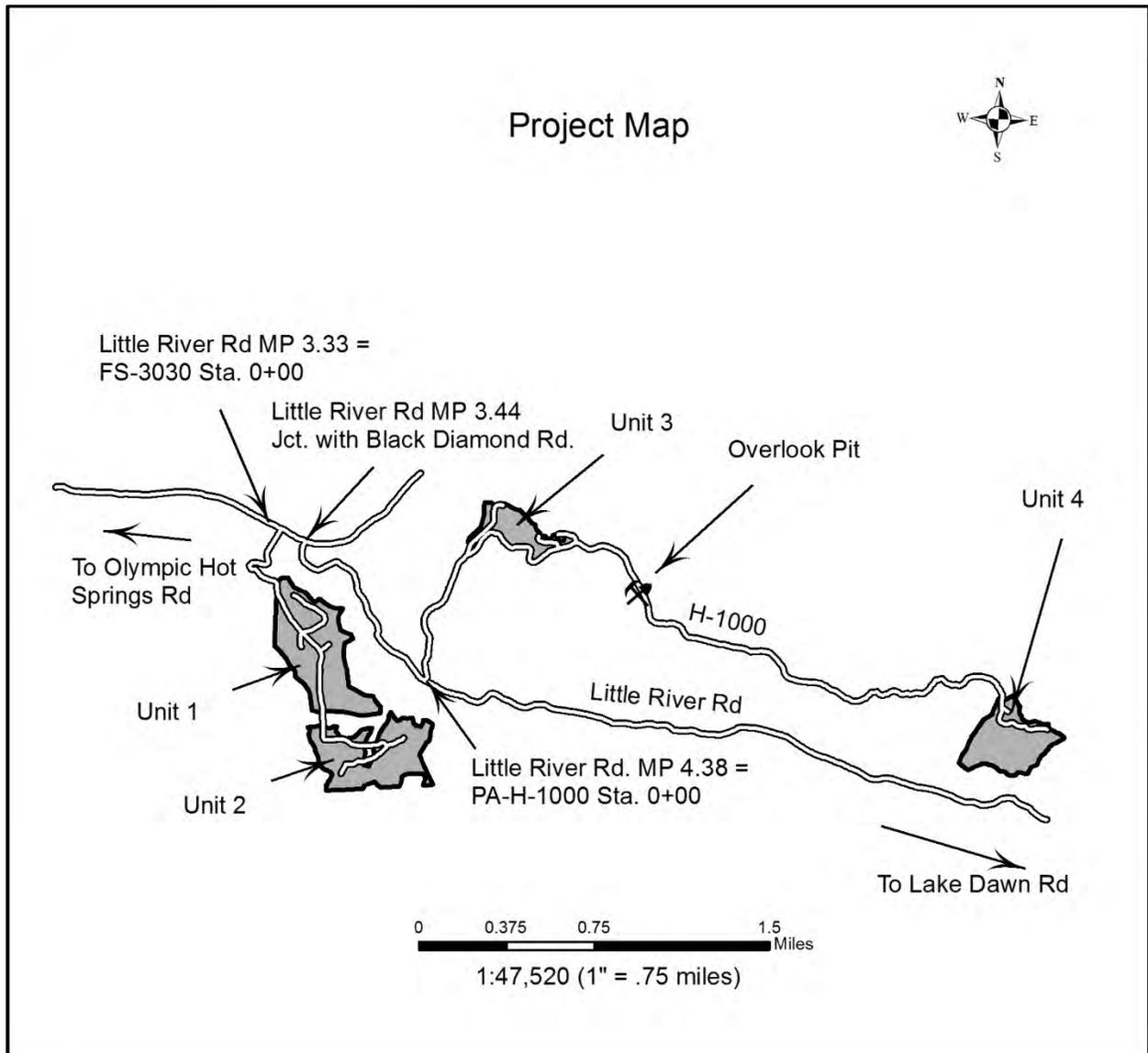
FOOT TRAIL TIMBER SALE ROAD PLAN
CLALLAM COUNTY
STRAITS DISTRICT
OLYMPIC REGION

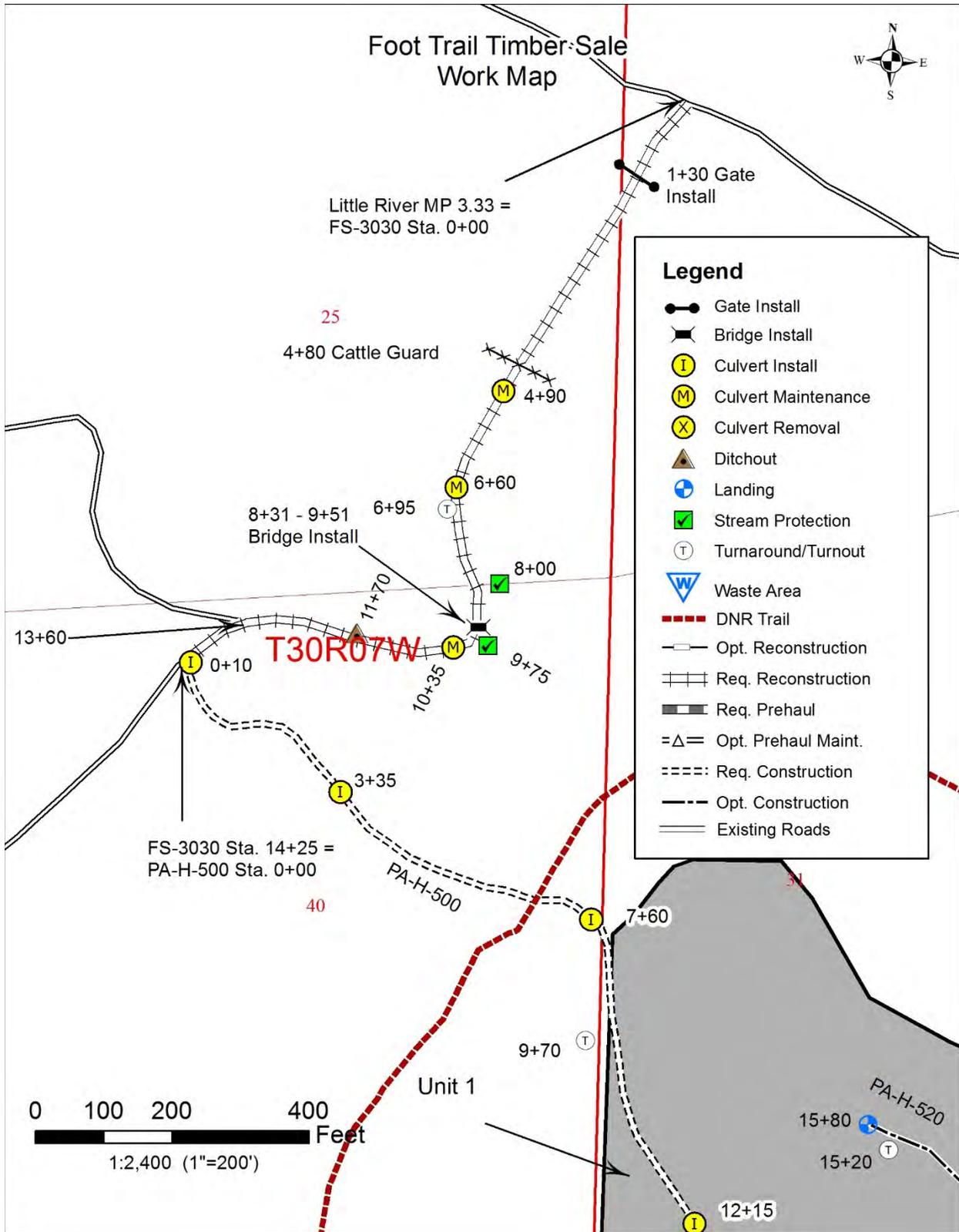
AGREEMENT NO.: 30-097642

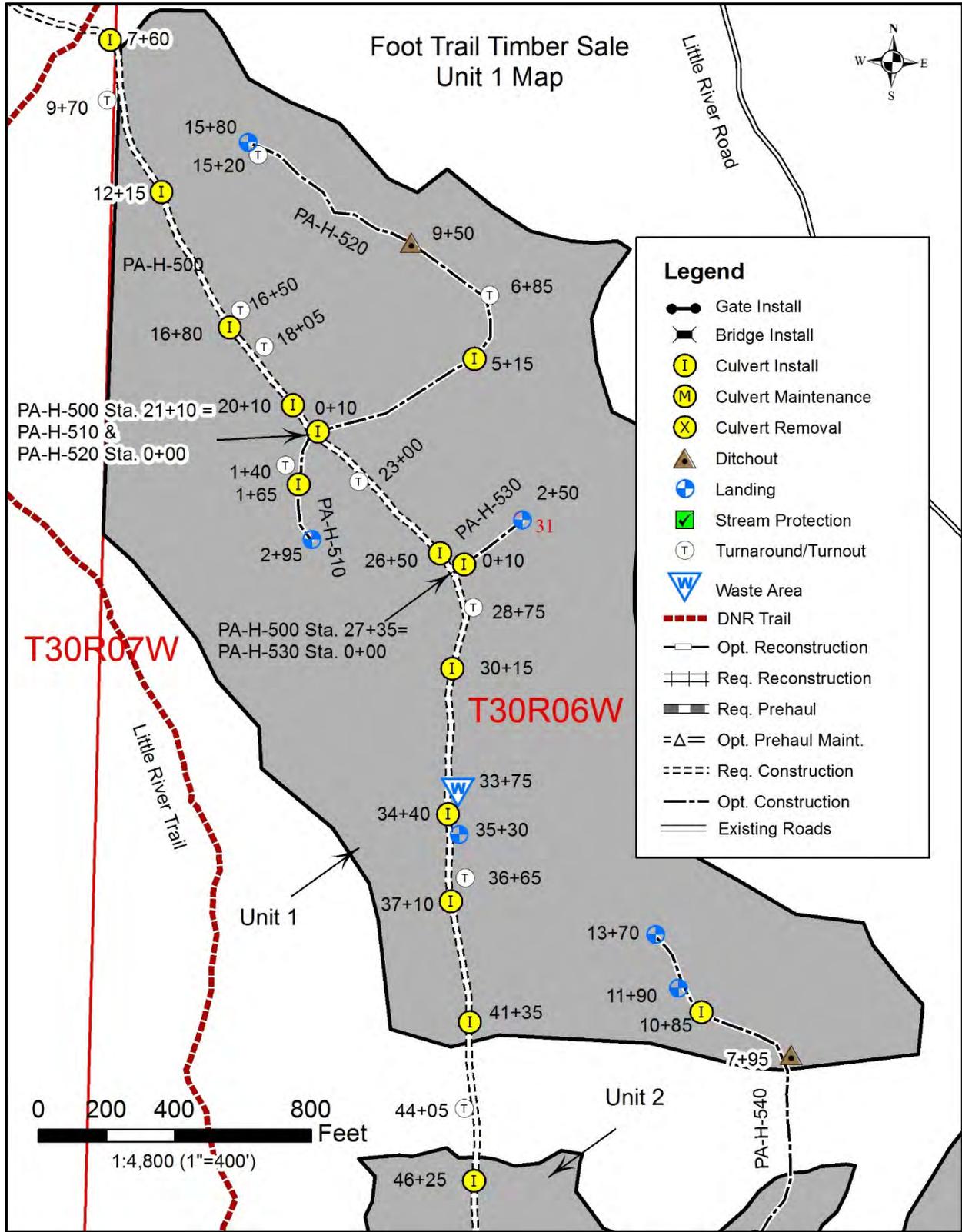
DISTRICT ENGINEER: GREG ELLIS

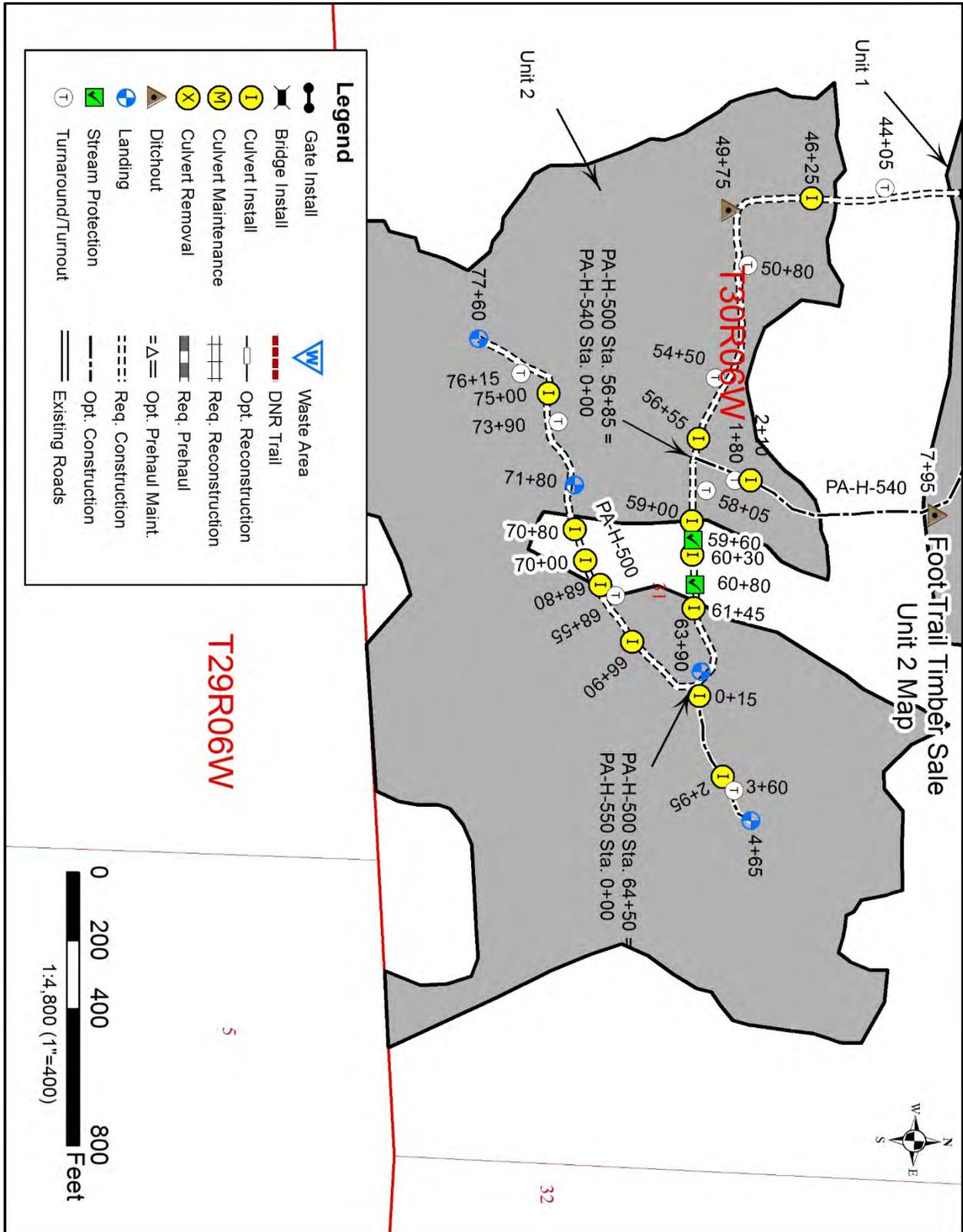
DATE: 6/11/2018

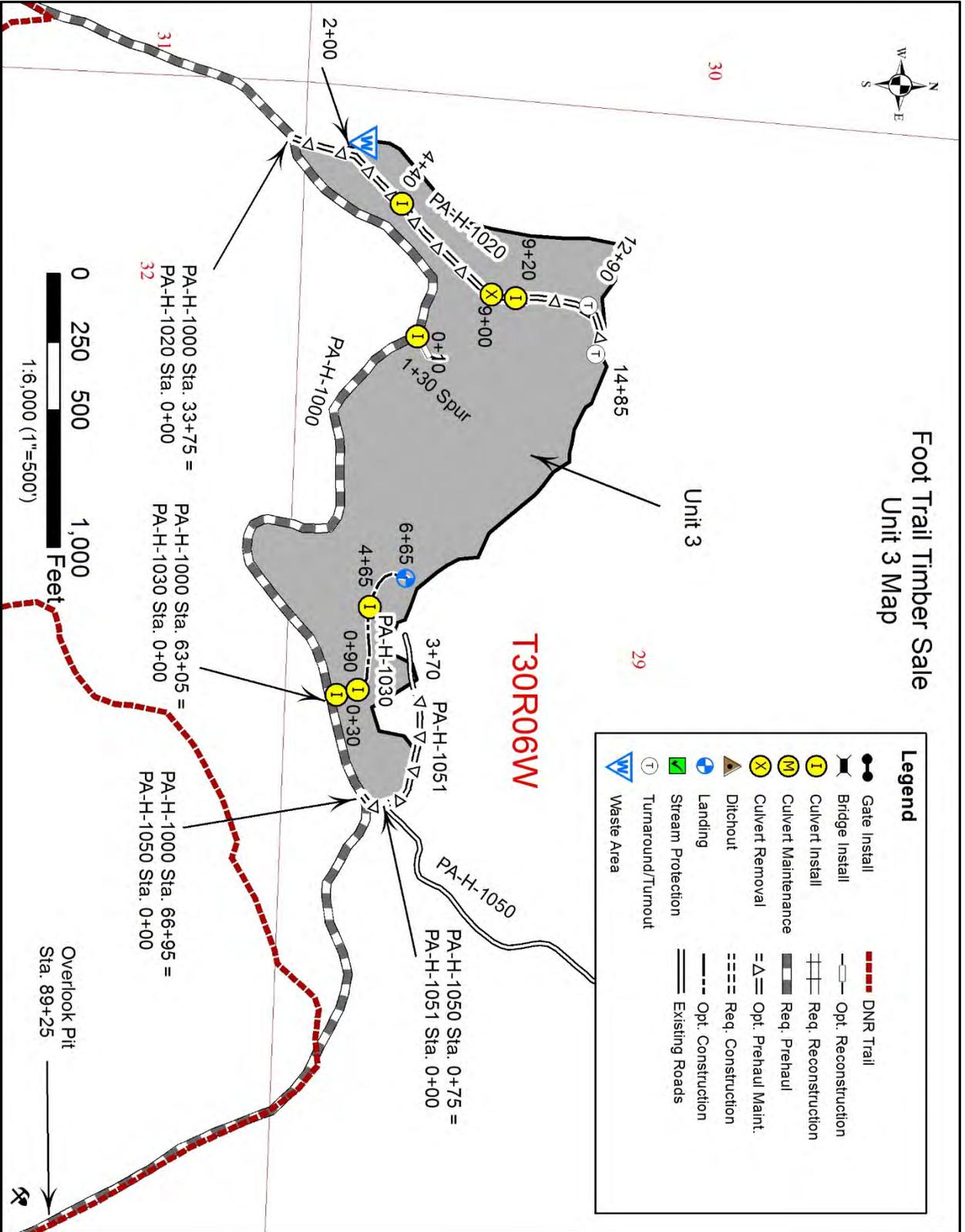
DRAWN & COMPILED BY: GREG ELLIS

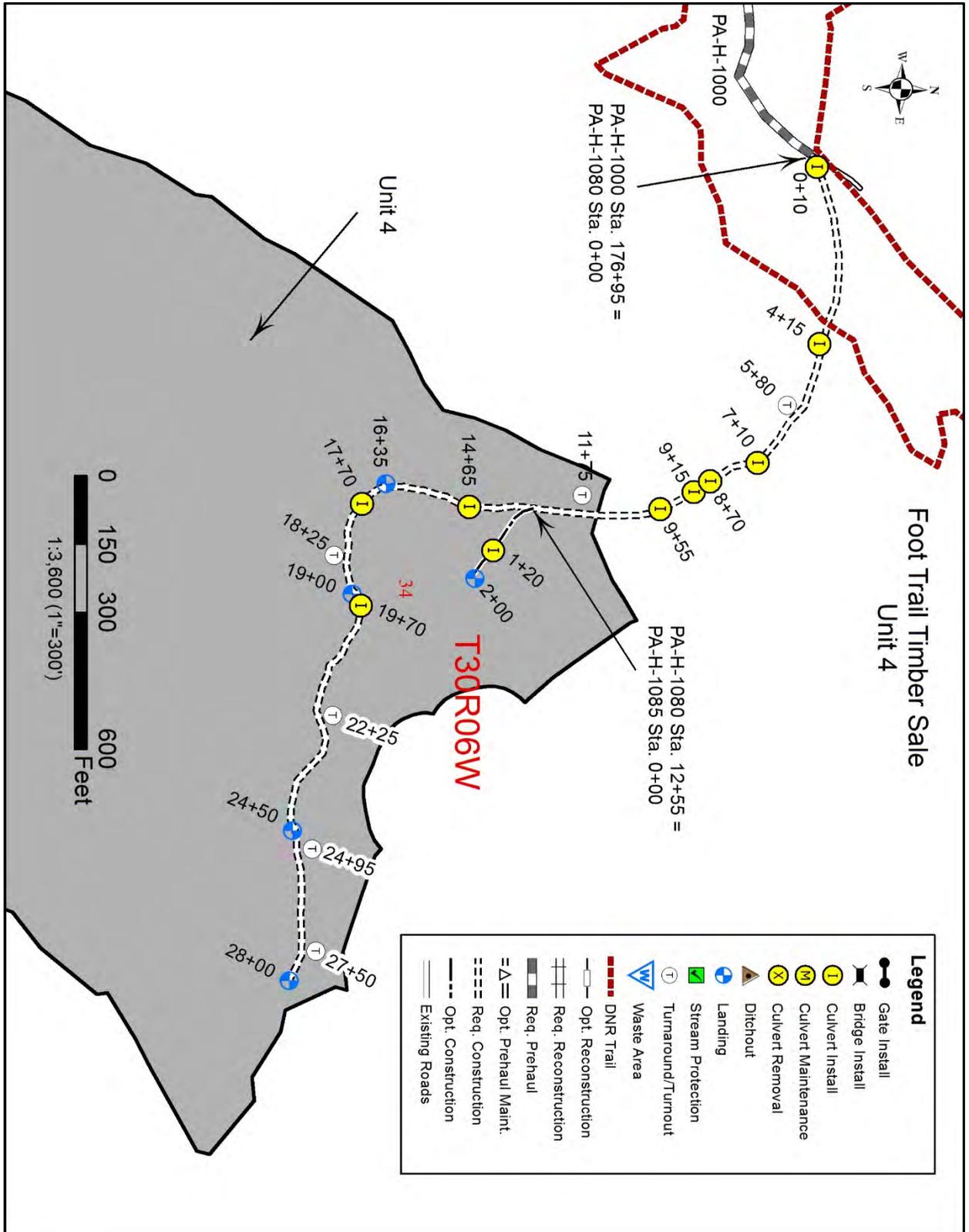


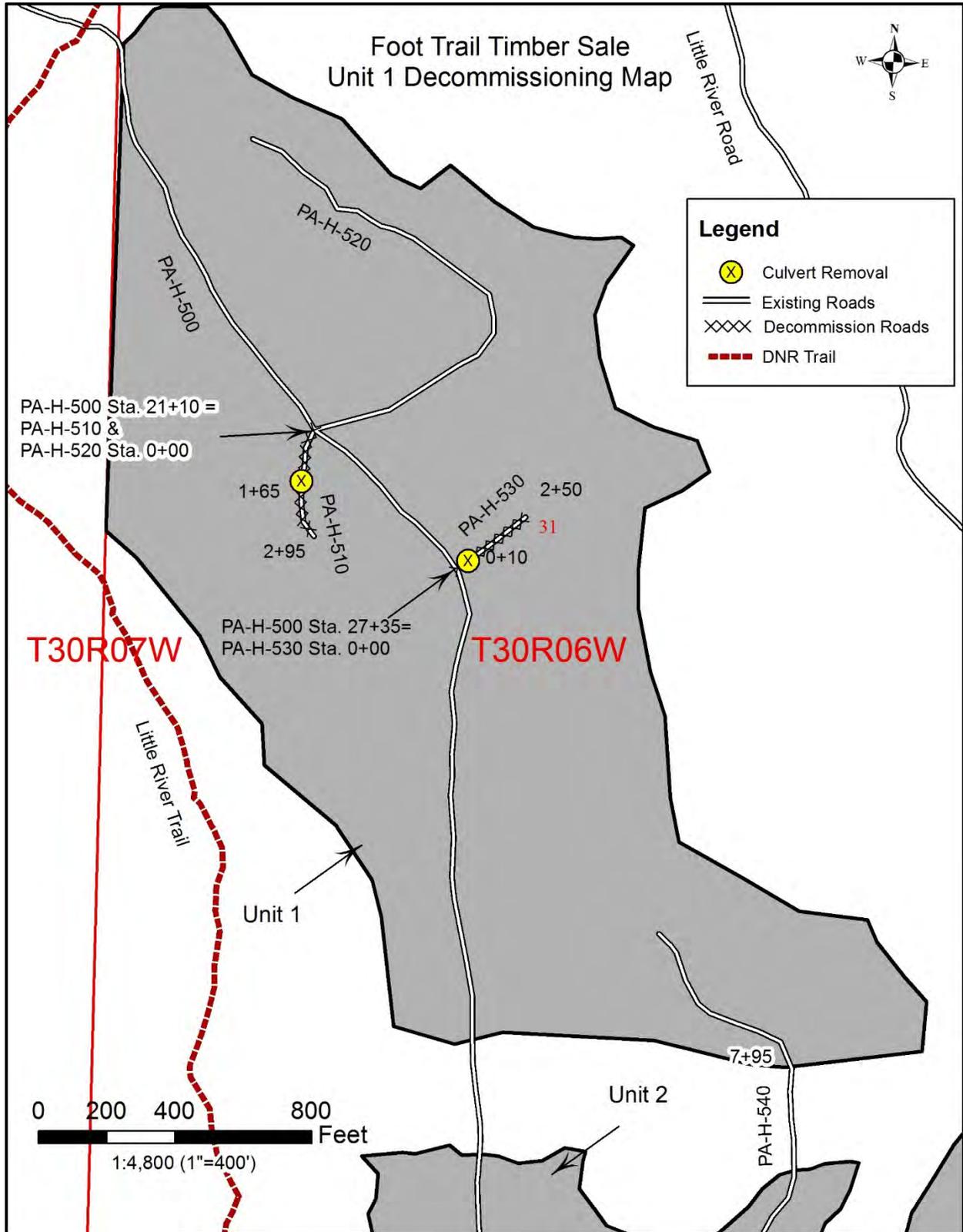


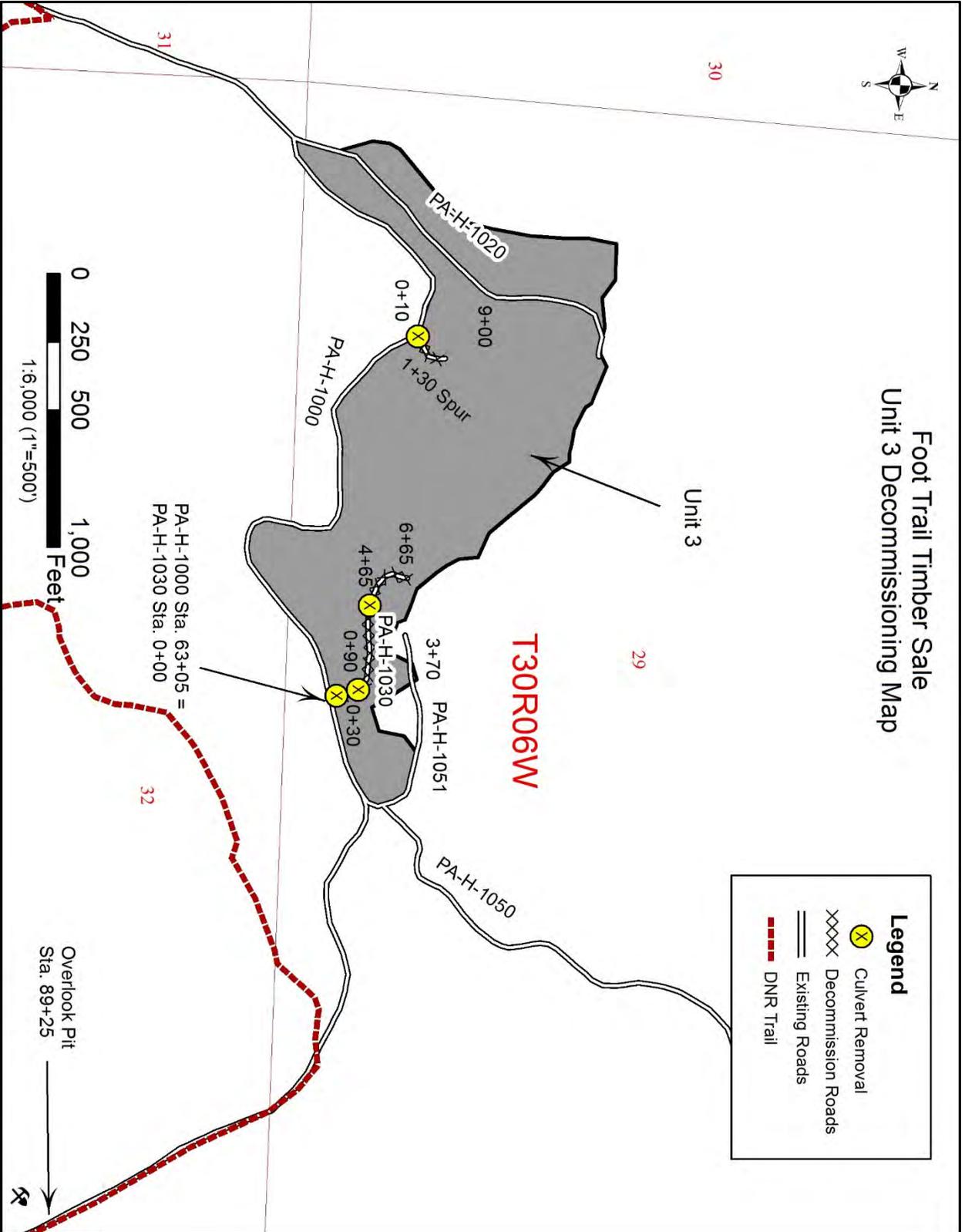


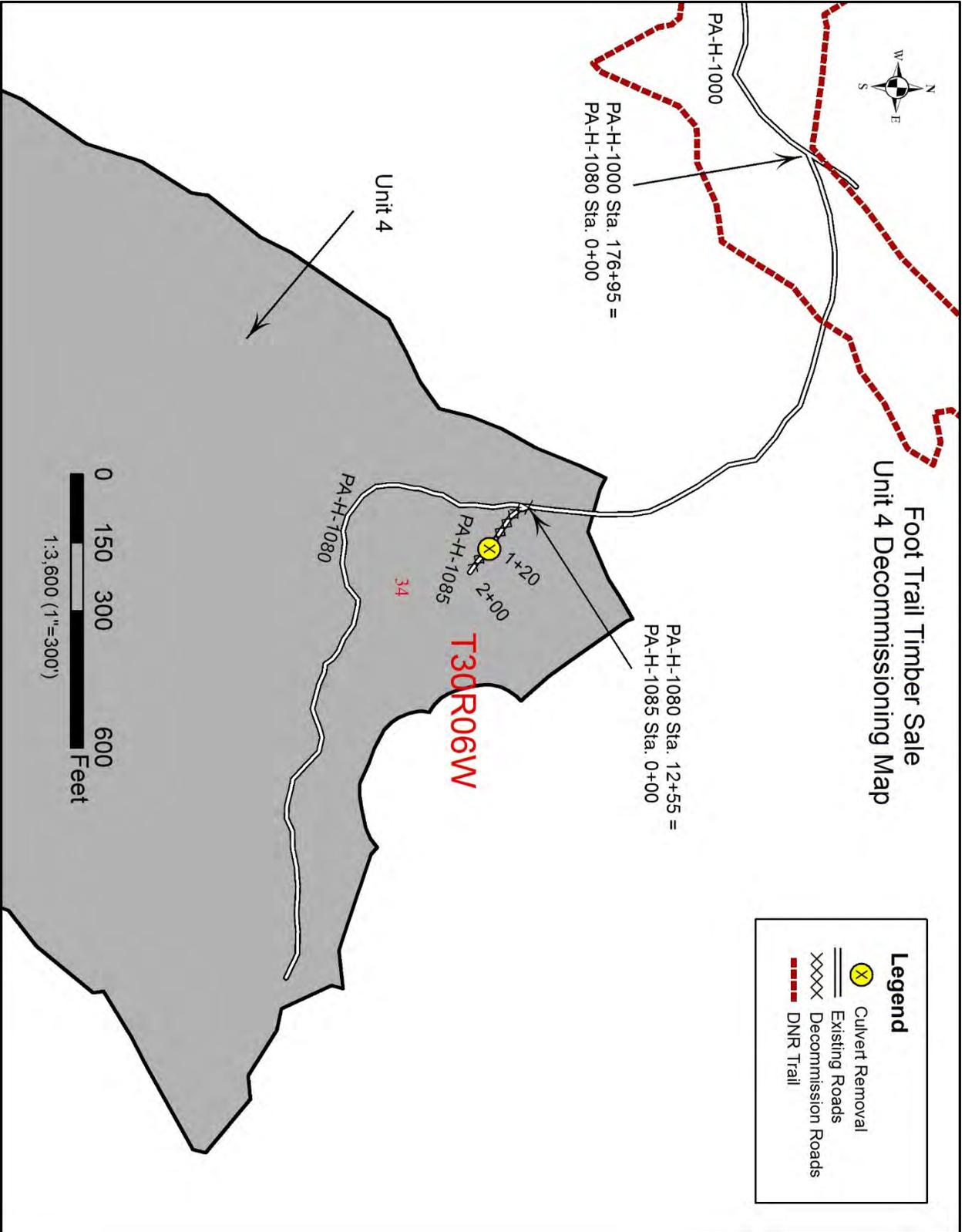












SECTION 0 – SCOPE OF PROJECT

0-1 ROAD PLAN SCOPE

Clauses in this road plan apply to all road related work, including landings and rock source development, unless otherwise noted.

0-2 REQUIRED ROADS

The specified work on the following roads is required.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
FS-3030	0+00 – 14+25	Reconstruction
PA-H-500	0+00 – 77+60	Construction
PA-H-1000	0+00 – 176+95	Maintenance
PA-H-1080	0+00 – 28+00	Construction

0-3 OPTIONAL ROADS

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

<u>Road</u>	<u>Stations</u>	<u>Type</u>
PA-H-510	0+00 – 2+95	Construction
PA-H-520	0+00 – 15+80	Construction
PA-H-530	0+00 – 2+50	Construction
PA-H-540	0+00 – 13+70	Construction
PA-H-550	0+00 – 4+65	Construction
PA-H-1020	0+00 – 14+85	Maintenance
1+30 Spur	0+00 – 1+30	Reconstruction
PA-H-1030	0+00 – 6+65	Construction
PA-H-1050	0+00 – 0+75	Maintenance
PA-H-1051	0+00 – 3+70	Maintenance
PA-H-1085	0+00 – 2+00	Construction

0-4 CONSTRUCTION

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
PA-H-500	0+00 – 77+60	See Below*
PA-H-510	0+00 – 2+95	See Below
PA-H-520	0+00 – 15+80	See Below
PA-H-530	0+00 – 2+50	See Below
PA-H-540	0+00 – 13+70	See Below
PA-H-550	0+00 – 4+65	See Below
PA-H-1030	0+00 – 6+65	See Below

PA-H-1080	0+00 – 28+00	See Below
PA-H-1085	0+00 – 2+00	See Below
Total Stations	153.85 Stations	

Construction includes, but is not limited to: Clearing, grubbing, right-of-way debris disposal, excavation and/or embankment to subgrade, end hauling material for construction, compacting road surfaces, constructing ditchlines, constructing ditchouts, constructing turnouts and turnarounds, curve widening, acquisition and installation of drainage structures, application of rock, spreading grass seed and hay/straw. *PA-H-500 shall also be in accordance with Clause 6-6 from station 0+00 – 8+00. All right of way trees on the PA-H-500 from Stations 0+00 - 8+00 shall be decked in accordance with Appendix B of the Road Use Permit and the “Olympic National Forest Tree Cutting and Log Decking Specifications”.

0-5 RECONSTRUCTION

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
FS-3030	0+00 – 14+25	Reconstruction includes, but not limited to: Removal all vegetative material with minimum loss of rock and existing asphalt surface and dispose of in accordance with Clause 3-23. Cleaning ditches and constructing ditches, constructing headwalls, cleaning culvert inlets and outlets in accordance with Clause 2-7. Brush road in accordance with Clause 3-1. Grading, shaping and compacting existing road surface and turnouts in accordance with Clause 2-5, application of rock in accordance with the rock list and Clause 6-6. Install gate in accordance with Clause 7-76.
1+30 Spur	0+00 – 1+30	Reconstruction includes, but not limited to: Removal all vegetative material with minimum loss of rock and dispose of in accordance with Clause 2-9 and Clause 3-23. Cleaning ditches and constructing ditches, constructing headwalls, cleaning culvert inlets and outlets in

		accordance with Clause 2-7, installing additional culverts and replacing culverts in accordance with the culvert list. Grading, shaping and compacting existing road surface and turnouts in accordance with Clause 2-5, application of rock in accordance with the rock list.
Total Stations	15.55 Stations	

Reconstruction includes, but is not limited to: Installing additional culverts, realigning road segments, application of rock, removing culverts.

0-6 PRE-HAUL MAINTENANCE

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
PA-H-1000	0+00 – 176+95	Grade, shape and compact existing running surface in accordance to Clause 2-5 as directed by contract administrator and apply rock in accordance with Rock List.
PA-H-1020	0+00 – 14+85	Grade, shape and compact existing running surface in accordance to Clause 2-5, apply rock in accordance with Rock list, install culverts in accordance with culvert list, clean/construct ditch lines in accordance with Clause 2-7 and add turnouts/turnarounds. Brush road in accordance with Clause 3-1.
PA-H-1050	0+00 – 0+75	Grade, shape and compact existing running surface in accordance to Clause 2-5 as directed by contract administrator and apply rock in accordance with Rock List.
PA-H-1051	0+00 – 3+70	Grade, shape and compact existing running surface in accordance to Clause 2-5 as directed by contract administrator and apply rock in accordance with Rock List.
Total Stations	196.25 Stations	

Pre-haul maintenance includes, but is not limited to: Brushing right-of-way, right-of-way debris disposal, cleaning ditches, constructing ditches, installing additional culverts, widening road segments, constructing headwalls, cleaning culvert inlets and outlets, cross drain culvert replacements, installing erosion control materials and sediment removal structures, spot rocking, grading and shaping existing road surface and turnouts, constructing additional turnouts, compaction of road surface, application of rock, acquisition and application of grass seed and hay.

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 called Overlook Pit. Rock source development will involve stripping approximately 0.75 acres, drilling, shooting and the manufacture of a minimum 20890 yds³ of 4" minus jaw run rock and 50 yds³ of oversized in accordance with Clause 6-23.

Work for developing rock sources is listed in Section 6 ROCK AND SURFACING.

0-13 STRUCTURES

Purchaser shall provide and install all structures. Requirements for these structures are listed in Section 7 STRUCTURES.

SECTION 1 – GENERAL

1-1 ROAD PLAN CHANGES

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

1-2 UNFORESEEN CONDITIONS

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

1-3 ROAD DIMENSIONS

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

1-4 ROAD TOLERANCES

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

<u>Tolerance Class</u>	<u>A</u>	<u>B</u>	<u>C</u>
Road and Subgrade Width (feet)	+1.5	+1.5	+2.0
Subgrade Elevation (feet +/-)	0.5	1.0	2.0
Centerline alignment (feet lt./rt.)	1.0	1.5	3.0
Bridge Installation Centerline alignment (feet lt./rt.)	0.5		
Bridge Installation Elevation (feet +/-)	0.25		

1-5 DESIGN DATA

Bridge design data and PA-H-500 design sheets are available upon request at the Department of Natural Resources Olympic Region Office in Forks, WA or at the Department of Natural Resources Straits District Office in Port Angeles, WA.

1-6 ORDER OF PRECEDENCE

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

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

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

1-8 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 cut ends, or 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 or cold galvanizing compound.

1-10 WSDOT STANDARD SPECIFICATION REFERENCE

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

1-12 SURVEY MONUMENTS

At no time during construction, reconstruction, or maintenance shall survey monuments, witness trees, or bearing trees be disturbed or damaged. If damaged or disturbed, Purchaser shall hire a licensed land surveyor to repair, replace, and/or reset them.

1-13 LOG LOADING

At no time shall the loading of logs occur on the PA-H-1000 road unless approved by the Contract Administrator. In addition, no debris from harvesting operations shall be allowed on this road.

SUBSECTION ROAD MARKING

1-15 ROAD MARKING

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

- Orange ribbon and paint for construction centerlines.
- Construction stakes for everything else.

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.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
PA-H-500	0+00 – 10+91	Centerline and Reference Points

1-18 REFERENCE POINT DAMAGE

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

SUBSECTION TIMING

1-20 COMPLETE BY DATE

Purchaser shall complete construction, reconstruction and pre-haul road work before the start of timber haul.

1-21 HAUL APPROVAL

Purchaser shall not use roads under this road plan without written approval from the Contract Administrator.

1-22 WORK NOTIFICATIONS

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

1-23 ROAD WORK PHASE APPROVAL

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

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

SUBSECTION RESTRICTIONS

1-25 ACTIVITY TIMING RESTRICTION

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

<u>Road</u>	<u>Stations</u>	<u>Activity</u>	<u>Closure Period</u>
All	All	All	Weekends and State Recognized Holidays
All	All	All	November 1 st – April 30 th
All	All	All	8:00 PM-6:00 AM (Year Round)

1-26 OPERATING DURING CLOSURE PERIOD

If permission is granted to operate during a closure period listed in Clause 1-25 ACTIVITY TIMING RESTRICTION or Contract Clause H-130 HAULING SCHEDULE, Purchaser shall provide a maintenance plan to include further protection of state resources. Purchaser shall obtain written approval from the Contract Administrator for the maintenance plan, and shall put preventative measures in place before operating during the closure period. Purchaser is required to maintain all haul roads at their own expense including those listed in Contract Clause C-060 DESIGNATED ROAD MAINTAINER. If other operators are using, or desire to use these designated maintainer roads, a joint operating plan must be developed. All parties shall follow this plan.

1-29 SEDIMENT RESTRICTION

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

1-30 CLOSURE TO PREVENT DAMAGE

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

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

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

1-32 BRIDGE AND ASPHALT SURFACE RESTRICTION

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

If tracked equipment is used on bridge or asphalt surfaces, Purchaser shall immediately cease all road construction and hauling operations. Purchaser shall remove any dirt, rock, or other material tracked or spilled on the bridge or asphalt surface(s) and have

surface(s) evaluated by the District Engineer or their designee for any damage caused by transporting equipment. Any damage to the surface(s) will be repaired, at the Purchaser’s expense, as directed by the Contract Administrator.

1-33 SNOW PLOWING RESTRICTION

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

SUBSECTION OTHER INFRASTRUCTURE

1-40 ROAD APPROACHES TO COUNTY ROADS AND STATE HIGHWAYS

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

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

The following county roads and state highways are affected by this sale:

<u>Road Name</u>
Little River Rd.

1-41 REQUIREMENTS FOR PAVED ROAD APPROACHES

Requirements for the paved road name road approaches:
 Purchaser shall build up approaches to allow a smooth grade transition between the FS-3030 and Little River road. The top of the FS-3030 road surfacing must be kept level with the surface of the Little River road at all times.

1-43 ROAD WORK AROUND UTILITIES

Road work is in close proximity to a utility. Known utilities are listed, but it is the Purchaser’s responsibility to identify any utilities not listed. Purchaser shall work in accordance with all applicable laws or rules concerning utilities. Purchaser is responsible for all notification, including “call before you dig”, and liabilities associated with the utilities and their rights-of-way. On the FS-3030 Rd., before road work activities, Purchaser shall contact Black Diamond Water District.

<u>Road</u>	<u>Stations</u>	<u>Utility</u>	<u>Utility Contact</u>
FS-3030	0+00 – 14+25	Black Diamond Water District and buried utilities	811 Black Diamond Water District

			Jim Heflin 360-775-4605
Little River Road	M.P. 3.44 – 4.38	Elevated and buried utilities	811

SECTION 2 – MAINTENANCE

2-1 GENERAL ROAD MAINTENANCE

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

2-2 ROAD MAINTENANCE – PURCHASER MAINTENANCE

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

2-3 ROAD MAINTENANCE – DESIGNATED MAINTAINER

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

2-4 PASSAGE OF LIGHT VEHICLES

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

2-5 MAINTENANCE GRADING – EXISTING ROAD

On the following road(s), Purchaser shall use a grader to shape the existing surface.

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
FS-3030	0+00 – 8+31	Grade and remove shoulder vegetation from existing asphalt surfacing. Care shall be taken not to damage asphalt.
FS-3030	9+51 – 14+25	Grade, shape, compact and remove shoulder vegetation.
PA-H-1000	0+00 – 176+95	Grade, shape, compact and remove shoulder vegetation as required by contract administrator.
PA-H-1020	0+00 – 14+85	Grade, shape, compact and remove shoulder vegetation.

PA-H-1050	0+00 – 0+75	Grade, shape, compact and remove shoulder vegetation as required by contract administrator.
PA-H-1051	0+00 – 3+70	Grade, shape, compact and remove shoulder vegetation as required by contract administrator.

2-6 CLEANING CULVERTS

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

<u>Road</u>	<u>Stations</u>
FS-3030	4+90, 6+60, 10+35

2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS

On the following road(s), Purchaser shall clean and/or construct ditches, headwalls, and catchbasins. Work must be completed before the start of timber haul and must be done in accordance with the Typical Section Sheet. Pulling ditch material across the road or mixing in with the road surface is not allowed. Ditchlines, headwalls, and catch basins shall not encroach into the existing road.

<u>Road</u>	<u>Stations</u>	<u>Left and/or Right</u>	<u>Comments</u>
FS-3030	4+90 – 8+31	Left	Ditching
FS-3030	8+00	Left	Catch basin install x 3
FS-3030	9+75	Left	Catch basin install x 3
FS-3030	11+70 – 13+60	Left and Right	Ditching
PA-H-500	59+60	Right	Catch basin install x 2
PA-H-500	60+80	Right	Catch basin install x 2
1+30 Spur	0+00 – 1+30	Right	Ditching
PA-H-1020	1+75 – 14+85	Right	Ditching

2-9 REMOVING VEGETATIVE MATERIAL

On the following road(s), Purchaser shall remove all vegetative material, dirt, mud and other debris on the existing road surface with a minimum loss of rock. Material must be disposed of as specified in Clauses 4-35 through 4-38.

<u>Road</u>	<u>Stations</u>
1+30 Spur	0+00 – 1+30

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

SUBSECTION BRUSHING

3-1 BRUSHING

On the following road(s), Purchaser shall cut vegetative material up to 5 inches in diameter, including limbs, as shown on the BRUSHING DETAIL. Brushing must be achieved by mechanical cutting of brush, trees, and branches. Root systems and stumps of cut vegetation may not be disturbed unless directed by the Contract Administrator. Purchaser shall remove brushing debris from the road surface, ditchlines, and culvert inlets and outlets.

<u>Road</u>	<u>Stations</u>
FS-3030	4+80 – 13+60
PA-H-1020	0+00 – 14+85

3-2 BRUSHING RESTRICTION

Pulling, digging, pushing over, and other non-cutting methods used for vegetation removal may not be used for brushing. Excavator buckets, log loaders and similar equipment may not be used for brushing unless otherwise approved in writing by the Contract Administrator.

SUBSECTION CLEARING

3-5 CLEARING

Purchaser shall fall all vegetative material larger than 5 inches DBH or over 15 feet high between the marked right-of-way boundaries or if not marked in the field, between the clearing limits specified on the TYPICAL SECTION SHEET. Clearing must be completed before starting excavation and embankment.

3-7 RIGHT-OF-WAY DECKING

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

3-8 PROHIBITED DECKING AREAS

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

- Within the grubbing limits.
- Within 50 feet of any stream.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- On slopes greater than 40%.
- Against standing trees.

SUBSECTION GRUBBING

3-10 GRUBBING

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

3-12 STUMP PLACEMENT

Purchaser shall place grubbed stumps outside of the clearing limits, as directed by the Contract Administrator and in compliance with all other clauses in this road plan. Stumps must be positioned upright, with root wads in contact with the forest floor and on stable locations.

3-13 STUMPS FOR PUNCHEON MATERIAL

On the following road(s), stumps from within the grubbing limits may be overturned and driven flush with the ground surface for use as subgrade puncheon material.

Road	Stations
PA-H-510	0+00 – 2+95
PA-H-520	0+00 – 15+80
PA-H-530	0+00 -2+50
PA-H-540	0+00 – 13+70
PA-H-550	0+00 – 4+65
PA-H-1030	0+00 – 6+65
PA-H-1080	0+00 – 28+00
PA-H-1085	0+00 – 2+00

SUBSECTION ORGANIC DEBRIS

3-20 ORGANIC DEBRIS DEFINITION

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

3-21 DISPOSAL COMPLETION

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

3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS

Waste areas for organic debris are located as listed below.

<u>Road</u>	<u>Stations</u>	<u>Disposal Location</u>	<u>Requirements</u>
H-500	37+10 – 46+25	Waste Area at Station 33+75	Deposit organic waste where slopes are greater than 45% between stations 37+10 – 46+25 into waste area.

3-23 PROHIBITED DISPOSAL AREAS

Purchaser shall not place organic debris in the following areas:

- Within 50 feet of a cross drain culvert.
- Within 100 feet of a live stream, or wetland.
- On road subgrades, or excavation and embankment slopes.
- On slopes greater than 45%.
- Within the operational area for cable landings where debris may shift or roll.
- On locations where brush can fall into the ditch or onto the road surface.
- Against standing timber.

3-24 BURYING ORGANIC DEBRIS RESTRICTED

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

3-25 SCATTERING ORGANIC DEBRIS

Purchaser shall scatter organic debris outside of the grubbing limits in accordance with Clause 3-23 unless otherwise detailed in this road plan and as directed by the Contract Administrator.

SUBSECTION PILE

3-32 END HAULING ORGANIC DEBRIS

On the following road(s), and on slopes greater than 45%, Purchaser shall end haul or push organic debris to the designated waste areas specified in Clause 3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS, or to a waste area located by the Contract Administrator.

<u>Road</u>	<u>Stations</u>
H-500	37+10 – 46+25

SECTION 4 – EXCAVATION

4-1 EXCAVATOR CONSTRUCTION

Purchaser shall use a track mounted hydraulic excavator for construction, reconstruction and maintenance work unless stated otherwise within this Road Plan or authorized in writing by the Contract Administrator.

4-2 PIONEERING

Pioneering may not extend past construction that will be completed during the current construction season. Pioneering may not extend more than 1000 feet beyond completed construction unless approved in writing by the Contract Administrator. In addition, the following actions must be taken as pioneering progresses:

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

4-3 ROAD GRADE AND ALIGNMENT STANDARDS

Purchaser shall follow these standards for road grade and alignment:

- Grade and alignment must have smooth continuity, without abrupt changes in direction.
- Maximum grades may not exceed 18 percent favorable and 16 percent adverse.
- Minimum curve radius is 60 feet at centerline.
- Maximum grade change for sag vertical curves is 5% in 100 feet.
- Maximum grade change for crest vertical curves is 4% in 100 feet.

4-4 SWITCHBACK STANDARDS

A switchback is defined as a curved segment of road between a beginning and end of the same curve, where the change of traffic travel direction is greater than 90 degrees.

Purchaser shall follow these standards for switchbacks:

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

4-5 CUT SLOPE RATIO

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

<u>Material Type</u>	<u>Excavation Slope Ratio</u>	<u>Excavation Slope Percent</u>
Common Earth (on side slopes up to 55%)	1:1	100
Common Earth (56% to 70% side slopes)	¾:1	133
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, unless construction staked or designed:

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

4-7 SHAPING CUT AND FILL SLOPE

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

4-8 CURVE WIDENING

The minimum widening placed on the inside of curves is:

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

4-12 FULL BENCH CONSTRUCTION

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

<u>Road</u>	<u>Full Bench Location</u>
PA-H-500	37+10 – 46+25

SUBSECTION INTERSECTIONS, TURNOUTS AND TURNAROUNDS

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. Locations changes are subject to written approval by the Contract Administrator. Minimum dimensions are shown on the TYPICAL SECTION SHEET.

4-22 TURNAROUNDS

Turnarounds must be no larger than 50 feet long and 30 feet wide. Locations are subject to written approval by the Contract Administrator.

SUBSECTION DITCH CONSTRUCTION

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.

4-27 DITCH WORK – MATERIAL USE PROHIBITED

Purchaser shall not pull ditch material across the road or mix in with the road surface. Excavated material must be end hauled to the location specified in Clauses 4-36 through 4-38.

4-28 DITCH DRAINAGE

Ditches must drain to cross-drain culverts or ditchouts.

4-29 DITCHOUTS

Purchaser shall construct ditchouts as identified in the table below and as needed to fit as built conditions. 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. L or R denotes ditchout left or ditchout right.

<u>Road</u>	<u>Stations</u>	<u>L or R</u>
FS-3030	11+70 (approx. 10')	Right
PA-H-500	49+75 (approx. 20')	Right
PA-H-520	9+50 (approx. 20')	Left and Right
PA-H-540	7+95 (approx. 20')	Right

SUBSECTION WASTE MATERIAL (DIRT)

4-35 WASTE MATERIAL DEFINITION

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

4-36 DISPOSAL OF WASTE MATERIAL

Purchaser may sidecast waste material on side slopes up to 45% if the waste material is compacted and free of organic debris. On side slopes greater than 45%, all waste material must be end hauled or pushed to the designated embankment sites and waste areas identified in Clause 4-37 WASTE AREA LOCATION.

4-37 WASTE AREA LOCATION

Purchaser shall deposit waste material in the listed designated areas. The amount of material allowed in a waste area is at the discretion of the Contract Administrator.

Note: All amount values are estimated bank yards.

<u>Road</u>	<u>Waste Area Location</u>	<u>Comments</u>	<u>Volume</u>
FS-3030	H-1021	Waste Area from bridge site to be deposited between the roads of H-1020 and H-1021	500 yds ³
H-500	H-500 Sta. 33+75	Between stations 37+10 – 46+25, endhaul waste from areas where slopes are greater than 45% to waste area.	4000 yds ³

4-38 PROHIBITED WASTE DISPOSAL AREAS

Purchaser shall not deposit waste material in the following areas:

- Within 50 feet of a cross drain culvert.
- Within 100 feet of a live stream or wetland.
- Within a riparian management zone.
- On side slopes steeper than 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.

4-39 WASTE AREA COMPACTION

Excavated material may be deposited adjacent to the road prism on side slopes up to 45% if the waste material is compacted and free of debris. On side slopes of 45% or more, all excavation shall be end hauled or pushed to designated waste areas. All waste material shall be compacted. The minimum acceptable compaction is achieved by placing embankments in 2 foot or shallower lifts and routing excavation equipment over the entire width of the lifts, with the exception of side hill embankments too narrow to accommodate excavation equipment which may be placed by end-dumping or sidecasting until sufficiently wide to support the equipment.

SUBSECTION BORROW

4-47 NATIVE MATERIAL

Native material consists of naturally occurring material that is free of organic debris, trash, and rocks greater than 12 inches in any dimension.

SUBSECTION SHAPING

4-55 ROAD SHAPING

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

4-56 DRY WEATHER SHAPING

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

SUBSECTION COMPACTION

4-60 FILL COMPACTION

Purchaser shall compact all embankment and waste material in accordance with the COMPACTION LIST by routing equipment over the entire width of each lift. A plate compactor must be used for areas specifically requiring keyed embankment construction and for embankment segments too narrow to accommodate equipment.

4-61 SUBGRADE COMPACTION

Purchaser shall compact constructed and reconstructed subgrades in accordance with the COMPACTION LIST by routing equipment over the entire width, except ditch. Purchaser shall obtain written approval from the Contract Administrator for subgrade compaction before before placement of rock.

4-62 DRY WEATHER COMPACTION

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

4-63 EXISTING SURFACE COMPACTION

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

4-64 WASTE MATERIAL COMPACTION

All waste material shall be compacted by running equipment over it or bucket tamping.

4-65 CULVERT BACKFILL COMPACTION

Culvert backfills shall be accomplished by using a jumping jack compactor, performing at least 2 passes per lift, in lifts not to exceed 8 inches.

4-66 COMPACTION BY METHOD

Compaction shall consist of three complete passes over the entire width of each lift with a vibratory drum roller weighing a minimum of 6,000 pounds at a maximum operating speed of 3 mph. For embankment segments too narrow to accommodate a drum roller, a plate compactor shall be used.

SECTION 5 – DRAINAGE

5-1 REMOVAL OF SHOULDER BERMS

On the following road(s), Purchaser shall remove berms from road shoulders to permit the escape of runoff. Material shall be disposed of in accordance with Clauses 4-35 through 4-38. The construction of ditchouts is required where ponding could result from the effects of sidecast debris.

<u>Road</u>	<u>Stations</u>
H-1020	0+00 – 14+85
1+30 Spur	0+00 – 1+30

5-3 PUNCHEON PLACEMENT

On the following road(s), puncheon may be utilized in the subgrade on the following road. Puncheon shall consist of logs of at least 4 inches in diameter and shall be at least 17 feet long.

<u>Road</u>	<u>Stations</u>
H-510	0+00 – 2+95
H-520	0+00 – 15+80
H-530	0+00 – 2+50

H-540	0+00 – 13+70
H-550	0+00 – 4+65
H-1030	0+00 – 6+65
H-1080	0+00 – 28+00
H-1085	0+00 – 2+00

5-4 PUNCHEON RESTRICTED

Other than listed in Clause 5-3 Puncheon Placement, At no time shall puncheon be used in the subgrade, unless approved by the Contract Administrator.

SUBSECTION CULVERTS

5-5 CULVERTS

Purchaser shall install culverts as part of this contract. Culverts must be installed concurrently with subgrade work and must be installed before subgrade compaction and rock application. Culvert locations and the minimum requirements for culvert length and diameter are designated on the CULVERT 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.

5-7 USED CULVERT MATERIAL

On the following road(s), Purchaser may install used culverts. All other culverts must have new culverts installed. Purchaser shall obtain approval from the Contract Administrator for the quality of the used culverts before installation. Culverts must meet the specifications in Clauses 10-15 through 10-23.

<u>Road</u>	<u>Stations</u>
H-510	1+65
H-530	0+10
1+30 Spur	0+10

5-12 UNUSED MATERIALS STATE PROPERTY

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

5-13 CONTINGENCY CULVERTS

The following culverts will be supplied by the Purchaser and are available for installation as directed by the Contract Administrator. In the event that culverts are not used, culverts shall be stockpiled at Port Angeles Work Center.

<u>Road</u>	<u>Size</u>
As Directed by Contract Administrator	3- 18" x 30'
	1 – 24" x 30'

SUBSECTION CULVERT INSTALLATION

5-15 CULVERT INSTALLATION

Culvert installation must be in accordance with the TYPICAL CROSS DRAIN CULVERT INSTALLATION DETAIL SHEET, TYPICAL TYPE NS NP CULVERT INSTALLATION DETAIL SHEET, the National Corrugated Metal Pipe Association’s "Installation Manual for Corrugated Steel Drainage Structures"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. Culverts over 15 inches diameter shall be banded using lengths of no less than 10 feet, and no more than one length less than 16 feet. Shorter section of banded culvert shall be installed at the inlet end.

5-16 APPROVAL FOR LARGER CULVERT INSTALLATION

Purchaser shall obtain written approval from the District Engineer or his/her designee for the installation of culverts 30 inches in diameter and over before backfilling.

5-17 CROSS DRAIN SKEW AND SLOPE

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

5-18 CULVERT DEPTH OF COVER

Cross drain culverts must be installed with a depth of cover of not less than 18 inches of compacted subgrade over the top of the culvert at the shallowest point. Stream crossing culverts must be installed with a depth of cover specified in the Engineer’s design, TYPICAL TYPE NS NP DETAIL SHEET, or recommended by the culvert manufacturer for the type and size of the pipe, whichever is greater.

SUBSECTION ENERGY DISSIPATERS

5-20 ENERGY DISSIPATERS

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

Rock used for energy dissipaters must weigh at least 10 pounds. Energy dissipaters must extend a minimum of 1 foot to each side of the culvert at the outlet and a minimum of 2 feet beyond the outlet. Placement must be with a zero-drop-height method only.

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 TYPICAL CULVERT INSTALLATION DETAILS SHEET.

SUBSECTION CATCH BASINS, HEADWALLS, AND ARMORING

5-25 CATCH BASINS

Purchaser shall construct catch basins to resist erosion. Minimum dimensions of catch basins are 1-2 feet wide, 1-2 feet deep and 2-4 feet long.

5-26 HEADWALLS FOR CROSS DRAIN CULVERTS

Purchaser shall construct headwalls in accordance with the TYPICAL CROSS DRAIN CULVERT INSTALLATION DETAIL at all cross drain culverts that specify the placement of rock. Rock used for headwalls must consist of oversize or quarry spall material. 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. No placement by end dumping or dropping of rock is allowed.

SECTION 6 – ROCK AND SURFACING

SUBSECTION ROCK SOURCE

6-2 ROCK SOURCE ON STATE LAND

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

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
Overlook Pit	T30 R6W Sec 32	4" minus jaw run, Oversized

6-5 ROCK FROM COMMERCIAL SOURCE

Rock used in accordance with the quantities on the ROCK LIST shall be obtained from the listed commercial source at the Purchaser's expense. Rock sources are subject to written approval by the Contract Administrator before their use. Prior to approval, purchaser shall submit a passing sieve test performed by procedure described in WSDOT FOP for WAQTC T 27/11.

6-6 WEED FREE ROCK SPECIFICATIONS

The Contractor shall provide documentation that the rock source has been certified as weed free by the Clallam County Noxious Weed Control Board and has been verified as meeting Forest Service requirements for use on roads. Certification shall consist of verification with the County Coordinator that a valid Inspection Record for Invasive Plants is on file with the County.

SUBSECTION ROCK SOURCE DEVELOPMENT

6-10 ROCK SOURCE DEVELOPMENT PLAN BY STATE

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

<u>Source</u>	<u>Rock Type</u>
Overlook Pit	4" minus jaw run, Oversized

6-12 ROCK SOURCE SPECIFICATIONS

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

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

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

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

6-14 DRILL AND SHOOT

Rock drilling and shooting must meet the following specifications:

- Oversize material remaining in the rock source at the conclusion of the timber sale may not exceed 5% of the total volume mined in that source.
- Oversize material is defined as rock fragments larger than five feet in any dimension.
- Oversized rock that exceeds the maximum allowable amount must be shot or broken up.
- Purchaser shall notify the Contract Administrator a minimum of 3 working days before blasting operations.
- Purchaser shall submit an informational drilling and shooting plan to the Contract Administrator 10 working days before any drilling (Form #M-126PAC).
- All operations must be carried out in compliance with the Regulations and Standards Applicable to Metal and Nonmetal Mining and Milling Operations (30 CFR) U.S. Department of Labor, Mine Safety and Health Administration and the Safety Standards for Construction Work (296-155 WAC), Washington Department of Labor and Industries.
- Purchaser shall block access roads and trails before blasting operations.

6-16 DRILL AND SHOOT TECHNICAL SPECIFICATIONS

DRILLING

The Purchaser shall drill in accordance to an approved Shot Plan. Drill depth shall not extend more than 5 feet below existing pit floor. The District Engineer or their designee and Purchaser shall jointly measure and determine drill depths, hole spacing and pattern and must be approved prior to loading explosives. During drilling operation, drill operator shall keep a bore log which includes the depth and location of each hole drilled. The District Engineer or their designee may ask to see the bore log during and after the drilling process has completed.

BLASTING

The Purchaser shall furnish and load appropriate explosives, detonators, and ignition sources in accordance to all State and Federal laws and in accordance to an approved Shot Plan.

DRILLING AND SHOOTING PLAN “SHOT PLAN”

The Purchaser shall submit a written drilling and shooting plan, including drawings, to the District Engineer or their designee, which must meet the approval of the District Engineer or their designee prior to the start of the drilling operation. The plan and drawing(s) shall include the following proposals: drill hole diameter, drill hole spacing, drill hole pattern, drill hole depth, any stemming depths, type and depth of explosive including amount per drill hole, detonator and ignition type, and proposed delay pattern. Any adjustment or modifications to the proposals during operations must be noted and resubmitted prior to loading of explosives.

WEATHER LIMITATIONS

When, in the opinion of the District Engineer or their designee or Contract Administrator, the weather is such that satisfactory results cannot be obtained in any phase of operation, Purchaser shall suspend operations until the weather is favorable. Before and during any suspension, Purchaser shall protect the work from damage or deterioration.

SUBSECTION ROCK MANUFACTURE

6-20 ROCK CRUSHING OPERATIONS

Rock crushing operations must conform to the following specifications:

- Operations and placement of oversize material must be conducted in or near the rock source site, as approved in writing by the Contract Administrator.
- The crushing operation must be concluded within 45 working days from the time it begins.
- All testing and operations must be performed in accordance with the attached ROCK CRUSHING COMPLIANCE PROCEDURE.
- Purchaser shall produce sieve analysis for crushing operations in accordance with 6-24 Rock Crushing Compliance Procedure.
- Purchaser may use a commercial testing lab to produce sieve analyses.
- Sieve analysis for acceptance of aggregate shall be performed by procedure described in WSDOT FOP for WAQTC T 27/11.

6-23 ROCK GRADATION TYPES

Purchaser shall manufacture rock in accordance with the types and amounts listed in the Manufacturing list below. Rock must meet the following specifications for gradation and uniform quality during manufacture. Purchaser shall provide a sieve analysis upon request from the Contract Administrator.

<u>Rock Type</u>	<u>Amount</u>
4" minus Jaw Run	20890 yds ³
Oversized	50 yds ³

6-24 ROCK CRUSHING COMPLIANCE PROCEDURE

Phase I. Equipment Adjustment

Step 1:

At start up of crushing operations, the Purchaser will notify the Contract Administrator when the rock meets the gradation specifications in the contract. None of the rock crushed during this calibration period will be counted toward the amount required to be crushed, and this rock must be kept separate from accepted rock crushed later.

Step 2:

The Purchaser will test the rock. Two samples will be taken. If the rock meets specifications, crushing may begin. If the rock does not meet specifications, return to Step 1.

Phase II. Production

Step 3:

The Purchaser will continue periodic testing to ensure that rock stays in spec. Testing will take place according to the following schedule:

- After the first 500 yards
- After every 2,000 yards thereafter.

- a) Any time a sample is out of spec, but is within 5%*, the Purchaser will be notified and a second sample will be taken later in the day. If the second sample meets specifications, the rock crushed during that day will be accepted. If the second sample also fails to meet spec, none of the rock crushed since the last acceptable test will be counted toward the amount to be crushed.
- b) Any time a sample is out of spec and is more than 5% off in any category, none of the rock crushed since the last acceptable test will be accepted and that rock must be kept separate from the stockpile. Return to Step 1.
- c) Purchaser is strongly encouraged to take their own samples regularly and keep their operations in spec to avoid unnecessary expenses.
 - The 5% will be applied only to sieve specs for 2" to ¼"; rock that is out of spec in larger sizes must be kept separate from the acceptable rock.

SUBSECTION ROCK GRADATIONS

6-28 1 ¼-INCH MINUS CRUSHED ROCK

% Passing 1 ¼" square sieve	100%
% Passing 5/8" square sieve	50 - 80%
% Passing U.S. #4 sieve	30 - 50%
% Passing U.S. #40 sieve	3 - 18%
% Passing U.S. #200 sieve	5%

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

6-37 4-INCH JAW RUN ROCK

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

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

6-52 OVERSIZE

% Passing 8" square sieve	100%
% Passing 4" square sieve	0%

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

SUBSECTION ROCK MEASUREMENT

6-55 ROCK APPLICATION MEASURED BY COMPACTED DEPTH

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

SUBSECTION ROCK APPLICATION

6-70 APPROVAL BEFORE ROCK APPLICATION

Purchaser shall obtain written approval from the Contract Administrator for subgrade drainage installation included grading and compaction before rock application.

6-71 ROCK APPLICATION

Purchaser shall apply rock in accordance with the specifications and quantities shown on the ROCK LIST. Rock must be spread, shaped, and compacted full width concurrent with rock hauling operations. The Contract Administrator will direct locations for rock that is to be applied as spot patching. Road surfaces must be compacted in accordance with the COMPACTION LIST by routing equipment over the entire width and in lifts not to exceed 6 inches.

6-72 ROCK APPLICATION AFTER HAULING

On the following road(s), upon completion of all hauling operations, Purchaser shall apply rock in accordance with the quantities shown on the ROCK LIST.

<u>Road</u>	<u>Stations</u>	<u>Rock Type</u>	<u>Amount</u>
FS-3030	0+00 – 14+25	1 ¼" minus	100 yd ³
PA-H-500	0+00 – 77+60	4" minus	200 yd ³
PA-H-1000	0+00 – 176+95	1 ¼" minus	200 yd ³

6-73 ROCK FOR WIDENED PORTIONS

Purchaser shall apply rock to turnarounds, turnouts, and areas with curve widening to the same depth and specifications as the traveled way.

6-76 DRY WEATHER ROCK COMPACTION

On all roads, The Contract Administrator may require the application of water to facilitate compaction of the rock surfacing. The method of water application is subject to approval by the Contract Administrator.

6-78 ROCK FOR SPOT PATCHING

Rock for spot patching shall be applied before any grading is done and before any rock lifts are applied. Once applied, spot patches shall be graded into the existing running surface.

SECTION 7 – STRUCTURES

SUBSECTION SIGNS

7-1 SIGN INSTALLATION

Purchaser shall purchase, install, and maintain the following road signs. Signs must be installed a minimum of 7 days before hauling logs and/or rock. Signs must comply with the Federal Highway Administration’s Manual on Uniform Traffic Control Devices.

<u>Road</u>	<u>Station</u>	<u>Sign</u>
Little River Rd	Junctions of FS-3030, PA-H-1000 and Little River Road	2 Truck Crossing signs East and West

SUBSECTION STREAM CROSSING STRUCTURES GENERAL

7-5 STRUCTURE DEBRIS

Purchaser shall not allow debris from the installation or removal of structures to enter any stream. Components removed from existing structures(s) must be removed from state land or, as directed in writing, by the Contract Administrator. Purchaser shall maintain a clean jobsite, with all materials stored away from the high water mark or other area presenting a risk of the materials entering a stream. Debris entering any stream must be removed immediately, and placed in the site(s) designated for stockpiling or disposal. Purchaser shall retrieve all material carried downstream from the jobsite.

7-6 STREAM CROSSING INSTALLATION

Purchaser shall install stream crossing structures in accordance with the manufacturer's requirements, and as directed by the District Engineer or their designee.

SUBSECTION ACCEPTANCE

7-15 DRAWING AND CALCULATION REVIEW FOR ACCEPTANCE

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

Bridge superstructure design must include all shop detail plans for fabricating the steel. All welds and splices must be shown on the shop plans. No welded field splices will be allowed; all field splices must be bolted and explicitly designed. No welded splices will be allowed on girders, floor beams, or truss members without specific approval from the Region Engineer or designee. When used, shop splices are generally complete joint penetration (CJP) butt-welded splices that develop the full section strength of the adjoining materials. In general, splices must not be made for material lengths or spans under 60 feet, or for widths or depths under 12.5 feet, unless the Purchaser demonstrates that the material is not otherwise readily and commercially available.

Send submittals to:

Department of Natural Resources
Attn.: Jeremy Tryall
411 Tillicum Lane
Forks, WA 98331

360-374-2833
Jeremy.tryall@dnr.wa.gov

Reports and plans will be accepted or rejected within 10 working days of receipt of final drawing submittal. Delays in work because of the possibility of rejection, revision, and resubmittal of documents are deemed a risk of the Purchaser and may not be the basis for claims of additional compensation.

Materials may not be fabricated until the Region Engineer or designee has approved the plans. Changes are not allowed in any shop plan after approval unless approved in writing by the Region Engineer or designee.

7-16 STRUCTURE ACCEPTANCE

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

7-17 INSTALLATION PRODUCTION SCHEDULE

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

- construction staking
- dewatering
- excavation
- pile driving
- construction of forms and rebar
- concrete pouring
- placement of sills/abutments/footings/structure
- backfill compaction, rock application and compaction

7-18 INSTALLATION STAGE ACCEPTANCE

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

7-19 INSTALLATION FINAL ACCEPTANCE

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

SUBSECTION TESTING

7-25 CONCRETE TESTING

Purchaser shall produce concrete test cylinders for the purpose of checking compressive strength of the concrete at 28 days. A minimum of 2 test cylinder(s) must be taken from each truckload. Purchaser shall provide the Contract Administrator or their designee, the written results of each test cylinder.

Purchaser shall also conduct a minimum of 1 concrete slump tests per 25 cubic yards of concrete in accordance with AASHTO specifications. The Contract Administrator or their designee may take concrete slump tests at any point. The results of each slump test must meet the allowable tolerances specified in the design. Concrete that does not meet the allowable tolerances may not be used unless the Purchaser's design engineer submits written approval to do so, to the Contract Administrator.

Purchaser shall not start backfilling until the results from a minimum of 1 test cylinder(s) from each truckload has been received by the Contract Administrator or their designee, and show that the compressive strength of the concrete meets or exceeds the design strength specified in the design. Purchaser may start backfill before concrete reaches its design strength if the Purchaser's design engineer submits written approval to do so, to the Contract Administrator.

All concrete not used for construction must be removed from state land.

SUBSECTION BRIDGE INSTALLATION

7-45 PURCHASER SUPPLIED BRIDGE

Purchaser shall provide, and construct each bridge listed below. Refer to design and Superstructure Specifications as stated in Clause 7-54 for details. Designs must include curbs and a full width, continuous deck with no gaps that allow water and sediment to drain from the bridge to the stream. Current design alignment does not account for passage of lowboys. Simulated Log Truck offtracking sheets upon request.

Road	Station	Length (ft.)	W.B.S.R. ¹ (ft.)	Loading/Deflection Ratio	Type	Vert. Clear ² (ft.)	Hor. Align ³ (ft.)
FS - 3030	8+31 – 9+51	120	20	U-80 and L-90 Overload, L/500	Non-composite Modular	29.1	P.P.

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

²Vertical clearance shall be measured from 100 year flood level.

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

7-47 PURCHASER SUPPLIED ABUTMENTS

If used Purchaser shall provide pre-cast concrete abutment designs. Bridge abutments must be designed by an engineer licensed in the state or province of manufacture. The abutment design includes, but is not limited to wing walls, steel reinforced concrete sills, and permanent, functional provisions for lifting. Abutments shall be designed to HL-93 Loading and U-80 and L-90 Overload Owner-specified special vehicle(s).

7-51 EMBANKMENT RETENTION

Purchaser shall provide embankment retention to ensure that bridge approach embankments are stable, contained, and do not encroach the stream channel. Bin wall or Hilfiker systems are two pre-approved designs. Alternate designs for embankment retention must be submitted to the same location stated in Clause 7-15 DRAWING AND CALCULATION REVIEW FOR ACCEPTANCE for consideration. Reports and plans will be accepted or rejected within 10 working days of receipt.

7-52 TECHNICAL SPECIFICATIONS

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

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

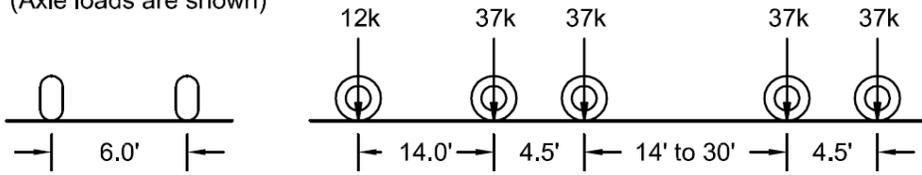
Certification of Materials: Mill test certificates must be provided for the steel stringers and the bridge deck. Certified mill test reports for steel bridge stringers with specified values must include, in addition to other tests, the results of Charpy V-notch impact tests.

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

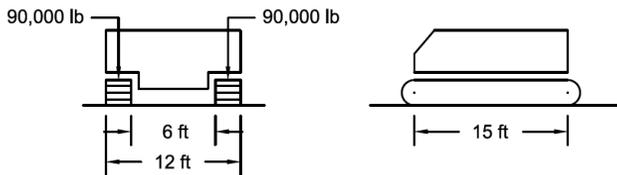
7-53 DESIGN LOADING (U-80/L-90)

Bridge and foundation shall be designed to U-80 inventory loading with L-90 overload and shall include the consideration for future 35 psf wearing surface.

U80 TRUCK LOADING - GVW = 80 TONS
(Axle loads are shown)



L-90 Tracked Loader - GVW = 90 tons



7-54 SUPERSTRUCTURE DESIGN-STEEL BRIDGE/FOUNDATION DESIGN

Purchaser is required to supply, prior to fabrication and construction of the structure, complete calculation and designs for all necessary elements of a modular steel bridge including, but not limited to superstructure, pile caps, guardrail, steel wingwalls and endwalls.

The Bridge structure shall meet or exceed the parameters below.

- A. Bridge deflection shall not exceed $L/500$ under inventory loading.
- B. Bridge shall be a minimum of 120 feet long and shall be 20 feet wide between guardrail faces.
- C. Bridge shall have the ability for 2 utilities to hang on bridge.

- D. The superstructure shall be two-piece modular design consisting of 4 steel girders and precast non-composite concrete deck construction with integral guard rails on each side.
- E. Deck running surface shall have a minimum 2% crown away from centerline and shall include concrete curbs.
- F. Joints between any precast concrete deck panels shall be designed to minimize seepage of water through the deck.
- G. Top of any bridge curb shall be a minimum 3 inches above finished surface.
- H. Guard rail shall be installed the full length of bridge on each side. Top of guard rails shall be a minimum height of 27-inches above finished running surface of the bridge.
- I. Bridge guard rails shall be Test Level 2 (TL-2) side-mounted thrie-beam with weathering steel posts. End sections shall conform to WSDOT Standard Plan C-7a, Design C.
- J. All piling used on this project shall be H-pile or minimum 12-inch diameter steel pile, or other structure steel section as specified. If steel pipe piling is specified, the Professional Engineer shall specify whether steel pipe piles are to be driven closed or open ended. Design for piling shall include:
 - a. The number and location of piling.
 - b. The dimensions and material specifications of the piling.
 - c. Whether steel pipe piles are to be driven open or closed ended.
 - d. Ultimate bearing capacity of the piling.
 - e. Minimum tip elevation of the piling.
 - f. Blows per foot required by equipment provided by the Purchaser to achieve the ultimate bearing capacity.
 - g. Pile tolerance relative to pile cap location.
 - h. Contingencies for if piles hit refusal prior to minimum tip elevation.
 - i. In the event of pile damage as deemed by the Contract Administrator or designee, procedure on replacement or relocation of new piling. All cost associated with removal and replacement of damaged piles shall be borne by Purchaser.
- K. Purchaser shall provide a pile driving log to Contract Administrator or designee. For each driven pile, the driving log shall contain at a minimum:
 - a. Pile driver contractor name.
 - b. The date pile driving took place.
 - c. The hammer type.
 - d. Weight of ram.
 - e. The type and size of pile.
 - f. Pile location relative to the bridge.
 - g. Start Time.
 - h. Finish Time.
 - i. Blows per foot for every foot of piling driven.
 - j. Pile Length before piling being driven.
 - k. Total length of piling driven.

- l. Tip elevation (relative to datum established by DNR)
- m. Duration of any pause in pile driving and at what depth the pause took place.
- n. Cut-off elevation (relative to datum established by DNR)
- o. Cut-off length (length of piling cut off above the cut-off elevation)
- L. All exposed steel components shall conform to requirements of AASHTO M270 Grade 50 W (A588 weathering steel) unless otherwise specified as galvanized. The following components shall be galvanized steel: guard rail, guard rail reflectors, any steel sheet pile used for backwalls/wingwalls, and lifting lugs and hardware.
- M. Bridge pile caps may be concrete or steel. Steel pile caps shall meet requirements listed above. Concrete pile caps shall meet approved mix design and shall be designed by Purchasers Engineer. Concrete members shall meet mix design requirements for slump, temperature, compressive strength and air content.
- N. Wingwalls shall match slope and elevation of the top of endwalls and be butted against the endwalls to retain fill material. Wingwalls and endwalls shall be constructed such that no embankment fill encroaches any closer to the stream than shown on attached plans.
- O. Elastomeric bearing pads shall be used in accordance with the bridge manufactures specifications.
- P. Road approaches shall be constructed at a smooth and continuous grade from the finished ends of the bridge.
- Q. Guardrails shall include bolt-on butterfly-style white reflective markers.
- R. Bridge delineators shall consist of post and bolt or other Owner approved means of attachment. One delineator shall be installed at each end of each bridge guard rail or curb, and shall be installed with the reflector stripes angled downward and guiding traffic towards the center of the bridge.

SUBSECTION GATE CLOSURE

7-70 GATE CLOSURE

On the following road(s), Purchaser shall keep gates closed and locked except during periods of haul. All gates that remain open during haul must be locked or securely fastened in the open position. All gates must be closed at termination of use.

<u>Road</u>	<u>Station</u>
FS-3030	1+30
PA-H-1000	1+35

SUBSECTION GATES AND FENCES

7-76 GATE INSTALLATION

Purchaser shall install the listed gate(s). Gate installations must be prior to prehaul maintenance of the FS-3030.

<u>Road</u>	<u>Station</u>	<u>Type*</u>	<u>Provided by</u>
FS-3030	1+30	Medium Gate	Purchaser

*Medium gate installation(s) must be in accordance with the MEDIUM GATE DETAIL.

The gate and lock box must be installed plumb and aligned to ensure all mating components match with precision. Each post must be filled with concrete, capped and set in a minimum of 2 cubic yards of poured-in-place concrete. The gate must be installed with a post and locking device to allow the gate to be locked in an open position. The Contract Administrator will provide Purchaser with a padlock.

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

The gate must be primed and painted safety yellow in accordance with the Medium Gate Detail.

If fences exist at the site of gate installation(s), Purchaser shall connect the fencing to the posts of the new installation, except by permission from the Contract Administrator.

7-78 GATE SUPPLIED BY PURCHASER

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

SECTION 8 – EROSION CONTROL

8-1 SEDIMENT CONTROL STRUCTURES

On the following road(s), sediment control shall be accomplished as listed below.

<u>Road</u>	<u>Stations</u>	<u>Left and/or Right</u>	<u>Comments</u>
FS-3030	8+00, 9+75	Left	Silt Fence in Ditch x3

8-2 PROTECTION FOR EXPOSED SOIL

Purchaser shall provide and evenly spread a 3-inch layer of straw or hay to all exposed soils stream at culvert installations and bridge installation. Soils must be covered before the first anticipated storm event. Soils may not sit exposed during any rain event. *On FS-3030 road and H-500 from stations 0+00 to 8+00 straw and/or hay shall be certified weed free.

SUBSECTION REVEGETATION

8-15 REVEGETATION

On the following road(s), Purchaser shall spread grass seed and hay mulch on all exposed soils including, but not limited to, stream culverts, waste areas, sidecast pullback areas, stream crossing removals, bridge installations, and other areas directed by the Contract Administrator. Revegetation of exposed soils shall be accomplished by manual dispersal of grass seed unless otherwise detailed in this Road Plan. Other methods of covering must be approved in writing by the Contract Administrator.

8-16 REVEGETATION SUPPLY

The Purchaser shall provide the all seed, mulch, straw and/or hay, matting etc..

8-17 REVEGETATION TIMING

Purchaser shall revegetate during the first available opportunity. Soils may not be allowed to sit exposed for longer than one month without receiving revegetation treatment unless otherwise approved in writing by the Contract Administrator. Soils shall not be allowed to sit exposed during any rain event.

8-18 PROTECTION FOR SEED

Purchaser shall provide a protective cover over the revegetated area. The protective cover may consist of but not be limited to, such items as dispersed hay mulch 3" thick or jute matting. Seed must be covered before the first anticipated storm event. Seed may not be allowed to sit exposed during any rain event.

8-19 ASSURANCE FOR SEEDED AREA

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

SUBSECTION SEED, FERTILIZER, AND MULCH

8-25 GRASS SEED

Purchaser shall evenly spread the seed mixture listed below on all exposed soil at a rate of 60 pounds per acre of exposed soil. Grass seed must meet the following specifications:

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

<u>Kind and Variety of Seed in Mixture</u>	<u>% by Weight</u>	<u>Minimum % germination</u>
Perennial Rye	35-45	90
Red Fescue	30-40	90
Highland Bent	5-15	85
White Clover	10-20	90
Inert and Other Crop	0.5	

*Grass seed used on FS 3030 Rd and on PA-H-500 from Stations 0+00 – 8+00 shall be certified weed free.

SECTION 9 – POST-HAUL ROAD WORK

SUBSECTION STRUCTURES

9-1 EARTHEN BARRICADES

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

<u>Road</u>	<u>Stations</u>
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PA-H-510	0+50
PA-H-530	0+50
1+30 Spur	0+50
PA-H-1030	0+50
PA-H-1085	0+50

9-3 CULVERT MATERIAL REMOVED FROM STATE LAND

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

SUBSECTION POST-HAUL MAINTENANCE

9-5 POST-HAUL MAINTENANCE

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

<u>Road</u>	<u>Stations</u>	<u>Additional Requirements</u>
All	All	Clean culverts, clean ditches, grade road shape and compact as directed by the Contract Administrator.
FS-3030	0+00 – 14+25	Apply post haul rock per Clause 6-72.
PA-H-500	0+00 – 77+60	Apply post haul rock per Clause 6-72.
PA-H-1000	0+00 – 176+95	Apply post haul rock per Clause 6-72.

SUBSECTION POST-HAUL LANDING MAINTENANCE

9-10 LANDING DRAINAGE

Purchaser shall provide for drainage of the landing surface as approved in writing by the Contract Administrator.

9-11 LANDING EMBANKMENT

Purchaser shall slope landing embankments to the original construction specifications.

SUBSECTION DECOMMISSIONING AND ABANDONMENT

9-20 ROAD DECOMMISSIONING

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

<u>Road</u>	<u>Stations</u>	<u>Type</u>
PA-H-510	0+00 – 2+95	Light Decommissioning
PA-H-530	0+00 – 2+50	Light Decommissioning
1+30 Spur	0+00 – 1+30	Light Decommissioning
PA-H-1030	0+00 – 6+65	Light Decommissioning

PA-H-1085	0+00 – 2+00	Light Decommissioning
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9-22 LIGHT DECOMMISSIONING

- Remove road shoulder berms except as directed.
- Construct non-drivable waterbars according to the attached NON-DRIVABLE WATERBAR DETAIL as directed by the Contract Administrator.
- 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 culverts.
- Remove ditch cross drain culverts and leave the resulting trench open.
- Apply grass seed concurrently with decommissioning and in accordance with Section 8 EROSION CONTROL.
- Cover, concurrently with decommissioning, all exposed soils within 100 feet of any live stream, with a 4-inch deep layer of hay or straw.

SECTION 10 MATERIALS

SUBSECTION GEOTEXTILES

10-2 GEOTEXTILE FOR SEPARATION

Geotextiles must meet the following minimum requirements for strength and property qualities, and must be designed by the manufacturer to be used for separation. Material must be free of defects, cuts, and tears.

	<u>ASTM Test</u>	<u>Requirements</u>
Type	--	Non-woven
Apparent opening size	D 4751	No. 30 max
Water permittivity	D 4491	0.02 sec ⁻¹
Grab tensile strength	D 4632	160 lb
Grab tensile elongation	D 4632	>= 50%
Puncture strength	D 6241	310 lb
Tear strength	D 4533	50 lb
Ultraviolet stability	D 4355	50% retained after 500 hours of exposure

10-3 GEOTEXTILE FOR STABILIZATION

Geotextiles must meet the following minimum requirements for strength and property qualities, and must be designed by the manufacturer to be used for stabilization or reinforcement, and filtration. Material must be free of defects, cuts, and tears.

	<u>ASTM Test</u>	<u>Requirements</u>
Type	--	Woven
Apparent opening size	D 4751	No. 40 max
Water permittivity	D 4491	0.10 sec ⁻¹
Grab tensile strength	D 4632	315 lb
Grab tensile elongation	D 4632	<50%
Puncture strength	D 6241	620 lb
Tear strength	D 4533	112 lb
Ultraviolet stability	D 4355	50% retained after 500 hours of exposure

10-6 GEOTEXTILE FOR TEMPORARY SILT FENCE

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

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

SUBSECTION EROSION CONTROL AND REVEGETATION

10-10 JUTE EROSION CONTROL MATTING

Jute mesh must have a uniform open plain weave made from jute yarn that does not vary by more than half its nominal diameter. Erosion control matting must conform to the specifications listed below, and must be recommended by the manufacturer for use on embankments with a slope of 1½:1 (H:V) or steeper.

- Mesh size 1 inch max.
- Mesh mass, 0.9 lb/yd² ±5%

SUBSECTION CULVERTS

10-15 CORRUGATED STEEL CULVERT

Metallic coated steel culverts must meet AASHTO M-36 (ASTM A-760) specifications. Culverts must be galvanized (zinc coated meeting AASHTO M-218).

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.

10-21 METAL BAND

Metal coupling and end bands must meet the AASHTO specification designated for the culvert and must have matching corrugations. Culverts 24 inches and smaller must have bands with a minimum width of 12 inches. Culverts over 24 inches must have bands with a minimum width of 24 inches.

10-22 PLASTIC BAND

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

10-23 RUBBER CULVERT GASKETS

Rubber gaskets must be continuous closed cell, synthetic expanded rubber gaskets conforming to the requirements of ASTM D 1056. Rubber gaskets must be used with all corrugated metal pipe coupling bands.

10-24 GAUGE AND CORRUGATION

metal culverts must conform to the following specifications for gage and corrugation as a function of diameter.

<u>Diameter</u>	<u>Gauge</u>	<u>Corrugation</u>
18"	16 (0.064")	2 ² / ₃ " X ¹ / ₂ "
24" to 48"	14 (0.079")	2 ² / ₃ " X ¹ / ₂ "
54" to 96"	12 (0.109")	3" X 1"

SUBSECTION BRIDGE

10-50 BRIDGE MATERIAL

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

- a. All structural steel must conform to the requirements of ASTM Specification A588 weathering steel. Before shipment all weathering steel must be wiped clean.
- b. All galvanizing must be done after fabrication and must be in accordance with AASHTO Designation M111-09 (ASTM Designation: A123) and/or AASHTO Designation M232-10 centrifuged to remove excess (ASTM Designation A153) and/or AASHTO M298-10 mechanical galvanization (ASTM B695-04).
- c. Flanges used for connecting the stringer units together must be designed to facilitate field assembly.
- d. All bolts used to facilitate field assembly will be A325 Type 1 or 2 galvanized. All materials necessary for assembly must be included with the structure. All hardware connections and fasteners must be in accordance with AASHTO Designation ASTM Designation A325 Type 3 weathering steel.
- e. Elastomeric bearing pads must conform to the requirements of AASHTO M251-06.
- f. All concrete and asphalt used must conform to AASHTO specifications.
- g. The superstructure must have permanent, functional provisions for lifting.

SECTION 11 SPECIAL NOTES

11-1 TRAIL AND ROAD INTERSECTIONS

On the following roads, Purchaser shall construct dirt ramps on the trails to allow for a smooth transition between the Little River trail and road surface.

<u>Road</u>	<u>Stations</u>
PA-H-500	6+11, 6+71

11-2 FOREST SERVICE ROAD USE PERMIT

The Foot Trail Timber Sale is subject to the requirements of the Forest Service Road Use Permit for the FS-3030 road and the PA-H-500 from station 0+00 – 8+00.

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The Foot Trail Timber Sale is subject to the requirements of the Forest Service Road Use Permit for the FS-3030 road and the PA-H-500 from station 0+00 – 8+00.

11-3 DRAINAGE FOR CATTLE GUARDS

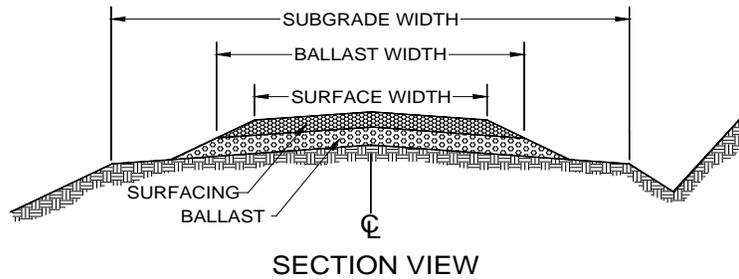
Purchaser shall maintain the following culverts as drainage for cattle guard pits. A drain from the outlet end must maintained.

<u>Road</u>	<u>Stations</u>
FS 3030	4+90

11-4 NOXIOUS WEED CONTROL

Purchaser shall notify the Contract Administrator in advance of moving equipment onto State lands. Purchaser shall thoroughly clean all off road equipment prior to entry onto State land to remove contaminated soils and noxious weed seed. If equipment is moved from one DNR project area to another, the Contract Administrator reserves the right to require the cleaning of equipment. Equipment shall be cleaned at a location approved by the Contract Administrator.

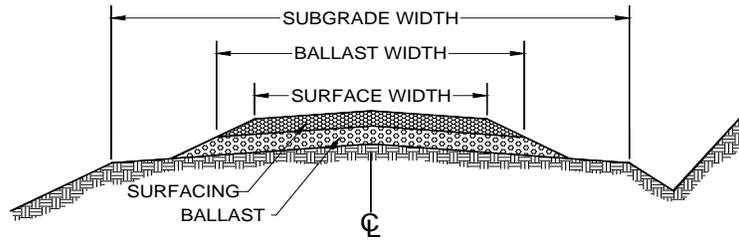
ROCK LIST SHEET



1. Rock quantities, subtotals and totals are “truck measure” estimates. Rock shall be applied to at least the depths listed.
2. All depths are compacted depths.
3. Rock slopes shall be 1½ (H) : 1 (V).
4. All rock sources are subject to approval by the Contract Administrator.*Rock Used on FS 3030 and PA-H-500 from station 0+00 – 8+00 shall be certified weed free
5. Pitrun is defined as pitrun or ballast per Line 6. Crushed is defined as any crushed rock from ¼” minus to 4” minus per Line 6. Oversize is defined as oversize, quarry spalls, light loose rip rap, or heavy loose rip rap per Line 6.
6. Rock sources= 1: Overlook Pit 4” minus Jaw Run, 2: Commerical Pit 1 ¼” minus, 3: Overlook Pit Oversized

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Pitrun SOURCE	Pitrun WIDTH (ft)	Pitrun DEPTH (in)	Pitrun Quantity(yd ³ /sta)	Pitrun SUBTOTAL(yd ³)	Crushed SOURCE	Crushed WIDTH (ft)	Crushed DEPTH (in)	Crushed Quantity(yd ³ /sta)	Crushed Subtotal(yd ³)	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd ³)
FS-3030															
Misc./Pile Cap	0+00	14+25							2				140		
Lift	0+00	8+31							2	12	6	35	290		
Bridge Curve Widening	7+31	10+51							2				110		
Bridge Ballast	7+31	8+31		1			70								
Bridge Ballast	9+51	10+51		1			180								
Lift	9+51	14+25							2	12	6	35	170		
Post Haul	0+00	14+25							2				100		
PA-H-500															
Lift	0+00	77+60	17	1	12	18	110	8540							
Culvert	3+35			1			20								
Culvert	7+60			1			20								
Turnout	9+70			1			20								
Culvert	12+15			1			20								
Turnaround	16+50			1			50								
Culvert	16+80			1			20								
Turnourt	18+05			1			20								
Culvert	20+10			1			20								
Turnaround	23+00			1			50								
Totals:								9030					810		

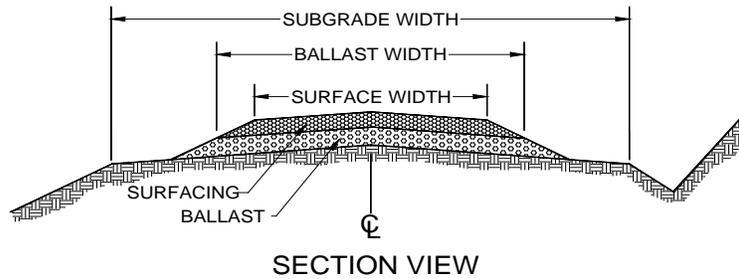
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ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Pitrun SOURCE	Pitrun WIDTH (ft)	Pitrun DEPTH (in)	Pitrun Quantity(yd ³ /sta)	Pitrun SUBTOTAL(yd ³)	Crushed SOURCE	Crushed WIDTH (ft)	Crushed DEPTH (in)	Crushed Quantity(yd ³ /sta)	Crushed Subtotal(yd ³)	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd ³)
PA-H-500 Cont.															
Culvert	26+50			1			20								
Turnout	28+75			1			20								
Culvert	30+15			1			20								
Culvert	34+40			1			20								
Landing	35+30			1			50								
Turnout	36+65			1			20								
Culvert	37+10			1			20							3	5
Culvert	41+35			1			20							3	5
Turnout	44+05			1			20								
Culvert	46+25			1			20							3	5
Turnaround	50+80			1			50								
Turnout	54+50			1			20								
Culvert	56+55			1			20							3	5
Turnaround	58+05			1			50								
Culvert	59+00			1			20								
Culvert	60+30			1			100								
Culvert	61+45			1			20								
Landing	63+90			1			80								
Totals:								590							20

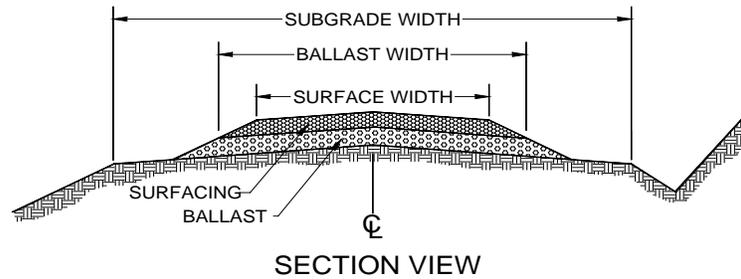
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PA-H-500 Cont.															
Culvert	66+90			1				20							
Culvert	68+80			1				20							
Culvert	70+00			1				20							
Culvert	70+80			1				20							
Landing	71+80			1				80							
Turnout	73+90			1				20							
Culvert	75+00			1				20							
Turnaround	76+15			1				50							
Landing	77+60			1				80							
Curve Widening	Varies			1				160							
Post Haul	0+00	77+60		1				200							
PA-H-510															
Lift	0+00	2+95	17	1	12	18	110	330							
Turnaround	1+40			1				50							
Culvert	1+65			1				20							
Landing	2+95			1				50							
PA-H-520															
Lift	0+00	15+80	17	1	12	18	110	1740							
Culvert	0+10			1				20							
Totals:								2900							

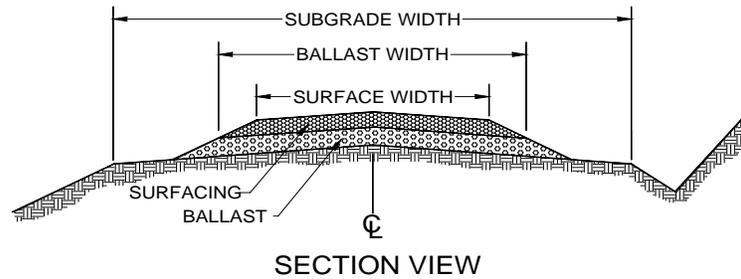
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PA-H-520 Cont.															
Culvert	5+15			1			20								
Turnaround	6+85			1			50								
Turnaround	15+20			1			50								
Landing	15+80			1			50								
PA-H-530															
Lift	0+00	2+50	17	1	12	18	110	280							
Culvert	0+10			1			20								
Landing	2+50			1			50								
PA-H-540															
Lift	0+00	13+70	17	1	12	18	110	1510							
Turnout	1+80			1			20								
Culvert	2+10			1			20							3	5
Culvert	10+85			1			20							3	5
Landing	11+90			1			50								
Landing	13+70			1			50								
PA-H-550															
Lift	0+00	4+65	17	1	12	18	110	520							
Culvert	0+15			1			20								
Culvert	2+95			1			20								
Turnaround	3+60			1			50								
Totals:								2800							10

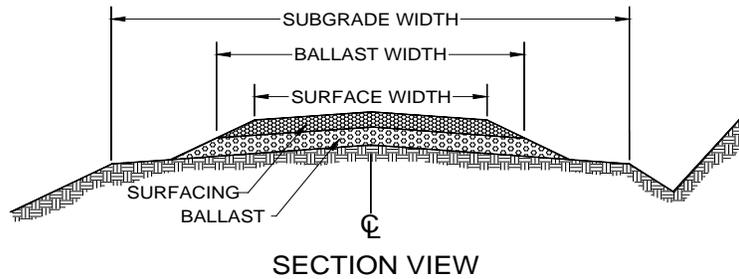
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PA-H-550															
Landing	4+65			1			50								
PA-H-1000															
Misc.	0+00	176+95							2				150		
Post Haul	0+00	176+95							2				200		
PA-H-1020															
Lift	2+00	14+85	17	1	12	6	35	450							
Spot Patch	2+60			1				20							
Culvert	4+40			1				20							
Spot Patch	4+90			1				20							
Culvert	9+20			1				20							
Turnout	12+90			1				20							
Turnaround	14+85			1				50							
1+30 Spur															
Lift	0+00	1+30	17	1	12	12	70	90							
Culvert	0+10			1				20							
PA-H-1030															
Lift	0+00	6+65	17	1	12	18	110	730							
Culvert	0+30			1				20							
Culvert	0+90			1				20							
Totals:								1530					350		

ROCK LIST SHEET CONTINUED



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PA-H-1030 Cont.															
Culvert	4+65			1				20							
Landing	6+65			1				50							
PA-H-1080															
Lift	0+00	28+00	17	1	12	18	110	3080							
Culvert	0+10			1				20							
Culvert	4+15			1				20							
Turnaround	5+80			1				50							
Culvert	7+10			1				20						3	5
Culvert	8+70			1				20							
Culvert	9+15			1				20							
Culvert	9+55			1				20							
Turnaround	11+75			1				50							
Culvert	14+65			1				20						3	5
Landing	16+35			1				50							
Culvert	17+70			1				20						3	5
Turnaround	18+25			1				50							
Landing	19+00			1				50							
Culvert	19+70			1				20						3	5
Turnout	22+25			1				20							
Landing	24+50			1				50							
Totals:								3650							20

CULVERT LIST

ROAD NAME	STATION	CULVERT DIAMETER (in)	CULVERT LENGTH (ft)	FLUME LENGTH (ft)		RIP RAP - INLET (cy)	RIP RAP - OUTLET (cy)	BACKFILL MATERIAL	NOTES
FS-3030	4+90	18						PR	Clean Culvert Inlet
FS-3030	6+60	18						PR	Clean Culvert Inlet
FS-3030	10+35	18						PR	Clean Culvert Inlet
PA-H-500	0+10	18	70					PR	Culvert Install
PA-H-500	3+35	18	30					PR	Culvert Install
PA-H-500	7+60	18	30					PR	Culvert Install
PA-H-500	12+15	18	30					PR	Culvert Install
PA-H-500	16+80	18	30					PR	Culvert Install
PA-H-500	20+10	18	30					PR	Culvert Install
PA-H-500	26+50	18	30					PR	Culvert Install
PA-H-500	30+15	18	26					PR	Culvert Install
PA-H-500	34+40	18	30					PR	Culvert Install
PA-H-500	37+10	18	30			5		PR	Culvert Install/ Energy Dissipater rock
PA-H-500	41+35	18	30			5		PR	Culvert Install/ Energy Dissipater rock
PA-H-500	46+25	18	30			5		PR	Culvert Install/ Energy Dissipater rock
PA-H-500	56+55	18	30			5		PR	Culvert Install/ Energy Dissipater rock
PA-H-500	59+00	18	30					PR	Culvert Install
PA-H-500	60+30	24	50					PR	Culvert Install
PA-H-500	61+45	18	30					PR	Culvert Install
PA-H-500	66+90	18	30					PR	Culvert Install
PA-H-500	68+80	18	30					PR	Culvert Install
PA-H-500	70+00	24	30					PR	Culvert Install
PA-H-500	70+80	18	30					PR	Culvert Install
PA-H-500	75+00	18	30					PR	Culvert Install
PA-H-510	1+65	18	30					PR	Culvert Install/Remove culvert during decommissioning
PA-H-520	0+10	18	40					PR	Culvert Install
PA-H-520	5+15	18	30					PR	Culvert Install
PA-H-530	0+10	18	40					PR	Culvert Install/Remove culvert during decommissioning

CULVERT LIST Continued

ROAD NAME	STATION	CULVERT DIAMETER (in)	CULVERT LENGTH (ft)	FLUME LENGTH (ft)		RIP RAP - INLET (cy)	RIP RAP – OUTLET (cy)	BACKFILL MATERIAL	NOTES
PA-H-540	2+10	18	30				5	PR	Culvert Install/ Energy Dissipater rock
PA-H-540	10+85	18	30				5	PR	Culvert Install/ Energy Dissipater rock
PA-H-550	0+15	18	40					PR	Culvert Install
PA-H-550	2+95	18	30					PR	Culvert Install
PA-H-1020	4+40	24	30					PR	Culvert Install
PA-H-1020	9+00	18	30					PR	Culvert Removal
PA-H-1020	9+20	18	36					PR	Culvert Install
1+30 Spur	0+10	18	40					PR	Culvert Install
PA-H-1030	0+30	18	40					PR	Culvert Install/Remove culvert during decommissioning
PA-H-1030	0+90	18	40					PR	Culvert Install/Remove culvert during decommissioning
PA-H-1030	4+65	18	30					PR	Culvert Install/Remove culvert during decommissioning
PA-H-1080	0+10	18	40					PR	Culvert Install
PA-H-1080	4+15	18	30					PR	Culvert Install
PA-H-1080	7+10	18	30				5	PR	Culvert Install/ Energy Dissipater rock
PA-H-1080	8+70	18	30					PR	Culvert Install
PA-H-1080	9+15	24	50					PR	Culvert Install
PA-H-1080	9+55	18	30					PR	Culvert Install
PA-H-1080	14+65	18	30				5	PR	Culvert Install/ Energy Dissipater rock
PA-H-1080	17+70	18	30				5	PR	Culvert Install/ Energy Dissipater rock
PA-H-1080	19+70	18	30				5	PR	Culvert Install/ Energy Dissipater rock
PA-H-1085	1+20	18	30						Culvert Install/Remove culvert during decommissioning
Contingency Culverts		18	30					PR	Culvert Install Per Contract Administrator x 3
Contingency Culverts		24	30						Culvert Install Per Contract Administrator

All rip rap shall be Oversize unless specified in the Rock List, or in the field.

All backfill shall be native material (NT) unless specified otherwise. CR= 1 ¼"- crushed rock, PR= Pit Run Rock or Ballast Rock

FISH STREAM WORK PROVISIONS

TIMING LIMITATIONS: The fish culvert project may begin July 1 and shall be completed by September 30.

1. Work shall conform to plans and specifications in the road plan.
2. Prior to the commencement of in-stream work, the Purchaser shall isolate the work area in a manner that fish cannot enter the work area, capture and safely move fish and other fish life from the work area. The Purchaser shall have fish capture and transportation equipment ready and on the job site. Captured fish shall be immediately and safely transferred to free-flowing water downstream of the work area.

TEMPORARY STREAM FLOW BYPASS

3. All in-stream work shall be conducted in the dry or in isolation from the stream flow by the installation of a bypass flume/pipe or by pumping the flow around the work area, back into the stream below the work area. Waste water pumped from within the work area shall terminate on the forest floor, sufficient distance from the stream to filter sediment prior to entering the stream.
4. The temporary bypass to divert flow around the work area shall be in place prior to initiation of other work in the wetted perimeter.
5. A sandbag revetment or similar device shall be installed at the bypass inlet to divert the entire flow through the bypass.
6. The bypass shall be of sufficient size to pass all flows and debris for the duration of the project.
7. If a pump is used for diverting water from the stream where fish are present, as per RCW 77.57.010 and 77.57.070, the pump intake shall be equipped with a fish guard to prevent passage of fish into the diversion pump. The pump intake shall be screened with 1/8 inch mesh to prevent fish from entering the pump. Velocity through the screened intake shall be less than 0.4 feet per second. Screens shall be maintained to prevent injury or entrapment of juvenile fish.

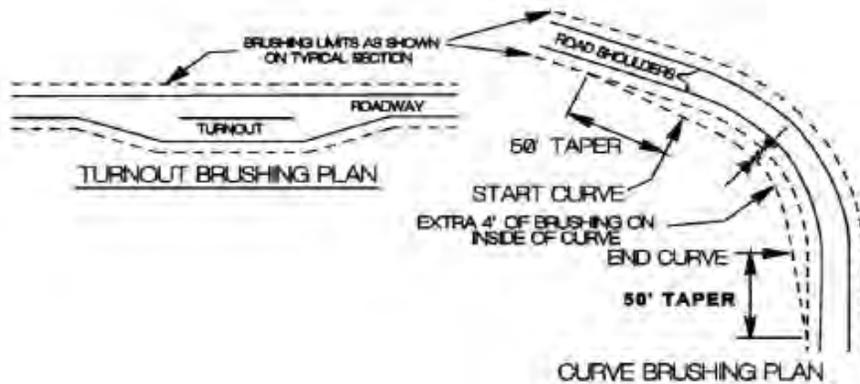
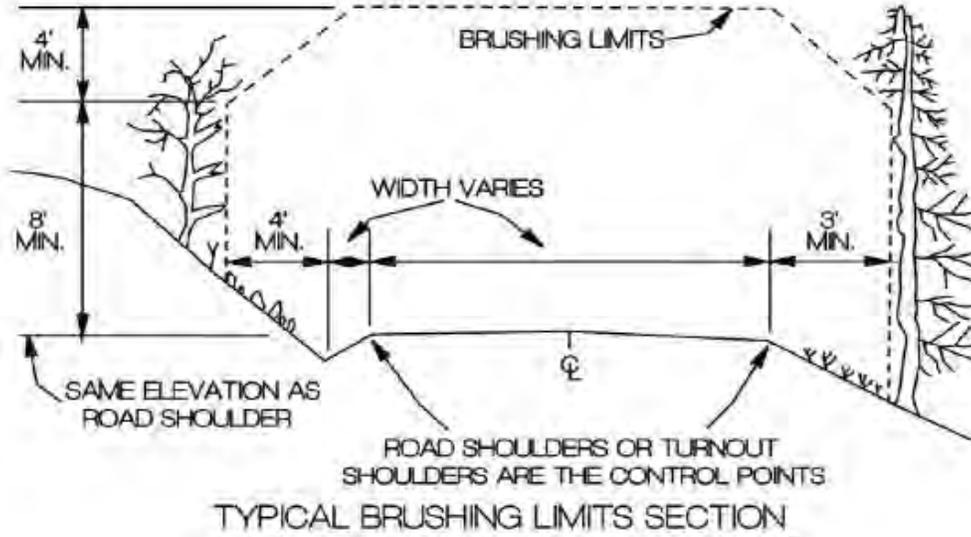
WATER QUALITY

8. Extreme care shall be taken to ensure that no petroleum products, hydraulic fluid, chemicals, or any other toxic or deleterious materials are allowed to enter or leach into the stream.

COMPACTION LIST

Road	Stations	Type	Max Depth Per Lift (inches)	Equipment Type	Minimum Equipment Weight (lbs)	Minimum Number of Passes	Maximum Operating Speed (mph)
Pre-haul	All	Culvert Backfill	8"	Jumping Jack		3	
Pre-haul	All	Rock Lifts	6"	Vibratory Smooth Drum	6,000	3	3
Pre-haul	All	Pre-haul Surface		Vibratory Smooth Drum	6,000	3	3
Construction	All	Subgrade (Except Puncheon)	6"	Vibratory Smooth Drum	6,000	2	3
Construction	All	Culvert Backfill	8"	Jumping Jack		3	
Construction	All	Rock Placement	6"	Vibratory Smooth Drum	6,000	2	3
Reconstruction	All	Subgrade (Except Puncheon)	6"	Vibratory Smooth Drum	6,000	2	3
Reconstruction	All	Culvert Backfill	8"	Jumping Jack		3	
Reconstruction	All	Rock Placement	6"	Vibratory Smooth Drum	6,000	2	3
Post-haul Maintenance FS-3030, PA-H-500, PA-H-1000	All	Rock Placement	6"	Vibratory Smooth Drum	6,000	2	3

BRUSHING DETAIL

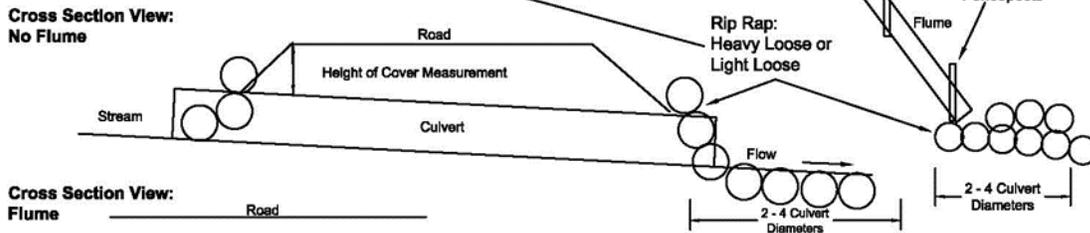
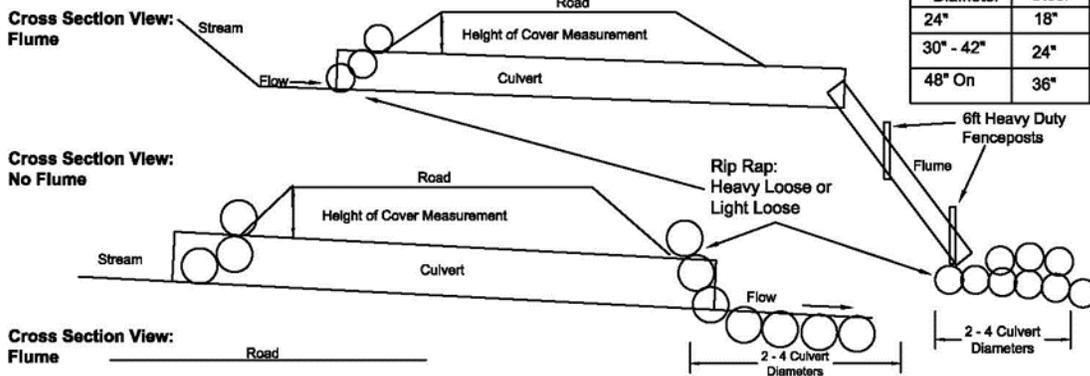


- 1) ALL VEGETATION WITHIN THE BRUSHING LIMITS SHALL BE CUT TO WITHIN 8" OF THE GROUND, UNLESS OTHERWISE DIRECTED BY THE CONTRACT ADMINISTRATOR.
- 2) ALL BRUSH, TREES, LIMBS, ETC. SHALL BE REMOVED FROM THE ROAD SURFACE.
- 3) ALL BRUSH, TREES, LIMBS, ETC. THAT MAY RESTRICT THE FLOW OF WATER SHALL BE REMOVED FROM THE DITCH LINE.
- 4) ALL DEBRIS THAT MAY ROLL OR MIGRATE INTO THE DITCHLINE SHALL BE REMOVED.

Typical Type Ns, Np Culvert Installation Detail Sheet.

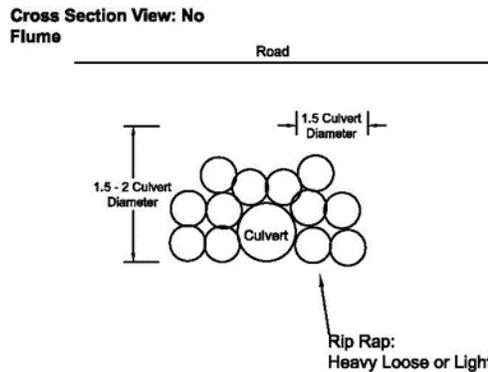
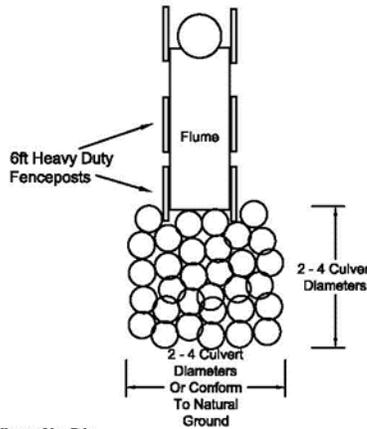
- Water shall be diverted away from the work site before any "in stream" work begins, and shall continue until culvert installation is complete.
- Culvert lay shall match stream gradient up to 5%.
- Flumes longer than 10ft shall be staked on both sides at maximum intervals of 10ft with 6ft heavy duty steel fence posts, and fastened securely to the posts with No. 10 galvanized smooth wire or bolted to the fence posts.
- Rip rap shall be placed using a "zero height drop method", and shall be set in conjunction with the culvert installation.
- Rip rap shall be placed at headwalls, along the fill at the inlet, and at the end off flumes in accordance with this Detail. On culverts with no flume rip rap shall be placed along the fill at the outlet, unless there is stream drop or it is called for in the Road Plan, at which point it will be installed as an energy dissipater at the end of the culvert as specified in this Detail. All rip rap distance to be determined by the Contract Administrator or the District Engineer.
- Backfill compaction shall be achieved using a jumping jack, walk behind vibratory roller, or plate compactor on lifts not to exceed 8in. 3 complete passes per lift is required for compaction. Backfill shall be placed and compacted evenly on both sides of the culvert. Care shall be taken to ensure adequate compaction of backfill material under the haunches of the pipe. Excavation trench width shall be at least culvert diameter plus 3 times the width of the compactor footprint used.

Culvert Minimum Cover		
Diameter	Steel	Plastic
24"	18"	24"
30" - 42"	24"	24"
48" On	36"	36"

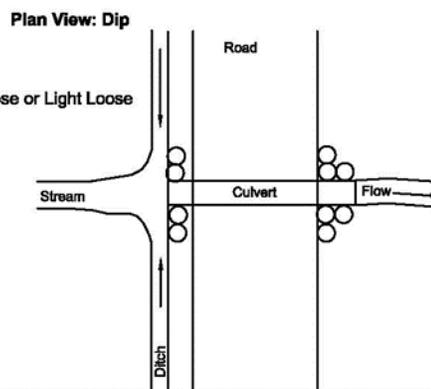
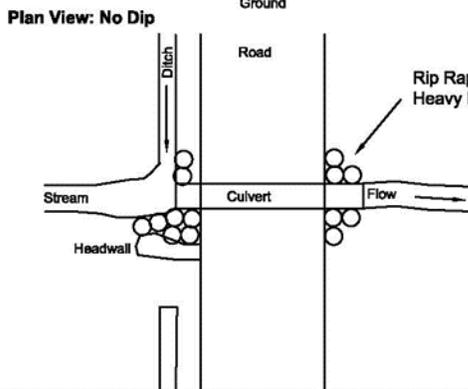


Cross Section View: Flume

Cross Section View: No Flume



Cross Section View: No Flume

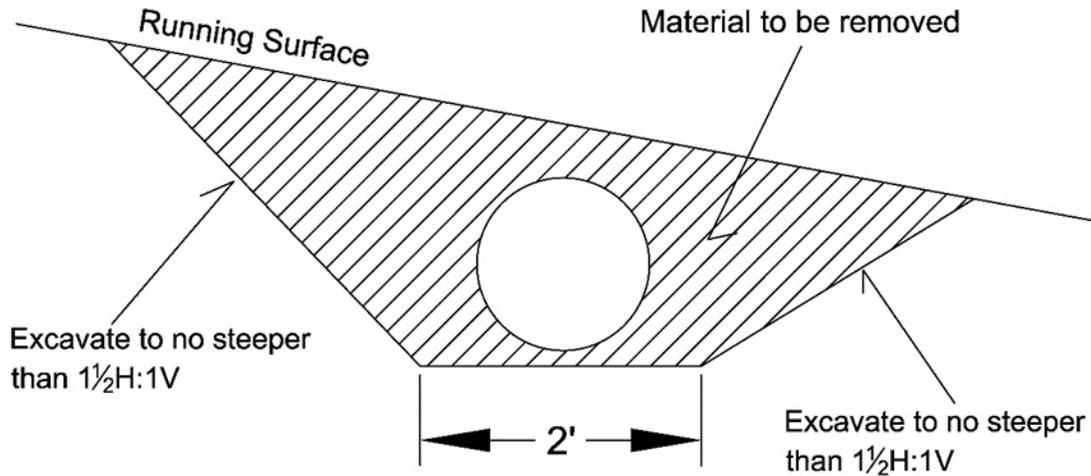


Plan View: No Dip

Plan View: Dip

Not To Scale

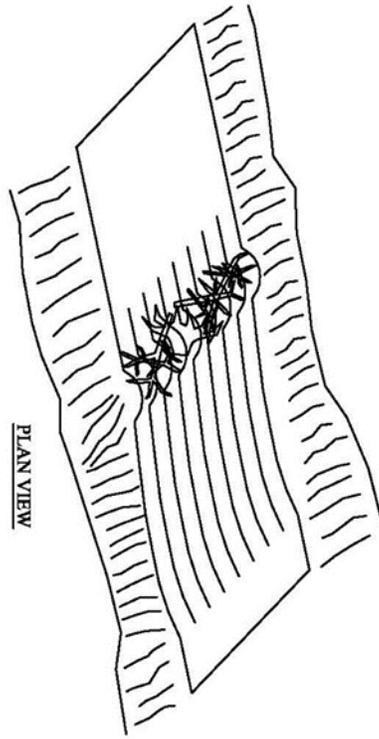
CROSSDRAIN REMOVAL DETAIL



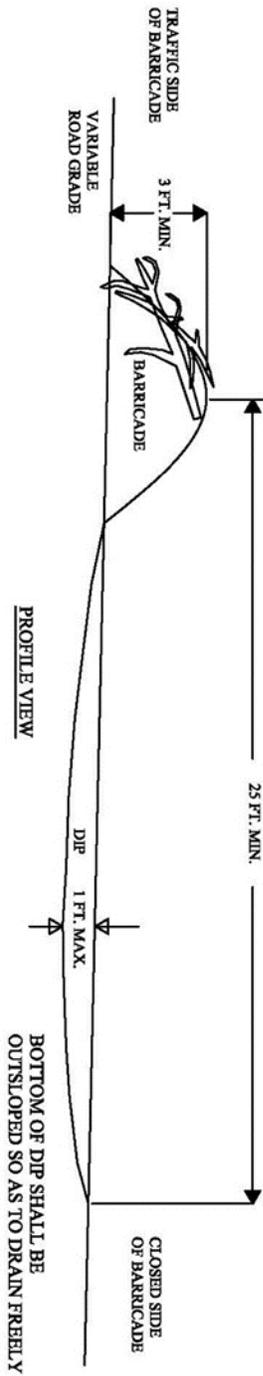
1) Excavated material may be wasted on the road surface on the downhill side of the excavation. Waste material shall be sloped at no steeper than ½ H:1V.

2) Resulting trench shall be keyed into the ditchline and sloped towards the outside edge of the road with a drop of at least 1 foot in 10 feet.

EARTHEN BARRICADE DETAIL

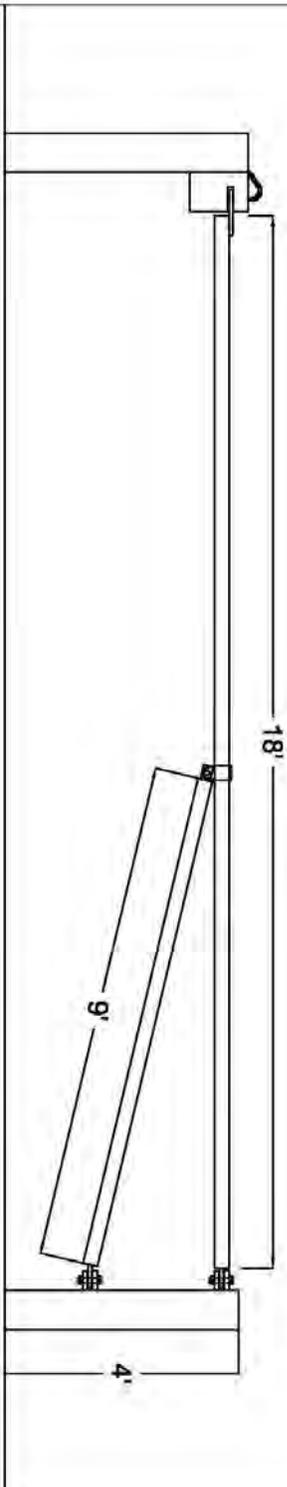


SLASH AND ROOT WADS SHALL BE INCORPORATED INTO THE TRAFFIC SIDE OF THE BARRICADE.



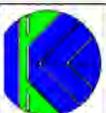
Gate Detail

- 1.) Gate beam shall be a minimum of 3" diameter steel pipe with a minimum 1/4" wall thickness.
- 2.) All metal surfaces, including welds, shall be primed and painted with at least two coats of safety yellow paint.
- 3.) Gate post shall be equipped with an enclosed, lock bell.
- 4.) Place 10 cubic yards of rip rap around gate to prevent vehicles from driving around the gate.
- 5.) Grease hinges.



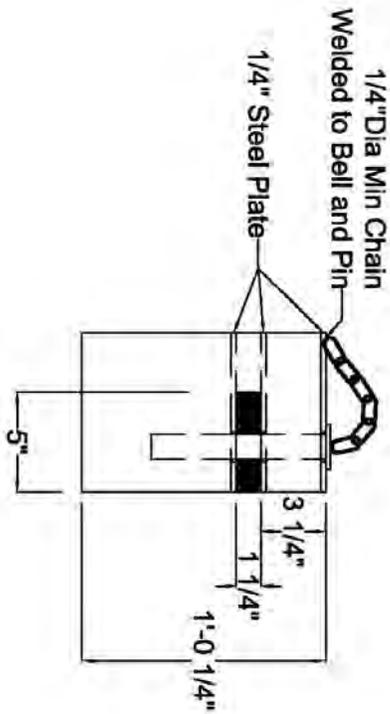
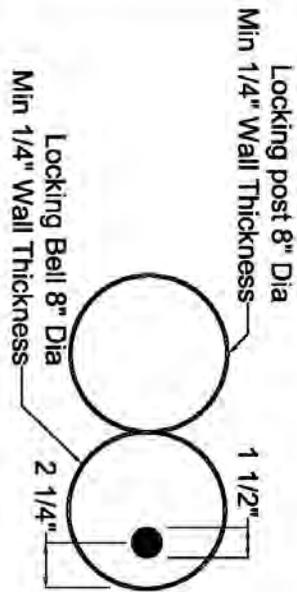
Drawn By
Madisen Warnstadt
11/3/2015

Straits Medium Duty Gate

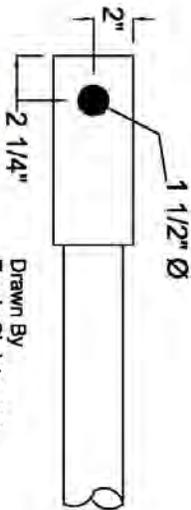
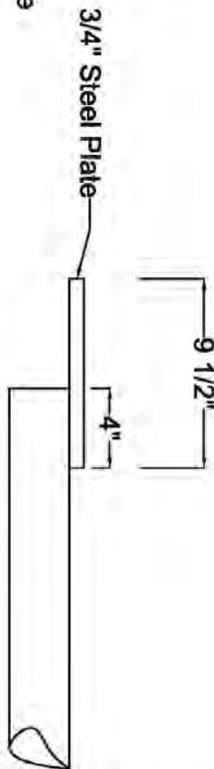
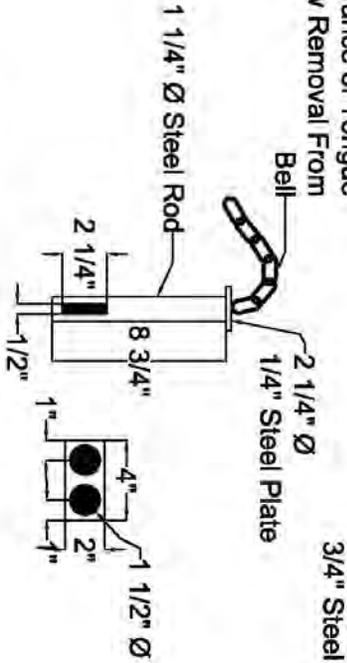


WASHINGTON STATE DEPARTMENT OF
Natural Resources

Division of Parks

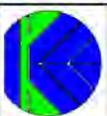


Chain Length Shall
Allow Clearance of Tongue
Not Allow Removal From



Drawn By
Travis Christensen
8/31/09

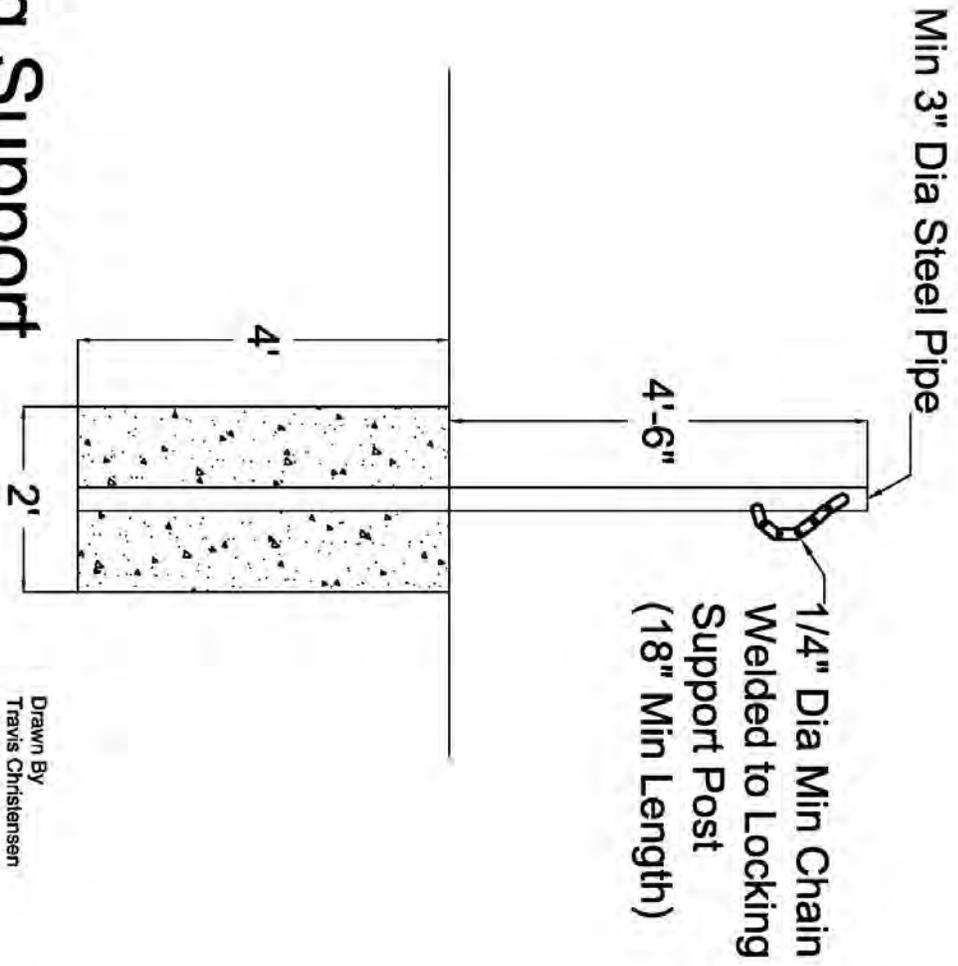
Bell, Pin, & Tongue



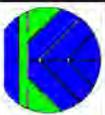
WASHINGTON STATE DEPARTMENT OF
Natural Resources

Original Author

Locking Support Post (Open Position)

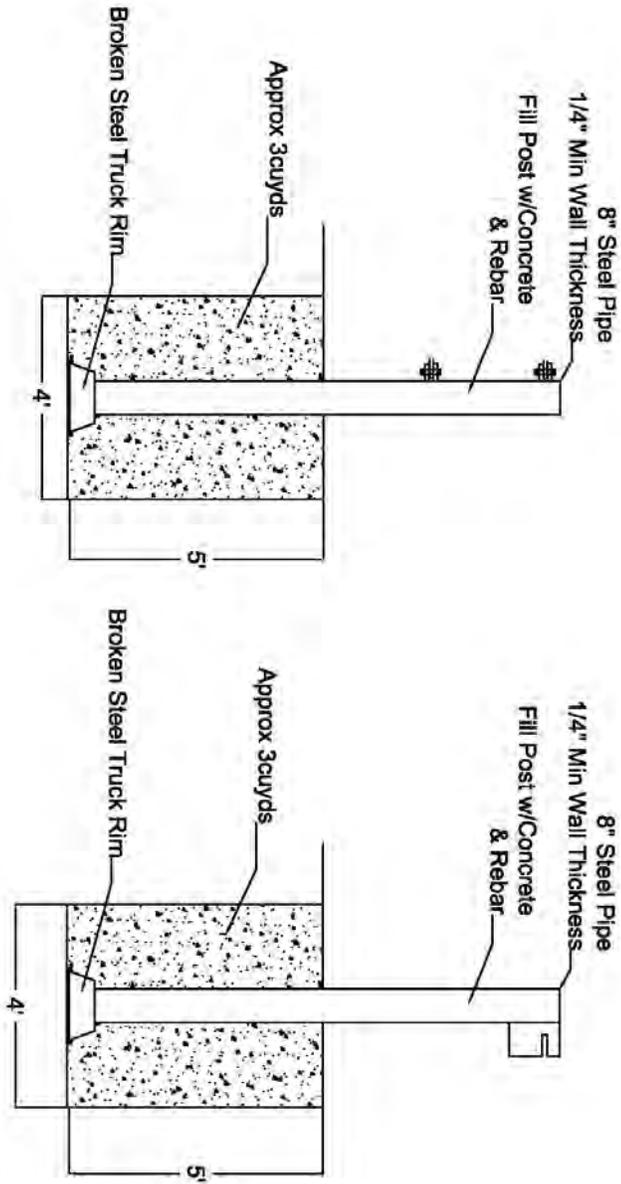


Drawn By
Travis Christensen
8/31/09

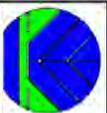


WASHINGTON STATE DEPARTMENT OF
Natural Resources

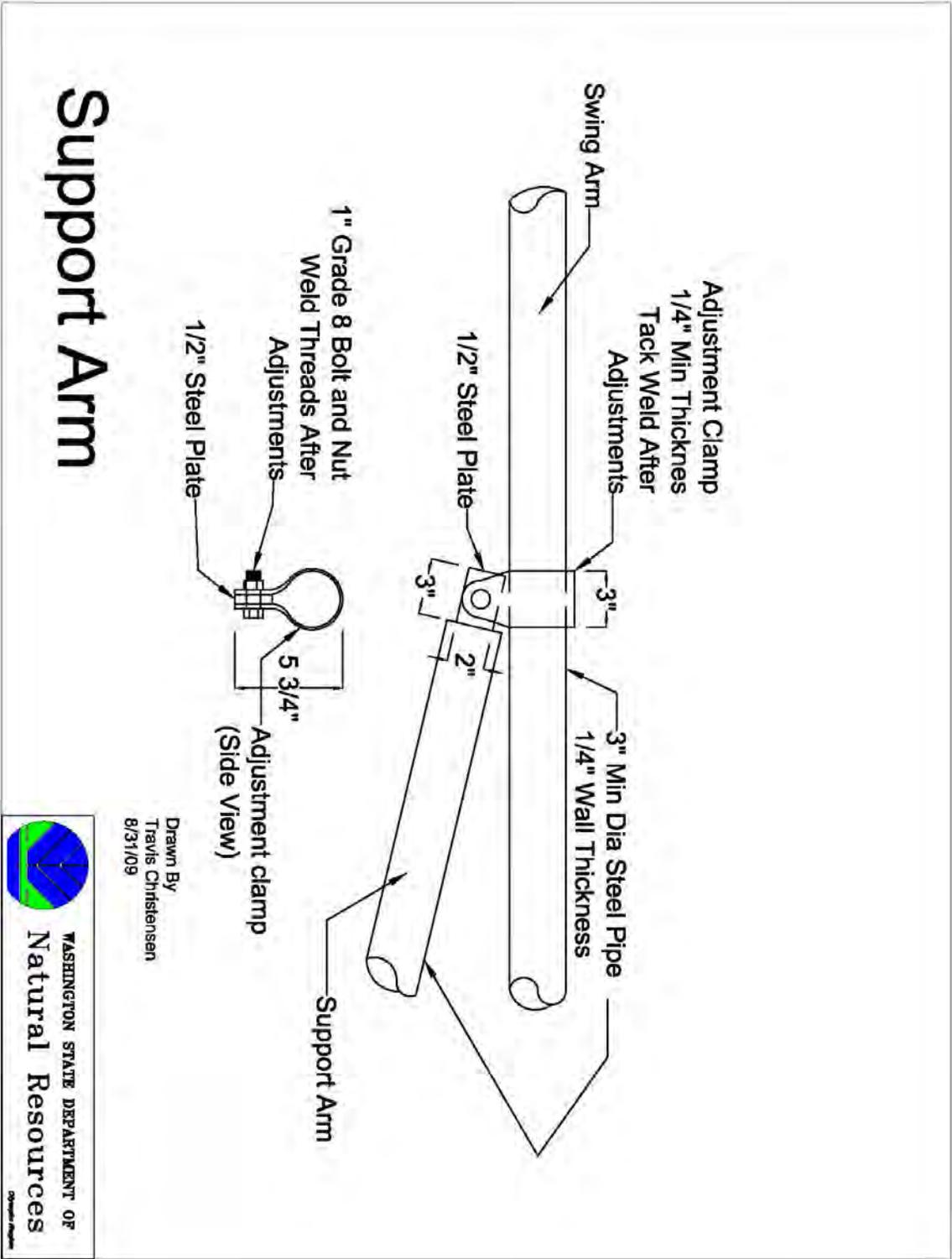
Lock & Pivot Posts



Drawn By
Travis Christensen
8/31/09



WASHINGTON STATE DEPARTMENT OF
Natural Resources



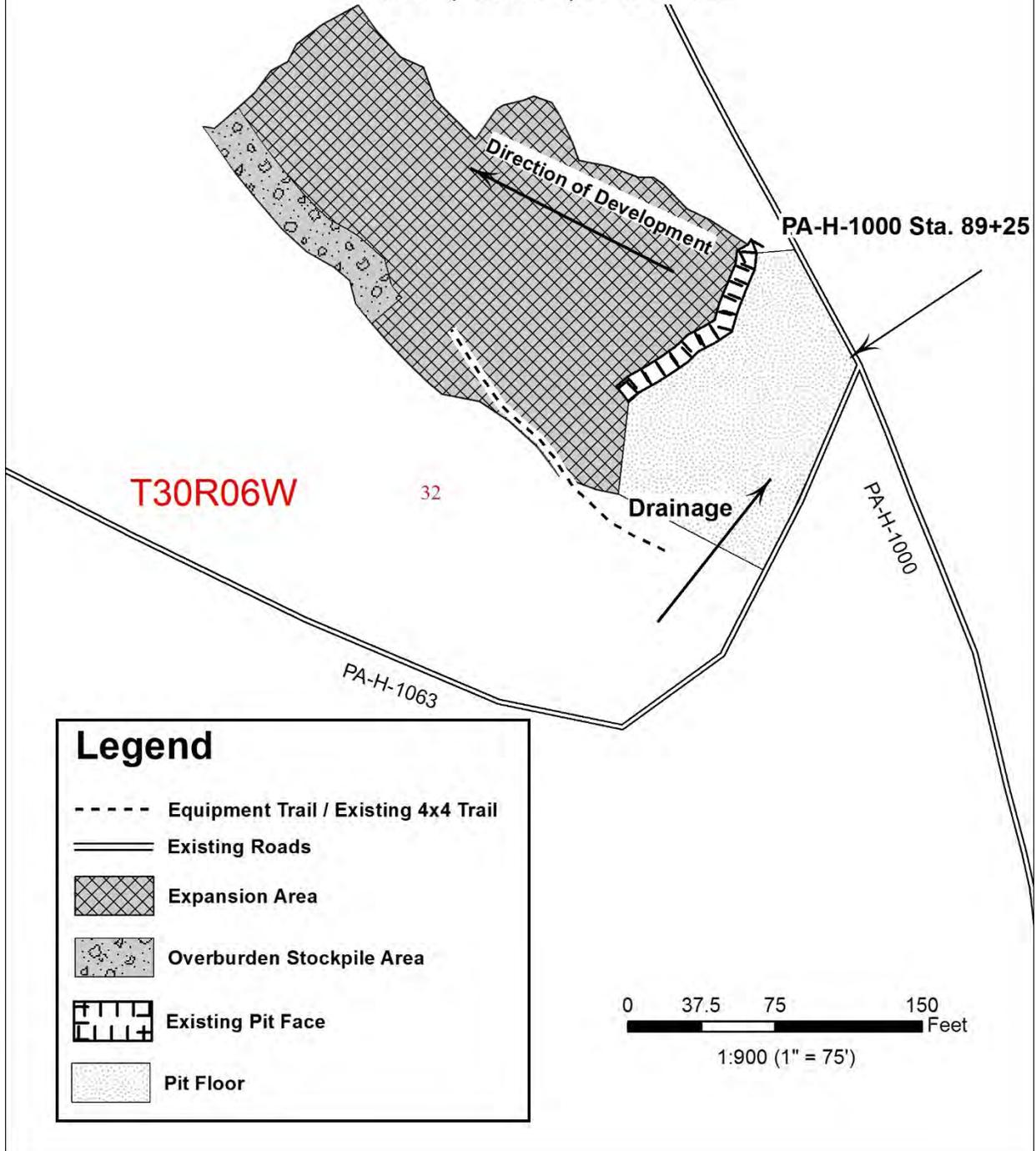
Drawn By
Travis Christensen
8/31/09

Support Arm



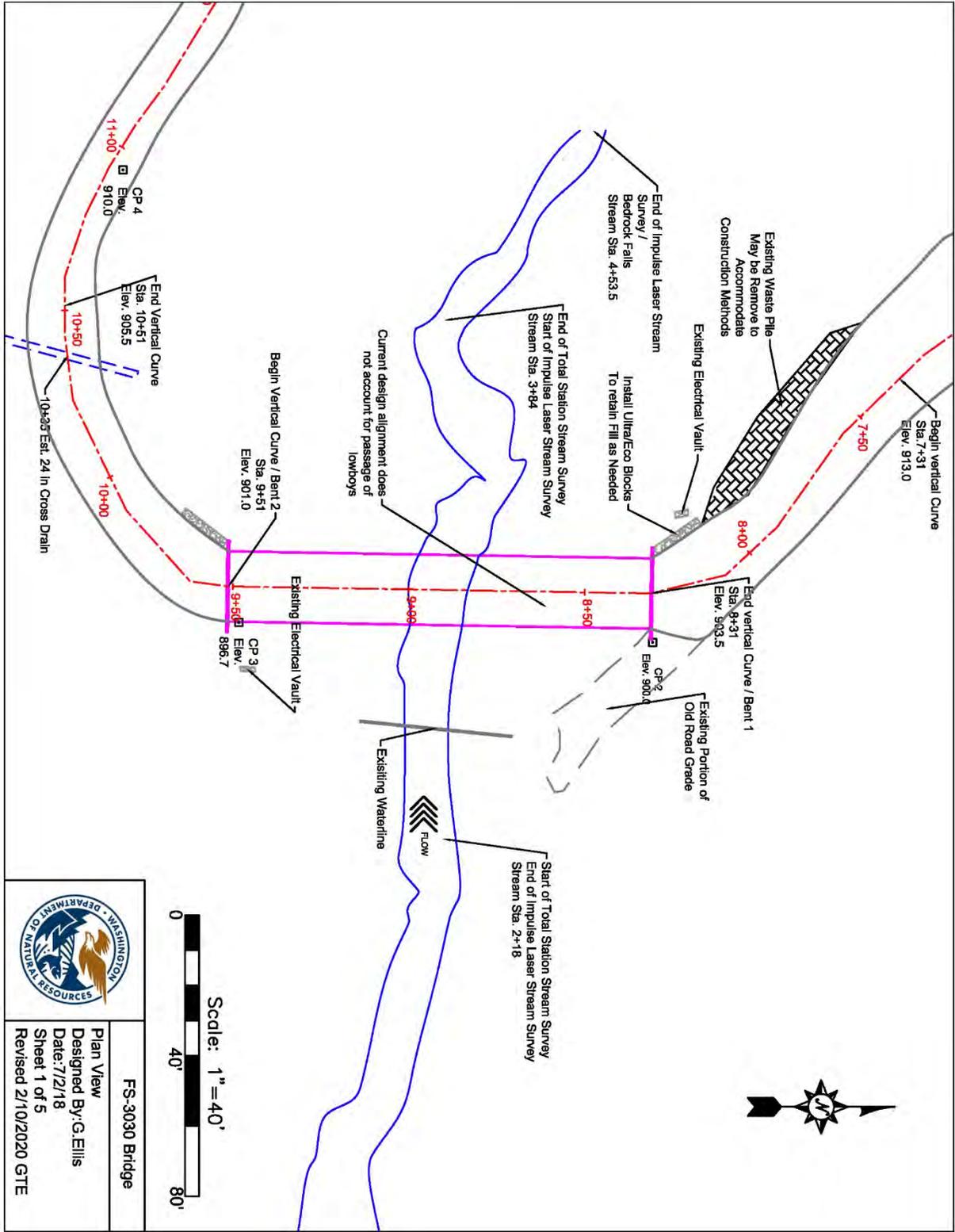


Overlook Pit Rock Source Development Plan T30N, R6W, Sec. 32

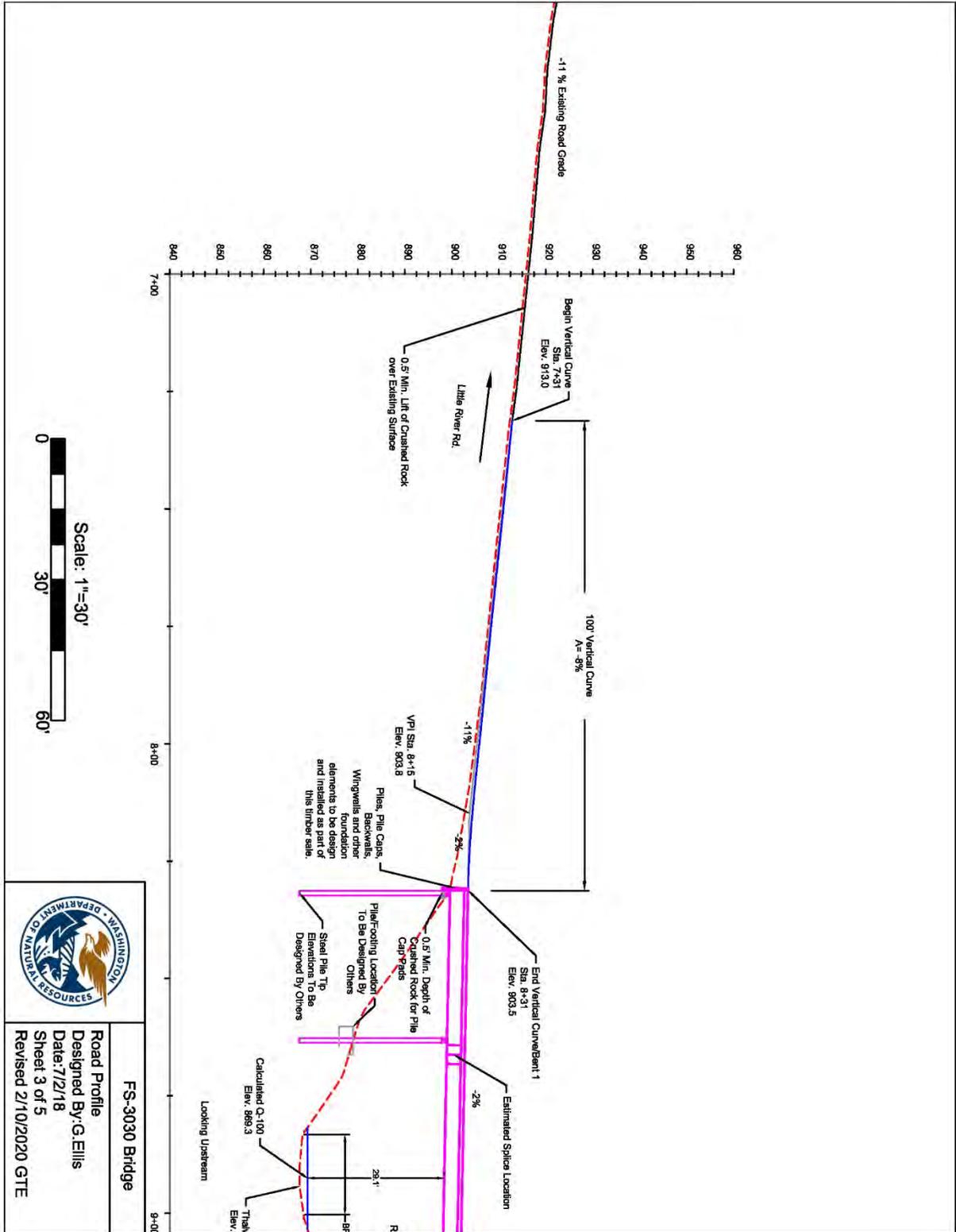


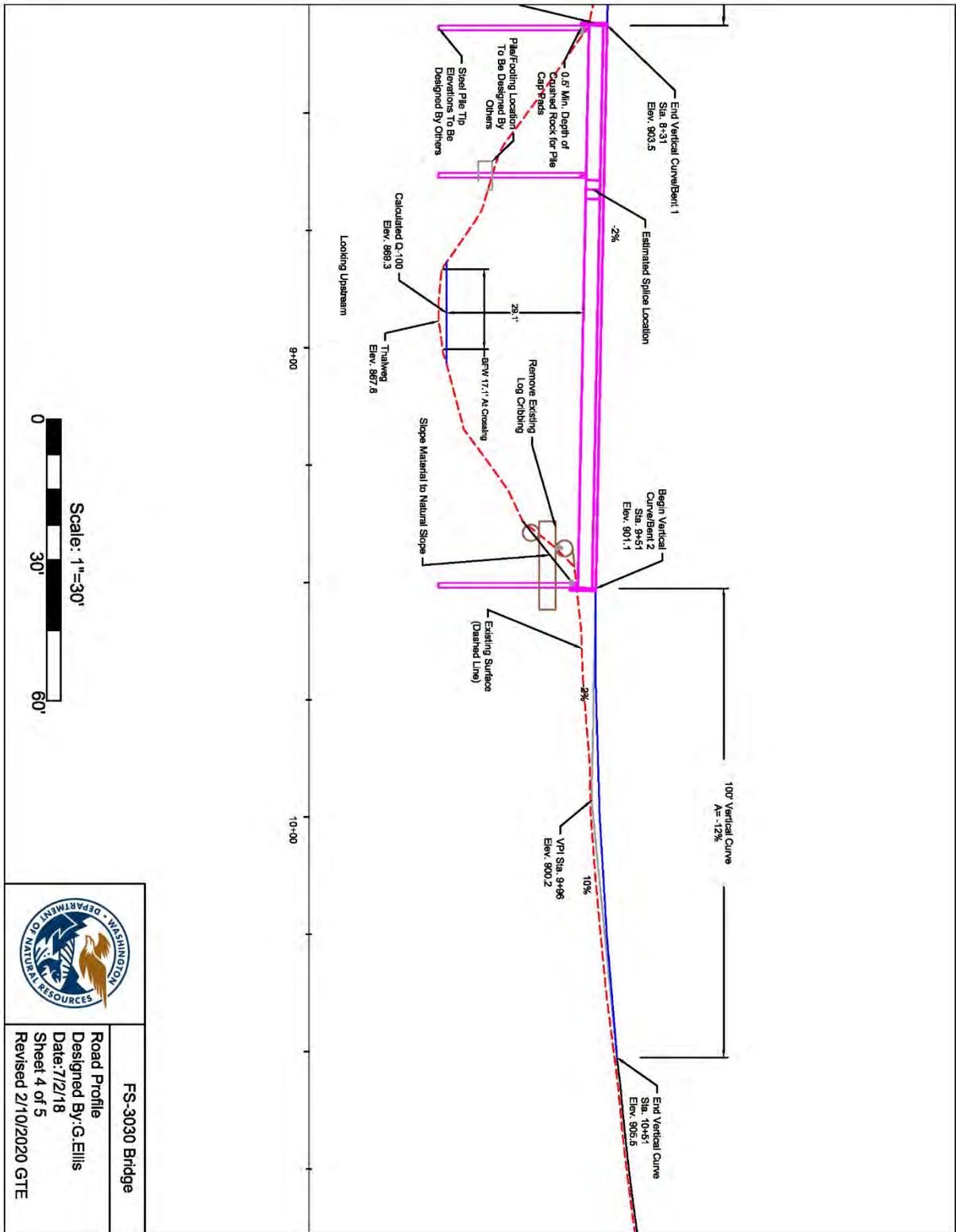
Overlook Pit
ROCK SOURCE DEVELOPMENT PLAN
SEC. 32, T.30N., R.6W
PIT USE REQUIREMENTS

1. Mining shall begin in the development shown on pit plan.
2. All vegetation including stumps shall be cleared a minimum 20 feet beyond the top of all working faces. Trees shall be cleared to a minimum of $\frac{3}{4}$ of height of the tallest tree adjacent to the pit. The Contractor shall maintain a minimum of 10 foot wide stripped area from the pit face at all times.
3. Root wads and organic debris larger than one cubic foot in volume shall be separated from overburden material and piled in an area designated by the Contract Administrator.
4. All exposed soils shall be grass seeded in accordance with Road Plan clause 8-25.
5. Activity restrictions per Clause 1-25.
6. Only the quantities and sorts specified in this road plan for this sale may be used or manufactured, unless otherwise approved by the Contract Administrator in writing.
7. Maintain drainage of the pit floor and all drainage structures within the pit boundaries. The pit floor shall have continuity of slope be left in a smooth and neat condition, providing drainage to the southeast at a minimum of 2 percent. All knobs, bumps, or extrusions shall be removed to the designated floor level by excavation or drill and shoot techniques.
8. Excavated face height shall not exceed 20 feet and shall be sloped no steeper than 1/4:1.
9. Excavated slopes shall have a 1 1/2:1 backslope or less at the completion of operations unless otherwise stated in Clause 4-5.
10. A minimum 4 foot high berm shall be constructed and constantly maintained along the upper edge of excavated pit faces. No pit faces shall be left unblocked at any time.
11. All operations shall be completed prior to the end of each operating season, including but not limited to: drainage maintenance, sloping of the excavated face, and construction of berms, unless otherwise approved in writing by the Contract Administrator.
12. At the end of operations, pit faces and walls shall be scaled and cleared of loose and overhanging material, benches shall have safety berms constructed or access blocked to highway vehicles. Upon completion of operations in the pit, the area will be left in a condition that will not endanger public safety, damage property, or be hazardous to animal or human life. The contractor shall use Light Loose Rip Rap to block the drill trail.
13. All material shall remain the property of the State.
14. At the conclusion of operations, Purchaser shall ask the Contract Administrator for written approval of the final rock source condition and compliance with the terms of this plan.
15. All work shall be conducted according to relevant specifications in this Road Plan, and the Contract Administrator.
16. Purchaser shall give the Contract Administrator a minimum of 7 days notice prior to commencing any operations.
17. Purchaser is required to inform Clallam County Dispatch (PenCom) of a day and approximate time of the pit blasting at 360-417-4911.
18. Purchaser shall submit an informational drilling and shooting plan to the Contract Administrator 10 working days before any drilling (Form #M-126PAC).

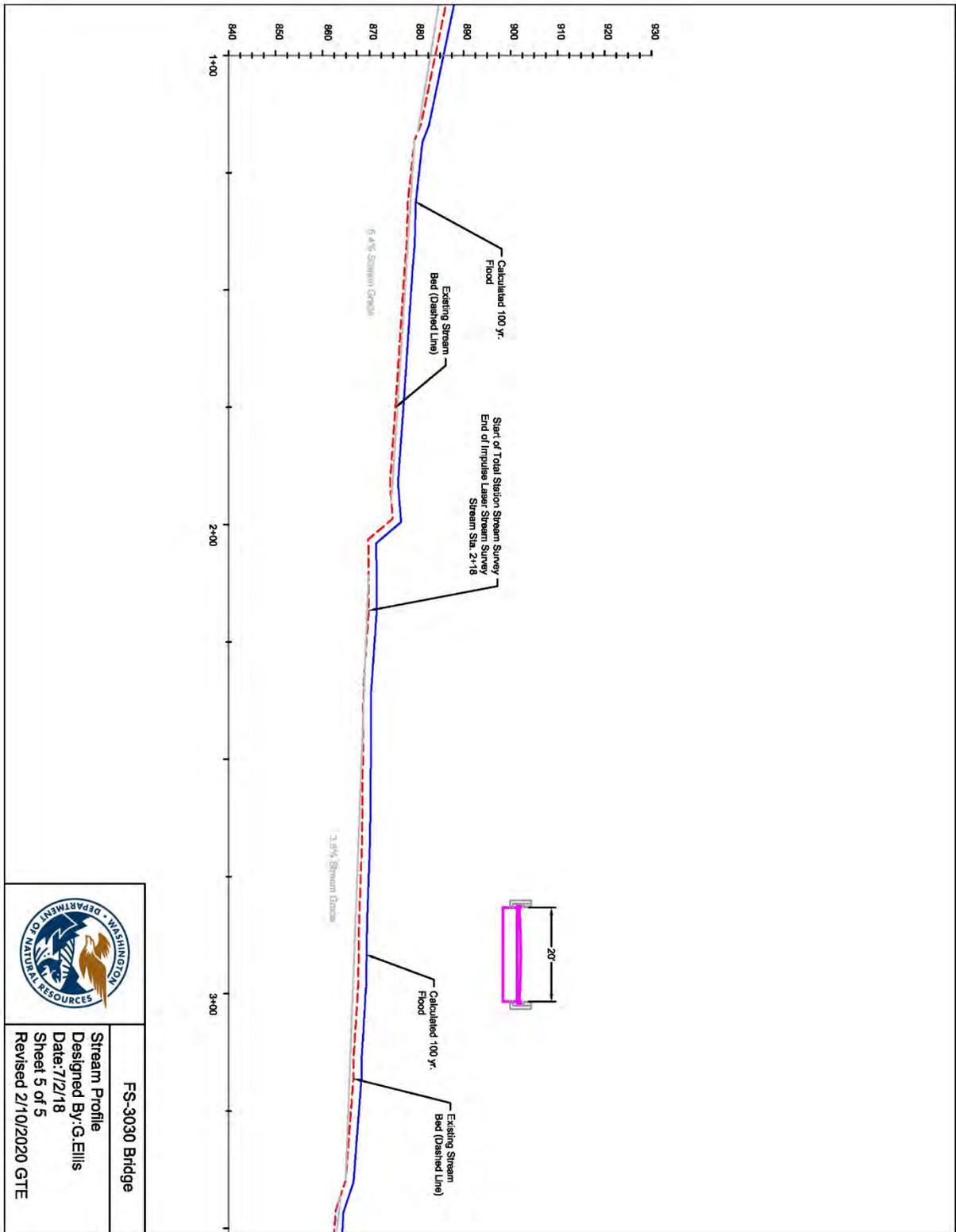


	FS-3030 Bridge
	Plan View
	Designed By: G. Ellis
	Date: 7/2/18
	Sheet 1 of 5
	Revised 2/10/2020 GTE





FS-3030 Bridge
 Road Profile
 Designed By: G. Ellis
 Date: 7/2/18
 Sheet 4 of 5
 Revised 2/10/2020 GTE



FS-3030 Bridge
 Stream Profile
 Designed By: G. Ellis
 Date: 7/2/18
 Sheet 5 of 5
 Revised 2/10/2020 GTE

		SUMMARY - Road Development Costs														
SALE NAME:	Foot Trail	CONTRACT#:	30-097642 <th>REGION:</th> <td>Olympic <th>DISTRICT:</th> <td>Stratis <th colspan="4"></th> <th>TOTAL</th> <th>SHEET #2</th> </td></td>	REGION:	Olympic <th>DISTRICT:</th> <td>Stratis <th colspan="4"></th> <th>TOTAL</th> <th>SHEET #2</th> </td>	DISTRICT:	Stratis <th colspan="4"></th> <th>TOTAL</th> <th>SHEET #2</th>					TOTAL	SHEET #2			
LEGAL DESCRIPTION:	0											TOTAL				
ROAD NAME:		PA-H-500	PA-H-510	PA-H-520	PA-H-530	PA-H-540	PA-H-550	PA-H-1030	PA-H-1080	PA-H-1085	FS-3030	I+30 Spur	TOTAL:			
ROAD TYPE:		Construction	Construction	Construction	Construction	Construction	Construction	Construction	Construction	Construction	Recon.	Recon.				
NUMBER OF STATIONS:		77.60	2.95	15.80	2.50	13.70	4.65	6.65	28.00	2.00	14.25	1.30	169.40	465.05		
SIDESLOPE:		30%	30%	5%	5%	30%	5%	45%	30%	30%	5%	10%				
CLEARING AND GRUBBING:		\$18,179	\$691	\$2,197	\$348	\$3,209	\$647	\$1,410	\$5,937	\$424	\$1,015	\$93	\$34,151	\$0		
ROAD BRUSHING:		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$158	\$0		
EXCAVATION AND FILL:		\$21,922	\$833	\$2,232	\$333	\$3,870	\$657	\$6,199	\$7,910	\$565	\$2,013	\$220	\$46,775	\$0		
ROAD GRADING:		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$93	\$101	\$4,885		
DITCH CLEANING/CONSTRUCTION:		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$281	\$51	\$332		
ROCK TOTALS (Cu. Yds.)/ROCK COSTS:		20938	20,940	9,860	450	1,930	350	1,670	660	840	3,730	290	280	110	20,139	\$800
Ballast:		\$203,905	\$9,116	\$39,449	\$7,147	\$33,571	\$14,911	\$14,431	\$14,431	\$73,033	\$5,304	\$4,908	\$924	\$408,699	10,889	
Surface:		1160	1,160	0	0	0	0	0	0	0	0	0	710	0	710	\$450
Oversize:		50	50	20	0	0	0	0	0	0	20	0	0	0	50	\$14,008
CULVERTS AND FLUMES:		\$299	\$0	\$0	\$0	\$156	\$0	\$0	\$0	\$0	\$252	\$0	\$0	\$0	\$706	\$0
STRUCTURES:		\$17,513	\$660	\$1,540	\$880	\$1,320	\$1,540	\$1,540	\$2,420	\$6,801	\$660	\$0	\$880	\$34,214	\$1,440	
MISC. EXPENSES:		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$468,645	\$0		
OVERHEAD:		\$1,130	\$17	\$112	\$15	\$100	\$27	\$39	\$39	\$280	\$12	\$487	\$2,354	\$3,846		
TOTAL COSTS:		\$21,036	\$905	\$3,642	\$699	\$3,538	\$1,423	\$1,960	\$7,537	\$557	\$39,329	\$185	\$80,811	\$3,163		
COST PER STATION:		\$283,984	\$12,223	\$49,173	\$9,442	\$47,765	\$19,205	\$26,459	\$101,749	\$7,522	\$30,936	2,495	\$1,090,954	\$34,792		
MOBILIZATION:				\$16,800												
ROAD DEACTIVATION AND ABANDONMENT COSTS:				\$2,406												
Per Work				\$10,850												
NOTE: This appraisal has no allowance for profit and risk.																
Sheet 1 of 2																
Plans to be furnished by:	Greg Ellis															
		Road Standard	Const.	Reconst.	Prehaul	Posthaul							TOTAL (All Roads) =	\$1,156,670		
		Total Costs =	\$573,440	\$537,631	\$19,838	\$23,364							SALE VOLUME MBF =	6,472		
		Total Sta. =	153.85	15.55	196.25	268.80							TOTAL COST PER MBF =	\$178.72		
		Cost per Sta. =	\$3,727	\$34,574	\$101	\$87							TOTAL COST PER STATION =	\$18,231.11		
		Computed by:	Greg Ellis											Date: 10/17/2019		

		SUMMARY - Road Development Costs						DISTRICT: Straits							
SALE NAME:	Foot Trail	CONTRACT#:	30-097642	REGION:	Olympic										
LEGAL DESCRIPTION:		0													
ROAD NAME:		PA-H-1000	PA-H-1020	PA-H-1050	PA-H-1051	FS-3030	PA-H-500	PA-H-1000	0	0	0	0	0	0	0
ROAD TYPE:		Prehaul	Prehaul	Prehaul	Prehaul	Posthaul	Posthaul	Posthaul							
NUMBER OF STATIONS:		176.95	14.85	0.75	3.70	14.25	77.60	176.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SIDESLOPE:		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
CLEARING AND GRUBBING:		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
ROAD BRUSHING:		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
EXCAVATION AND FILL:		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
ROAD GRADING:		\$1,200	\$0	\$0	\$0	\$85	\$2,400	\$1,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0
DITCH CLEANING/CONSTRUCTION:		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
ROCK TOTALS (Cu. Yds.)/ROCK COSTS:															
Ballast:		0	600	0	0	0	200	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Surface:		\$0	\$6,753	\$0	\$0	\$0	\$4,136	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Oversize:		150	0	0	0	100	0	200	\$0	\$0	\$0	\$0	\$0	\$0	\$0
		\$3,683	\$0	\$0	\$0	\$1,974	\$0	\$4,911	\$0	\$0	\$0	\$0	\$0	\$0	\$0
CULVERTS AND FLUMES:		0	0	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
		\$0	\$1,440	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
STRUCTURES:		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
MISC. EXPENSES:		\$880	\$250	\$0	\$0	\$76	\$1,760	\$880	\$0	\$0	\$0	\$0	\$0	\$0	\$0
OVERHEAD:		\$576	\$844	\$0	\$0	\$213	\$830	\$699	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL COSTS:		\$6,340	\$9,288	\$0	\$0	\$2,348	\$9,126	\$7,690	\$0	\$0	\$0	\$0	\$0	\$0	\$0
COST PER STATION:		\$36	\$625	\$0	\$0	\$165	\$118	\$43	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

Forest Access Road Maintenance Specifications

Cuts and Fills

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

Surface

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

Drainage

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

Forest Access Road Maintenance Specifications

Preventative Maintenance

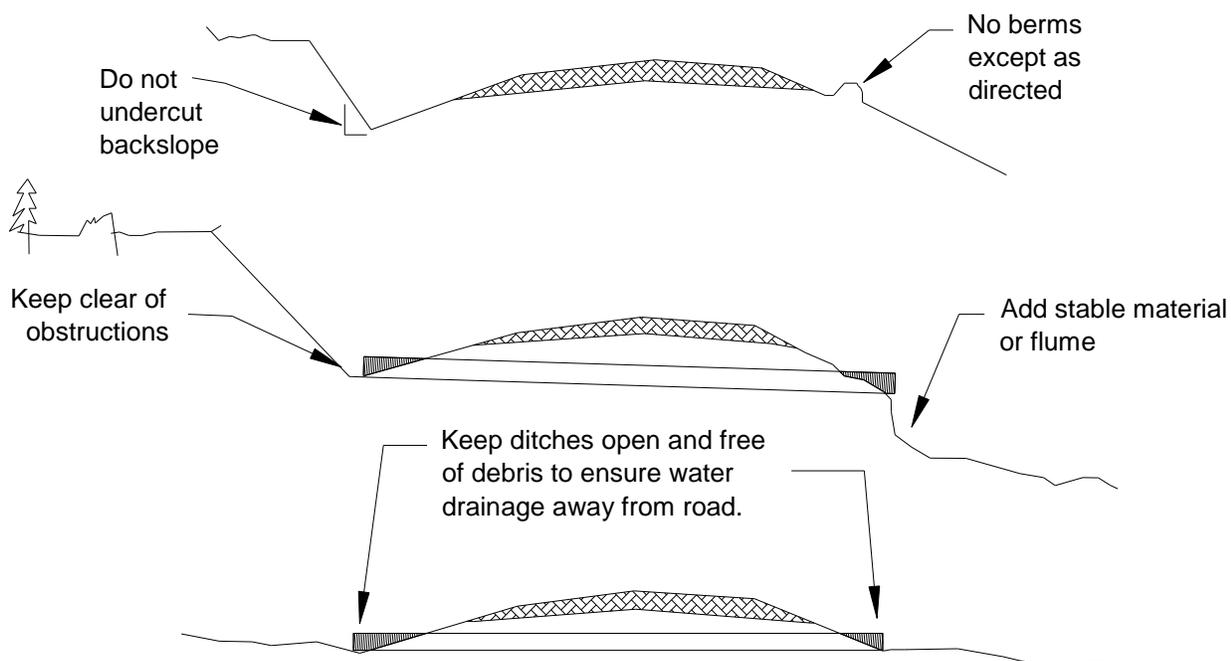
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

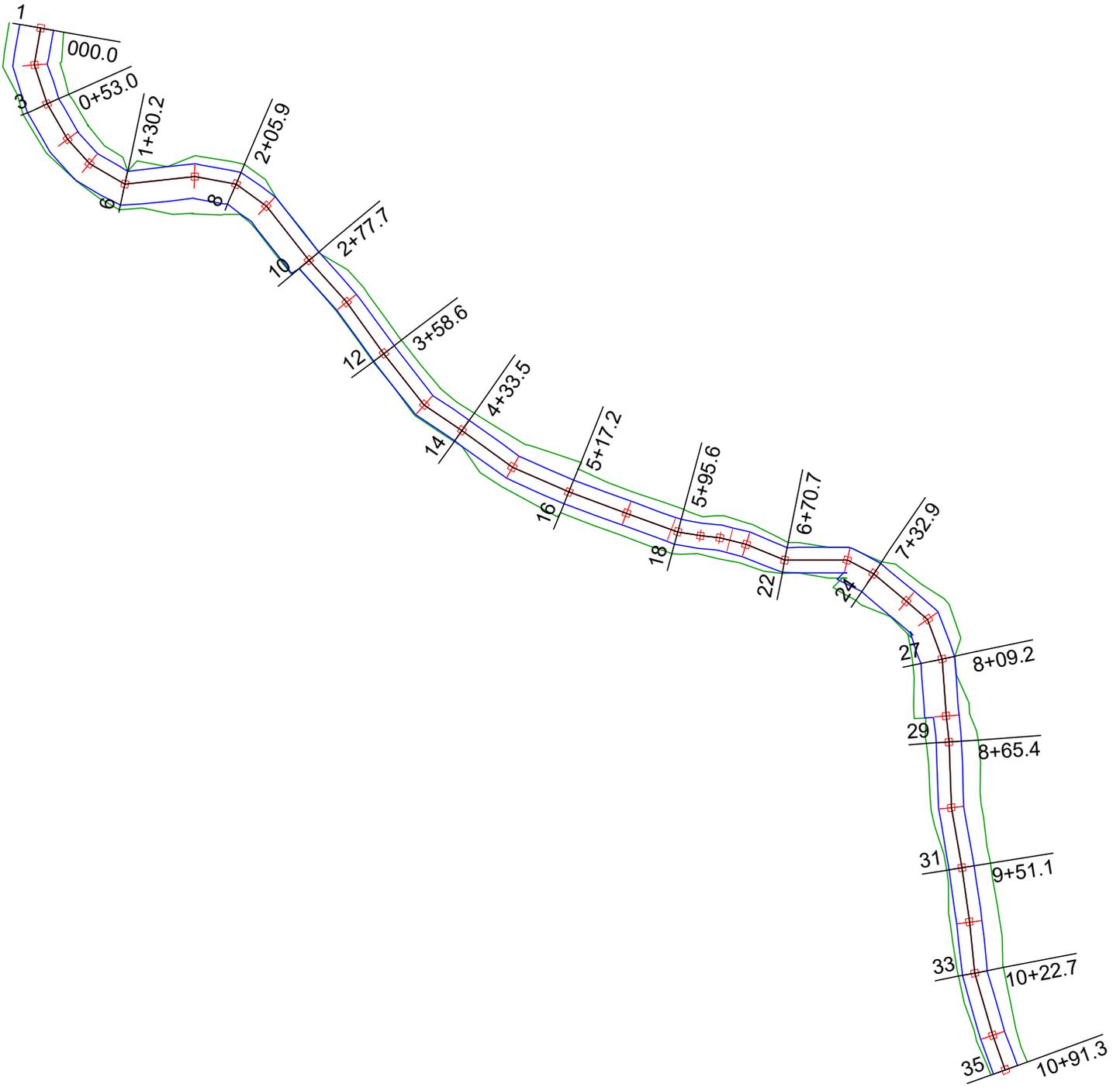
Termination of Use or End of Season

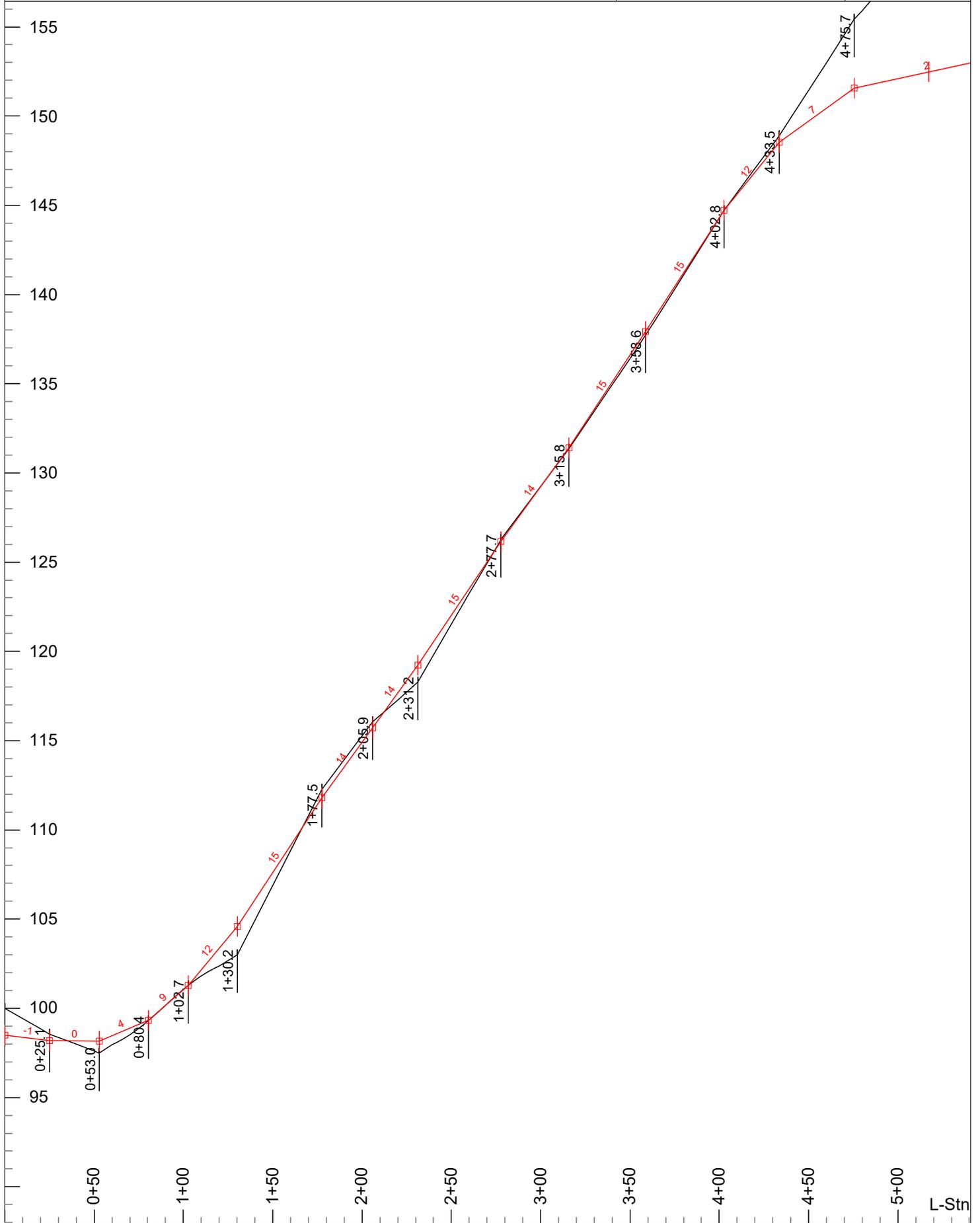
- At the conclusion of logging operations, ensure all conditions of these specifications have been met.

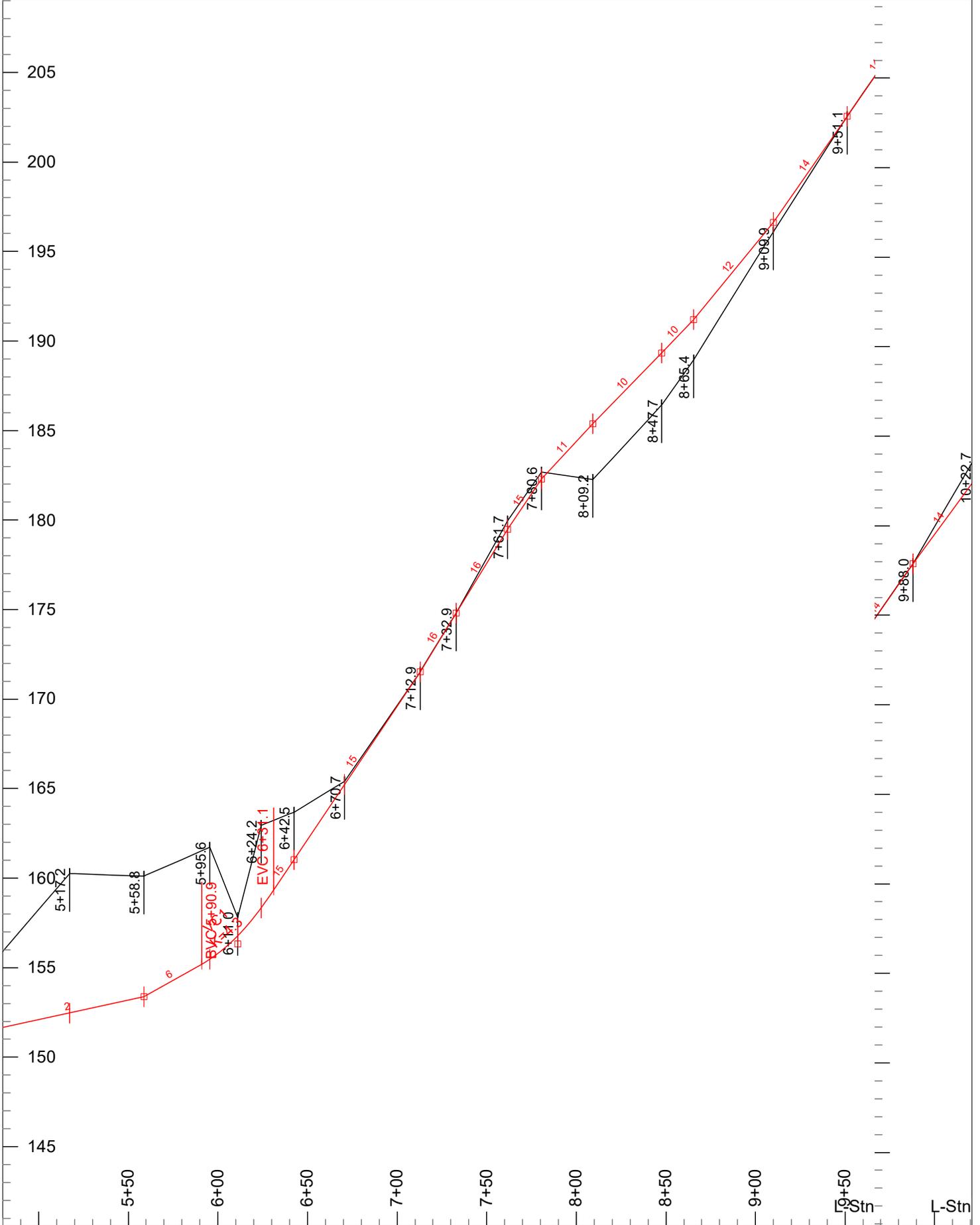
Debris

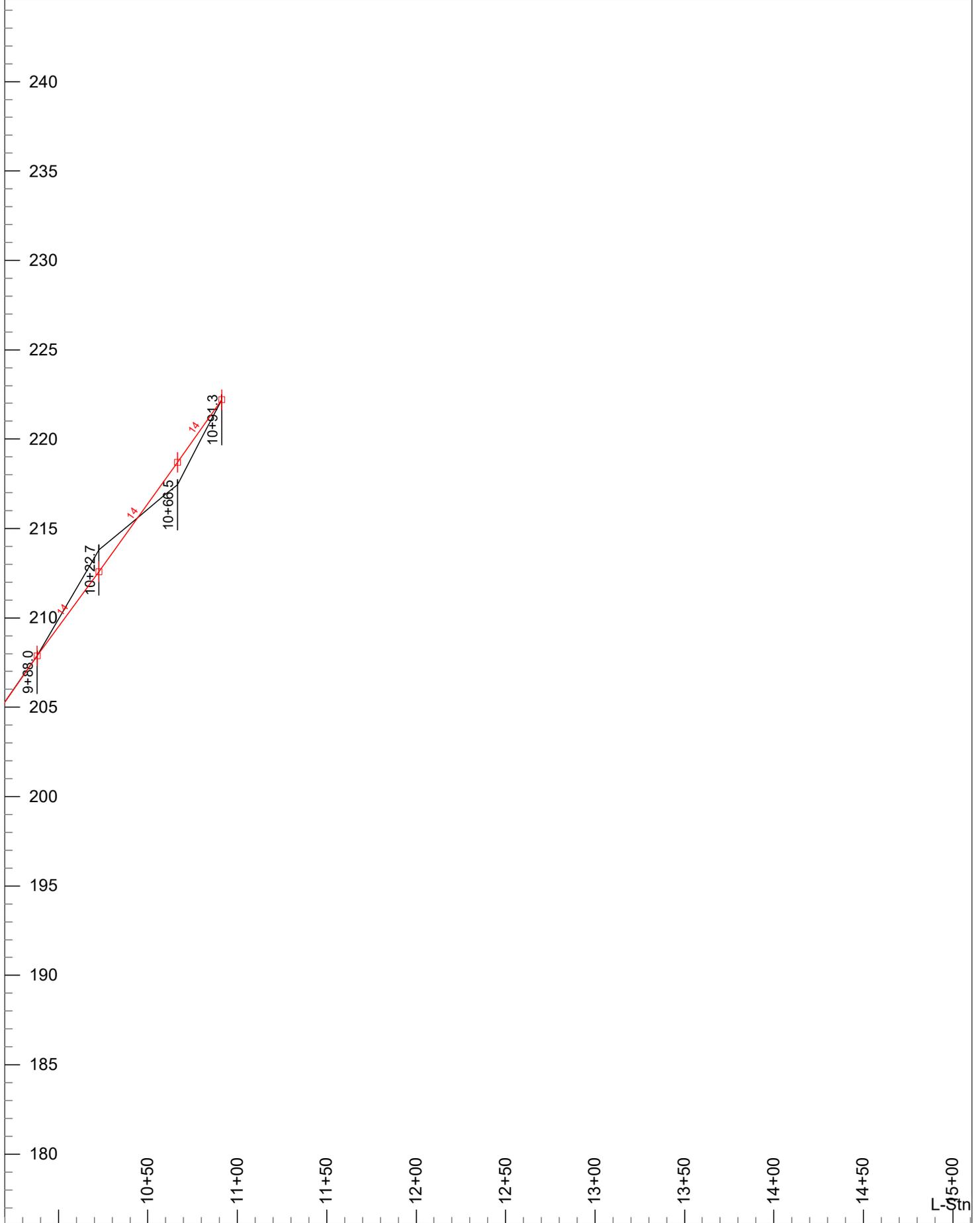
- Remove fallen timber, limbs, and stumps from the slopes, roadway, ditchlines, and culvert inlets.

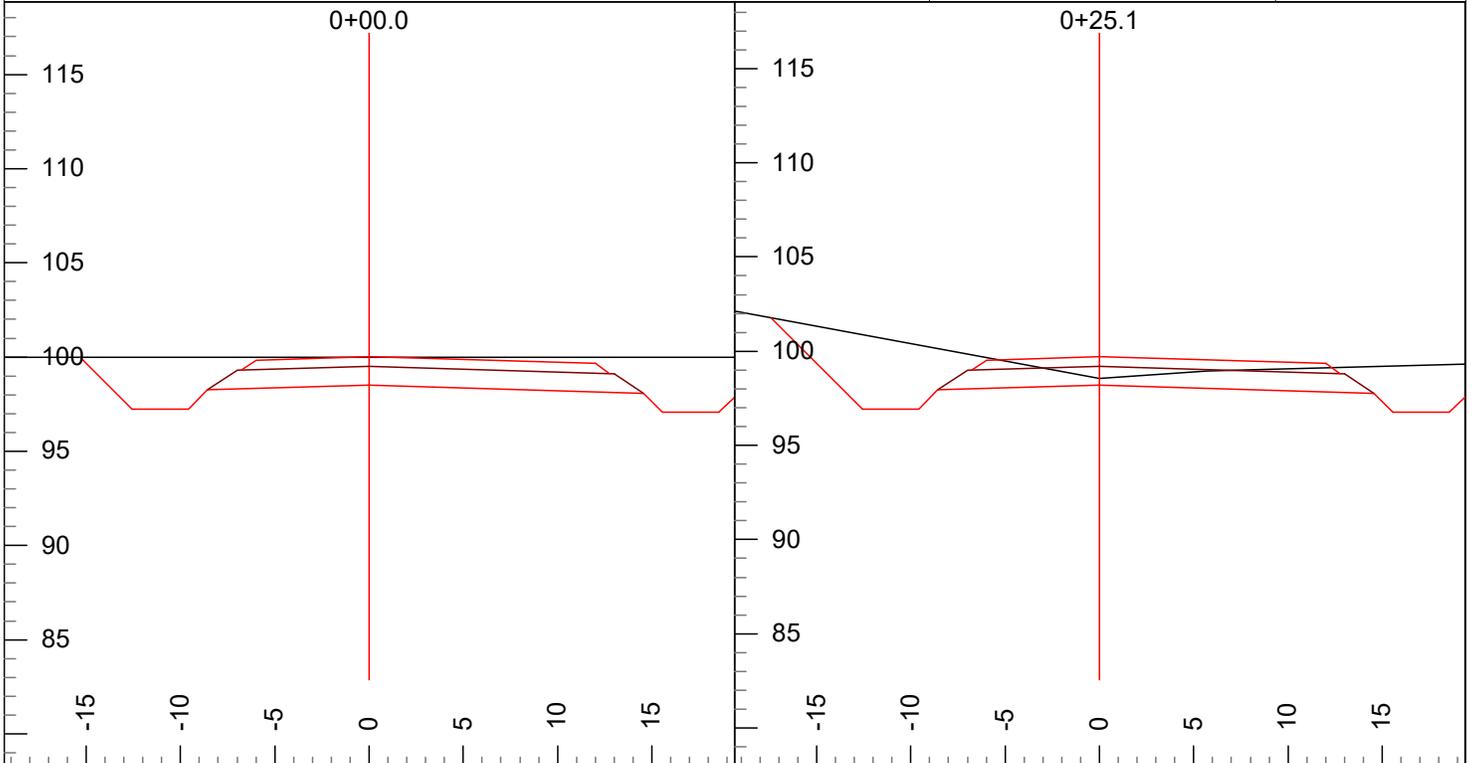






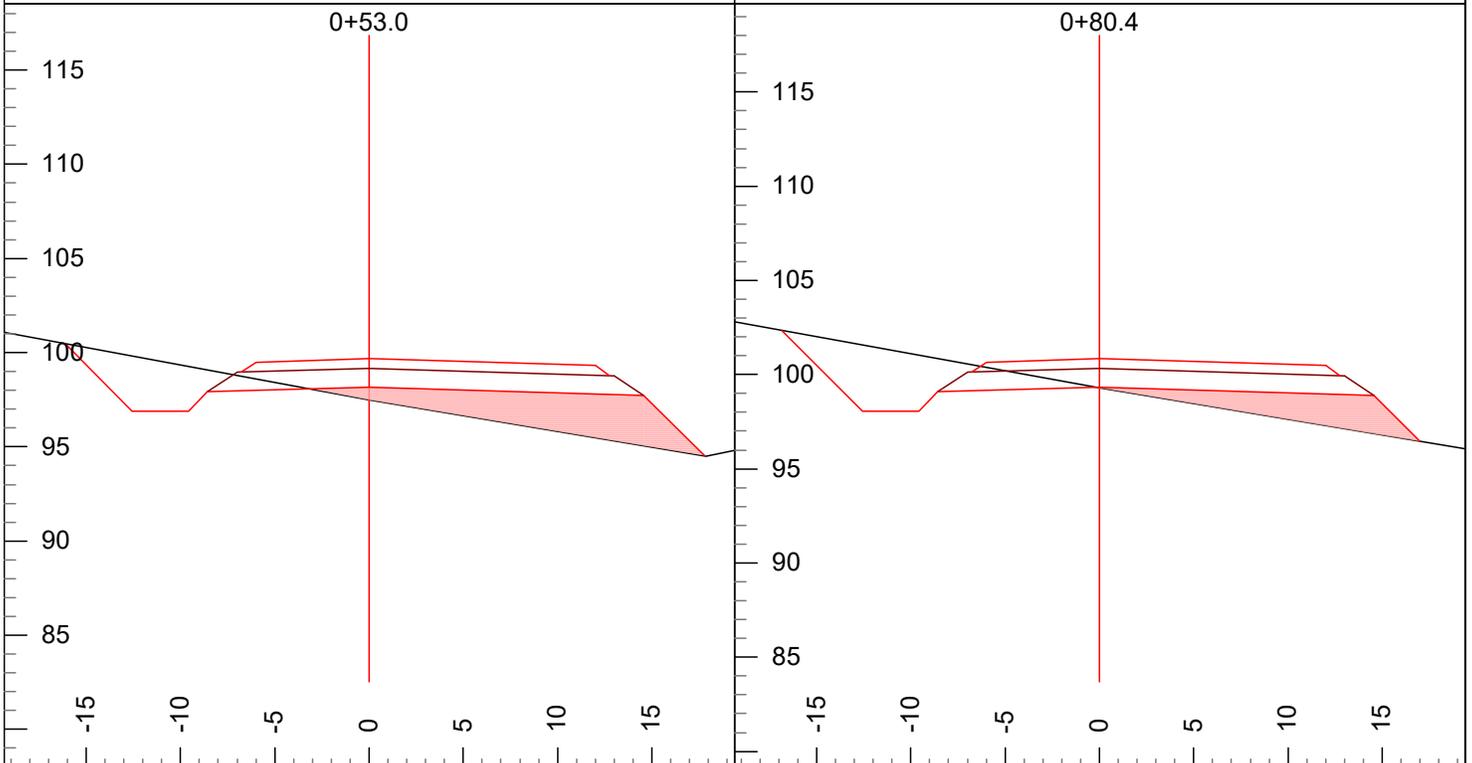






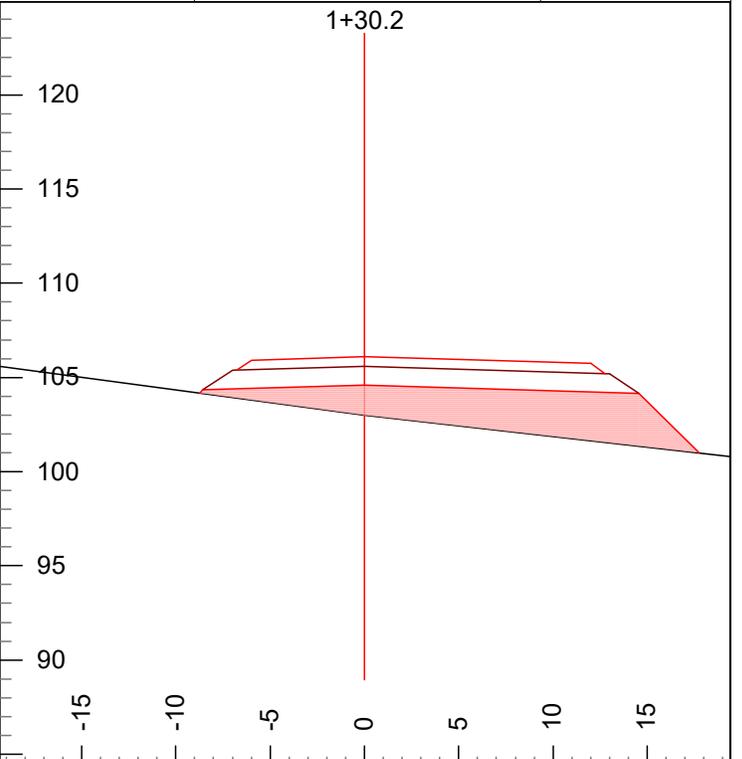
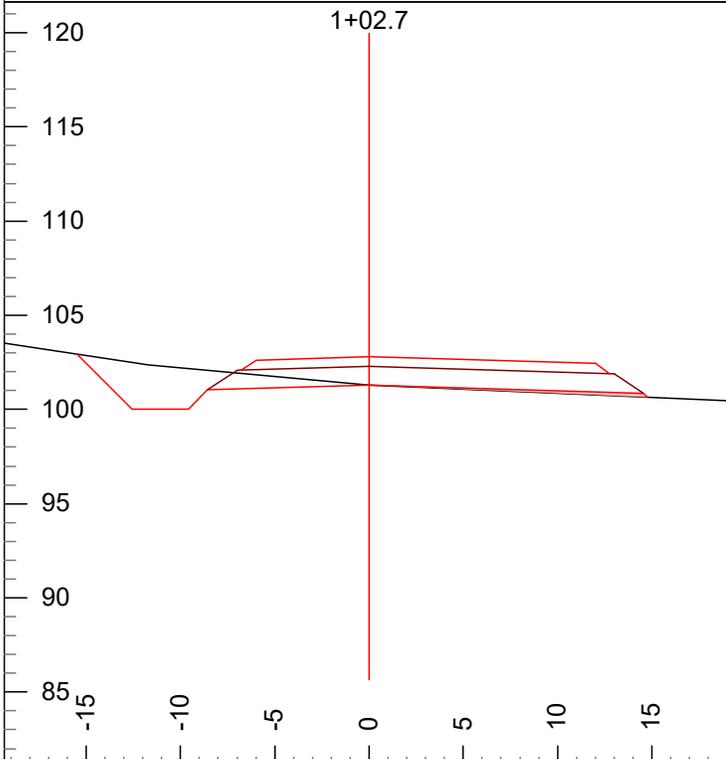
L-Stn :	0+00.0	L-Ssl:	0.0	F Slope L:	100.00
P-Stn :	0+00.0	L-Ssr:	0.0	F Slope R:	100.00
Grd.Nxt.:	-1.3	Super L:	-3.0	Cut Dp:	1.5
Grd.Lst:	n/a	Super R:	-3.0	Index:	1

L-Stn :	0+25.1	L-Ssl:	18.3	F Slope L:	100.00
P-Stn :	0+25.1	L-Ssr:	6.8	F Slope R:	100.00
Grd.Nxt.:	-0.1	Super L:	-3.0	Cut Dp:	0.4
Grd.Lst:	-1.3	Super R:	-3.0	Index:	2



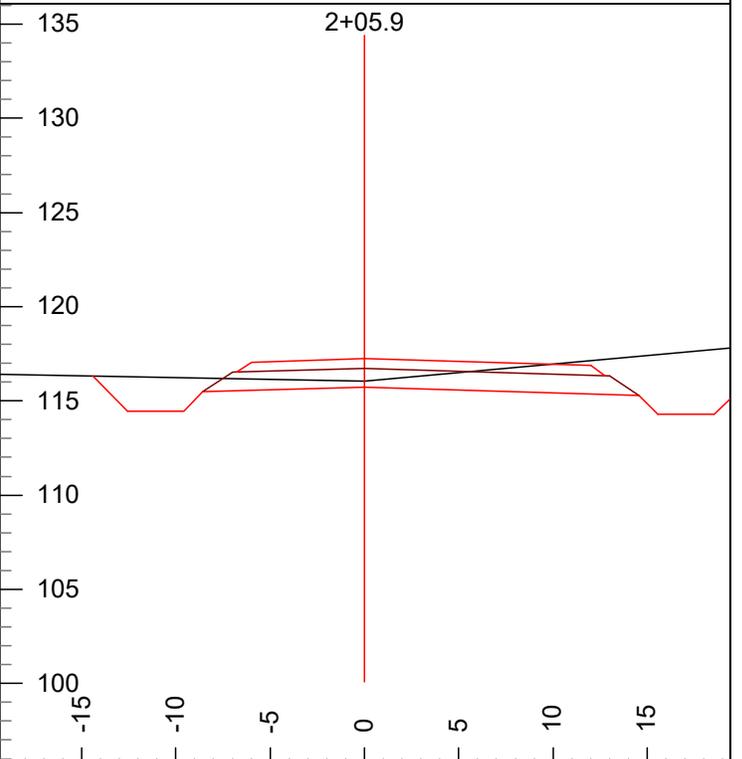
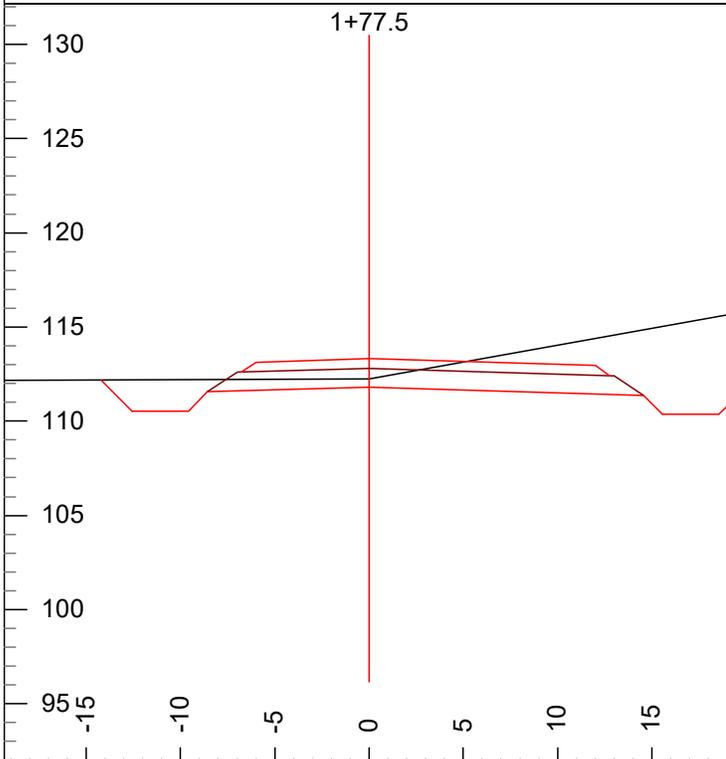
L-Stn :	0+53.0	L-Ssl:	18.4	F Slope L:	100.00
P-Stn :	0+53.0	L-Ssr:	-16.8	F Slope R:	-100.00
Grd.Nxt.:	4.3	Super L:	-3.0	Cut Dp:	-0.7
Grd.Lst:	-0.1	Super R:	-3.0	Index:	3

L-Stn :	0+80.4	L-Ssl:	18.1	F Slope L:	100.00
P-Stn :	0+80.4	L-Ssr:	-16.7	F Slope R:	-100.00
Grd.Nxt.:	8.8	Super L:	-3.0	Cut Dp:	0.0
Grd.Lst:	4.3	Super R:	-3.0	Index:	4



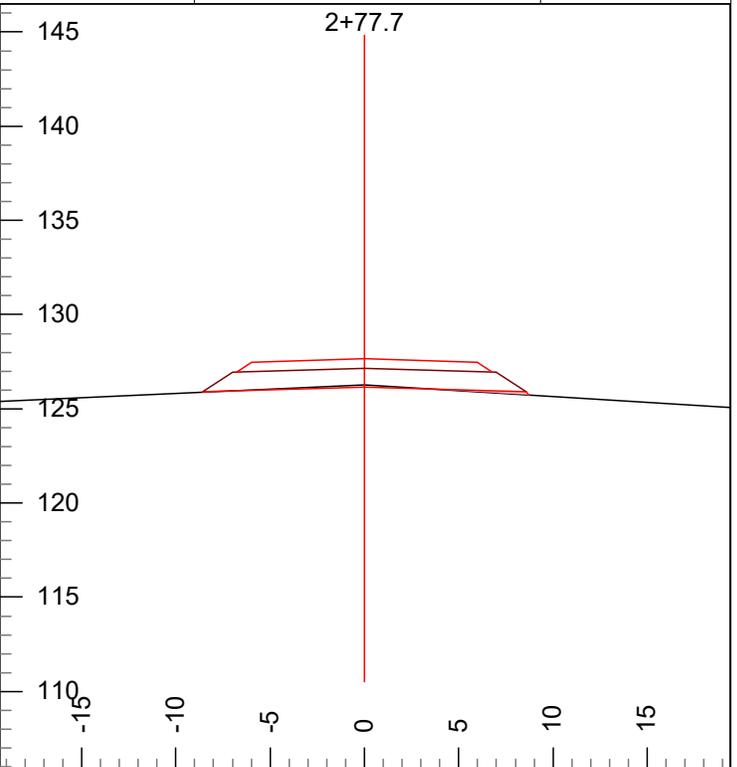
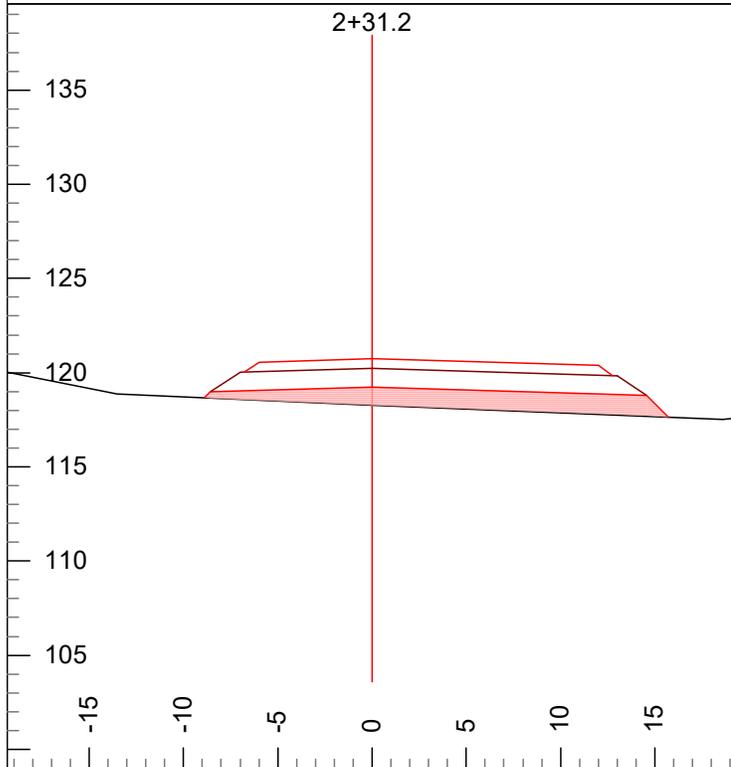
L-Stn :	1+02.7	L-Ssl:	9.1	F Slope L:	100.00
P-Stn :	1+02.7	L-Ssr:	-4.4	F Slope R:	-100.00
Grd.Nxt.:	12.0	Super L:	-3.0	Cut Dp:	0.0
Grd.Lst:	8.8	Super R:	-3.0	Index:	5

L-Stn :	1+30.2	L-Ssl:	13.3	F Slope L:	-100.00
P-Stn :	1+30.2	L-Ssr:	-11.4	F Slope R:	-100.00
Grd.Nxt.:	15.3	Super L:	-3.0	Cut Dp:	-1.6
Grd.Lst:	12.0	Super R:	-3.0	Index:	6



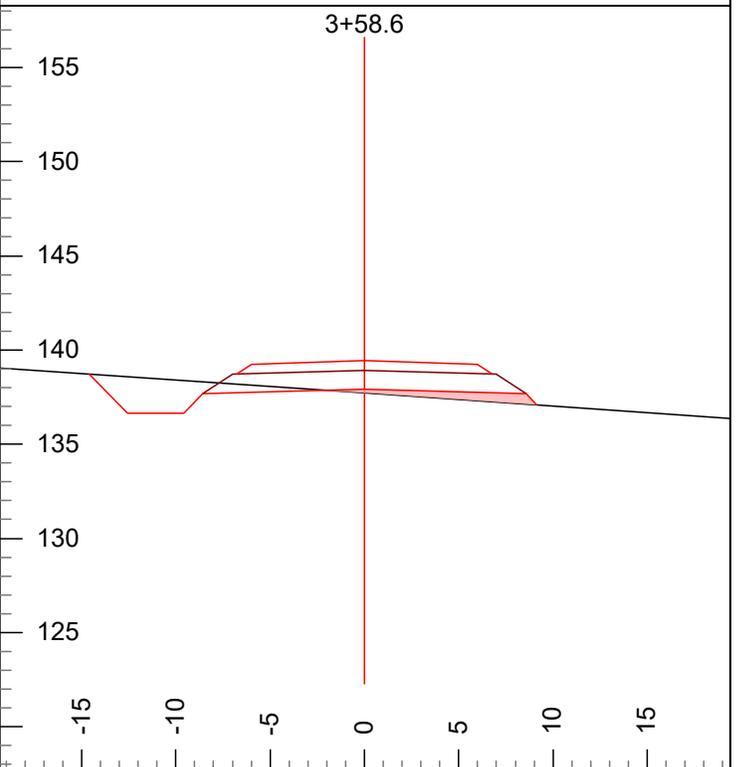
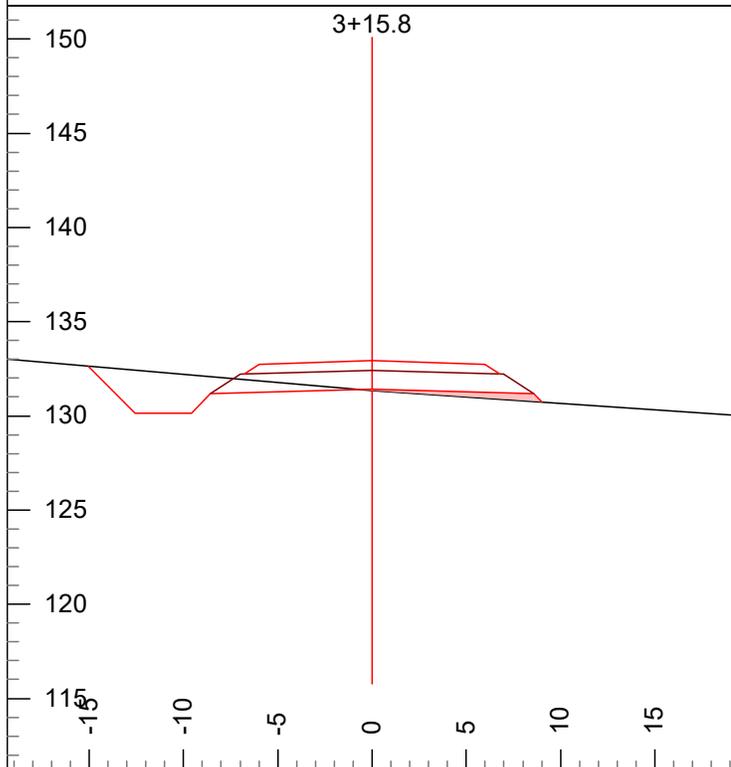
L-Stn :	1+77.5	L-Ssl:	-0.6	F Slope L:	100.00
P-Stn :	1+77.5	L-Ssr:	17.8	F Slope R:	100.00
Grd.Nxt.:	13.8	Super L:	-3.0	Cut Dp:	0.5
Grd.Lst:	15.3	Super R:	-3.0	Index:	7

L-Stn :	2+05.9	L-Ssl:	1.9	F Slope L:	100.00
P-Stn :	2+05.9	L-Ssr:	9.1	F Slope R:	100.00
Grd.Nxt.:	13.8	Super L:	-3.0	Cut Dp:	0.3
Grd.Lst:	13.8	Super R:	-3.0	Index:	8



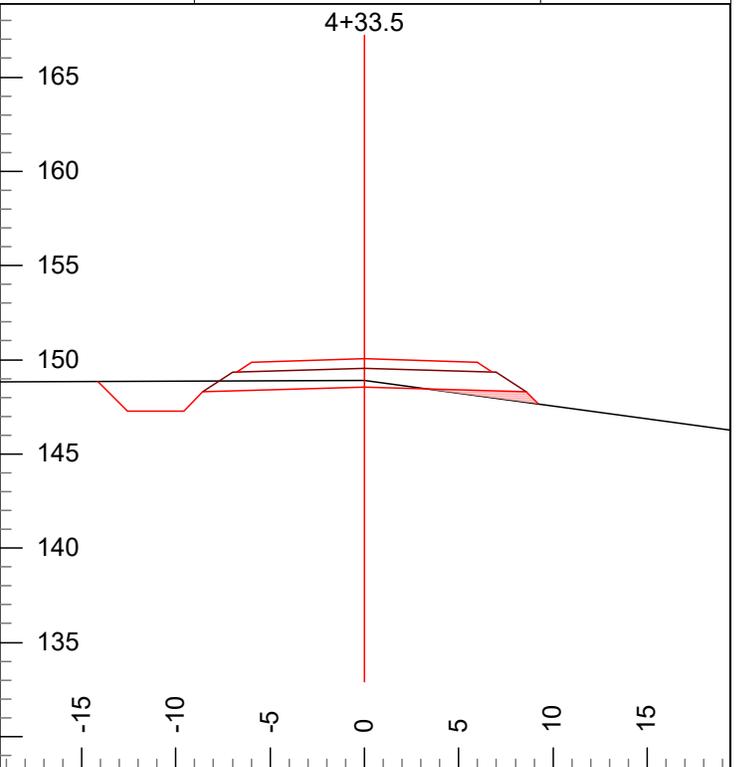
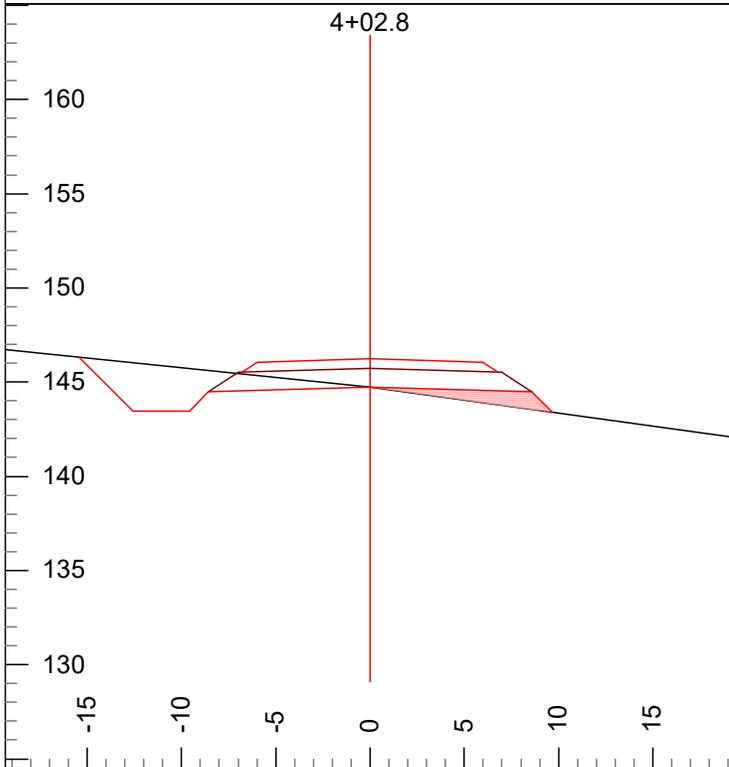
L-Stn :	2+31.2	L-Ssl:	4.3	F Slope L:	-100.00
P-Stn :	2+31.2	L-Ssr:	-4.0	F Slope R:	-100.00
Grd.Nxt.:	14.9	Super L:	-3.0	Cut Dp:	-0.9
Grd.Lst:	13.8	Super R:	-3.0	Index:	9

L-Stn :	2+77.7	L-Ssl:	-4.5	F Slope L:	-100.00
P-Stn :	2+77.7	L-Ssr:	-6.2	F Slope R:	-100.00
Grd.Nxt.:	13.8	Super L:	-3.0	Cut Dp:	0.1
Grd.Lst:	14.9	Super R:	-3.0	Index:	10



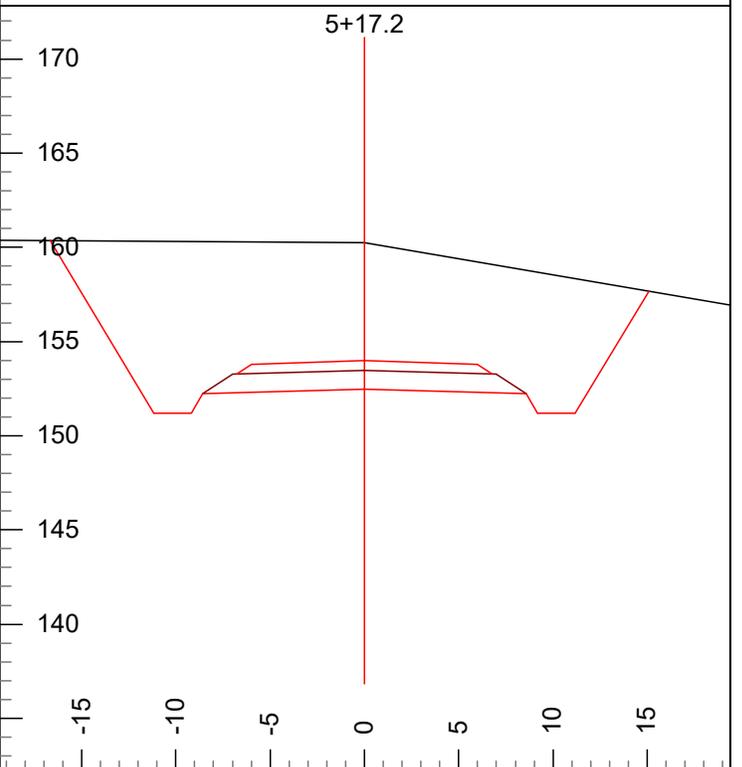
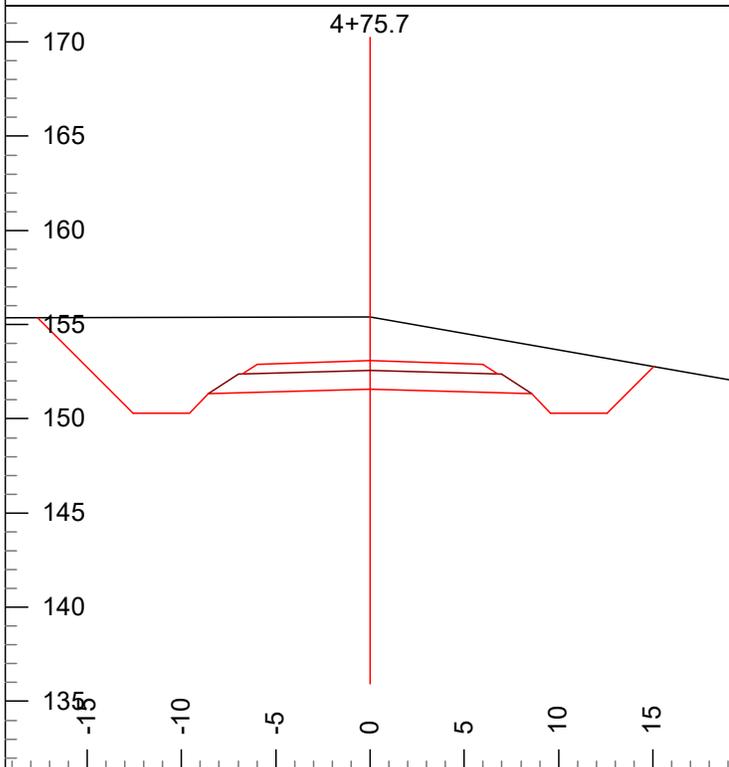
L-Stn :	3+15.8	L-Ssl:	8.5	F Slope L:	100.00
P-Stn :	3+15.8	L-Ssr:	-6.9	F Slope R:	-100.00
Grd.Nxt.:	15.2	Super L:	-3.0	Cut Dp:	-0.1
Grd.Lst:	13.8	Super R:	-3.0	Index:	11

L-Stn :	3+58.6	L-Ssl:	6.7	F Slope L:	100.00
P-Stn :	3+58.6	L-Ssr:	-7.0	F Slope R:	-100.00
Grd.Nxt.:	15.4	Super L:	-3.0	Cut Dp:	-0.2
Grd.Lst:	15.2	Super R:	-3.0	Index:	12



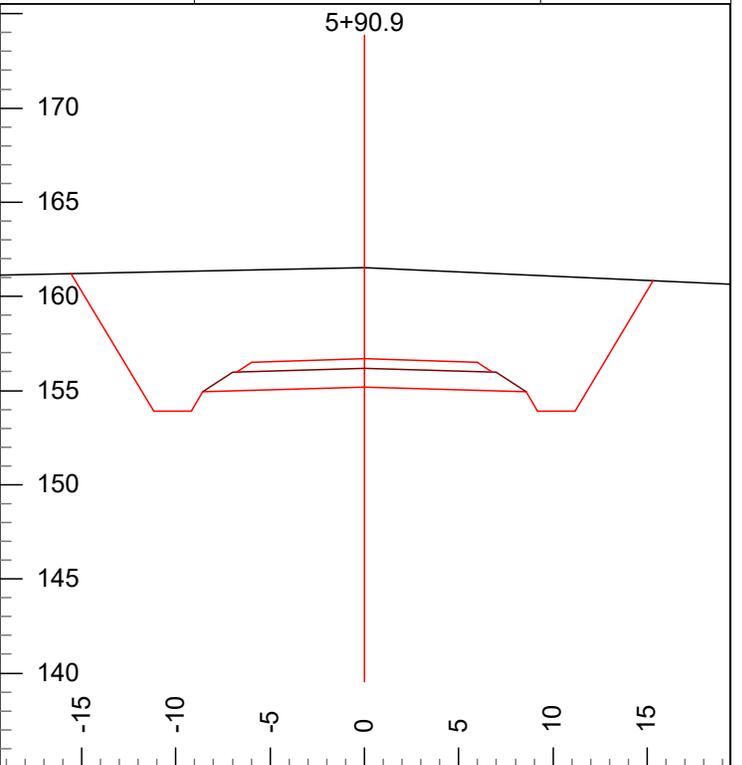
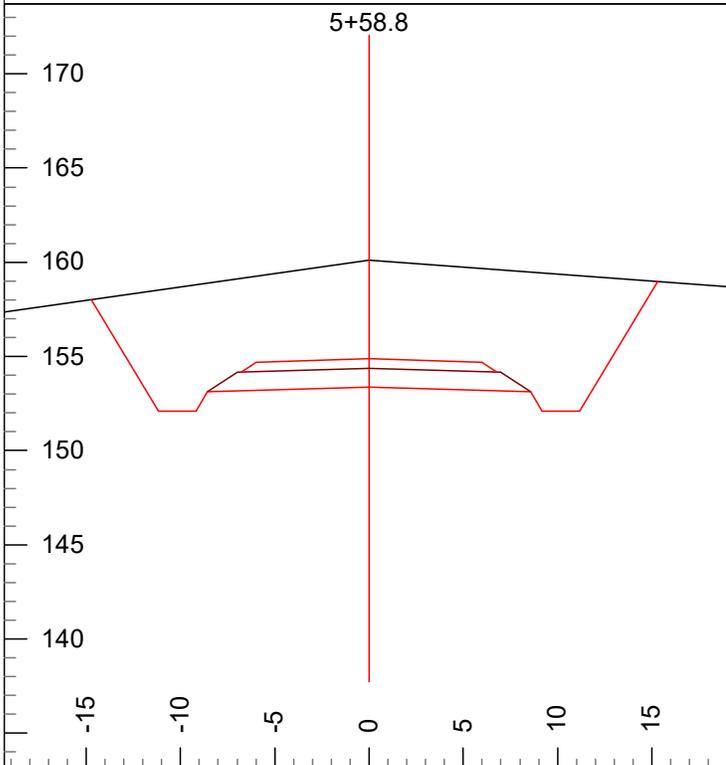
L-Stn : 4+02.8 L-Ssl: 10.4 F Slope L: 100.00
 P-Stn : 4+02.8 L-Ssr: -13.7 F Slope R: -100.00
 Grd.Nxt.: 12.4 Super L: -3.0 Cut Dp: 0.0
 Grd.Lst: 15.4 Super R: -3.0 Index: 13

L-Stn : 4+33.5 L-Ssl: -0.4 F Slope L: 100.00
 P-Stn : 4+33.5 L-Ssr: -13.6 F Slope R: -100.00
 Grd.Nxt.: 7.2 Super L: -3.0 Cut Dp: 0.4
 Grd.Lst: 12.4 Super R: -3.0 Index: 14



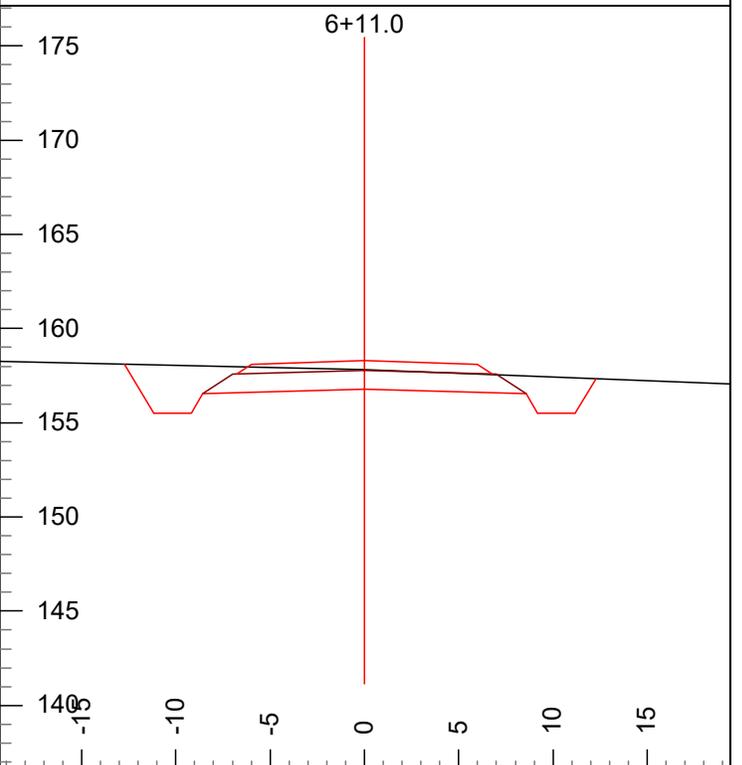
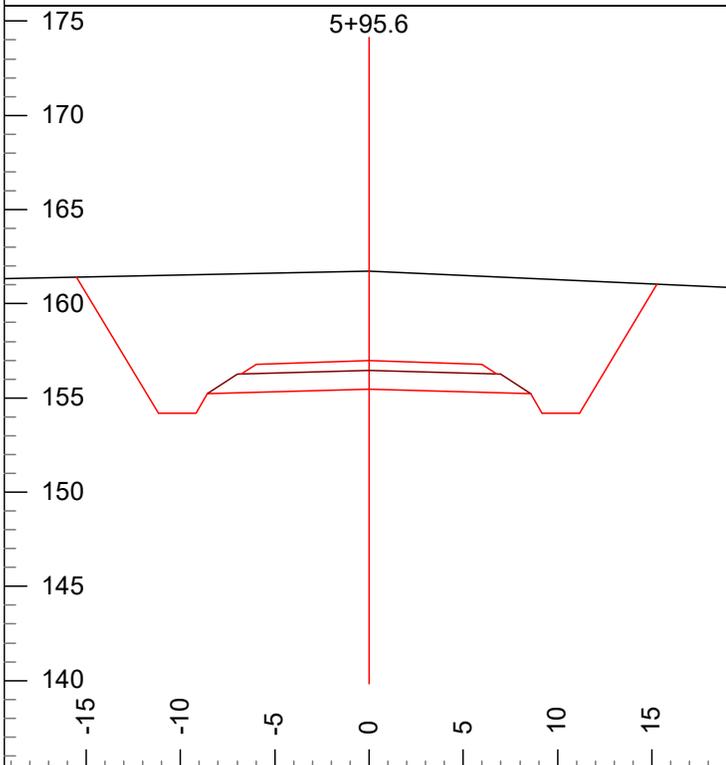
L-Stn : 4+75.7 L-Ssl: -0.3 F Slope L: 100.00
 P-Stn : 4+75.7 L-Ssr: -17.5 F Slope R: 100.00
 Grd.Nxt.: 2.2 Super L: -3.0 Cut Dp: 3.8
 Grd.Lst: 7.2 Super R: -3.0 Index: 15

L-Stn : 5+17.2 L-Ssl: 0.7 F Slope L: 166.00
 P-Stn : 5+17.2 L-Ssr: -17.1 F Slope R: 166.00
 Grd.Nxt.: 2.2 Super L: -3.0 Cut Dp: 7.8
 Grd.Lst: 2.2 Super R: -3.0 Index: 16



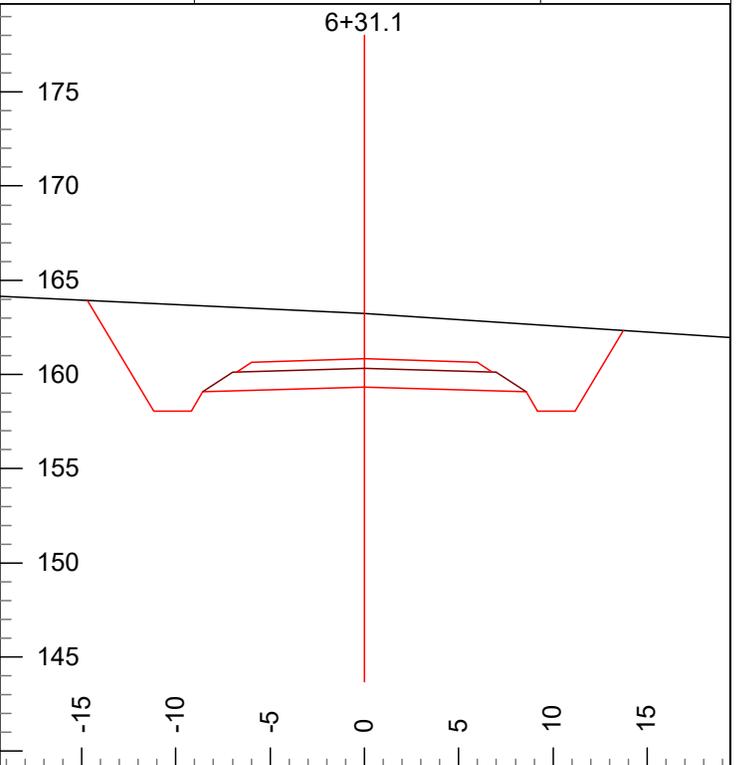
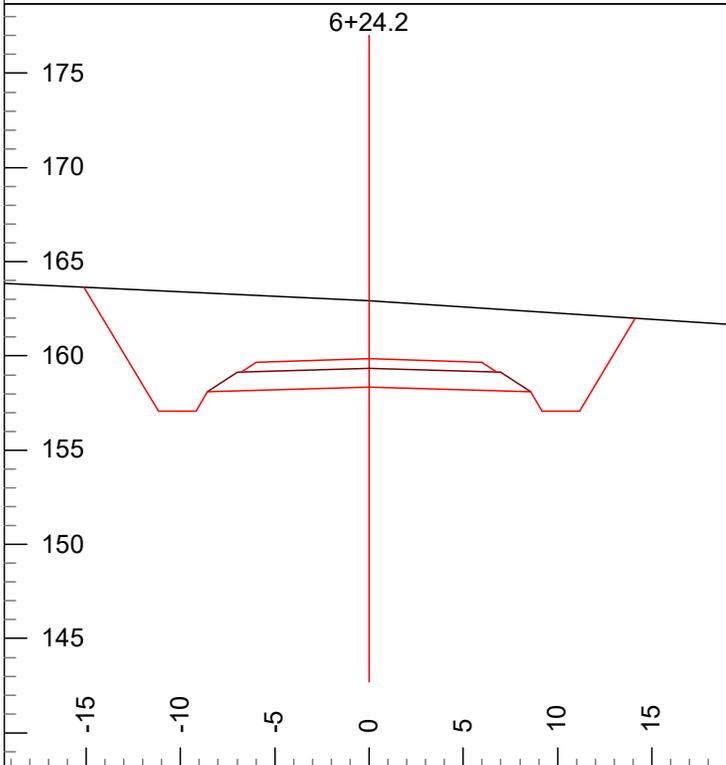
L-Stn :	5+58.8	L-Ssl:	-14.2	F Slope L:	166.00
P-Stn :	5+58.8	L-Ssr:	-7.4	F Slope R:	166.00
Grd.Nxt.:	5.6	Super L:	-3.0	Cut Dp:	6.7
Grd.Lst:	2.2	Super R:	-3.0	Index:	17

L-Stn :	5+90.9	L-Ssl:	-2.0	F Slope L:	166.00
P-Stn :	5+90.9	L-Ssr:	-4.5	F Slope R:	166.00
Grd.Nxt.:	5.6	Super L:	-3.0	Cut Dp:	6.3
Grd.Lst:	5.6	Super R:	-3.0	Index:	



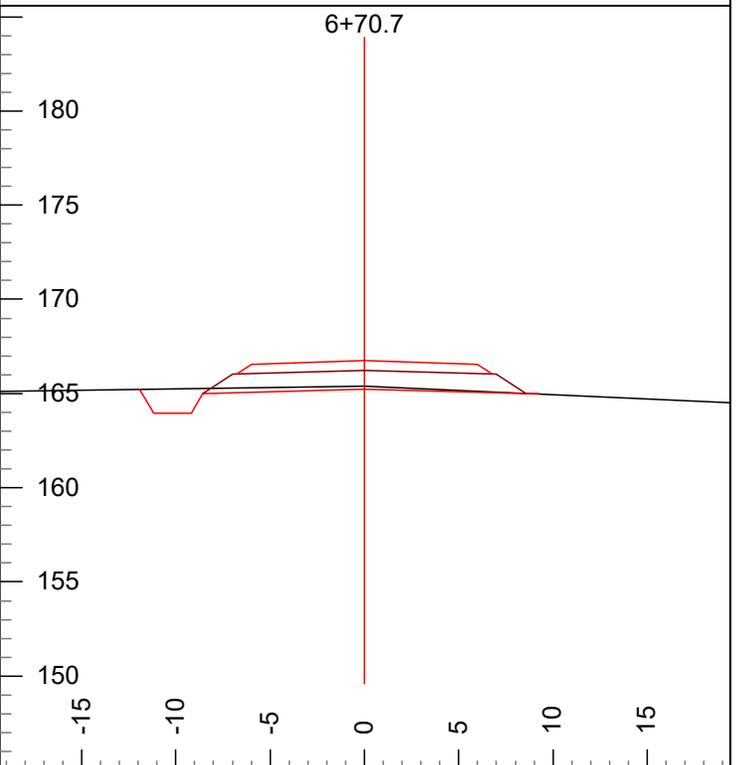
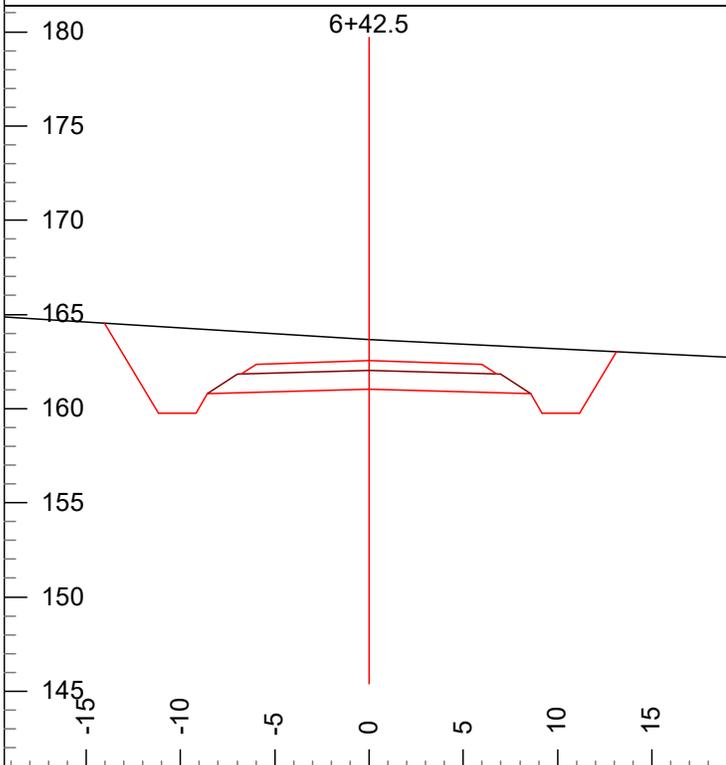
L-Stn :	5+95.6	L-Ssl:	-2.0	F Slope L:	166.00
P-Stn :	5+95.6	L-Ssr:	-4.5	F Slope R:	166.00
Grd.Nxt.:	6.7	Super L:	-3.0	Cut Dp:	6.3
Grd.Lst:	6.7	Super R:	-3.0	Index:	18

L-Stn :	6+11.0	L-Ssl:	2.2	F Slope L:	166.00
P-Stn :	6+11.0	L-Ssr:	-3.8	F Slope R:	166.00
Grd.Nxt.:	10.3	Super L:	-3.0	Cut Dp:	1.0
Grd.Lst:	10.3	Super R:	-3.0	Index:	19



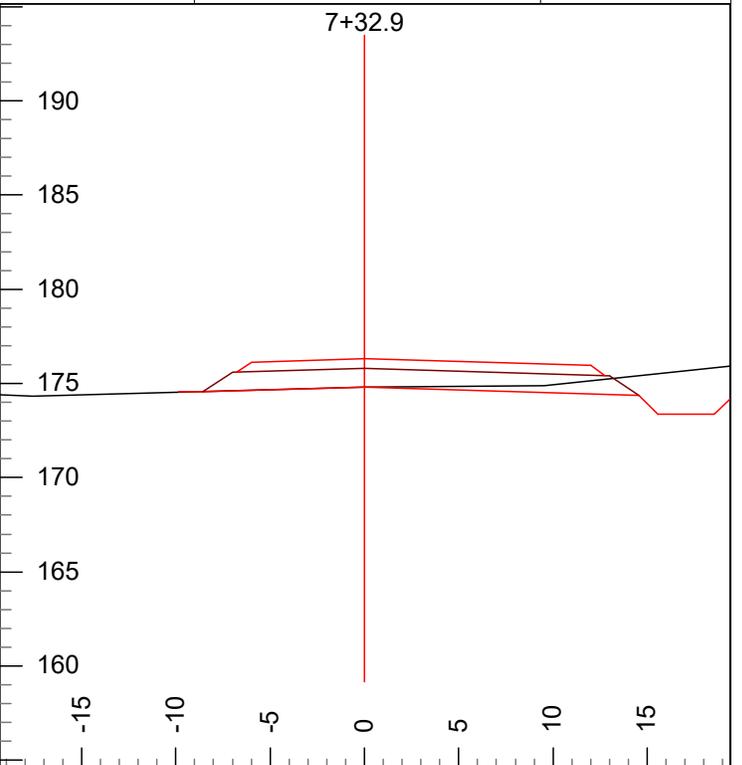
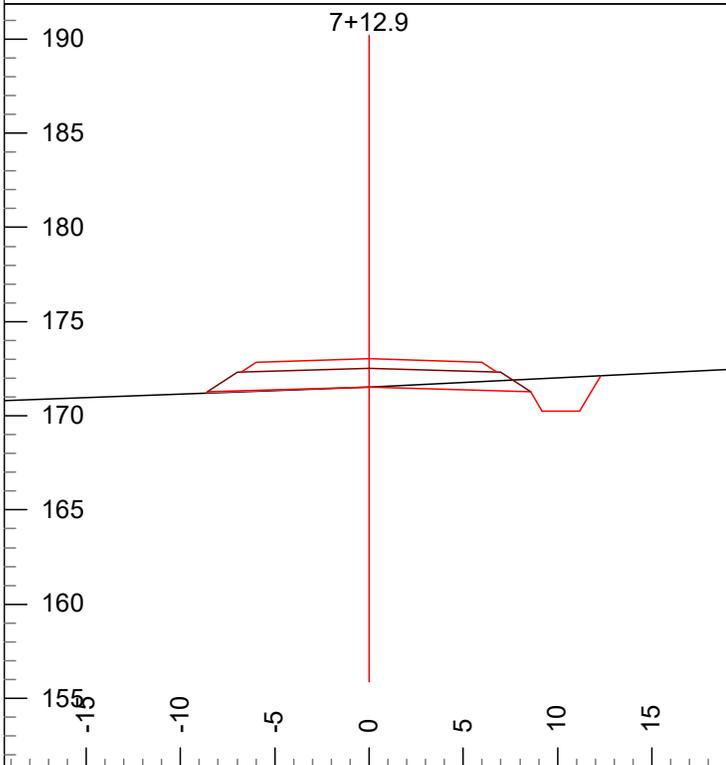
L-Stn :	6+24.2	L-Ssl:	4.7	F Slope L:	166.00
P-Stn :	6+24.2	L-Ssr:	-6.6	F Slope R:	166.00
Grd.Nxt.:	13.4	Super L:	-3.0	Cut Dp:	4.6
Grd.Lst:	13.4	Super R:	-3.0	Index:	20

L-Stn :	6+31.1	L-Ssl:	4.7	F Slope L:	166.00
P-Stn :	6+31.1	L-Ssr:	-6.6	F Slope R:	166.00
Grd.Nxt.:	15.0	Super L:	-3.0	Cut Dp:	3.9
Grd.Lst:	15.0	Super R:	-3.0	Index:	



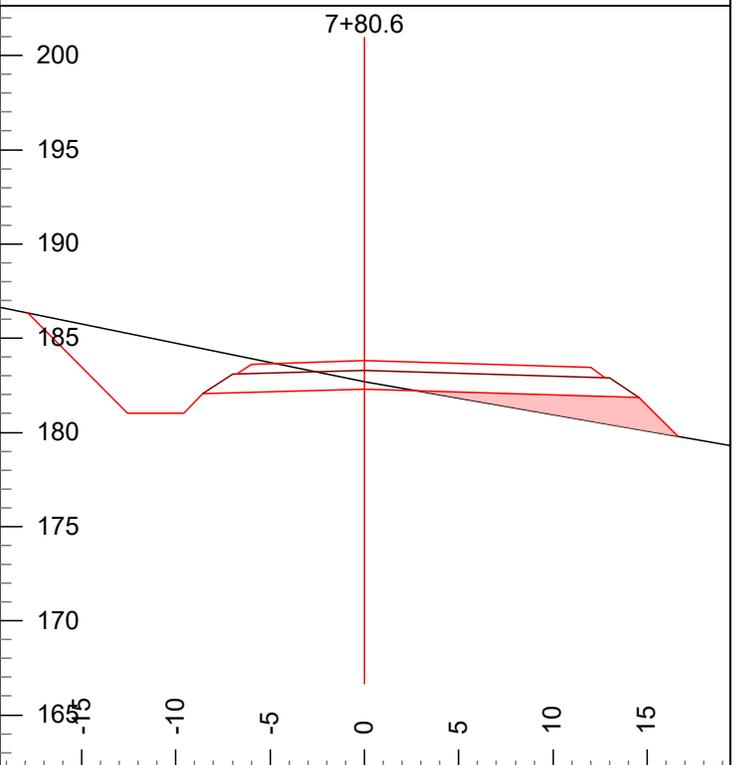
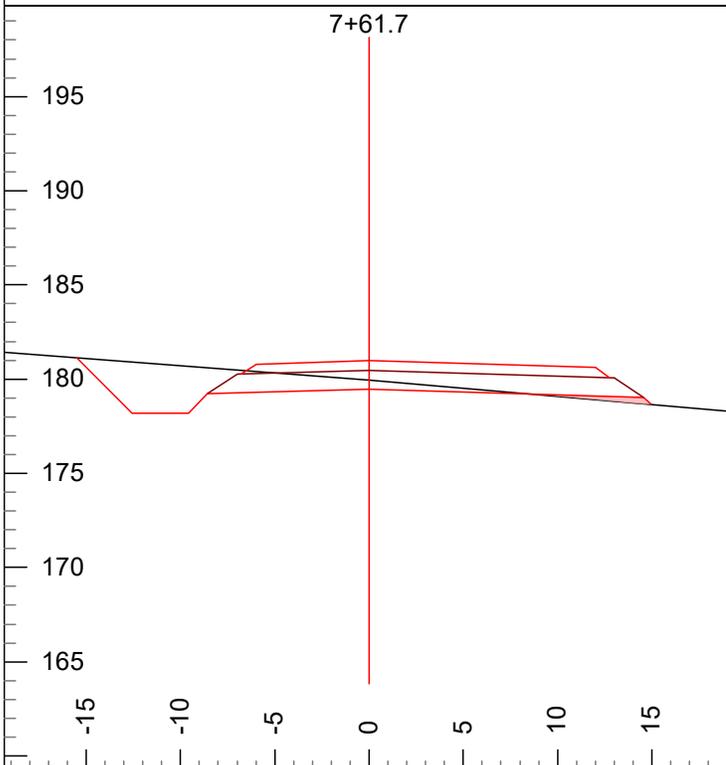
L-Stn :	6+42.5	L-Ssl:	6.1	F Slope L:	166.00
P-Stn :	6+42.5	L-Ssr:	-5.1	F Slope R:	166.00
Grd.Nxt.:	14.9	Super L:	-3.0	Cut Dp:	2.6
Grd.Lst:	15.0	Super R:	-3.0	Index:	21

L-Stn :	6+70.7	L-Ssl:	-1.6	F Slope L:	166.00
P-Stn :	6+70.7	L-Ssr:	-4.7	F Slope R:	0.00
Grd.Nxt.:	14.9	Super L:	-3.0	Cut Dp:	0.2
Grd.Lst:	14.9	Super R:	-3.0	Index:	22



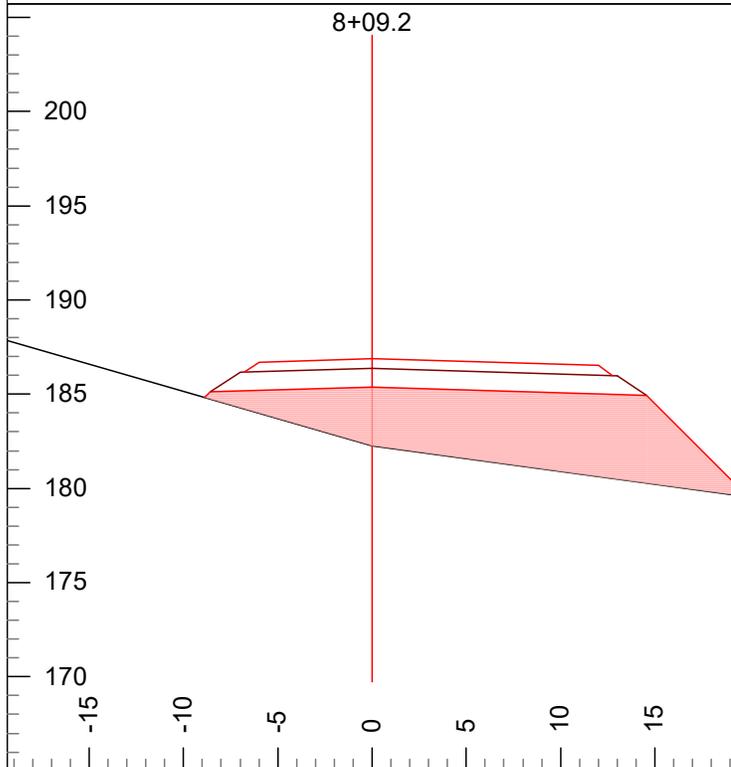
L-Stn :	7+12.9	L-Ssl:	-3.7	F Slope L:	-166.00
P-Stn :	7+12.9	L-Ssr:	4.9	F Slope R:	166.00
Grd.Nxt.:	16.4	Super L:	-3.0	Cut Dp:	0.0
Grd.Lst:	14.9	Super R:	-3.0	Index:	23

L-Stn :	7+32.9	L-Ssl:	-2.6	F Slope L:	0.00
P-Stn :	7+32.9	L-Ssr:	0.6	F Slope R:	100.00
Grd.Nxt.:	16.2	Super L:	-3.0	Cut Dp:	0.0
Grd.Lst:	16.4	Super R:	-3.0	Index:	24

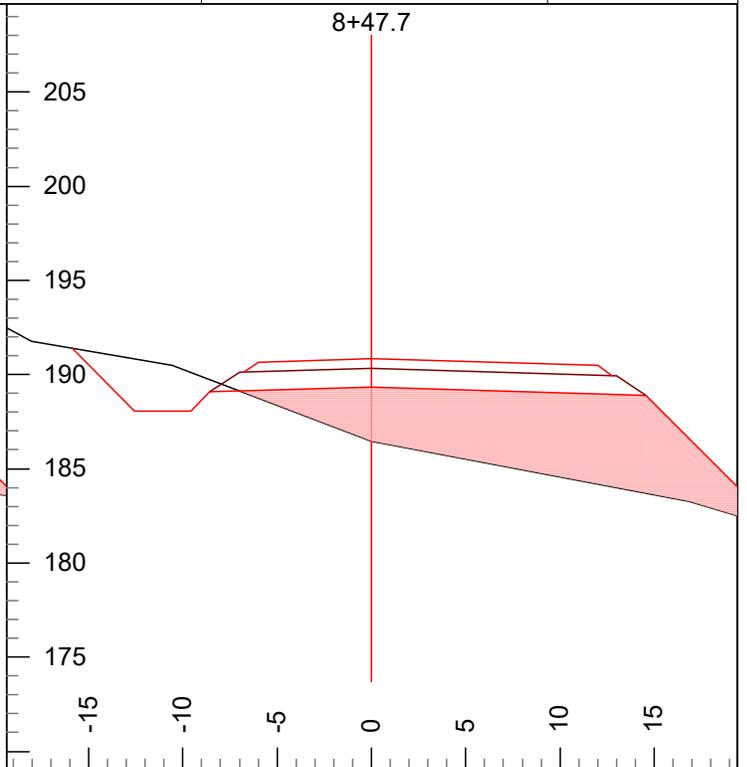


L-Stn :	7+61.7	L-Ssl:	7.6	F Slope L:	100.00
P-Stn :	7+61.7	L-Ssr:	-8.7	F Slope R:	-100.00
Grd.Nxt.:	15.0	Super L:	-3.0	Cut Dp:	0.5
Grd.Lst:	16.2	Super R:	-3.0	Index:	25

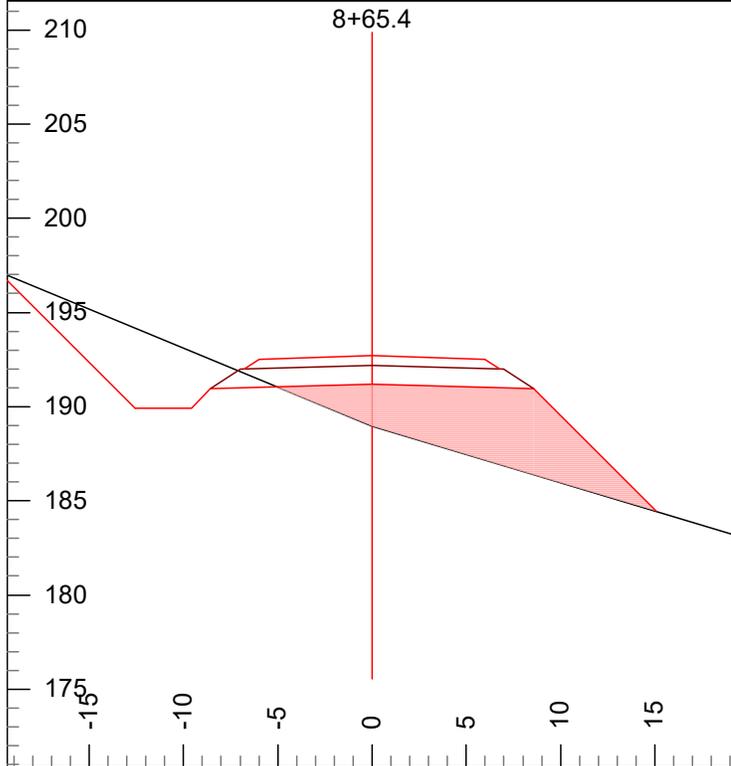
L-Stn :	7+80.6	L-Ssl:	20.5	F Slope L:	100.00
P-Stn :	7+80.6	L-Ssr:	-17.4	F Slope R:	-100.00
Grd.Nxt.:	10.8	Super L:	-3.0	Cut Dp:	0.4
Grd.Lst:	15.0	Super R:	-3.0	Index:	26



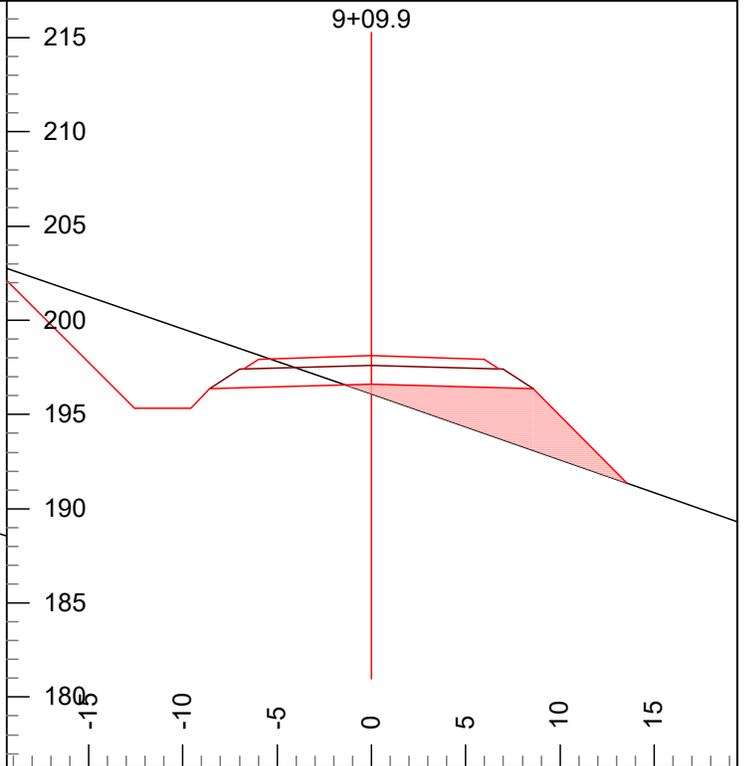
L-Stn :	8+09.2	L-Ssl:	28.8	F Slope L:	-100.00
P-Stn :	8+09.2	L-Ssr:	-13.5	F Slope R:	-100.00
Grd.Nxt.:	10.3	Super L:	-3.0	Cut Dp:	-3.1
Grd.Lst:	10.8	Super R:	-3.0	Index:	27



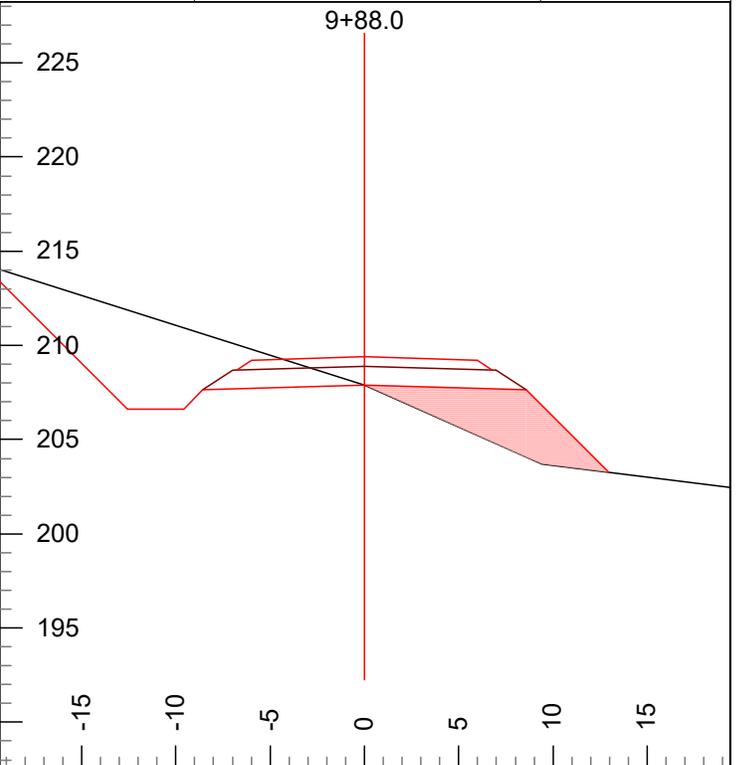
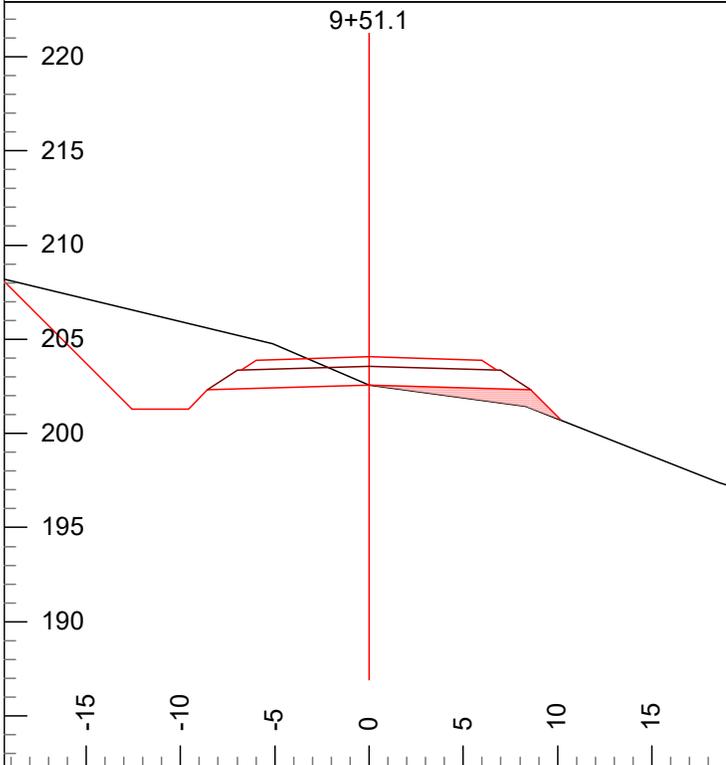
L-Stn :	8+47.7	L-Ssl:	38.2	F Slope L:	100.00
P-Stn :	8+47.7	L-Ssr:	-18.9	F Slope R:	-100.00
Grd.Nxt.:	10.5	Super L:	-3.0	Cut Dp:	-2.9
Grd.Lst:	10.3	Super R:	-3.0	Index:	28



L-Stn :	8+65.4	L-Ssl:	41.5	F Slope L:	100.00
P-Stn :	8+65.4	L-Ssr:	-29.9	F Slope R:	-100.00
Grd.Nxt.:	12.2	Super L:	-3.0	Cut Dp:	-2.3
Grd.Lst:	10.5	Super R:	-3.0	Index:	29

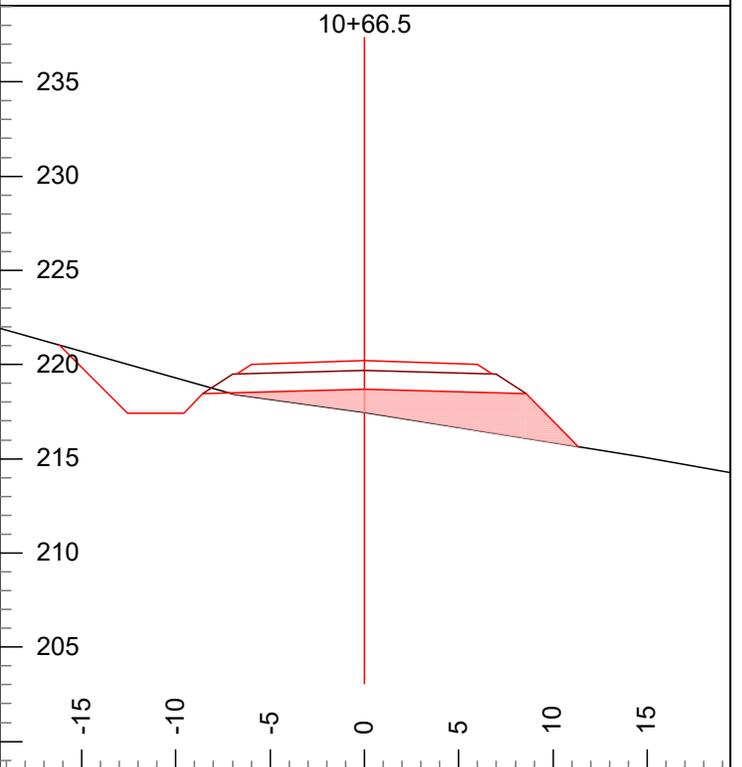
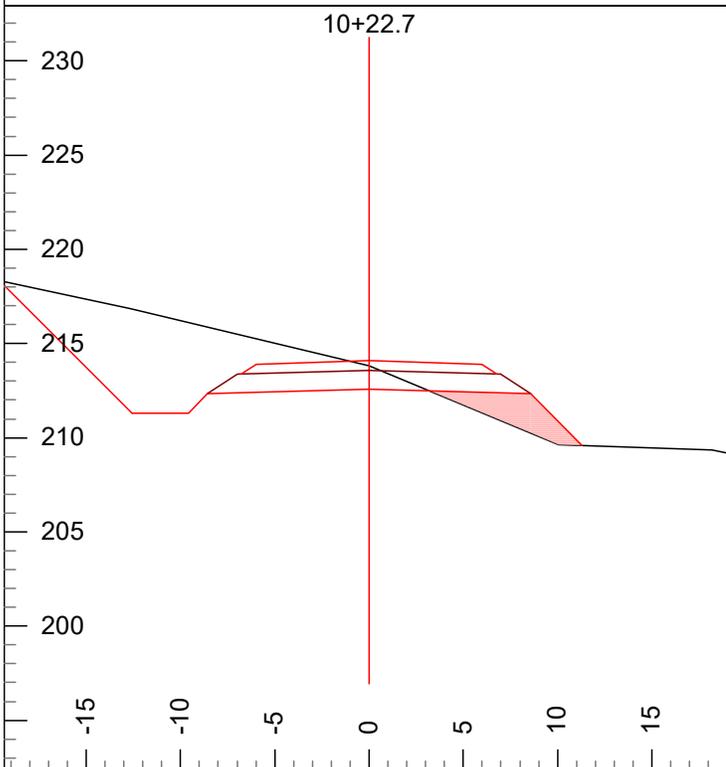


L-Stn :	9+09.9	L-Ssl:	34.4	F Slope L:	100.00
P-Stn :	9+09.9	L-Ssr:	-34.8	F Slope R:	-100.00
Grd.Nxt.:	14.4	Super L:	-3.0	Cut Dp:	-0.5
Grd.Lst:	12.2	Super R:	-3.0	Index:	30



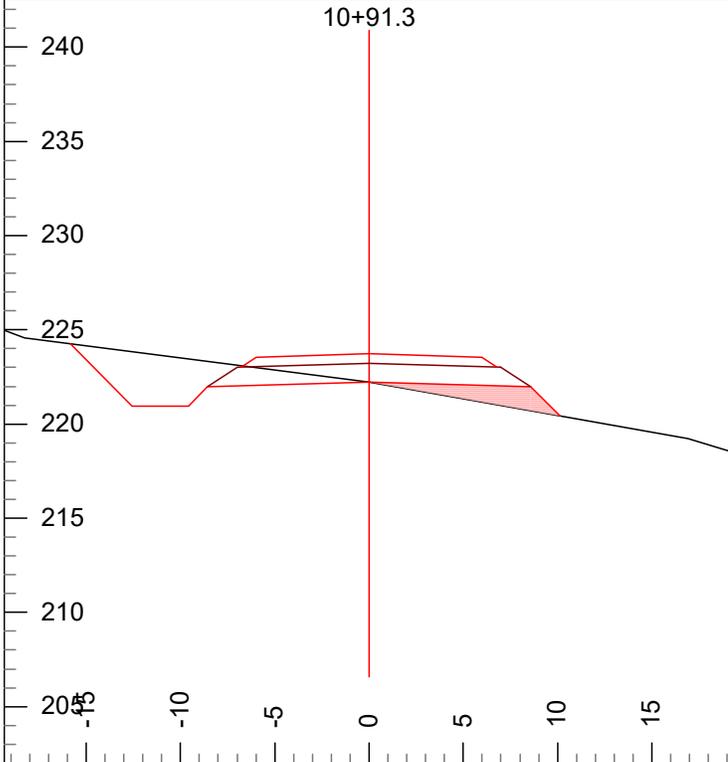
L-Stn : 9+51.1 L-Ssl: 42.9 F Slope L: 100.00
 P-Stn : 9+51.1 L-Ssr: -13.5 F Slope R: -100.00
 Grd.Nxt.: 14.4 Super L: -3.0 Cut Dp: 0.0
 Grd.Lst: 14.4 Super R: -3.0 Index: 31

L-Stn : 9+88.0 L-Ssl: 31.7 F Slope L: 100.00
 P-Stn : 9+88.0 L-Ssr: -44.7 F Slope R: -100.00
 Grd.Nxt.: 13.5 Super L: -3.0 Cut Dp: 0.0
 Grd.Lst: 14.4 Super R: -3.0 Index: 32



L-Stn : 10+22.7 L-Ssl: 24.0 F Slope L: 100.00
 P-Stn : 10+22.7 L-Ssr: -41.4 F Slope R: -100.00
 Grd.Nxt.: 14.0 Super L: -3.0 Cut Dp: 1.2
 Grd.Lst: 13.5 Super R: -3.0 Index: 33

L-Stn : 10+66.5 L-Ssl: 14.1 F Slope L: 100.00
 P-Stn : 10+66.5 L-Ssr: -16.1 F Slope R: -100.00
 Grd.Nxt.: 14.2 Super L: -3.0 Cut Dp: -1.2
 Grd.Lst: 14.0 Super R: -3.0 Index: 34



L-Stn :	10+91.3	L-Ssl:	12.8	F Slope L:	100.00
P-Stn :	10+91.3	L-Ssr:	-17.8	F Slope R:	-100.00
Grd.Nxt.:	n/a	Super L:	-3.0	Cut Dp:	0.0
Grd.Lst:	14.2	Super R:	-3.0	Index:	35

Softree Data										P. 1
J:\District_Straits\Engineering\Timber Sales\Road Plans\Foot Trail\Designs\New Road Design GE\Shindlers Road										18/11/29ve
L-Stn ft.	P-Stn ft.	Index	Cut Dp. ft.	Grade %	V.Brk %	SG Cut V. Cu. Yd.	SG Fill V. Cu. Yd.	Mass H. Cu. Yd.	Comment	
0+00.0	0+00.0	1	1.5	-1.3	0.00	82.8	0.0	0.0		
0+25.1	0+25.1	2	0.4	-0.1	1.2	44.3	15.8	82.8		
0+53.0	0+53.0	3	-0.7	4.3	4.3	29.6	21.5	111.3		
0+80.4	0+80.4	4	0.0	8.8	4.5	22.6	6.4	119.4		
1+02.7	1+02.7	5	0.0	12.0	3.2	12.6	21.3	135.7		
1+30.2	1+30.2	6	-1.6	15.3	3.2	78.6	24.9	127.0		
1+77.5	1+77.5	7	0.5	13.8	-1.4	84.0	0.0	180.6		
2+05.9	2+05.9	8	0.3	13.8	0.0	20.6	7.3	264.7		
2+31.2	2+31.2	9	-0.9	14.9	1.1	0.3	18.3	278.0		
2+77.7	2+77.7	10	0.1	13.8	-1.0	19.1	1.6	260.0		
3+15.8	3+15.8	11	-0.1	15.2	1.3	25.0	4.0	277.5		
3+58.6	3+58.6	12	-0.2	15.4	0.3	27.9	4.9	298.5		
4+02.8	4+02.8	13	0.0	12.4	-3.0	17.7	3.0	321.5		
4+33.5	4+33.5	14	0.4	7.2	-5.2	114.3	0.2	336.1		
4+75.7	4+75.7	15	3.8	2.2	-5.0	741.7	0.0	450.3		
5+58.8	5+58.8	17	6.7	5.6	3.5	274.0	0.0	1191.9		
5+90.9	5+90.9		6.3	p 10.3	0.0	206.7	0.0	1465.9		
6+31.1	6+31.1		3.9	15.0	0.0	51.4	0.0	1672.6		
6+42.5	6+42.5	21	2.6	14.9	-0.1	71.0	0.1	1724.0		
7+12.9	7+12.9	23	0.0	16.4	1.5	18.3	0.1	1795.0		
7+32.9	7+32.9	24	0.0	16.2	-0.2	30.0	0.5	1813.2		
7+61.7	7+61.7	25	0.5	15.0	-1.2	28.6	4.2	1842.7		
7+80.6	7+80.6	26	0.4	10.8	-4.3	28.7	42.3	1867.1	Property Line	
8+09.2	8+09.2	27	-3.1	10.3	-0.5	11.5	109.3	1853.4	Old Pt 17	
8+47.7	8+47.7	28	-2.9	10.5	0.2	20.2	31.0	1755.5	Old Pt 18	
8+65.4	8+65.4	29	-2.3	12.2	1.7	83.2	53.9	1744.7		
9+09.9	9+09.9	30	-0.5	14.4	2.2	97.7	19.7	1774.0	Old Pt 19	
9+51.1	9+51.1	31	0.0	14.4	0.0	91.9	17.1	1851.9		
9+88.0	9+88.0	32	0.0	13.5	-0.9	96.9	18.5	1926.7		
10+22.7	10+22.7	33	1.2	14.0	0.4	74.8	23.9	2005.1		
10+66.5	10+66.5	34	-1.2	14.2	0.3	17.2	12.0	2056.0		
10+91.3	10+91.3	35	0.0		0.00			2061.2		
Cum. Tot.						2523.2	461.8			