



TIMBER NOTICE OF SALE

SALE NAME: KERSWOP

AGREEMENT NO: 30-093067

AUCTION: November 15, 2016 starting at 10:00 a.m., COUNTY: King South Puget Sound Region Office, Enumclaw, WA

SALE LOCATION: Sale located approximately 12 miles northeast of Carnation.

PRODUCTS SOLD AND SALE AREA: All timber, except trees marked with blue paint or bounded out by yellow leave tree area tags, snags, and down timber existing more than 5 years from the day of sale bounded by the following: white timber sale boundary tags, timber type change, and the 5200 Road in Unit #1; white timber sale boundary tags, and the 5200 Road in Unit #2;

All timber marked with pink paint bounded by white timber sale boundary tags and the 5300 Road in Unit #3; all timber marked with pink paint bounded by white timber sale boundary tags, timber type change and the 5200 Road in Unit #4

All forest products above located on part(s) of Sections 6, 7 and 8 all in Township 26 North, Range 8 East, W.M., containing 54 acres, more or less.

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

ESTIMATED SALE VOLUMES AND QUALITY:

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

MINIMUM BID: \$719,000.00 BID METHOD: Sealed Bids

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

EXPIRATION DATE: October 31, 2018 ALLOCATION: Export Restricted

BID DEPOSIT: \$71,900.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: Cable or tracked ground based equipment with tracked ground based equipment, with non-tethered self-leveling equipment limited to sustained slopes 60 percent or less, cable-tethered equipment limited to sustained slopes 70 percent or less, and all other tracked ground based equipment limited to sustained slopes 40 percent or less. Yarding may be restricted if rutting becomes excessive, per clause H-017.

Falling, yarding and timber haul will not be permitted from November 1st to April 30th, nor on weekends or state recognized holidays, unless authority to do so is granted, in writing, by the Contract Administrator. If permission is granted to operate from



TIMBER NOTICE OF SALE

November 1st to April 30th, the Purchaser shall comply with a Winter Operating Plan to include further protection of water, soil, roads and other forest assets at the Purchaser's expense. Sedimentation preventative measures must be in place prior to commencing any winter operations.

ROADS:

0.80 stations of required reconstruction. 25.55 stations of optional construction. 6.60 stations of optional reconstruction. 243.72 stations of required pre-haul maintenance. 267.57 stations of required post-haul maintenance. 1.68 stations of abandonment, if constructed. Cross section designs are available at the South Puget Sound Region office upon request. Purchaser maintenance on the 5000, 5050, 5200, 5210, 5220, 5222, 5228, 5229, 5300, 5301 and 7500 roads. Rock for this proposal can be obtained from the 5050, 5200 or 7500 Rock Pits or any commercial rock source.

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

ACREAGE DETERMINATION

CRUISE METHOD:

Acreage was determined by traversing boundaries by GPS. Traverse GPS data files are available upon request by emailing rachel.mason@dnr.wa.gov. See cruise narrative for cruise method.

FEES:

\$43,062.00 is due on day of sale. \$9.00 per MBF is due upon removal. These are in addition to the bid price.

SPECIAL REMARKS:

Units #3 and #4, totaling 20 acres, are variable density thinning (VDT) units implementing the Riparian Forest Restoration Strategy (RFRS) with take trees marked with pink paint. Red painted trees within these units with a "S" or "D" are not to be cut and must remain onsite.

A 120 inch by 80 foot culvert must be acquired and installed on the 5200 Road between July 1 and September 30. Any trees cut within 25 feet of the stream at this location must be left onsite. See Road Plan and FPA for details.

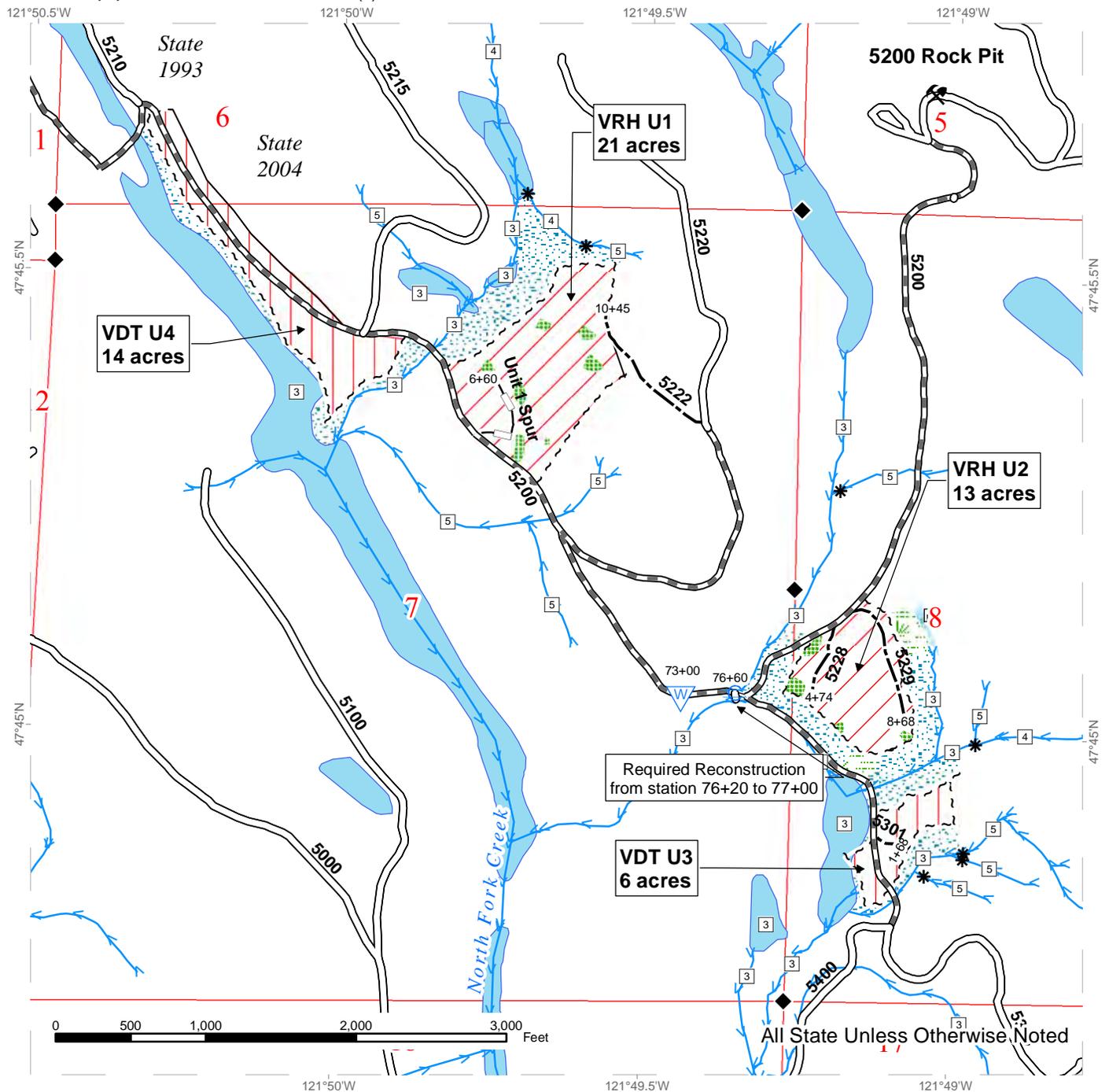
Purchaser shall cut all vine maple leaving a stump of 12" or less in the ground based and cable harvest areas.

See map for gate locations. Gate keys may be obtained by contacting the South Puget Sound Region Office at (360) 825-1631 or by contacting Zach Beebe at (253) 736-4830.

TIMBER SALE MAP

SALE NAME: KERSWOP
AGREEMENT #: 93067
TOWNSHIP(S): T26R08E
TRUST(S): State Forest Transfer(1)

REGION: South Puget Sound Region
COUNTY(S): KING
ELEVATION RGE: 789-1205

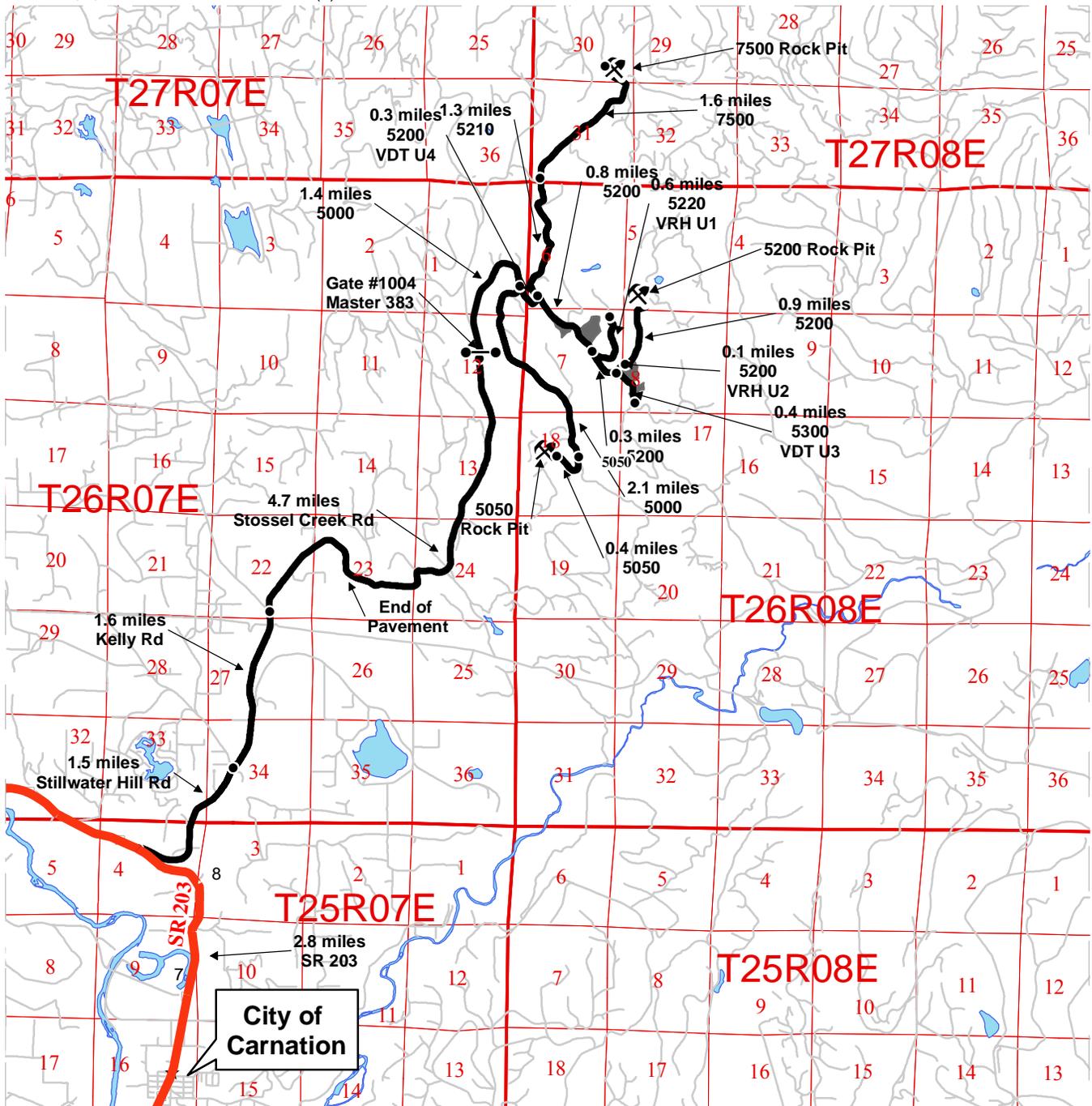


Variable Retention Harvest	Existing Roads	Streams
Variable Density Thinning	Required Pre-Haul Maintenance	Stream Type
White "Timber Sale Boundary" Tags	Required Reconstruction	Stream Type Break
Timber Type Change	Optional Construction	Open Water
Leave Tree Area	Optional Reconstruction	Monumented Corners
Riparian Mgt Zone	Culvert	Waste Area
Forested Wetland		Existing Rock Pit
Wetland Mgt Zone		

DRIVING MAP

SALE NAME: KERSWOP
 AGREEMENT#: 93067
 TOWNSHIP(S): T26R08E
 TRUST(S): State Forest Transfer(1)

REGION: South Puget Sound Region
 COUNTY(S): KING
 ELEVATION RGE: 789-1205



	Timber Sale Unit
	Haul Route
	Milepost Markers
	Existing Rock Pit
	Town
	Gate (Master 383)
	Distance Indicator

DRIVING DIRECTIONS:
HARVEST UNITS
 Traveling from Carnation, go 2.8 miles north on State Route 203 and turn right onto Stillwater Hill Road. In 1.5 miles Stillwater Hill Rd turns into Kelly Rd. Continue on Kelly Rd for 1.6 miles and turn right onto Stossel Creek Road. Travel 4.7 miles and turn right onto the 5000 Rd; gate #1004, lock type Master 383, is 200 feet further. Travel 1.4 miles and turn left onto the 5200 Rd. Travel for 0.3 mile to the 5200/5210 Rd intersection and take a right to continue on the 5200 Rd, this is the start of VDT U4. Travel for 0.8 mile and turn left onto the 5220 Rd, VRH U1 can be accessed after 0.6 mile. From the 5200/5220 Rd intersection travel 0.3 mile to the 5200/5300 intersection. From this intersection take a left to continue on the 5200 Rd for 0.1 mile to access VRH U2, or take a right onto the 5300 Rd for 0.4 mile to access VDT U3.

ROCK PITS
 At the 5200/5300 Rd intersection take a left to continue on the 5200 RD. The 5200 Rock Pit will be on the left after 0.9 mile. At the 5200/5210 Rd intersection take a left onto the 5210 Rd. After 1.3 miles take a right onto the 7500 Rd, the 7500 Rock Pit will be on the right after 1.6 miles. At the 5000/5200 Rd intersection, take a right to continue on the 5000 Rd. After 2.1 miles take a right onto the 5050 Rd. The 5050 Rock Pit will be on the left after 0.4 mile.



**STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES**

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

Export Restricted Lump Sum AGREEMENT NO. 30-093067

SALE NAME: KERSWOP

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

Section G: General Terms

G-001 Definitions

The following definitions apply throughout this contract;

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

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

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

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

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

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

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

G-011 Right to Remove Forest Products and Contract Area

Purchaser was the successful bidder on November 15, 2016 and the sale was confirmed on _____. The State, as owner, agrees to sell to Purchaser, and Purchaser agrees to purchase as much of the following forest products as can be cut and removed during the term of this contract: All timber, except trees marked with blue paint or bounded out by yellow leave tree area tags, snags, and down timber existing more than 5 years from the day of sale bounded by the following: white timber sale boundary tags, timber type change, and the 5200 Road in Unit #1; white timber sale boundary tags, and the 5200 Road in Unit #2;

All timber marked with pink paint bounded by white timber sale boundary tags and the 5300 Road in Unit #3; all timber marked with pink paint bounded by white timber sale boundary tags, timber type change and the 5200 Road in Unit #4

All forest products above located, located on approximately 54 acres on part(s) of Sections 6, 7, and 8 all in Township 26 North, Range 8 East W.M. in King County(s) as designated on the sale area and as shown on the attached timber sale map.

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

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

G-020 Inspection By Purchaser

Purchaser hereby warrants to the State that they have had an opportunity to fully inspect the sale area and the forest products being sold. Purchaser further warrants to the State that they enter this contract based solely upon their own judgment of the value of the forest products, formed after their own examination and inspection of both the timber sale area and the forest products being sold. Purchaser also warrants to the State

that they enter this contract without any reliance upon the volume estimates, acreage estimates, appraisals, pre-bid documentation, or any other representations by the State Department of Natural Resources.

G-031 Contract Term

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

G-040 Contract Term Adjustment - No Payment

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

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

G-051 Contract Term Extension - Payment

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

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

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

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

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

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

- e. Payment of \$842.00 per acre per annum for the acres on which an operating release has not been issued within the harvest area.
- f. In no event will the extension charge be less than \$200.00.
- g. Extension payments are non-refundable.

G-053 Surveys - Sensitive, Threatened, Endangered Species

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

G-060 Exclusion of Warranties

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

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

- f. THAT THE SALE AREA IS FREE FROM THREATENED OR ENDANGERED SPECIES or their habitat. The State is not responsible for any interference with forestry operations that result from the presence of any threatened or endangered species, or the presence of their habitat, within the sale area.
- g. THAT THE FORESTRY OPERATIONS to be performed under this contract WILL BE FREE FROM REGULATORY ACTIONS by governmental agencies. The State is not responsible for actions to enforce regulatory laws, such as the Washington Forest Practices Act (chapter 76.09 RCW), taken by the Department of Natural Resources or any other agency that may affect the operability of this timber sale.
- h. Items contained in any other documents prepared for or by the State.

G-062 Habitat Conservation Plan

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

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

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

G-063 Incidental Take Permit Notification Requirements

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

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

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

G-064 Permits

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

G-065 Regulatory Disclaimer

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

G-066 Governmental Regulatory Actions

- a. Risk

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

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

b. Sale Area

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

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

c. Adjustment of Price

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

G-070 Limitation on Damage

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

G-080 Scope of State Advice

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

G-091 Sale Area Adjustment

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

G-101 Forest Products Not Designated

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

The pricing schedule has not been set for the sale.

G-106 Adding Naturally Damaged Forest Products

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

G-111 Title and Risk of Loss

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

G-116 Sustainable Forestry Initiative® (SFI) Certification

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

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

G-120 Responsibility for Work

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

G-121 Exceptions

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

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

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

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

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

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

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

G-140 Indemnity

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

G-150 Insurance

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

G-160 Agents

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

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

G-170 Assignment and Delegation

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

G-180 Modifications

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

G-190 Contract Complete

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

G-200 Notice

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

G-210 Violation of Contract

G-220 State Suspends Operations

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

G-210 Violation of Contract

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

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

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

G-220 State Suspends Operation

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

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

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

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

G-230 Unauthorized Activity

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

G-240 Dispute Resolution

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

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

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

G-250 Compliance with All Laws

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

G-260 Venue

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

G-270 Equipment Left on State Land

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

G-280 Operating Release

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

G-310 Road Use Authorization

Purchaser is authorized to use the following State roads and roads for which the State has acquired easements and road use permits; on the 5000, 5050, 5200, 5210, 5220, 5222, 5228, 5229, 5300, 5301, and 7500 roads and Stossel Creek Road. 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 5000, 5200 or 5300 roads, unless authority is granted in writing by the Contract Administrator.

G-396 County Hauling Permit

The hauling of forest products, rock or equipment may require a county road hauling permit. Purchaser is responsible for obtaining a permit and any costs associated with extra maintenance or repair levied by a county. Purchaser must provide the Contract Administrator with a copy of the executed permit.

G-430 Open Fires

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

G-450 Encumbrances

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

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

Section P: Payments and Securities

P-011 Initial Deposit

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

P-020 Payment for Forest Products

Purchaser agrees to pay the total, lump sum contract price of \$64,896.00. The total contract price consists of a \$0.00 contract bid price plus \$64,896.00 in fees. Fees collected shall be retained by the state unless the contract is adjusted via the G-066 clause. Purchaser shall be liable for the entire purchase price, and will not be entitled to any refunds or offsets unless expressly stated in this contract.

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

P-045 Guarantee of Payment

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

P-050 Billing Procedure

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

P-080 Payment Account Refund

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

P-090 Performance Security

Purchaser agrees to furnish, within 30 days of the confirmation date, security acceptable to the State in the amount of \$0.00. The Security provided shall guarantee

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

P-100 Performance Security Reduction

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

Section H: Harvesting Operations

H-001 Operations Outside the Sale Boundaries

No operations shall occur outside the sale boundaries, as described within the contract, unless approved in writing by the State.

H-012 Leave Tree Damage Definition

Leave trees are trees required for retention within the sale boundary. Purchaser shall protect leave trees from being cut, damaged, or removed during operations.

Leave tree damage exists when more than 5 percent of the leave trees are damaged in a unit and when one or more of the following criteria occur as a result of Purchaser's operation, as determined by the Contract Administrator:

- a. A leave tree has one or more scars on its trunk exposing the cambium layer, which in total exceeds 144 square inches.
- b. A leave tree top is broken or the live crown ratio is reduced below 30 percent.
- c. A leave 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 leave tree has been cut or damaged, the Purchaser may be required to pay liquidated damages for Excessive Leave Tree Damage as detailed in clause D-040.

H-013 Reserve Tree Damage Definition

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

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

- a. A reserve tree has one or more scars on its trunk exposing the cambium layer, which in total exceeds 144 square inches.
- b. A reserve tree top is broken or the live crown ratio is reduced below 30 percent.
- c. A reserve tree has more than 1/3 of the circumference of its root system injured such that the cambium layer is exposed.

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

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

H-015 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. Skid trails will not exceed 15 feet in width, including rub trees.
- b. Skid trails shall not cover more than 10 percent of the total acreage on one unit.
- c. Skid trail location will be pre-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. 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-035 Fall Trees Into Sale Area

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

H-051 Branding and Painting

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

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

H-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 using cable or tracked ground based equipment, with non-tethered self-leveling equipment limited to sustained slopes 60 percent or less, cable-tethered equipment limited to sustained slopes 70 percent or less, and all other tracked ground based equipment limited to sustained slopes 40 percent or less unless authority to use other equipment is granted in writing by the State.

H-125 Log Suspension Requirements

Lead-end suspension is required for all yarding activities.

H-126 Tailholds on State Land

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

H-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

- a. Falling, yarding and timber haul will not be permitted from November 1st to April 30th, nor on weekends or state recognized holidays, unless authority to do so is granted, in writing, by the Contract Administrator. If permission is granted to operate from November 1st to April 30th, the Purchaser shall comply with a Winter Operating Plan to include further protection of water, soil, roads and other forest assets at the Purchaser's expense. Sedimentation preventative measures must be in place prior to commencing any winter operations.
- b. Any downed timber or logs existing more than 5 years from the day of sale that is yarded to the landing shall be returned to their original locations.
- c. Equipment limitation zones are required within 30 feet of Type 5 streams.
- d. Any and all operations associated with this sale may be temporarily suspended when, in the opinion of the Contract Administrator, there is the potential for delivery to typed water.
- e. Landings located on the 5200 and 5300 roads will be for decking and loading alongside the roads, to avoid blocking the roads, per clause G-370. Processing should take place in the yarding corridors. The Contract Administrator will need to approve the processing, decking and loading plan for the 5200 and 5300 roads prior to operations beginning.
- f. Purchaser shall cut all vine maple leaving a stump of 12" or less in the ground based and cable harvest areas.
- g. To facilitate proper reforestation in areas of high slash concentration, Purchaser shall, in concurrence with ground-based yarding, clear plantable spots at a 10.5 foot by 10.5 foot spacing.
- h. Purchaser shall notify all employees and contractors working on this sale that any danger tree marked or unmarked may be felled. Any marked danger tree will be replaced with a suitable tree of similar size and species as approved by the Contract Administrator.

- i. Any employee or contractor planning to camp overnight in the sale area for purposes associated with this timber sale shall request permission from the Contract Administrator.
- j. Red painted trees within Units #3 and #4 marked with a "S" or a "D" are not to be cut and must remain onsite.
- k. Purchaser shall take measures throughout operations to control soil erosion, water channelization, and prevent sediment delivery to streams or wetlands. Methods may include construction of water bars, "sweeping" with logs, silt traps, or other measures on skid trails, yarding corridors and haul roads.

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

H-141 Additional Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

- a. Purchaser shall leave 2 down logs per acre in Units #1 and #2. A log is defined as having a minimum diameter of 12 inches on the small end of the log and a minimum length of 20 feet or at least 100 board feet.

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

H-190 Completion of Settings

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

H-220 Protection of Residual or Adjacent Trees

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

H-230 Tops and Limbs Outside the Sale Boundary

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

Section C: Construction and Maintenance

C-040 Road Plan

Road construction and associated work provisions of the Road Plan for this sale, dated 4/25/2016 are hereby made a part of this contract.

C-050 Purchaser Road Maintenance and Repair

Purchaser shall perform work at their own expense on the 5000, 5050, 5200, 5210, 5220, 5222, 5228, 5229, 5300, 5301 and 7500 roads. 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-140 Water Bars

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

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

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

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

S-010 Fire Hazardous Conditions

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

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

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

S-030 Landing Debris Clean Up

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

S-050 Cessation of Operations for Low Humidity

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

S-060 Pump Truck or Pump Trailer

Purchaser shall provide a fully functional pump truck or pump trailer equipped to meet the specifications of WAC 332-24-005 and WAC 332-24-405 during the "closed

season" or as extended by the State and shall provide trained personnel to operate this equipment on the sale area during all operating periods.

S-100 Stream Cleanout

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

S-120 Stream Protection

No timber shall be felled into, across, or yarded through any stream, except Type 5 streams.

S-130 Hazardous Materials

a. Hazardous Materials and Waste - Regulatory Compliance

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

b. Hazardous Materials Spill Prevention

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

c. Hazardous Materials Spill Containment, Control and Cleanup

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

d. Hazardous Material Release Reporting

Releases of oil or hazardous materials to the environment must be reported according to the State Department of Ecology (ECY). It is the responsibility of the Purchaser to have all emergency contact information readily available

and a means of remote communication for purposes of quick notification. In the event of a spill, the Purchaser is responsible for notifying the following:

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

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

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

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

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

S-131 Refuse Disposal

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

Section D: Damages

D-013 Liquidated Damages or Failure to Perform

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

Clause P-020 governs Purchaser’s liability in the event Purchaser fails to perform any of the contract requirements other than the below liquidated damage clauses without written approval by the State. Purchaser’s failure to pay for all or part of the forest products sold in this contract prior to expiration of the contract term results in substantial injury to the State. Therefore, Purchaser agrees to pay the State the full lump sum contract price in P-020 in the event of failure to perform.

D-040 Leave Tree Excessive Damage

When Purchaser's operations exceed the damage limits set forth in clause H-012, Leave Tree Damage Definition, the trees damaged result in substantial injury to the State. The value of the damaged leave trees at the time of the breach is not readily ascertainable. Therefore, Purchaser agrees to pay the State as liquidated damages at the rate of \$1,000.00 per tree for all damaged trees in Units #3 and #4.

D-041 Reserve Tree Excessive Damage

When Purchaser’s operations exceed the damage limits set forth in clause H-013, Reserve Tree Damage Definition, and when the Contract Administrator determines that a suitable replacement for a damaged reserve tree is not possible, the damaged trees result in substantial injury to the State. The value of the damaged reserve trees at the time of the breach is not readily ascertainable. Therefore, the Purchaser agrees to pay the State as liquidated damages at the rate of \$1,000.00 per tree for all damaged reserve trees that are not replaced in Units #1 and #2.

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

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

Purchaser

Art Tasker
South Puget Sound Region Manager

Date: _____
Address: _____

Date: _____

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

STATE OF _____)

COUNTY OF _____)

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

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

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

Notary Public in and for the State of

My appointment expires _____



WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOREST EXCISE TAX ROAD SUMMARY SHEET

Region:

Timber Sale Name:

Application Number:

EXCISE TAX APPLICABLE ACTIVITIES

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

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

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

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

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

EXCISE TAX EXEMPT ACTIVITIES

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

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

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

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

(Revised 6/13)

PRE-CRUISE NARRATIVE

Sale Name: Kerswop	Region: South Puget Sound
Agreement #: 30-093067	District: Rainer
Contact Forester: Zachary Beebe	Phone/ Location: (253)-736-4830 Ext: /
Alternate Contact: Paul Footen	Phone/ Location: (425)-736-1708 Ext: /

Type of Sale (lump sum, mbf scale, tonnage scale or contract harvest): Lump Sum
 Required or Optional removal of utility as pulp: Optional
 Evaluated for RFRS Implementation?: Yes, will be implementing RFRS
 Percentage cable (specify downhill vs uphill): 15%
 Percentage ground based: 85%
 Species Onsite: RC, DF, WH, RA, BC, BLM, NF, SF, SS, Other:(Please List)

UNIT ACREAGES AND METHOD OF DETERMINATION:

Unit #	Harvest R/W or RMZ WMZ	Legal Description Sec/Twp/Rng	Grant	Gross Traversed Acres	Deductions from Gross Acres (No harvest acres)			Net Harvest Acres	Acreage Determination (List method and error of closure if applicable)	
					RMZ/WMZ Acres	Leave Tree Acres	Existing Road Acres			Other Acres (describe)
1		Sec 7/ T 26N/ R 08 E	01	22.52	0	1.19	0	0	21.33	Garmin 64s
2		Sec 8/ T 26N/ R 08 E	01	13.35	0	0.82	0	0	12.53	Garmin 64s
3		Sec 8/ T 26N/ R 08 E	01	6.00	0	0	0.10	0	5.9	Garmin 64s
4		Sec 6/7/ T 26N/ R 08 E	01	15.27	0	0	0.87	0	14.4	Garmin 64s
TOTAL ACRES				57.14	0	2.01	0.97	0	54.16	

HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription: (Mark leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
1	White "Timber Sale Boundary" Tags, Pink Flashers, Pink Flagging, 5200 Rd. Leave trees marked with Yellow "Leave Tree Area" Tags, Pink Flashers, and Blue Paint for individual leave trees.	None	184 total leave trees
2	White "Timber Sale Boundary" Tags, Pink Flashers, Pink Flagging, 5200 Rd. Leave trees marked with Yellow "Leave Tree Area" Tags, Pink Flashers, and Blue Paint for individual leave trees.	None	106 total leave trees
3	White "Timber Sale Boundary" Tags, Pink Flashers, Pink Flagging.	None	206 "Take" Trees 20 "Down" Trees 10 "Snag" Trees

	<p>"Take" trees are marked with 1 band of pink paint. "Snag" trees are marked with 2 bands of red paint. "Down" trees are marked with 1 band of red paint.</p> <p>Only "Take" trees will be harvested.</p>		
4	<p>White "Timber Sale Boundary" Tags, Pink Flashers, Pink Flagging.</p> <p>"Take" trees are marked with 1 band of pink paint. "Snag" trees are marked with 2 bands of red paint. "Down" trees are marked with 1 band of red paint.</p> <p>Only "Take" trees will be harvested.</p>	None	<p>504 "Take" Trees 38 "Down" Trees 34 "Snag" Trees</p>

OTHER PRE-CRUISE INFORMATION:

Unit #	Estimated Volume	Access information (Gates, locks, etc.)	Photos, traverse maps required
1	See Cruise	Gate #1004 Master 383	
2	See Cruise	Gate #1004 Master 383	
3	See Cruise	Gate #1004 Master 383	
4	See Cruise	Gate #1004 Master 383	

REMARKS:

Units 1 and 2 are Variable Retention Harvest (VRH) Units. Units 3 and 4 are Riparian Forest Restoration Strategy (RFRS) units and will be harvested using Variable Density Thinning (VDT).

Prepared By: Zachary Beebe Date: 02/22/2016	Title: Forester	CC:
--	-----------------	-----

Revised 2/23/2007 (PSLD)

Cruise Narrative

Sale Name: Kerswop	Region: South Puget Sound
App. #: 30-093067	District: Rainier
Lead Cruiser: Aaron Coleman	Completion Date: 04-06-2016
Other Cruisers: Zach Beebe	

Unit acreage specifications:

Unit #	Cruised acres	Cruised acres agree with sale acres? Yes/No	If acres do not agree explain why.
1	21.33	Yes	
2	12.53	Yes	
3	5.90	Yes	
4	14.40	Yes	
Total	54.16	Yes	

Unit cruise specifications:

Unit #	Sample type (VP, FP, ITS,100%)	Expansion factor (BAF, full/half)	Sighting height (4.5 ft, 16 ft.)	Grid size (Plot spacing or % of area)	Plot ratio (Cru./Tally)	Total number of plots
1	VP	54.44 - ALL	4.5 ft	170' x 170'	1:1	32
2	VP	46.94 - ALL	4.5 ft	170' x 170'	1:1	18
3	VP	54.44 - ALL	4.5 ft	125' x 125'	Cruise All	15
4	VP	54.44 - ALL	4.5 ft	150' x 150'	Cruise All	30

Sale/Cruise Description:

Minor species cruise intensity:	n/a
Minimum cruise spec:	40% Of Form- Factor at 16 feet D.O.B or 5 inch Top, and merchantable top.
Avg. ring count by sp:	DF = 7 WH = 7
Leave/take tree description:	VRH units contain leave tree areas bound with yellow "Leave Tree Area" tags and pink flashers/flagging, as well as clumped and scattered leaves trees marked with a single band of blue paint and a butt mark. VDT units contain 'take' trees marked with a single band of pink paint and a butt mark.
Sort Description:	<p>HA - Logs meeting the following criteria: Surface characteristics for a high quality A sort will have sound tight knots not to exceed 1 1/2" in diameter, numbering not more than an average of one per foot of log length. May include logs with not more than two larger knots. Knots and knot indicators 1/2" in diameter and smaller shall not be a determining factor. Logs will have a growth ring count of 6 or more rings per inch in the outer third top end of the log. (High Quality sort. Grades SM, 2S, 3S. Lengths 16ft-40ft, 2ft multiples min TDIB 8". Max butt 27")</p> <p>HB - Logs meeting the following criteria: Surface characteristics for an Intermediate B sort will have sound tight knots not to exceed 1 1/2" in diameter. May include logs with not more than two larger knots up to 2 1/2" in diameter. Logs will have a growth ring count of 6 or more rings per inch in the outer third to end of the log. (Intermediate sort. Grades 2S, 3S. Lengths 16ft-40ft, 2ft multiples min TDIB 8". Max butt 27").</p>

	<p>D - Domestic quality logs that do not meet high quality or intermediate definitions. (Domestic sort. Grades 2S, 3S, 4S and utility. Lengths 16ft-40ft, min TDIB 5".)</p> <p>O - Logs exceeding 27" on the large end. (Oversize sort. Grade 2S. Lengths 16ft-40ft, 2ft multiples butt diameter min dia. 27 in. +)</p> <p>R - Logs meeting the following criteria: Surface characteristics for a rough log sort will not meet the requirements for a domestic 2S, but still be in limitations for a domestic 3S. Meaning logs will contain excessive knots in excess of 2 1/2" and not exceeding 3" with a recovery of less than 65% of the net scale and greater than 33% of the gross scale. (Rough oversize sort. Grade 3S. Lengths 16ft-40ft, 2ft multiples TDIB 12"+)</p>
--	--

Field observations:

This sale consists of 2 variable retention harvest (VRH) units and 2 variable density thinning (VDT) units off of the 5200 and the 5300 roads in the Marckworth State Forest.

The primary species for this sale is as follows:

Douglas-fir (DF): **78%**
Western Hemlock (WH): **18%**
Western red cedar (RC): **4%**

The DF throughout this sale averages 27.4" diameter with 124' bole height, the WH averages 16.4" diameter with 87' bole height, and the RC averages 16.7" diameter with 80' bole height.

Unit 1 has had previous harvest activity; it is especially patchy and less dense in the southeast portion. Unit 2 is more uniform in stand structure with a denser tree spacing than Unit 1. Units 3 and 4 are VDT units where the harvestable timber is 100% marked with a single band of pink paint. In unit 3, the painted trees are evenly scattered throughout, while unit 4 has trees painted in corridors that follow the contour lines to ease yarding.

Defect present throughout the sale consists primarily of butt swell, spike knots, sweep and forked/broken tops.

The recommended harvest system for the sale is 100% ground-based yarding.

All roads to this sale are in good condition and there are plenty of good access points into both units. A 383 key is needed to access the gate off of Stossel Creek County Road.

Grant(s): 01

Prepared by: Aaron Coleman

Title: Timber Cruiser

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																								
T26N R08E S07 Ty00U1 THRU T26N R08E S07 Ty00U4				Project: KERSWOP										Page 1														
				Acres 54.16										Date 4/6/2016														
														Time 12:16:57PM														
Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre							
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf								
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99												
DF	CU	CU			100.0	141											6	10		0.00	21.7							
DF	HA	SM	5	3.2	2,085	2,019	109							4		2	94	39	17	453	2.28	4.5						
DF	HA	2S	3	3.2	864	836	45										100	40	14	306	1.64	2.7						
DF	HA	3S			213	213	12										100	40	11	167	0.82	1.3						
DF	HB	2S	10	3.2	3,605	3,488	189										100	40	14	311	1.63	11.2						
DF	HB	3S	1	1.1	331	327	18										100	40	10	157	0.87	2.1						
DF	D	2S	29	4.2	10,423	9,987	541								1	1	98	40	16	381	1.89	26.2						
DF	D	3S	7	1.3	2,593	2,560	139							17	81	1		39	9	111	0.80	23.1						
DF	D	4S	1		186	186	10							96	4			27	6	34	0.38	5.4						
DF	D	UT			107	107	6							51	49			19	11	82	0.97	1.3						
DF	OS	3P	3	3.9	926	890	48										100	40	25	1147	5.16	.8						
DF	OS	SM	12	4.7	4,584	4,369	237										100	40	21	737	3.68	5.9						
DF	OS	2S	29	7.4	10,585	9,796	531										100	40	22	830	4.07	11.8						
DF Totals				78	5.1	36,643	34,779	1,884						2	8	19	72	0	1	1	98	33	14	295	1.86	118.0		
DF	D	CU	CU		100.0	7												20	8		0.00	.2						
DF	D	D	UT	100	20.5	123	98	5										100	40	15	290	2.07	.3					
DF Totals				0	24.7	130	98	5										100	33	13	193	1.66	.5					
RC	CU	CU																3	6		0.00	7.5						
RC	D	3S	73	7.1	1,395	1,296	70								49	34	16	2	1		97	36	11	164	1.27	7.9		
RC	D	4S	16	.6	282	281	15							97		3				40	9	51	31	6	38	0.35	7.3	
RC	OS	3S	11	21.8	227	178	10										100	36	24	755	5.49	.2						
RC Totals				4	7.9	1,905	1,755	95						16	37	26	22	1	7	1	90	24	8	76	0.89	23.0		
WH	CU	CU																4	6		0.00	16.5						
WH	HA	SM	12	3.3	1,057	1,023	55											100	40	17	470	2.32	2.2					
WH	HA	2S	10	2.9	784	761	41										100	40	14	264	1.45	2.9						
WH	HA	3S	4		372	372	20										100	40	11	169	0.98	2.2						
WH	HB	2S	21	3.6	1,724	1,663	90										86	14	100	40	13	239	1.34	7.0				
WH	HB	3S	6	3.4	528	510	28										100	40	9	114	0.69	4.5						
WH	D	SM	2	8.3	143	132	7										100	40	19	550	2.83	.2						
WH	D	2S	13	5.2	1,150	1,090	59										64	36	3	4	93	39	14	269	1.62	4.1		
WH	D	3S	16	3.9	1,313	1,262	68							36	64					1	5	94	39	8	92	0.65	13.8	
WH	D	4S	9	1.4	752	742	40							90	10					19	22	4	55	30	5	35	0.34	21.4
WH	D	UT	1		122	122	7											100	16	10	61	0.77	2.0					
WH	OS	SM	5	7.8	381	351	19										100	40	21	744	3.67	.5						
WH	OS	2S	1		73	73	4										100	40	19	600	2.97	.1						
WH Totals				18	3.6	8,401	8,100	439						14	22	37	27	3	3	2	93	29	8	105	0.86	77.2		
RA	CU	CU																9	5		0.00	.9						
RA	D	4S	100		55	55	3							100				100	40	6	60	0.43	.9					
RA Totals				0		55	55	3						100				100	25	6	30	0.35	1.8					
Totals					5.0	47,134	44,786	2,426						5	11	22	62	1	1	1	96	30	11	203	1.44	220.5		

TC PSTATS		PROJECT STATISTICS							PAGE	1	
		PROJECT KERSWOP							DATE	4/6/2016	
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt	
26N	08E	07	KERSWOP	00U1	THR	54.16	95	334	S	W	
26N	08E	07	KERSWOP	00U4							
		PLOTS	TREES	TREES PER PLOT		ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		95	334	3.5							
CRUISE		67	248	3.7		3,887	6.4				
DBH COUNT											
REFOREST											
COUNT		20	80	4.0							
BLANKS		8									
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	174	32.1	27.6	124	25.4	133.3	36,643	34,779	7,160	7,132	
DOUG FIR-D	1	.2	27.0	103	0.1	.7	130	98	30	28	
WHEMLOCK	57	29.5	16.4	87	10.7	43.5	8,401	8,100	1,910	1,911	
WR CEDAR	15	9.1	16.7	80	3.4	13.9	1,905	1,755	483	483	
R ALDER	1	.9	11.0	72	0.2	.6	55	55	16	16	
TOTAL	248	71.8	22.1	103	40.8	191.9	47,134	44,786	9,598	9,568	
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL	68.1	COEFF	SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.			
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR		42.6	3.3	1,312	1,356	1,400					
DOUG FIR-D											
WHEMLOCK		67.9	9.2	457	503	550					
WR CEDAR		105.6	29.3	283	400	517					
R ALDER											
TOTAL		59.9	3.9	1,057	1,100	1,142	143	73	36		
CL	68.1	COEFF	SAMPLE TREES - CF			# OF TREES REQ.		INF. POP.			
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR		37.0	2.8	263	271	278					
DOUG FIR-D											
WHEMLOCK		59.6	8.1	104	113	122					
WR CEDAR		90.7	25.1	79	106	132					
R ALDER											
TOTAL		52.7	3.4	216	224	232	111	57	28		
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		86.2	8.8	29	32	35					
DOUG FIR-D		974.7	99.9	0	0	0					
WHEMLOCK		157.3	16.1	25	30	34					
WR CEDAR		383.2	39.3	6	9	13					
R ALDER		974.7	99.9	0	1	2					
TOTAL		90.8	9.3	65	72	78	329	168	82		
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		82.2	8.4	122	133	144					
DOUG FIR-D		974.7	99.9	0	1	1					
WHEMLOCK		144.7	14.8	37	43	50					
WR CEDAR		312.3	32.0	9	14	18					
R ALDER		974.7	99.9	0	1	1					
TOTAL		70.7	7.2	178	192	206	200	102	50		

PROJECT STATISTICS
PROJECT KERSWOP

TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
26N	08E	07	KERSWOP	00U1	THR	54.16	95	334	S	W
26N	08E	07	KERSWOP	00U4						

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		82.8	8.5	31,826	34,779	37,732			
DOUG FIR-D		974.7	99.9	0	98	195			
WHEMLOCK		153.7	15.8	6,823	8,100	9,376			
WR CEDAR		319.3	32.7	1,181	1,755	2,329			
R ALDER		974.7	99.9	0	55	110			
TOTAL		70.1	7.2	41,568	44,786	48,004	196	100	49

CL	68.1	COEFF	NET CUFT FT/ACRE				# OF PLOTS REQ.		INF. POP.
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR		83.1	8.5	6,524	7,132	7,739			
DOUG FIR-D		974.7	99.9	0	28	56			
WHEMLOCK		149.4	15.3	1,618	1,911	2,203			
WR CEDAR		313.0	32.1	328	483	637			
R ALDER		974.7	99.9	0	16	31			
TOTAL		70.0	7.2	8,881	9,568	10,255	196	100	49

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		30.4	3.1	239	261	283			
DOUG FIR-D		974.7	99.9	0	146	292			
WHEMLOCK		118.2	12.1	157	186	216			
WR CEDAR		278.3	28.5	85	127	168			
R ALDER		974.7	99.9	0	91	182			
TOTAL		71.0	7.3	217	233	250	201	103	50

T26N R08E S07 T00U1 T26N R08E S07 T00U1
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt
 26N 08E 07 KERSWOP 00U1 21.33 32 80 S W

Spp	S	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs Per /Acre					
									Net BdFt	Def%	Gross	Net	Net MBF	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			100.0	29												5	10		0.00	25.1				
DF	HA	SM	9	3.5	3,822	3,686	79					100		5			95	39	17	446	2.31	8.3				
DF	HA	2S	3	4.7	1,120	1,068	23				100						100	40	15	318	1.74	3.4				
DF	HA	3S	1		228	228	5				100						100	40	11	180	0.86	1.3				
DF	HB	2S	14	3.3	5,311	5,134	110					57	43				100	40	14	293	1.58	17.5				
DF	HB	3S	1	2.8	344	335	7				100						100	40	10	159	0.91	2.1				
DF	DM	2S	22	5.5	8,844	8,361	178					35	65		2	3	95	39	16	379	1.91	22.1				
DF	DM	3S	8	1.2	2,846	2,811	60	20	80						2	14	84	38	9	103	0.78	27.4				
DF	DM	4S			123	123	3	100							59		41	29	6	33	0.38	3.7				
DF	DM	UT	1		223	223	5		40	60				85	15			19	12	88	1.01	2.5				
DF	OS	3P	2	2.4	992	968	21										100	40	25	1169	5.10	.8				
DF	OS	SM	10	7.4	3,987	3,691	79										100	40	21	698	3.48	5.3				
DF	OS	2S	29	9.8	11,598	10,465	223										100	40	22	806	4.06	13.0				
DF	Totals			74	6.0	39,466	37,093	791	2	8	19	71		1	1	2	96	32	13	280	1.83	132.4				
DF	D	CU	CU		100.0	17												20	8		0.00	.4				
DF	D	DM	UT	100	20.5	312	248	5				24	76				100	40	15	290	2.07	.9				
DF	D	Totals		0	24.7	329	248	5				24	76				100	33	13	193	1.66	1.3				
WH	CU	CU																5	9		0.00	10.1				
WH	HA	SM	6	1.9	554	543	12						100				100	40	18	520	2.45	1.0				
WH	HA	2S	10	4.6	978	932	20										100	40	15	310	1.66	3.0				
WH	HA	3S	5		423	423	9				100						100	40	11	180	1.03	2.3				
WH	HB	2S	39	3.8	3,589	3,452	74										100	40	13	226	1.30	15.3				
WH	HB	3S	9	1.8	825	810	17				100						100	40	9	111	0.66	7.3				
WH	DM	2S	8	5.2	726	688	15					37	63				100	38	14	260	1.84	2.6				
WH	DM	3S	14	6.6	1,304	1,218	26	17	83								100	40	9	102	0.67	12.0				
WH	DM	4S	6	4.6	508	484	10	78	22					49	36	15		24	6	28	0.37	17.2				
WH	DM	UT	3		258	258	6					27	73				100	17	10	55	0.73	4.7				
WH	Totals			18	3.9	9,163	8,809	188	7	27	55	11		6	2	92		30	10	117	0.92	75.5				
RC	CU	CU																4	6		0.00	15.6				
RC	DM	3S	78	7.1	3,329	3,093	66					48	36	16		2	98	36	11	164	1.27	18.8				
RC	DM	4S	14		560	560	12	100							30	11	59	32	5	37	0.32	15.1				
RC	OS	3S	8	20.4	393	313	7										100	36	25	820	5.44	.4				
RC	Totals			8	7.4	4,282	3,966	85	14	37	28	20			5	2	93	25	8	79	0.88	49.9				
Type Totals					5.9	53,241	50,116	1,069	4	14	26	57		2	1	1	95	30	11	193	1.41	259.2				

T26N R08E S07 T00U2 **T26N R08E S07 T00U2**
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt
 26N 08E 07 KERSWOP 00U2 12.53 18 55 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		CU	CU		100.0	168												5	10		0.00	25.2
DF		HA	2S	2	1.5	1,170	1,153	14			100					100		40	14	287	1.55	4.0
DF		HA	3S	1		345	345	4		100						100		40	10	150	0.73	2.3
DF		HB	2S	9	2.8	4,284	4,166	52			53	47				100		40	15	356	1.77	11.7
DF		HB	3S		.0	309	309	4		100						100		40	11	180	0.94	1.7
DF		DM	2S	34	3.3	16,012	15,491	194			32	68				100		40	16	413	1.97	37.5
DF		DM	3S	8	.5	3,654	3,635	46	11	85	4				5	95		39	9	130	0.90	27.9
DF		DM	4S	1		365	365	5	100					75	25			27	6	38	0.40	9.7
DF		OS	3P	4	5.1	2,316	2,199	28				100				100		40	26	1131	5.20	1.9
DF		OS	SM	14	3.9	6,710	6,449	81				100				100		40	20	703	3.64	9.2
DF		OS	2S	27	5.9	12,766	12,018	151				100				100		40	23	852	4.18	14.1
DF	Totals			85	4.1	48,099	46,129	578	2	8	18	72		1	1	99		33	14	318	1.95	145.2
WH		CU	CU															3	5		0.00	40.8
WH		HA	SM	8	3.8	643	619	8				100				100		40	18	510	2.45	1.2
WH		HA	2S	12		764	764	10			100					100		40	13	257	1.47	3.0
WH		HB	3S	3	8.3	232	213	3		100						100		40	9	110	0.68	1.9
WH		DM	SM	8	8.3	620	569	7				100				100		40	19	550	2.83	1.0
WH		DM	2S	16	6.1	1,160	1,090	14			68	32				100		40	15	306	1.71	3.6
WH		DM	3S	18		1,272	1,272	16	66	34					5	95		39	8	83	0.67	15.4
WH		DM	4S	25		1,758	1,758	22	97	3			10	18		72		33	5	37	0.32	47.2
WH		OS	SM	10	9.6	695	629	8				100				100		40	25	1040	5.05	.6
WH	Totals			13	3.3	7,145	6,913	87	37	10	22	31	2	5	1	92		24	6	60	0.64	114.7
RC		CU	CU															7			0.00	6.0
RC		DM	3S	40	7.6	364	337	4		74		26	26			74		33	12	166	1.25	2.0
RC		DM	4S	31	2.7	269	261	3	86		14				75	25		27	7	44	0.49	6.0
RC		OS	3S	29	24.7	314	236	3				100				100		36	23	640	5.58	.4
RC	Totals			2	11.9	946	834	10	27	30	4	39	11	23		66		17	8	58	0.98	14.3
RA		CU	CU															9	5		0.00	4.0
RA		DM	4S	100		237	237	3	100							100		40	6	60	0.43	4.0
RA	Totals			0		237	237	3	100							100		25	6	30	0.35	7.9
Type Totals					4.1	56,428	54,113	678	7	9	19	66	0	1	1	97		28	10	192	1.44	282.1

T26N R08E S07 T00U3										T26N R08E S07 T00U3				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
26N	08E	07	KERSWOP	00U3	5.90	15	36	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		CU	CU		100.0	48												9	9		0.00	15.5				
DF		HA	SM	7	2.8	1,977	1,922	11							100			21	79	39	17	415	1.99	4.6		
DF		HA	2S	5	2.3	1,396	1,363	8							100					40	14	310	1.57	4.4		
DF		HA	3S	1		403	403	2							100					40	11	180	0.94	2.2		
DF		HB	2S	6	.0	1,344	1,344	8							18	82				40	15	377	1.73	3.6		
DF		HB	3S	2		521	521	3							100					40	11	172	0.95	3.0		
DF		DM	2S	28	3.6	7,888	7,604	45							36	64			6	94	39	15	341	1.78	22.3	
DF		DM	3S	9	.8	2,260	2,241	13	33	67									6	94	39	8	99	0.65	22.6	
DF		DM	4S	1		243	243	1	87	13								18	32	49	26	6	30	0.29	8.2	
DF		DM	UT			137	137	1		100								71	29		18	10	66	0.82	2.1	
DF		OS	SM	13	3.8	3,439	3,307	20												100	40	20	692	3.41	4.8	
DF		OS	2S	28	5.5	7,705	7,280	43												100	40	23	868	4.12	8.4	
DF	Totals			91	3.6	27,361	26,366	156	4	10	16	70			1	2	3	95		33	13	259	1.57	101.8		
WH		CU	CU																	15	5		0.00	4.5		
WH		HA	3S	32		807	807	5							100					40	11	180	1.03	4.5		
WH		DM	2S	33	8.8	885	807	5							52	48				48	52	36	16	310	1.85	2.6
WH		DM	3S	25	12.9	704	613	4	51	49											40	8	87	0.62	7.1	
WH		DM	4S	2	20.0	65	52	0	100									50	50		20	6	20	0.38	2.6	
WH		DM	UT	8		182	182	1										100		100	16	15	140	1.31	1.3	
WH	Totals			9	6.9	2,643	2,461	15	15	45	24	16			8	1	16	75		31	9	109	0.83	22.6		
Type Totals					3.9	30,004	28,826	170	5	13	17	65			1	2	4	93		33	12	232	1.45	124.3		

T26N R08E S07 T00U4										T26N R08E S07 T00U4				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
26N	08E	07	KERSWOP	00U4	14.40	30	77	S	W					

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre	
									Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/ Lf		
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf		
DF		CU	CU		100.0	321											7	10		0.00	16.2	
DF		HA	SM	5	1.8	1,371	1,346	19							100		100	40	18	510	2.35	2.6
DF		HB	2S	5	5.3	1,413	1,337	19			79	21				100	40	14	292	1.56	4.6	
DF		HB	3S	1		253	253	4		100						100	40	9	128	0.69	2.0	
DF		DM	2S	35	4.0	8,937	8,582	124			42	58				100	40	15	354	1.79	24.2	
DF		DM	3S	5	3.2	1,429	1,383	20	13	87						100	39	9	110	0.77	12.5	
DF		DM	4S	1		100	100	1	83	17				100			24	6	33	0.39	3.1	
DF		DM	UT			17	17	0		100			100				16	10	60	0.81	.3	
DF		OS	SM	16	2.1	4,087	4,000	58							100	40	23	888	4.23	4.5		
DF		OS	2S	32	5.5	8,367	7,904	114							100	40	22	837	3.94	9.4		
DF	Totals			71	5.2	26,295	24,923	359	1	6	19	74	0	0	100	33	14	314	1.93	79.4		
WH		CU	CU														5	7		0.00	9.7	
WH		HA	SM	24	3.6	2,598	2,505	36							100	100	40	17	448	2.25	5.6	
WH		HA	2S	7	2.2	835	816	12							100	100	40	13	216	1.18	3.8	
WH		HA	3S	5		444	444	6		100						100	40	10	150	0.89	3.0	
WH		HB	2S	11	2.5	1,169	1,140	16			24	76				100	40	15	326	1.65	3.5	
WH		HB	3S	5	5.1	564	535	8		100						100	40	9	124	0.76	4.3	
WH		DM	2S	17	4.1	1,878	1,801	26			79	21		6	94	39	14	251	1.43	7.2		
WH		DM	3S	15	1.9	1,614	1,583	23	34	66				4	12	84	38	8	89	0.62	17.8	
WH		DM	4S	5		521	521	8	88	12			3	11	22	63	35	5	40	0.35	13.1	
WH		OS	SM	8	6.6	828	773	11								100	40	20	620	3.09	1.2	
WH		OS	2S	3		274	274	4								100	40	19	600	2.97	.5	
WH	Totals			29	3.1	10,724	10,392	150	10	20	24	46	0	2	3	95	33	10	149	1.00	69.5	
Type Totals					4.6	37,019	35,315	509	4	10	20	66	0	1	1	98	33	12	237	1.49	149.0	

TC TSTATS		STATISTICS							PAGE	1
		PROJECT KERSWOP							DATE	4/6/2016
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
26N	08E	07	KERSWOP	00U1	21.33	32	132	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		32	132	4.1						
CRUISE		18	80	4.4	1,699		4.7			
DBH COUNT										
REFOREST										
COUNT		13	46	3.5						
BLANKS		1								
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	53	35.5	27.5	124	27.9	146.3	39,466	37,093	7,782	7,775
DOUG FIR-D	1	.4	27.0	103	0.3	1.7	329	248	76	71
WHEMLOCK	14	24.1	18.7	99	10.6	45.9	9,163	8,809	2,096	2,097
WR CEDAR	12	19.6	16.9	86	7.4	30.6	4,282	3,966	1,087	1,086
TOTAL	80	79.6	22.7	107	47.1	224.6	53,241	50,116	11,040	11,030
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		48.5	6.7	1,164	1,247	1,330				
DOUG FIR-D										
WHEMLOCK		45.2	12.5	347	397	447				
WR CEDAR		106.6	33.7	265	399	534				
TOTAL		67.7	7.6	896	970	1,044	183	93	46	
CL:	68.1 %	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		42.8	5.9	241	256	272				
DOUG FIR-D										
WHEMLOCK		35.7	9.9	84	94	103				
WR CEDAR		85.6	27.0	75	103	131				
TOTAL		59.2	6.7	192	205	219	140	71	35	
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		67.1	11.9	31	35	40				
DOUG FIR-D		565.7	99.9	0	0	1				
WHEMLOCK		135.2	23.9	18	24	30				
WR CEDAR		241.6	42.7	11	20	28				
TOTAL		67.9	12.0	70	80	89	184	94	46	
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		65.8	11.6	129	146	163				
DOUG FIR-D		565.7	99.9	0	2	3				
WHEMLOCK		138.3	24.4	35	46	57				
WR CEDAR		185.8	32.8	21	31	41				
TOTAL		49.5	8.8	205	225	244	98	50	25	
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		68.2	12.0	32,627	37,093	41,558				
DOUG FIR-D		565.7	99.9	0	248	496				
WHEMLOCK		140.2	24.8	6,627	8,809	10,991				

TC TSTATS				STATISTICS				PAGE	2	
PROJECT				KERSWOP				DATE	4/6/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
26N	08E	07	KERSWOP	00U1	21.33	32	132	S	W	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10	
WR CEDAR		188.8	33.4	2,643	3,966	5,289				
TOTAL		53.0	9.4	45,428	50,116	54,804	112	57	28	
CL:	68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		67.0	11.8	6,856	7,775	8,695				
DOUG FIR-D		565.7	99.9	0	71	142				
WHEMLOCK		138.6	24.5	1,584	2,097	2,611				
WR CEDAR		184.8	32.6	732	1,086	1,441				
TOTAL		50.6	8.9	10,044	11,030	12,016	102	52	26	
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				223	254	284				
DOUG FIR-D		565.7	99.9	0	146	292				
WHEMLOCK		61.7	10.9	144	192	239				
WR CEDAR		159.6	28.2	86	130	173				
TOTAL		159.8	28.2	202	223	244	1,020	520	255	

TC TSTATS				STATISTICS				PAGE	1	
PROJECT				KERSWOP				DATE	4/6/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
26N	08E	07	KERSWOP	00U2	12.53	18	89	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	18	89	4.9							
CRUISE	11	55	5.0		1,327		4.1			
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	38	40.0	28.2	124	32.7	173.4	48,099	46,129	9,388	9,353
WHEMLOCK	13	55.9	12.7	67	13.9	49.5	7,145	6,913	1,732	1,732
WR CEDAR	3	6.0	15.5	48	2.0	7.8	946	834	237	237
R ALDER	1	4.0	11.0	72	0.8	2.6	237	237	68	68
TOTAL	55	105.9	20.1	88	52.1	233.4	56,428	54,113	11,425	11,389
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	38.3	6.3		1,327	1,416	1,505				
WHEMLOCK	135.5	40.8		233	394	555				
WR CEDAR	125.2	86.6		54	403	753				
R ALDER										
TOTAL	64.7	8.9		1,004	1,102	1,200	167	85	42	
CL:	68.1 %	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	32.6	5.4		265	281	296				
WHEMLOCK	120.7	36.3		56	88	121				
WR CEDAR	124.9	86.4		16	114	213				
R ALDER										
TOTAL	58.6	8.0		205	223	241	137	70	34	
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	69.5	16.8		33	40	47				
WHEMLOCK	102.0	24.7		42	56	70				
WR CEDAR	322.0	78.0		1	6	11				
R ALDER	424.3	102.8			4	8				
TOTAL	54.3	13.2		92	106	120	125	64	31	
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	59.7	14.5		148	173	199				
WHEMLOCK	100.0	24.2		38	50	62				
WR CEDAR	308.7	74.8		2	8	14				
R ALDER	424.3	102.8			3	5				
TOTAL	44.7	10.8		208	233	259	84	43	21	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	59.1	14.3		39,522	46,129	52,736				
WHEMLOCK	132.9	32.2		4,687	6,913	9,138				
WR CEDAR	300.8	72.9		226	834	1,442				
R ALDER	424.3	102.8			237	481				
TOTAL	47.3	11.5		47,916	54,113	60,310	94	48	24	

TC TSTATS				STATISTICS			PAGE	2		
				PROJECT	KERSWOP		DATE	4/6/2016		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
26N	08E	07	KERSWOP	00U2	12.53	18	89	S	W	
CL:	68.1 %	COEFF	NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10	
CL:	68.1 %	COEFF	NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		60.2	14.6	7,989	9,353	10,716				
WHEMLOCK		117.6	28.5	1,239	1,732	2,226				
WR CEDAR		300.1	72.7	65	237	409				
R ALDER		424.3	102.8		68	137				
TOTAL		46.8	11.4	10,097	11,389	12,682	93	47	23	
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				228	266	304				
WHEMLOCK		111.2	27.0	95	140	184				
WR CEDAR		300.8	72.9	29	107	184				
R ALDER		424.3	102.8		91	184				
TOTAL		158.5	38.4	205	232	258	1,062	542	266	

TC TSTATS				STATISTICS				PAGE	1		
				PROJECT KERSWOP				DATE	4/6/2016		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
26N	08E	07	KERSWOP	00U3	5.90	15	36	S	W		
				TREES	ESTIMATED	PERCENT					
				PER PLOT	TOTAL	SAMPLE					
				PLOTS	TREES	TREES	TREES				
TOTAL	15	36	2.4								
CRUISE	13	36	2.8	218		16.5					
DBH COUNT											
REFOREST											
COUNT											
BLANKS	2										
100 %											
STAND SUMMARY											
SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET		
TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC		
DOUG FIR	32	29.9	24.8	121	20.1	100.1	27,361	26,366	5,339	5,329	
WHEMLOCK	4	7.1	18.0	108	3.0	12.5	2,643	2,461	580	580	
TOTAL	36	37.0	23.6	118	23.2	112.7	30,004	28,826	5,919	5,909	
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR	37.6	7.1		1,249	1,344	1,439					
WHEMLOCK	40.4	23.1		294	383	471					
TOTAL	46.6	8.1		1,128	1,228	1,327	87	44	22		
CL:	68.1 %	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR	30.9	5.8		251	266	282					
WHEMLOCK	39.0	22.3		70	90	110					
TOTAL	39.7	6.9		228	245	262	63	32	16		
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	79.6	21.3		24	30	36					
WHEMLOCK	179.7	48.0		4	7	10					
TOTAL	73.7	19.7		30	37	44	233	119	58		
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	68.3	18.2		82	100	118					
WHEMLOCK	171.7	45.8		7	13	18					
TOTAL	68.3	18.2		92	113	133	200	102	50		
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	74.2	19.8		21,142	26,366	31,590					
WHEMLOCK	172.7	46.1		1,325	2,461	3,596					
TOTAL	73.9	19.7		23,139	28,826	34,514	234	119	58		
CL:	68.1 %	COEFF	NET CUFT FT/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR	71.4	19.1		4,312	5,329	6,345					
WHEMLOCK	172.5	46.1		313	580	847					
TOTAL	71.3	19.0		4,783	5,909	7,034	218	111	54		
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	74.2	19.8		211	263	315					
WHEMLOCK	172.7	46.1		106	197	287					
TOTAL	73.9	19.7		205	256	306	234	119	58		

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT KERSWOP				DATE	4/6/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
26N	08E	07	KERSWOP	00U4	14.40	30	77	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	30	77	2.6							
CRUISE	25	77	3.1	644	12.0					
DBH COUNT										
REFOREST										
COUNT										
BLANKS	5									
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	51	21.0	28.4	127	17.4	92.5	26,295	24,923	5,046	4,984
WHEMLOCK	26	23.7	19.1	108	10.8	47.2	10,724	10,392	2,334	2,334
TOTAL	77	44.7	23.9	117	28.6	139.7	37,019	35,315	7,381	7,318
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	42.6	6.0		1,347	1,433	1,518				
WHEMLOCK	43.2	9.0		582	640	697				
TOTAL	54.6	6.3		1,105	1,179	1,253	119	61	30	
CL:	68.1 %	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	37.5	5.3		266	281	296				
WHEMLOCK	37.5	7.8		129	140	151				
TOTAL	47.9	5.5		223	236	249	91	47	23	
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	95.5	17.7		17	21	25				
WHEMLOCK	174.1	32.3		16	24	31				
TOTAL	104.7	19.4		36	45	53	453	231	113	
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	83.4	15.5		78	93	107				
WHEMLOCK	153.7	28.5		34	47	61				
TOTAL	72.8	13.5		121	140	159	219	112	55	
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	83.8	15.6		21,046	24,923	28,799				
WHEMLOCK	151.0	28.0		7,479	10,392	13,305				
TOTAL	70.7	13.1		30,679	35,315	39,950	207	105	52	
CL:	68.1 %	COEFF	NET CUFT FT/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	84.1	15.6		4,205	4,984	5,762				
WHEMLOCK	149.9	27.8		1,685	2,334	2,984				
TOTAL	71.9	13.3		6,341	7,318	8,295	214	109	53	
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	83.8	15.6		227	269	311				
WHEMLOCK	151.0	28.0		159	220	282				
TOTAL	70.7	13.1		220	253	286	207	105	52	

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

T26N R08E S07 Ty00U1	21.3
T26N R08E S07 Ty00U2	12.5
T26N R08E S07 Ty00U	14.4

Project KERSWOP
Acres 54.16

Page No 1
Date: 4/6/2016
Time 12:16:59PM

Species	s T	Total	Total	Total	Net Cubic Ft/		CF/ LF	Total CCF		Total MBF	
		Trees	Logs	Tons	Tree	Log		Gross	Net	Gross	Net
DOUG FIR		1,737	5,214	11,052	222.37	74.08	1.92	3,878	3,862	1,985	1,884
WHEMLOCK		1,599	3,290	3,310	64.72	31.45	0.88	1,034	1,035	455	439
WR CEDAR		493	837	614	53.00	31.24	0.94	261	261	103	95
DOUG FIR	D	9	18	46	165.92	82.96	2.07	16	15	7	5
R ALDER		50	50	23	17.13	17.13	0.43	8	8	3	3
Totals		3,887	9,409	15,046	133.30	55.08	1.48	5,198	5,182	2,553	2,426

Wood Type Species	Total	Total	Total	Net Cubic Ft/		CF/ LF	Total CCF		Total MBF	
	Trees	Logs	Tons	Tree	Log		Gross	Net	Gross	Net
C	3,838	9,359	15,023	134.80	55.28	1.49	5,190	5,174	2,550	2,423
H	50	50	23	17.13	17.13	0.43	8	8	3	3
Totals	3,887	9,409	15,046	133.30	55.08	1.48	5,198	5,182	2,553	2,426



FPA/N No: 2418727

Effective Date: 8/11/2016

Expiration Date: 8/11/2019

Shut Down Zone: 657

EARR Tax Credit: Eligible Non-eligible

Reference: Kerswop

**Forest Practices Application/Notification
 Notice of Decision**

Decision

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

FPA/N Classification

Number of Years Granted on Multi-Year Request

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

Conditions on Approval / Reasons for Disapproval

- Notify DNR at southpuget.forestpractices@dnr.wa.gov 2 business days prior to starting the Forest Practice Hydraulic Project. Please refer to FPA #2418727.
- If pumping is used to bypass stream, pump should run continuously until project is completed.
- Rock bands shall be constructed with rounded rock.
- The work window for in channel work = July - September
- See ICN 15237

Issued By: Eric Dasso Region: South Puget Sound

Title: Resource Protection Forester Date: 8/11/2016

Copies to: Landowner, Timber Owner and Operator.

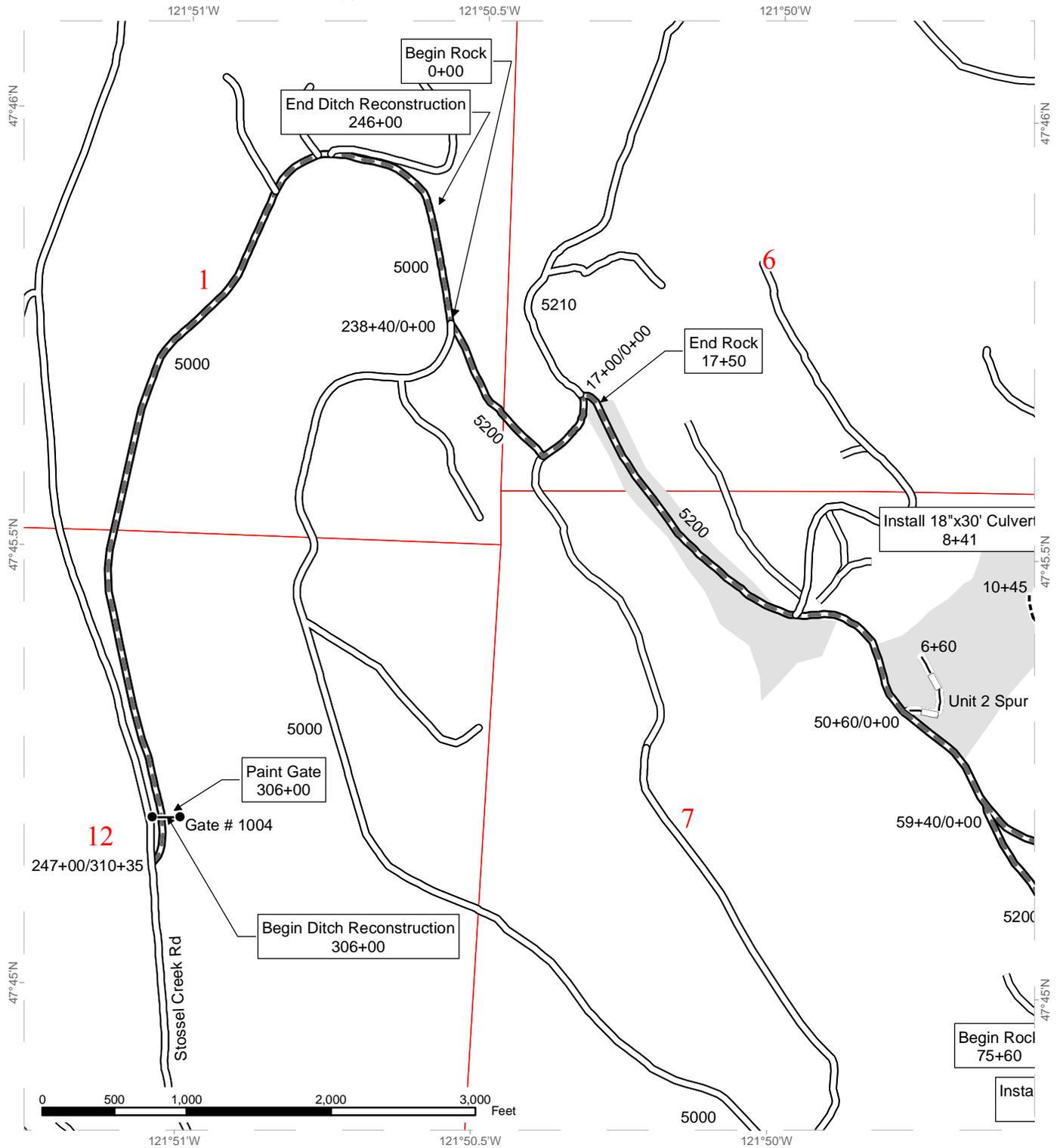
Issued in person: Landowner Timber Owner Operator By: Charlotte Bass - Charlotte Bass

*AEM
 8-15-16*

ROAD WORK MAP

SALE NAME: KERSWOP
AGREEMENT #: 30-093067
TOWNSHIP(S): T26R08E
TRUST(S): State Forest Transfer(1)

REGION: South Puget Sound Region
COUNTY(S): KING
ELEVATION RGE: 789-1205



Harvest Area	Existing Roads	Existing Rock Pit
Required Pre-Haul Maintenance	Required Reconstruction	Waste Area
Optional Construction	Optional Reconstruction	Culvert Installation

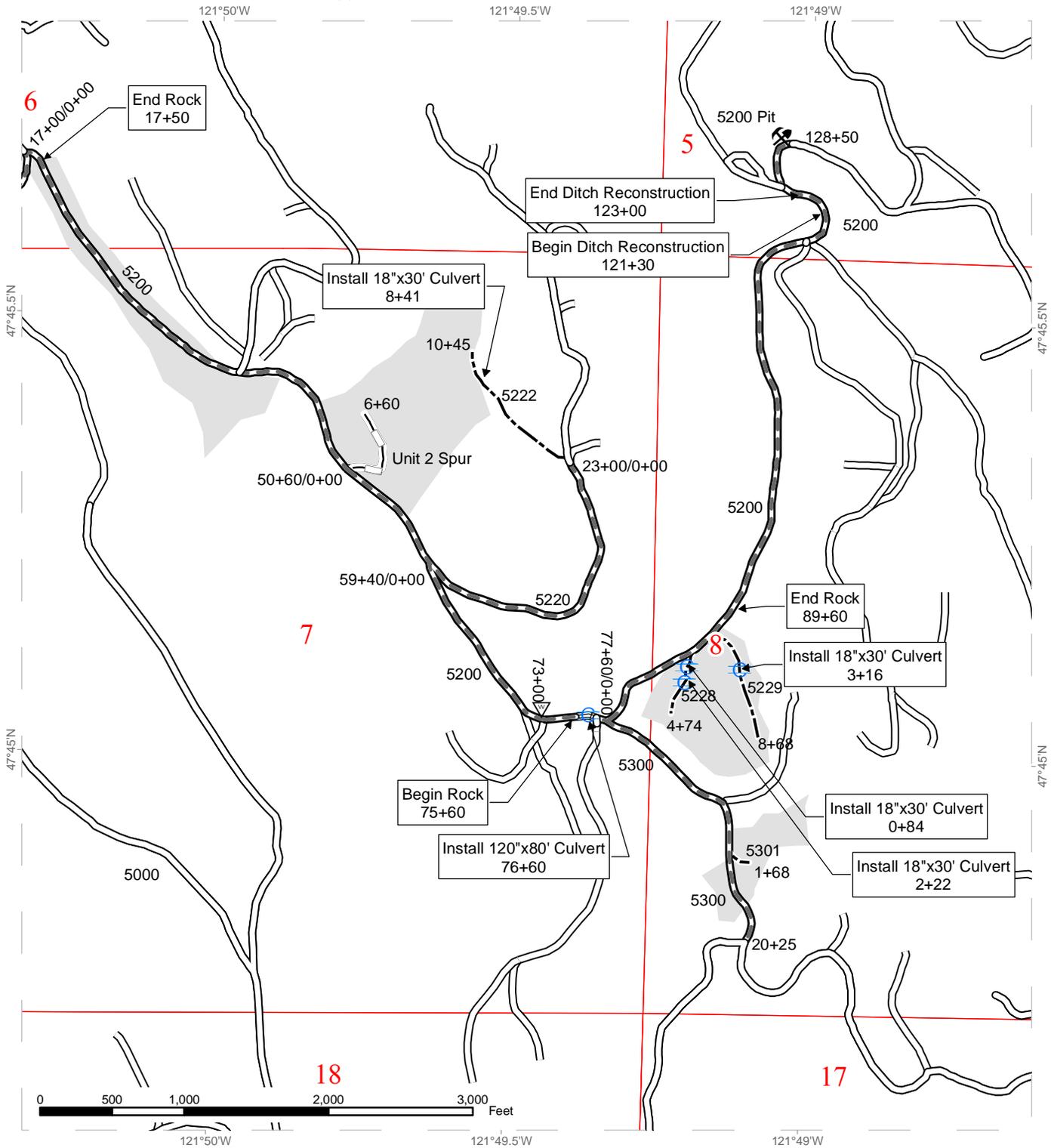
Prepared By: gard490 04/12/2016

Modification Date: 6/28/2016

ROAD WORK MAP

SALE NAME: KERSWOP
AGREEMENT #: 30-093067
TOWNSHIP(S): T26R08E
TRUST(S): State Forest Transfer(1)

REGION: South Puget Sound Region
COUNTY(S): KING
ELEVATION RGE: 789-1205



Harvest Area	Existing Roads	Existing Rock Pit
Required Pre-Haul Maintenance	Required Reconstruction	Waste Area
Optional Construction	Optional Reconstruction	Culvert Installation

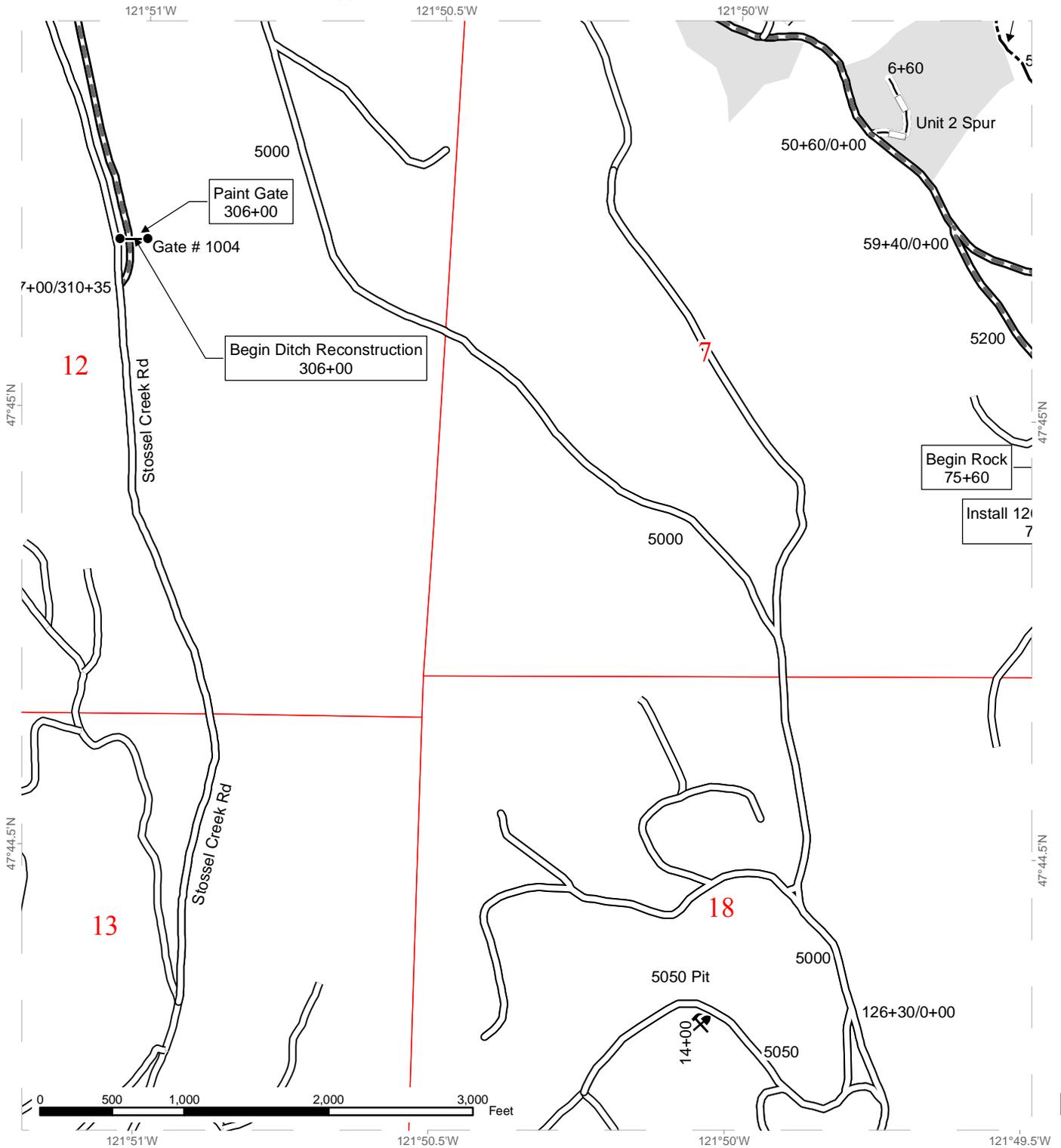
Prepared By: gard490 04/12/2016

Modification Date: 6/28/2016

ROAD WORK MAP

SALE NAME: KERSWOP
AGREEMENT #: 30-093067
TOWNSHIP(S): T26R08E
TRUST(S): State Forest Transfer(1)

REGION: South Puget Sound Region
COUNTY(S): KING
ELEVATION RGE: 789-1205



Harvest Area	Existing Roads	Existing Rock Pit
Required Pre-Haul Maintenance	Required Reconstruction	Waste Area
Optional Construction	Optional Reconstruction	Culvert Installation

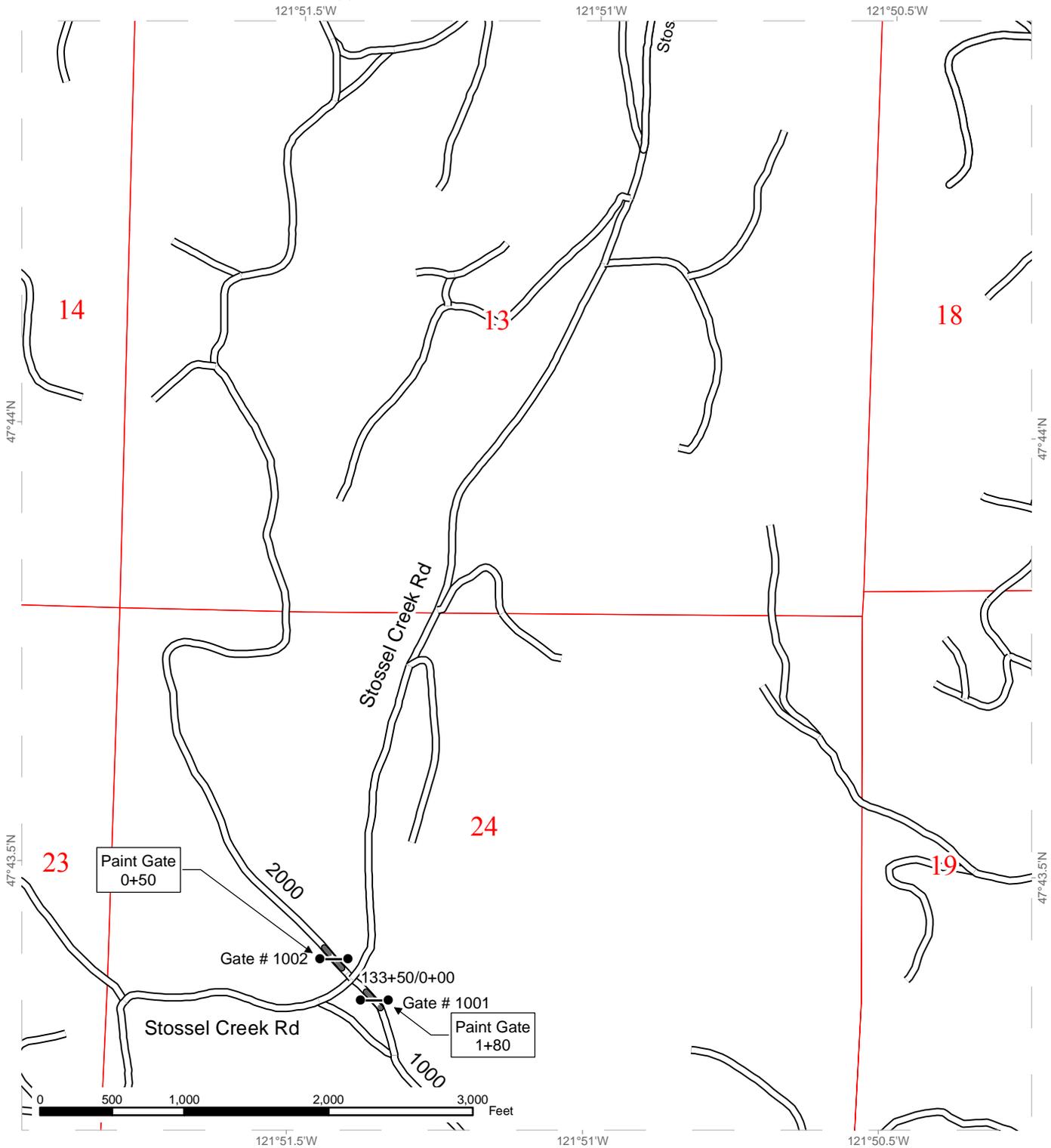
Prepared By: gard490 04/12/2016

Modification Date: 6/28/2016

ROAD WORK MAP

SALE NAME: KERSWOP
AGREEMENT #: 30-093067
TOWNSHIP(S): T26R08E
TRUST(S): State Forest Transfer(1)

REGION: South Puget Sound Region
COUNTY(S): KING
ELEVATION RGE: 789-1205



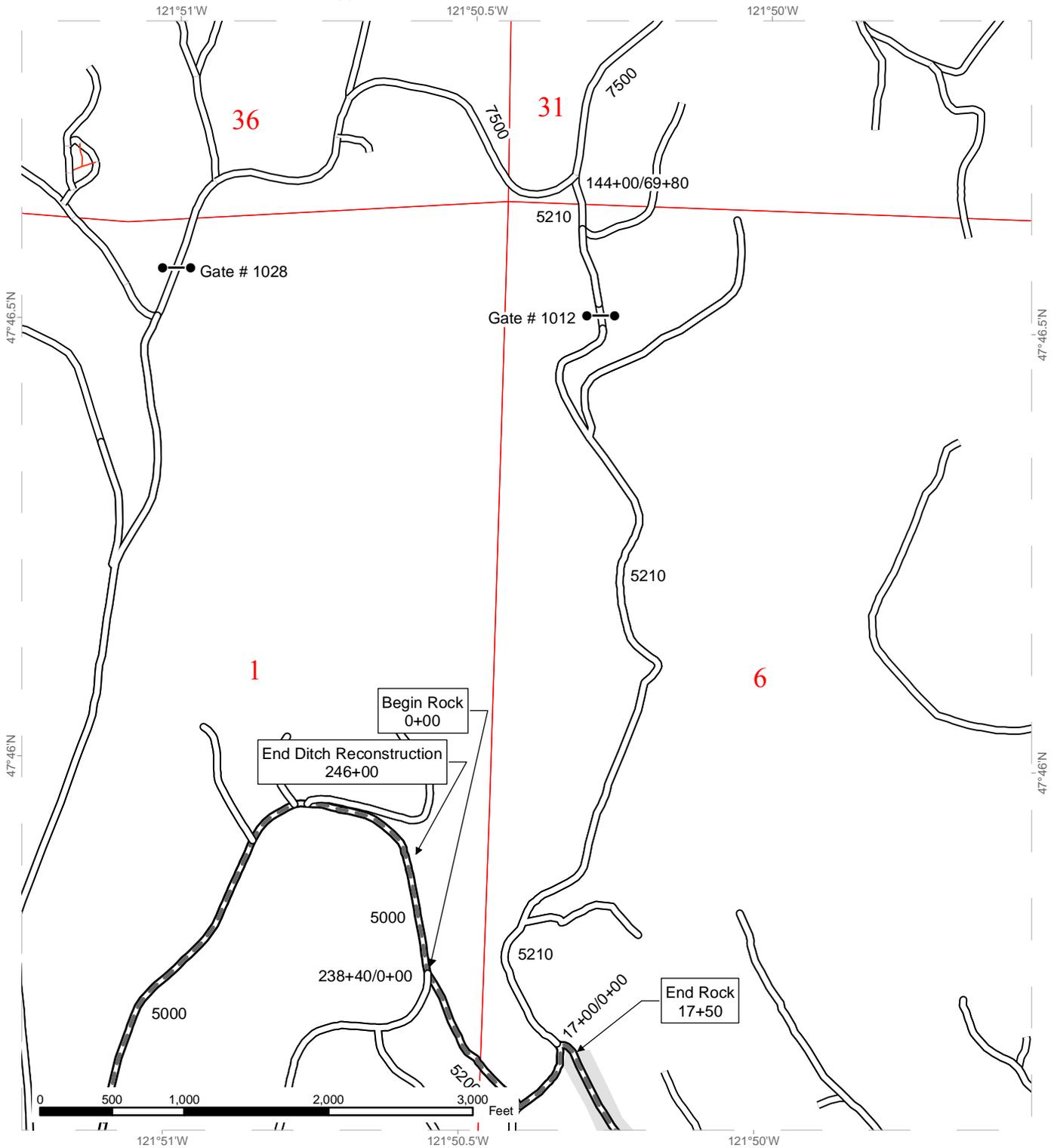
Harvest Area	Existing Roads	Existing Rock Pit
Required Pre-Haul Maintenance	Required Reconstruction	Waste Area
Optional Construction	Optional Reconstruction	Culvert Installation



ROAD WORK MAP

SALE NAME: KERSWOP
AGREEMENT #: 30-093067
TOWNSHIP(S): T26R08E
TRUST(S): State Forest Transfer(1)

REGION: South Puget Sound Region
COUNTY(S): KING
ELEVATION RGE: 789-1205



Harvest Area	Existing Roads	Existing Rock Pit
Required Pre-Haul Maintenance	Required Reconstruction	Waste Area
Optional Construction	Optional Reconstruction	Culvert Installation

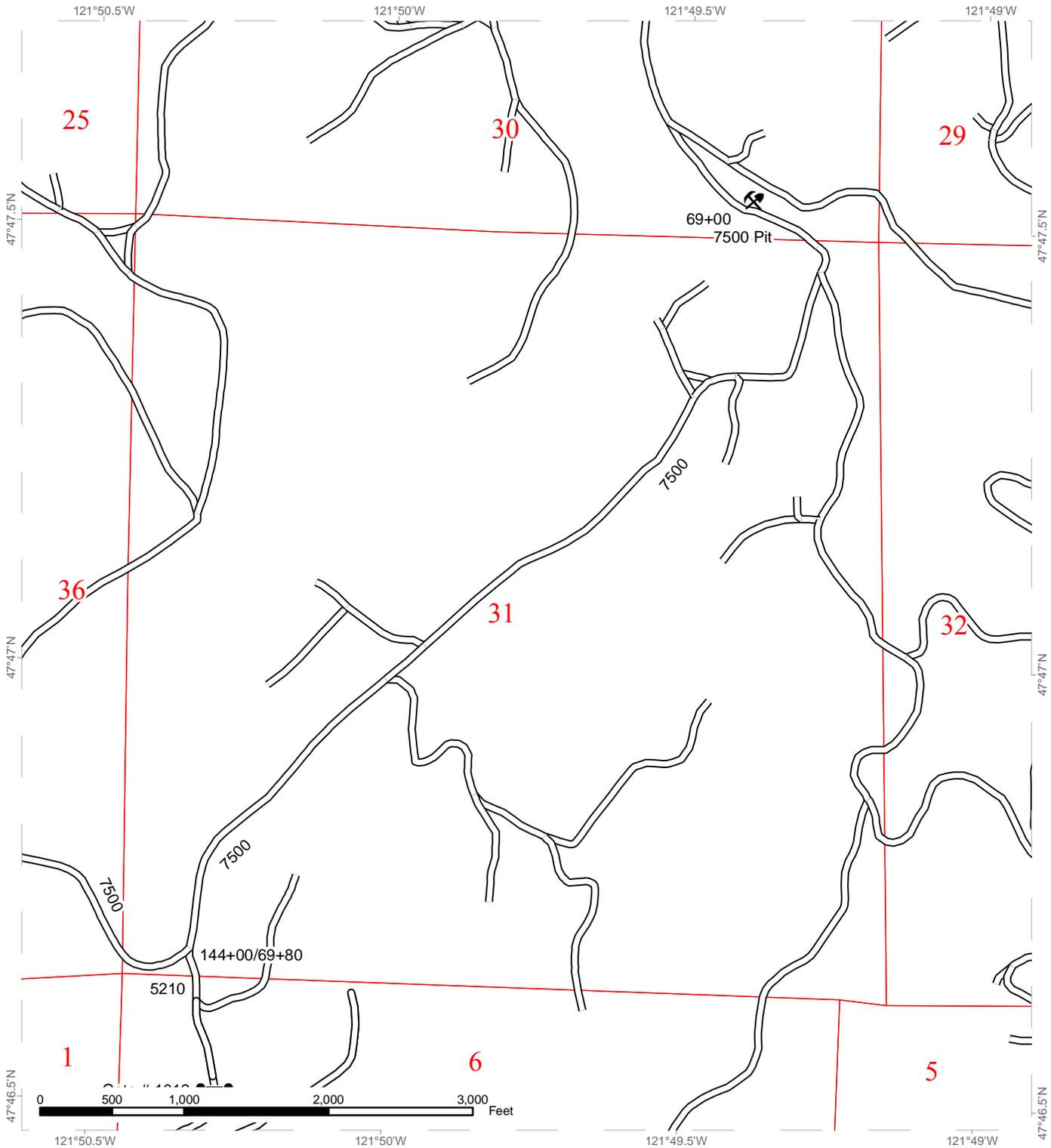
Prepared By: gard490 04/12/2016

Modification Date: 6/28/2016

ROAD WORK MAP

SALE NAME: KERSWOP
AGREEMENT #: 30-093067
TOWNSHIP(S): T26R08E
TRUST(S): State Forest Transfer(1)

REGION: South Puget Sound Region
COUNTY(S): KING
ELEVATION RGE: 789-1205



Harvest Area	Existing Roads	Existing Rock Pit
Required Pre-Haul Maintenance	Required Reconstruction	Waste Area
Optional Construction	Optional Reconstruction	Culvert Installation

Prepared By: gard490 04/12/2016

Modification Date: 6/28/2016

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

KERSWOP TIMBER SALE ROAD PLAN
KING COUNTY
SNOQUALMIE UNIT

AGREEMENT NO.: 30-093067

STAFF ENGINEER: E. BAUER

DATE: APRIL 25, 2016

DRAWN & COMPILED BY: J. GARDNER

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>
1000	1+80	Pre-haul Maintenance
2000	0+50	Pre-haul Maintenance
5000	238+40 to 310+35	Pre/Post-haul Maintenance
5200	0+00 to 128+50	Pre/Post-haul Maintenance
5200	76+20 to 77+00	Reconstruction
5220	0+00 to 23+00	Pre/Post-haul Maintenance
5222	0+00 to 10+45	Post-haul Maintenance
5228	0+00 to 4+74	Post-haul Maintenance
5229	0+00 to 8+68	Post-haul Maintenance
5300	0+00 to 20+25	Pre/Post-haul Maintenance
5301	0+00 to 1+68	Abandonment, if constructed

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>
Unit 1 Spur	0+00 to 6+60	Reconstruction
5222	0+00 to 10+45	Construction
5228	0+00 to 4+74	Construction
5229	0+00 to 8+68	Construction
5301	0+00 to 1+68	Construction

0-4 CONSTRUCTION

Construction includes, but is not limited to:

- Clearing;
- Grubbing;
- Right-of-way debris disposal;
- Excavation and/or embankment to subgrade;
- Landing construction;
- Acquisition and installation of drainage structures;
- Application of rock.

0-5 RECONSTRUCTION

Reconstruction includes, but is not limited to:

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

0-6 PRE-HAUL MAINTENANCE

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

- Cleaning ditches;
- Reconstructing ditches;
- Cleaning culverts, and catchbasins;
- Application of rock.
- Acquisition and installation of additional drainage structures.
- Gate painting.

0-7 POST-HAUL MAINTENANCE

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

0-10 ABANDONMENT

This project includes abandonment listed in Clause 9-20 ROAD ABANDONMENT.

0-13 STRUCTURES

Purchaser shall provide and install one 120 inch x 80 foot 10ga aluminized culvert. Requirements for these structures are listed in SECTION 7 - STRUCTURES.

SECTION 1 – GENERAL

1-1 ROAD PLAN CHANGES

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

1-2 UNFORESEEN CONDITIONS

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

1-3 ROAD DIMENSIONS

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

1-4 ROAD TOLERANCES

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

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

1-6 ORDER OF PRECEDENCE

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

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

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

1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS

Purchaser shall repair or replace all materials, roadway infrastructure, and road components damaged during road work or operation activities. The Contract Administrator will direct repairs and replacements. Repairs to structural materials must be made in accordance with the manufacturer’s recommendation.

1-9 DAMAGED METALLIC COATING

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

1-15 ROAD MARKING

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

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

1-16 CONSTRUCTION STAKES SET BY STATE

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

1-18 REFERENCE POINT DAMAGE

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

1-20 COMPLETE BY DATE

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

1-21 HAUL APPROVAL

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

1-22 WORK NOTIFICATIONS

On the following road, Purchaser shall notify the Contract Administrator a minimum of 4 business days before work begins.

<u>Road</u>	<u>Stations</u>
5200 Road	76+20 to 77+00

1-23 ROAD WORK PHASE APPROVAL

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

- Drainage installation
- Subgrade compaction
- Rock application

1-24 ACTIVITY TIMING RESTRICTION AT TYPE 3 STREAM CROSSING

The specified activities are allowed only during the listed operation period.

<u>Road</u>	<u>Stations</u>	<u>Activity</u>	<u>Operation Period</u>
5200	76+20 to 77+00	All work within Ordinary High Water Mark	July 1 – Sept.30

1-25 ACTIVITY TIMING RESTRICTION

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

<u>Road</u>	<u>Stations</u>	<u>Activity</u>	<u>Closure Period</u>
All	All	Operation of Road Construction Equipment	November 1 to April 30

1-26 OPERATING DURING CLOSURE PERIOD

If permission is granted to operate during a closure period listed in Clause 1-25 ACTIVITY TIMING RESTRICTION, 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.

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 shall suspend road work or hauling of right-of-way timber, forest products, or rock under the following conditions:

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

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

1-32 BRIDGE SURFACE RESTRICTION

Metal tracked equipment shall not be used on bridge surfaces at any time. If equipment must be run on bridge surfaces, then rubber tired equipment or other methods, as approved in writing by Contract Administrator, shall be used.

Any dirt, rock, or other material tracked or spilled on bridge surface(s) shall be removed immediately. Any damage to the surface(s) shall be repaired at the Purchaser’s expense as directed by the Contract Administrator.

1-33 SNOW PLOWING RESTRICTION

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

SECTION 2 – MAINTENANCE

2-1 GENERAL ROAD MAINTENANCE

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

2-2 ROAD MAINTENANCE – PURCHASER MAINTENANCE

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

2-5 MAINTENANCE GRADING – EXISTING ROAD

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
5200	0+00 to 17+50	surface grading prior to rock application
5200	75+60 to 89+60	surface grading prior to rock application

2-6 CLEANING CULVERTS

On the following road(s), all inlets and outlets of culverts shall be cleaned before timber haul.

<u>Road</u>	<u>Stations</u>
5000	238+40 to 310+35
5200	0+00 to 128+50
5220	0+00 to 23+00
5300	0+00 to 20+25

2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS

On the following road(s), Purchaser shall clean ditches, headwalls, and catch basins. Work shall be completed before haul and shall be done in accordance with the TYPICAL SECTION DETAIL. Pulling ditch material across the road is allowed, mixing ditch material in with the road surface will not be allowed.

<u>Road</u>	<u>Stations</u>
5000	238+40 to 310+35
5200	0+00 to 128+50
5220	0+00 to 23+00
5300	0+00 to 20+25

SECTION 3 – CLEARING, GRUBBING, & DISPOSAL

3-5 CLEARING

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

3-6 CLEARING WITHIN RIPARIAN AREA AT TYPE 3 STREAM CROSSING

Purchaser shall place a log, with length equal to two (2) times the width of the ordinary high water, from the largest diameter class conifer tree cut from within the Inner Zone (25 feet either side of the stream) in the stream in accordance with the 5200 ROAD CULVERT REPLACEMENT and HYDRAULIC PROJECT REQUIREMENTS.

3-8 PROHIBITED DECKING AREAS

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

- Within the grubbing limits.
- Within 50 feet of any stream.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.

- Against State Owned standing trees unless approved by the Contract Administrator.

3-10 GRUBBING

Remove all stumps between the grubbing limits specified on the TYPICAL SECTION SHEET. Those stumps outside the grubbing limits but with undercut roots shall also be removed. Grubbing shall be completed before starting excavation and embankment.

3-11 GRUBBING WITHIN RIPARIAN AREA AT TYPE 3 STREAM CROSSING

Purchaser shall retain all grubbed stumps (root wads) within the Inner Zone (25 feet either side of the stream) for placement in accordance with the 5200 ROAD CULVERT REPLACEMENT and HYDRAULIC PROJECT REQUIREMENTS. Three root wads must be placed in or adjacent to the stream channel. The remaining stumps grubbed from the Inner Zone must be placed at least 50 feet from the roadway in the Middle (25 feet to 100 feet from the stream) or the Outer Zones (remaining portion of RMZ).

3-20 ORGANIC DEBRIS DEFINITION

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

3-21 DISPOSAL COMPLETION

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

3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS

Waste areas for organic debris are located within the cleared right-of-way or in natural openings.

3-23 PROHIBITED DISPOSAL AREAS

Purchaser shall not place organic debris in the following areas:

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

3-24 BURYING ORGANIC DEBRIS RESTRICTED

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

3-25 SCATTERING ORGANIC DEBRIS

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

SECTION 4 – EXCAVATION

4-2 PIONEERING

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

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

4-3 ROAD GRADE AND ALIGNMENT STANDARDS

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

- Grade and alignment must have smooth continuity, without abrupt changes in direction.
- Maximum grades may not exceed 18 percent favorable and 12 percent adverse.
- Minimum curve radius is 60 feet at centerline.
- Maximum grade change for sag vertical curves is 5% in 100 feet.
- Maximum grade change for crest vertical curves is 5% in 100 feet.

4-5 CUT SLOPE RATIO

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

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

4-9 EMBANKMENT WIDENING

The minimum embankment widening is:

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

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

4-12 FULL BENCH CONSTRUCTION

Where side slopes exceed 45%, Purchaser shall use full bench construction for the entire subgrade width except as construction staked or designed. If designated, Purchaser shall end haul waste material to the location specified in Clause 4-37 WASTE AREA LOCATION.

4-22 TURNAROUNDS

Purchaser shall construct turnarounds as designated on the TURNAROUND LIST. Turnarounds must be no larger than 30 feet long and 30 feet wide

4-25 DITCH CONSTRUCTION

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

4-26 DITCH RECONSTRUCTION

On the following road(s), Purchaser shall reconstruct ditches into the subgrade as specified on the TYPICAL SECTION SHEET.

<u>Road</u>	<u>Stations</u>
5000	246+00 to 306+00
5200	121+30 to 123+00

4-28 DITCH DRAINAGE

Ditches must drain to cross-drain culverts or ditchouts.

4-29 DITCHOUTS

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

4-35 WASTE MATERIAL DEFINITION

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

4-36 DISPOSAL OF WASTE MATERIAL

Purchaser may sidecast waste material on side slopes up to 45% if the waste material is compacted and free of organic debris. 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. Additional waste areas may also be identified or approved by the Contract Administrator.

<u>Road</u>	<u>Waste Area Location</u>	<u>Comments</u>
5200	73+00	North of the road is existing waste/borrow area

4-38 PROHIBITED WASTE DISPOSAL AREAS

Waste material shall not be deposited in the following areas, except as otherwise specified in this plan:

- Within 50 feet of a cross drain culvert.
- Within 100 feet of a live stream or wetland.
- Within a riparian management zone.
- On side slopes steeper than 45%.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Against standing timber.

4-45 SELECT BORROW

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

4-47 NATIVE MATERIAL

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

4-55 ROAD SHAPING

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

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 embankment segments too narrow to accommodate equipment. Waste material may be placed by end-dumping or sidecasting until sufficiently wide enough to support the equipment.

4-61 SUBGRADE COMPACTION

Constructed subgrades shall be compacted in accordance with the COMPACTION LIST by routing equipment over the entire width except ditch. Subgrade compaction shall be approved, in writing, by the Contract Administrator before rock application.

SECTION 5 – DRAINAGE

5-1 REMOVAL OF SHOULDER BERMS

Purchaser shall remove berms from road shoulders to permit the escape of runoff.

5-5 CULVERTS

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

5-10 CONTINGENCY CULVERTS

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

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

5-11 UNUSED MATERIALS STATE PROPERTY

On required roads or listed in Clause 5-10, any materials listed on the CULVERT LIST that are not installed will become the property of the state. Purchaser shall stockpile materials at 5050 Pit (SE ¼ NW ¼ Section 18, T26R08W).

5-15 CULVERT INSTALLATION

Culvert installation must be in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL and the National Corrugated Metal Pipe Association's "Installation Manual for Corrugated Steel Drainage Structures". Corrugated Polyethylene pipe must be installed in a manner consistent with the manufacturer's recommendations.

5-16 APPROVAL FOR LARGER CULVERT INSTALLATION

Purchaser shall obtain written approval from the Contract Administrator for the installation of culverts 48 inches in diameter and over before backfilling.

5-17 CROSS DRAIN SKEW AND SLOPE

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

5-18 CULVERT DEPTH OF COVER

Cross drain culverts must be installed with a depth of cover of not less than 1 foot of compacted subgrade over the top of the culvert at the shallowest point. Stream crossing culverts must be installed with a depth of cover recommended by the culvert manufacturer for the type and size of the pipe.

5-20 ENERGY DISSIPATERS

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

The type of energy dissipater and the amount of material must be consistent with the specifications listed on the CULVERT LIST. Placement must be by zero-drop-height method only. No placement by end dumping or dropping of rock is allowed. Quarry Spalls shall meet the specifications in Clause 6-43.

5-25 CATCH BASINS

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

5-26 HEADWALLS FOR CULVERTS

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

5-27 ARMORING FOR STREAM CROSSING CULVERTS

At the following culvert(s), Purchaser shall place Heavy Loose Rip Rap in conjunction with construction of the embankment. Rock must be part of the embankment slopes, around culvert inlets and outlets as designated on the CULVERT LIST and attached culvert design. Rock may not restrict the flow of water into culvert inlet. Rock must be set in place by machine.

<u>Road</u>	<u>Stations</u>	<u>Rock Type</u>
5200	76+60	Heavy Loose Rip Rap

SECTION 6 – ROCK AND SURFACING

6-2 ROCK SOURCE ON STATE LAND

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

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
7500 Pit	SE¼SE¼ of Sect. 30, T27R08E	6 Inch Minus Streambed Material

6-3 ROCK SOURCE STATE LAND, EXISTING STOCKPILE

Rock used in accordance with the quantities on the ROCK LIST may be obtained from the following existing stockpile(s) on state land at no charge to the Purchaser. Purchaser shall not remove additional yardage without prior written approval from the Contract Administrator. Other stockpiles may not be used without prior written approval from the Contract Administrator.

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
5200 Pit	SW¼SW¼ of Sect. 5, T26R08E	4 Inch Minus
5050 Pit	SE¼NW¼ of Sect. 18, T26R08E	1 ¼" Minus, Rip Rap, Quarry Spalls, Rock Band Material

6-5 ROCK FROM COMMERCIAL SOURCE

Rock used in accordance with the quantities on the ROCK LIST may be obtained from a commercial source at the Purchaser's expense. Rock source(s) must be a WSDOT certified source.

6-12 ROCK SOURCE SPECIFICATIONS

Rock sources must be in accordance with the following specifications:

- 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.

6-20 ROCK GRADATION TYPES

Purchaser shall manufacture rock in accordance with the types and amounts listed in the CULVERT LIST. Rock must meet the following specifications for gradation and uniform quality.

6-40 ROCK BAND MATERIAL

- % Passing 18" square sieve 100%
- % Passing 12" square sieve 50% maximum
- % Passing 8" square sieve 10% maximum

Rock shall be rounded. Rock may not contain more than 5 percent organic debris and trash. All percentages are by weight.

6-43 QUARRY SPALLS

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

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

6-45 12 INCH MINUS BANKRUN STREAMBED MATERIAL

% Passing 12" square sieve	80 - 95%
% Passing 5" square sieve	70 - 90%
% Passing 2" square sieve	40 - 60%
% Passing 5/8" square sieve	15 - 35%
% Passing U.S. #4 sieve	5 - 20%
% Passing U.S. #200 sieve	5% maximum

Rock shall be rounded gravel. The portion of aggregate retained on the No. 4 sieve may not contain more than 0.2 percent organic debris and/or trash. All percentages are by weight.

6-55 ROCK APPLICATION MEASURED BY COMPACTED DEPTH

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

6-70 APPROVAL BEFORE ROCK APPLICATION

Purchaser shall obtain written approval from the Contract Administrator for drainage installation 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.

SECTION 7 – STRUCTURES

7-5 STRUCTURE DEBRIS

The Purchaser shall ensure that debris from the installation or removal of structures does not enter any stream. Components removed from the existing structures(s) shall be placed at designated site(s), as directed in writing, by the Contract Administrator. The Purchaser is responsible for maintaining a clean jobsite, with all materials stored away from any high water mark or other area presenting a risk of the materials entering a stream. Debris entering any stream shall be removed immediately, and placed in the site(s) designated for stockpiling or disposal, unless otherwise stated in the FPHP. The Purchaser is responsible for retrieving all material carried downstream from the jobsite by the stream current.

7-6 STREAM CROSSING INSTALLATION

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

7-55 LARGE CULVERT INSTALLATION

Purchaser shall provide and install large culverts in accordance with the 5200 ROAD CULVERT REPLACEMENT design.

<u>Road</u>	5200
<u>Station</u>	76+60
<u>Type</u>	Round
<u>Material and Coating Type*</u>	CMP Aluminized
<u>Span</u>	120 in.
<u>Rise</u>	120 in.
<u>Length (ft.)</u>	80 ft.
<u>Depth of Cover</u>	18 in.
<u>Material</u>	
<u>Corrugations</u>	3"x1" or 5"x1"
<u>Gauge</u>	10

* See Clause 10-15 CORRUGATED STEEL CULVERT for culvert specifications.

7-56 STEEL PIPE, PIPE ARCH, AND STRUCTURAL PLATE INSTALLATION

Purchaser shall install steel pipe in accordance with the National Corrugated Steel Pipe Association "Installation Manual for Corrugated Steel Pipe, Pipe Arches, and Structural Plate." Installation is subject to the inspection and approval of the Contract Administrator before placement and backfill. The latest edition of the NCSPIA Installation Manual can be found at www.ncspa.org.

7-57 CULVERT SHAPE CONTROL

Purchaser shall monitor the culvert shape during backfill and compaction. Special attention must be paid to maintaining the structure's rise dimensions, concentricity, and

smooth uniform curvature. If compaction methods are resulting in peaking or deflection of the culvert, Purchaser shall modify the compaction method to achieve the appropriate end result.

7-58 MATERIAL INSIDE CULVERT

Purchaser shall furnish and install 6 INCH MINUS BANKRUN STREAMBED MATERIAL and ROCK BAND MATERIAL rock inside the following culvert as specified in the 5200 Road Culvert Replacement DESIGN. Material inside culvert must meet the specifications in Clause 6-40 and 6-45 and quantities in the ROCK LIST.

<u>Road</u>	<u>Stations</u>
5200	76+60

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 nightly.

<u>Road</u>	<u>Station</u>	<u>Gate No.</u>
5000	306+00	1004

7-75 GATE MAINTENANCE

On the following road(s), gate maintenance is required. Maintenance work shall consist of gate painting. The gates shall be cleaned of all grease and oils, primed and then painted the color of Rodda Safey Yellow.

<u>Road</u>	<u>Station</u>	<u>Requirements</u>
1000 (Gate: 1001)	1+80	Paint the Gate
2000 (Gate: 1002)	0+50	Paint the Gate
5000 (Gate: 1004)	306+00	Paint the Gate

SECTION 8 – EROSION CONTROL

SUBSECTION REVEGETATION

8-15 REVEGETATION

On the following road, Purchaser shall spread grass seed and a layer of straw on all exposed soils that have potential to deliver to typed water. The straw shall be approved by the Contract Administrator. Seed shall be covered within 3 days of application.

Alternative methods of seeding and mulching must be approved in writing by the Contract Administrator.

<u>Road</u>	<u>Stations</u>	<u>Qty (lbs)</u>	<u>Type</u>
5200	76+20 to 77+00	50lbs/acre	Pasture Mix
5301	0+00 to 1+68	50lbs/acre	Pasture Mix

8-16 REVEGETATION SUPPLY

The Purchaser shall provide the Pasture Mix seed and straw.

8-17 REVEGETATION TIMING

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

SECTION 9 – POST-HAUL ROAD WORK

9-1 EARTHEN BARRICADES

Purchaser shall construct barricades in accordance with the BARRICADE DETAIL.

<u>Road</u>	<u>Stations</u>
5301	0+00

9-3 CULVERT MATERIAL REMOVED FROM STATE LAND

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

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>
5000	238+40 to 310+35	Grading with Grader
5200	0+00 to 128+50	Grading with Grader
5220	0+00 to 23+00	Grading with Grader
5222	0+00 to 10+45	Grading with Grader
5228	0+00 to 4+74	Grading with Grader
5229	0+00 to 8+68	Grading with Grader
5300	0+00 to 20+25	Grading with Grader

9-10 LANDING DRAINAGE

Purchaser shall provide for drainage of the landing surface.

9-20 ROAD ABANDONMENT

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

<u>Road</u>	<u>Stations</u>	<u>Type</u>
5301	0+00 to 1+68	Light Abandonment

9-22 LIGHT ABANDONMENT

- Construct non-drivable waterbars according to the attached NON-DRIVABLE WATERBAR DETAIL at a maximum spacing that will produce a vertical drop of no more than 10 feet between waterbars or between natural drainage paths and with a maximum spacing of 50 feet, or as marked in the field.
- Skew waterbars at least 30 degrees from perpendicular to the road centerline on roads in excess of 3 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.
- Seed and straw is per Clause 8-15 REVEGETATION.
- Block roads with earthen barricades in accordance with the attached BARRICADE DETAIL.

SECTION 10 MATERIALS

10-15 CORRUGATED STEEL CULVERT

Metallic coated steel culverts must meet AASHTO M-36 (ASTM A-760) specifications. Culverts must be aluminized (aluminum type 2 coated meeting AASHTO M-274).

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.

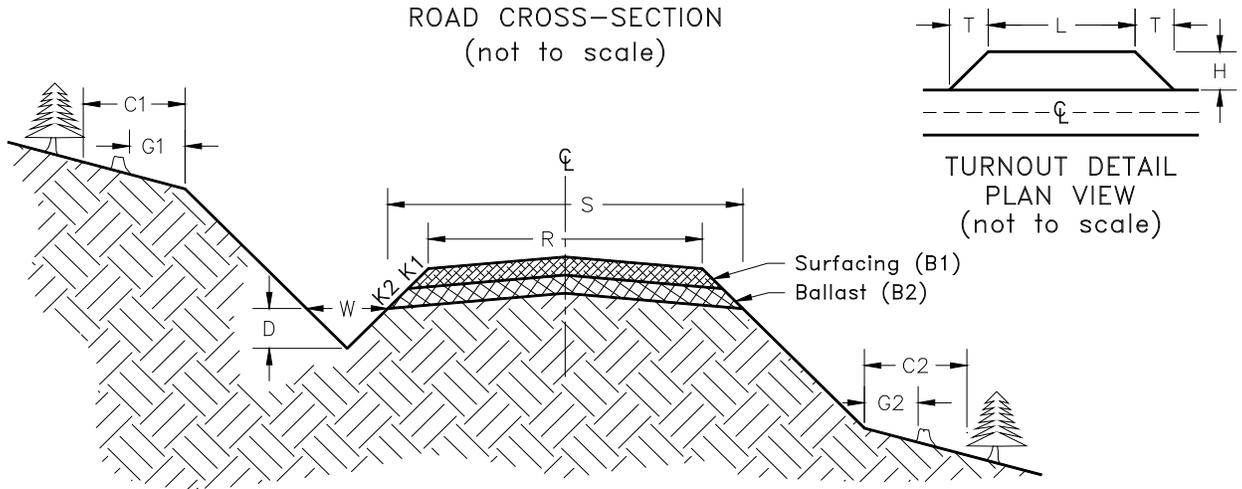
10-21 METAL BAND

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

10-22 PLASTIC BAND

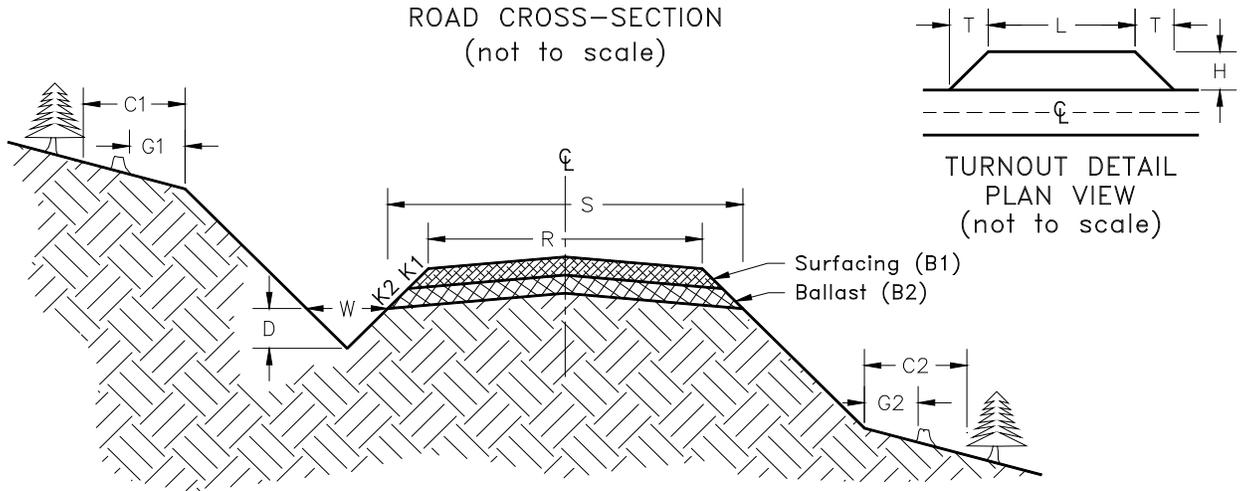
Plastic coupling and end bands shall meet the AASHTO specification designated for the culvert. Only fittings supplied or recommended by the culvert manufacturer shall be used.

TYPICAL SECTION SHEET (pg 1 of 2)



Road Number	From Station	To Station	Tolerance Class	Subgrade Width (feet)	Road Width (feet)	Ditch		Crown in. @ CL	Grubbing Limits (feet)		Clearing Limits (feet)		Cut Slope Ratio	Fill Slope Ratio
						Width (feet)	Depth (feet)		G1	G2	C1	C2		
				S	R	W	D						Clause	Clause
5000	126+30	310+35			12	3	1	4					4-5	4-6
5050	0+00	14+00			12	3	1	4					4-5	4-6
5200	0+00	76+20			12	3	1	4					4-5	4-6
5200	76+20	77+00			18	3	1	4					4-5	Slope @ 1:1
5200	77+00	121+30			12	3	1	4					4-5	4-6
5200	121+30	123+00			12	6	2	4					4-5	4-6
5200	123+00	128+50			12	3	1	4					4-5	4-6
5210	0+00	69+80			12	3	1	4					4-5	4-6
5220	0+00	23+00			12	3	1	4					4-5	4-6
5222	0+00	10+45	C	15	12	3	1	4	2	2	5	5	4-5	4-6
5228	0+00	4+74	C	15	12	3	1	4	2	2	5	5	4-5	4-6
5229	0+00	8+68	C	15	12	3	1	4	2	2	5	5	4-5	4-6
5300	0+00	20+25			12	3	1	4					4-5	4-6

TYPICAL SECTION SHEET (pg 2 of 2)



Road Number	From Station	To Station	Tolerance Class	Subgrade Width (feet)	Road Width (feet)	Ditch		Crown in. @ CL	Grubbing Limits (feet)		Clearing Limits (feet)		Cut Slope Ratio	Fill Slope Ratio
						Width (feet)	Depth (feet)		G1	G2	C1	C2		
5301	0+00	1+68	C	15	12	3	1	4	2	2	Trees marked w/ pink paint		4-5	4-6
7500	69+00	144+00			12	3	1	4					4-5	4-6
Unit 2 Spur	0+00	6+60	C		12	3	1	4	2	2	5	5	4.5	4.6

ROCK LIST

BALLAST

Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth	C.Y./ Station	# of Stations	C.Y. Subtotal	Rock Source	Turnout		
									Length	Width	Taper
			K2	B2	4 Inch-Minus						
					L	H	T				
5222	0+00	10+45	1½ : 1	12"	50	10.45	523	5200 Pit stock pile			
5228	0+00	4+74	1½ : 1	12"	50	4.74	237	5200 Pit stock pile			
5229	0+00	8+68	1½ : 1	12"	50	8.68	434	5200 Pit stock pile			
5301	0+00	1+68	1½ : 1	12"	50	1.68	84	5200 Pit stock pile			
Turnarounds							150	5200 Pit stock pile			
								Quarry Spalls			
Culvert Headwalls and Dissipaters							25	5050 Pit			
								Rock Band Material			
5200							24	5050 Pit			
								Rip-Rap			
5200	76+80	78+40					100	5050 Pit			
								6 Inch Minus Bankrun Streambed Material			
5200							92	7500 Pit			

BALLAST TOTAL _1669_ Cubic Yards

SURFACE

Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth	C.Y./ Station	# of Stations	C.Y. Total	Rock Source
			K1	B1	1 ¼ Inch Minus			
5200	0+00	17+50	1½ : 1	4"	16	17.50	280	5050 pit stock pile
5200	75+60	76+20	1½ : 1	4"	16	0.60	10	5050 pit stock pile
5200	76+20	77+00	1½ : 1	12"	72	0.80	58	5050 pit stock pile
5200	77+00	89+30	1½ : 1	4"	16	12.30	197	5050 pit stock pile

SURFACE TOTAL _545_ Cubic Yards

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

CULVERT LIST

Road Number	Location	Culvert		Length (ft)			Riprap (C.Y.)			Backfill Material*	Placement Method*	Const. Staked*	Remarks
		Dia. (in)	Type	Culvert	Downspt	Flume	Inlet	Outlet	Type				
5200	76+60	120	AS10	80			50	50	HL	SL			Type 3 Replacement
5222	8+41	18	PD	30			1	1.5	QS	NT			
5228	0+84	18	PD	30			1	1.5	QS	NT			
5228	2+22	18	PD	30			1	1.5	QS	NT			
5229	3+16	18	PD	30			1	1.5	QS	NT			
As		18	PD	30			1	1.5	QS	NT			Contingency
Directed		18	PD	30			1	1.5	QS	NT			Contingency
By C.A.		18	Poly	Band									Contingency

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

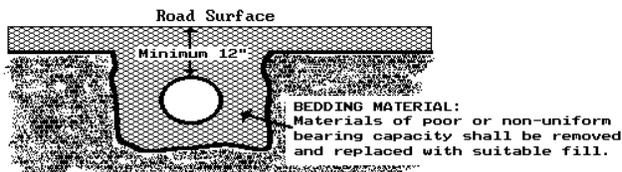
AS10 = Aluminized Steel AASHTO No. M274, 10 Gauge

TEMP = Temporary Culvert

Key:

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

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



TURNOUT & TURNAROUND LIST

Road Number	Begin L- Station	End L- Station	Turnout Width (H)	Full Width Length (L)	Taper Length (T)	Comments
5222	10+00	10+45	30'	30'	15'	Turnaround Right
5228	4+29	4+74	30'	30'	15'	Turnaround Right
5229	8+23	8+68	30'	30'	15'	Turnaround Right

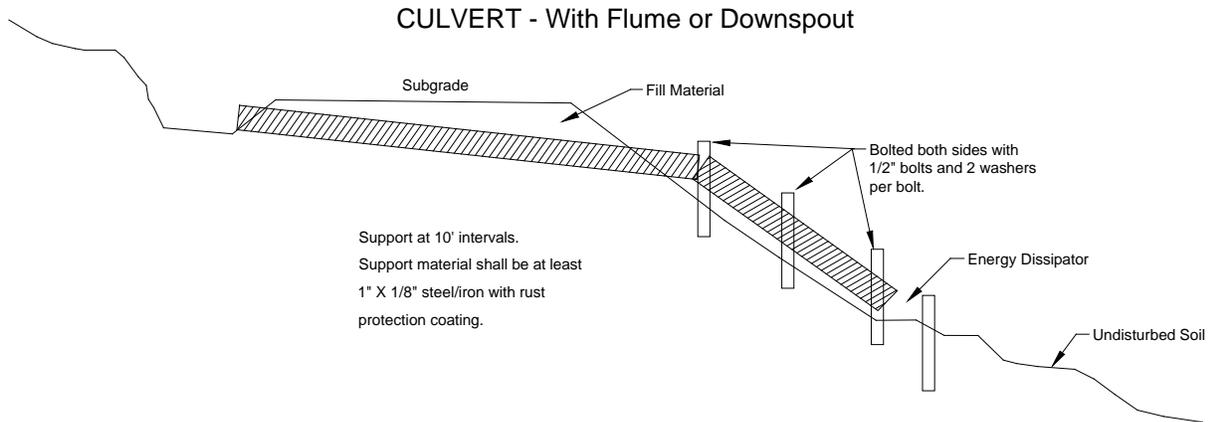
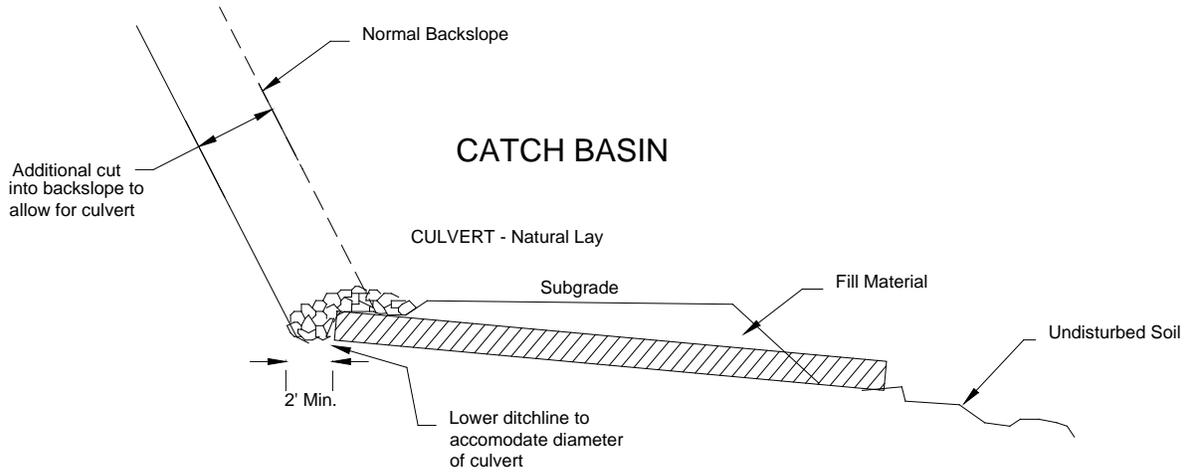
*See Typical Section Sheet for Turnout Detail

COMPACTION LIST

Road	From Station	To Station	Type	Max Depth Per Lift (inches)	Equipment Type	Equipment Weight (lbs)	Minimum Number of Passes	Maximum Operating Speed (mph)
5222	0+00	10+45	Subgrade, Surfacing	- 8"	Smooth Drum Vibratory Roller	14,000	2 low freq. vibe on	3.5
5228	55+50	4+74	Pre-haul Culvert Install, Surfacing	8"	Smooth Drum Vibratory Roller	14,000	2 low freq. vibe on	3.5
5229	0+00	8+68	Pre-haul Culvert Install, Surfacing	8"	Smooth Drum Vibratory Roller	14,000	2 low freq. vibe on	3.5
5200	0+00	17+50	Surfacing	4"	Smooth Drum Vibratory Roller	14,000	2 low freq. vibe on	3.5
5200	75+60	89+60	Surfacing	4"	Smooth Drum Vibratory Roller	14,000	2 low freq. vibe on	3.5

CULVERT AND DRAINAGE SPECIFICATION DETAIL

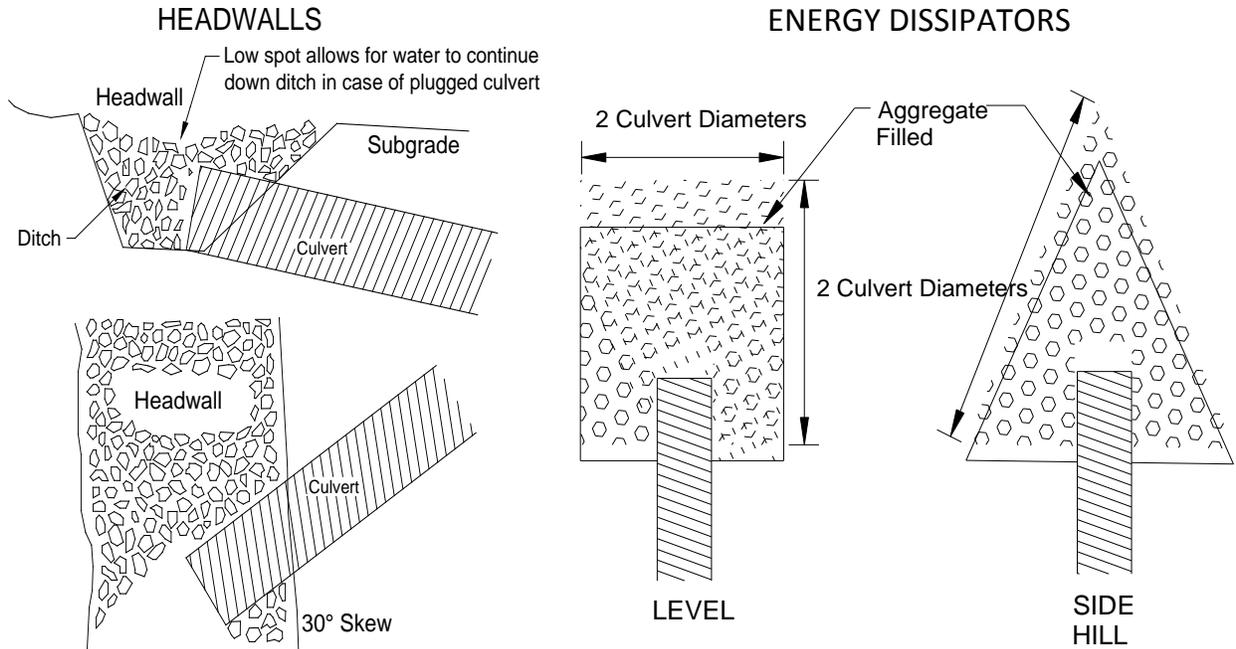
(Page 1 of 3)



CULVERT AND DRAINAGE SPECIFICATION DETAIL

(Page 2 of 3)

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



Headwalls to be constructed of material that will resist erosion.

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

CULVERT AND DRAINAGE SPECIFICATION DETAIL

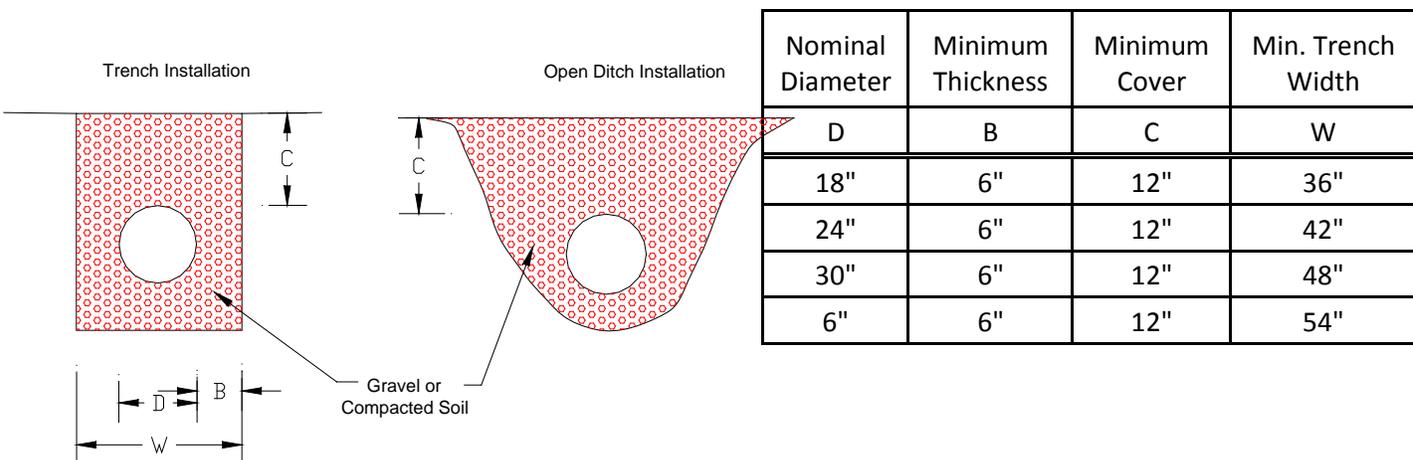
(Page 3 of 3)

POLYETHYLENE PIPE INSTALLATION

INSTALLATION REQUIREMENTS:

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

MINIMUM DIMENSIONS Trench or Open Ditch Installation



FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

Page 1 of 2

Cuts and Fills

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

Surface

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

Drainage

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

FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS
Page 2 of 2

Preventative Maintenance

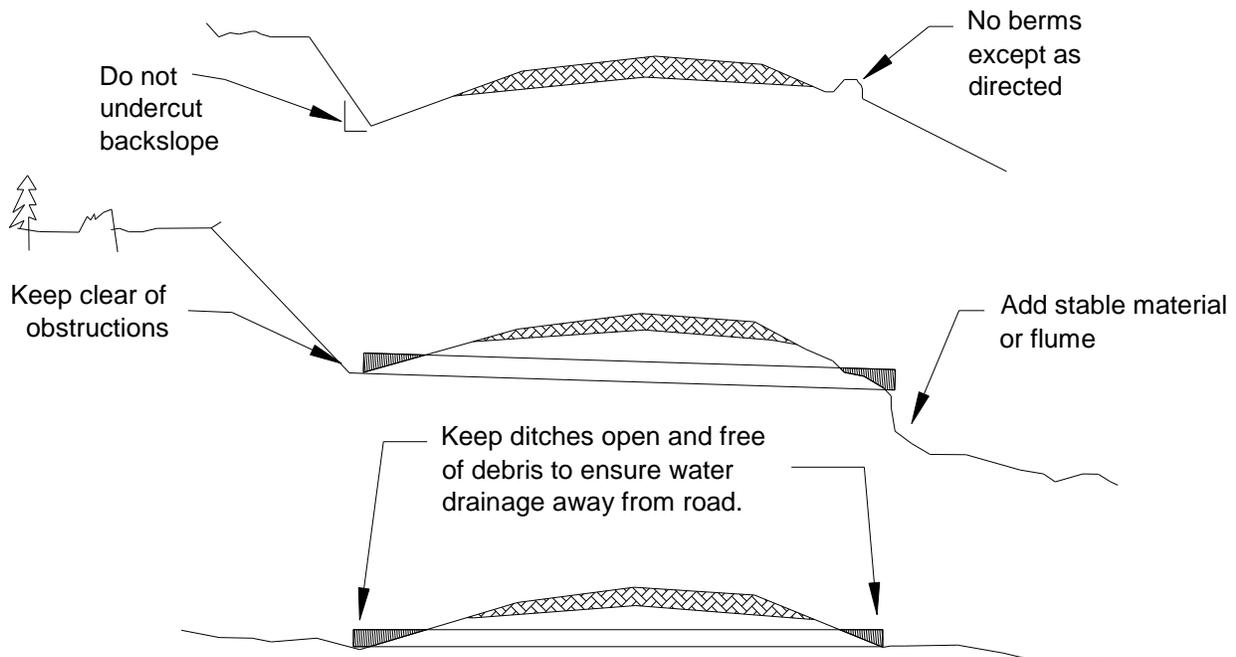
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

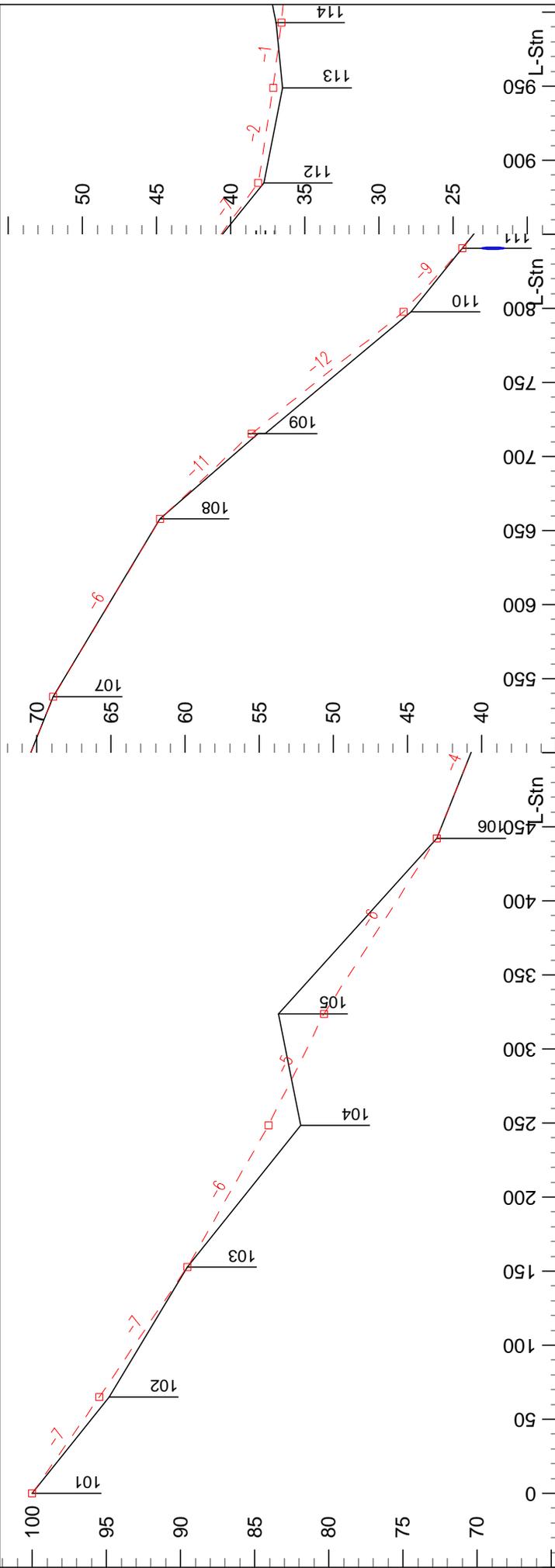
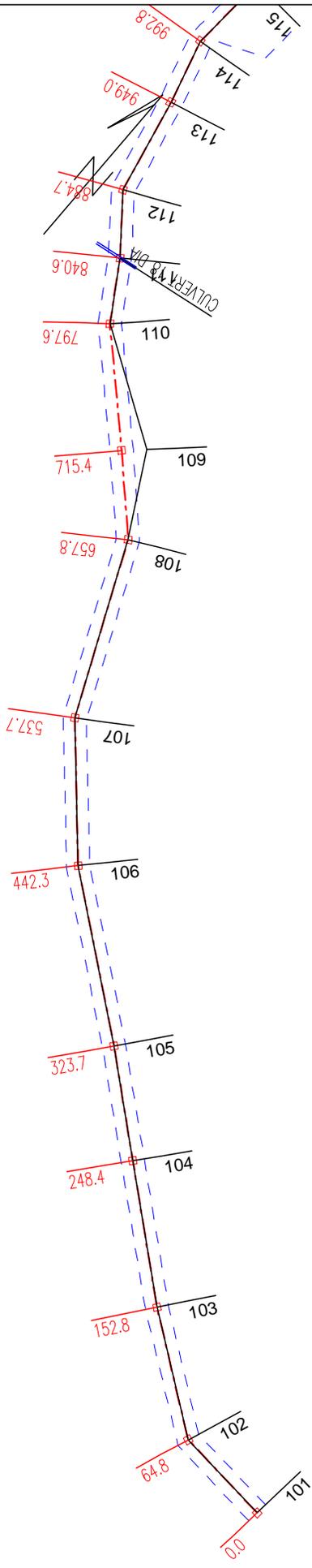
Termination of Use or End of Season

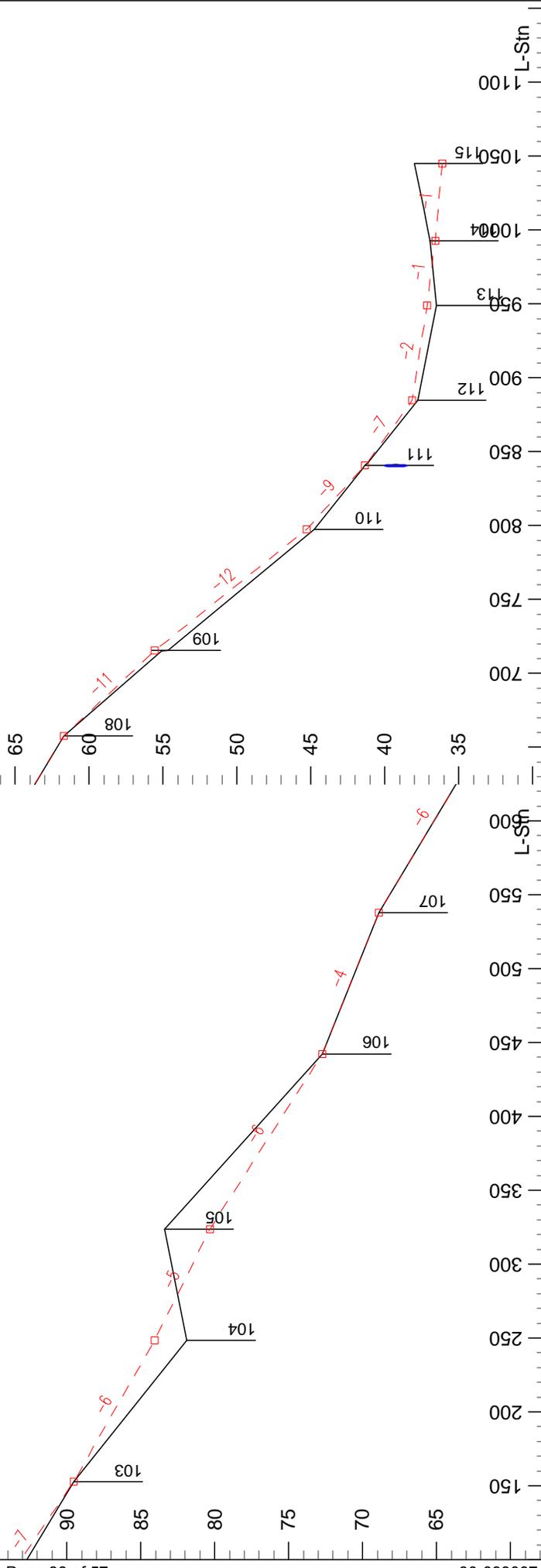
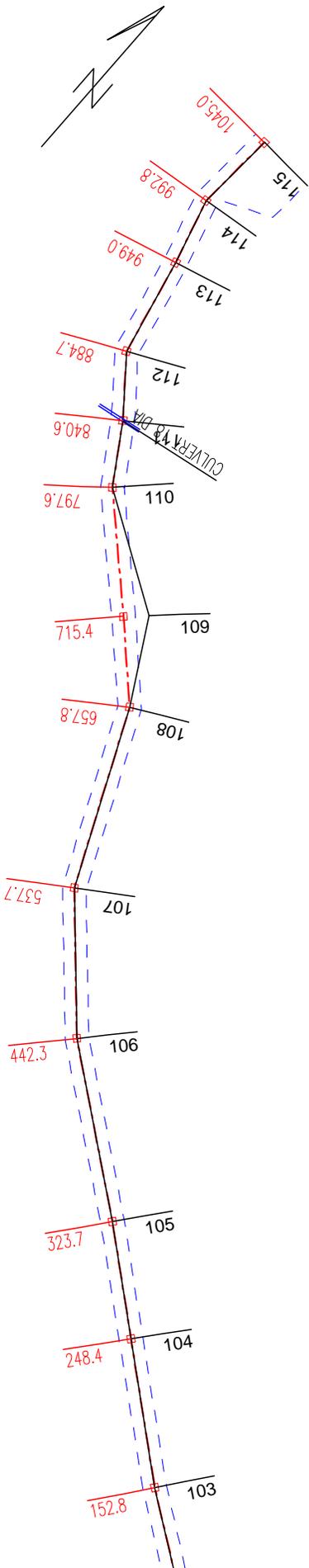
- At the conclusion of logging operations, ensure all conditions of these specifications have been met.

Debris

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





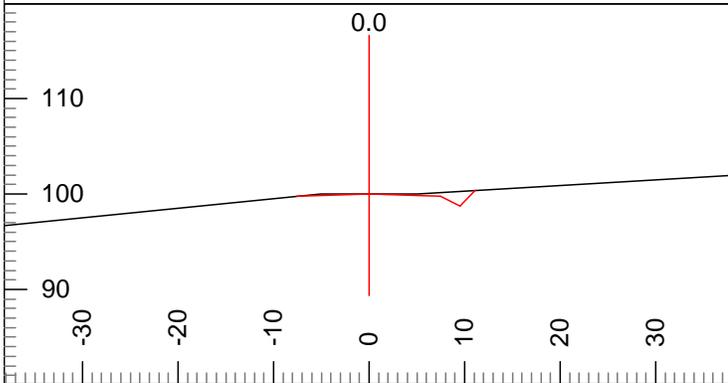


Kerswop Timber Sale
 5222 RD
 Contract #: 30-093067

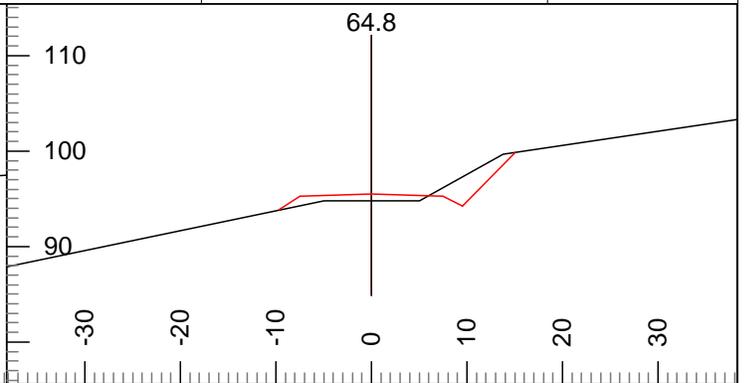
Washington State Department of Natural Resources
 South Puget Sound Region

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

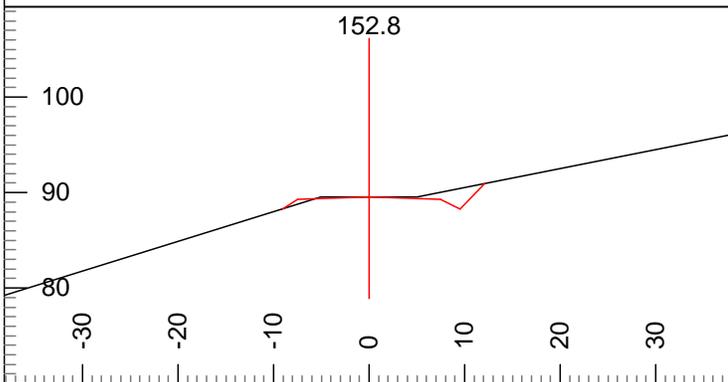
Engineer: J. Gardner
 16/04/26



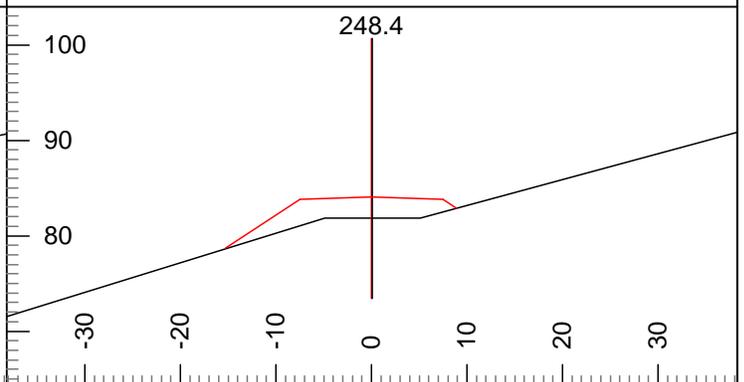
P-Stn: 0.0 V.Offset: 0.0 Cut Dp: 0.0
 L-Stn: 0.0 H. Offset: 0.0 Index: 101



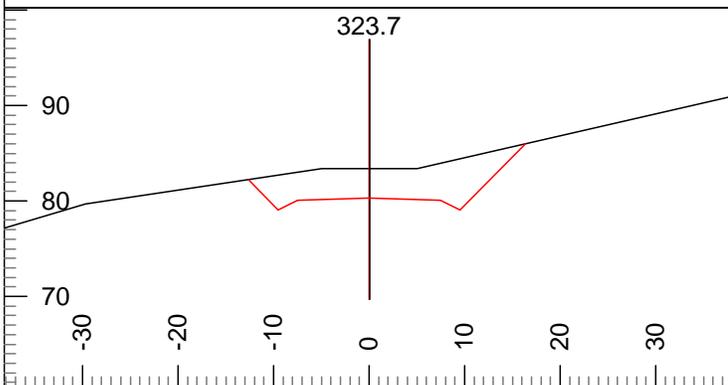
P-Stn: 64.8 V.Offset: 0.7 Cut Dp: -0.7
 L-Stn: 64.8 H. Offset: 0.0 Index: 102



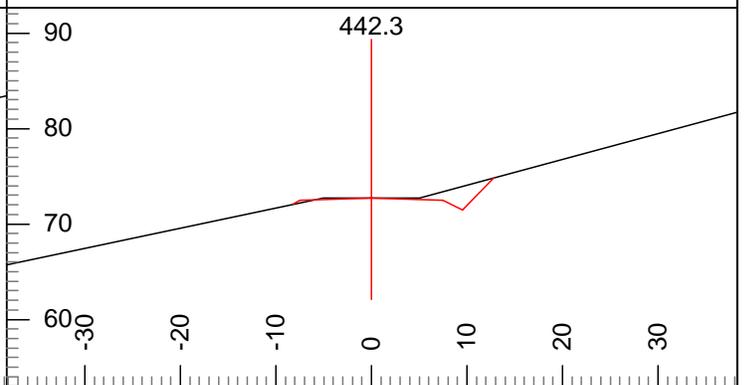
P-Stn: 152.7 V.Offset: 0.0 Cut Dp: 0.0
 L-Stn: 152.8 H. Offset: 0.0 Index: 103



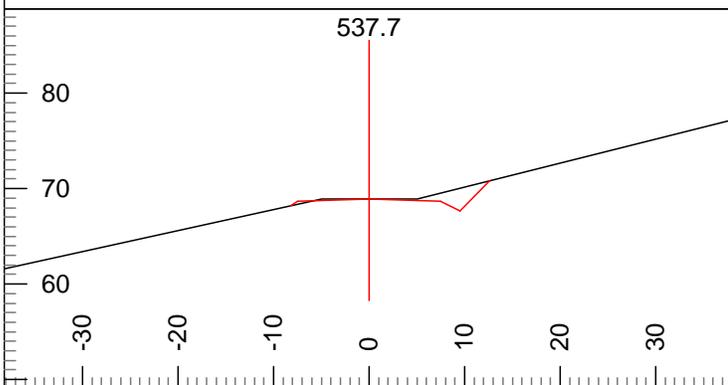
P-Stn: 248.4 V.Offset: 2.2 Cut Dp: -2.2
 L-Stn: 248.4 H. Offset: -0.1 Index: 104



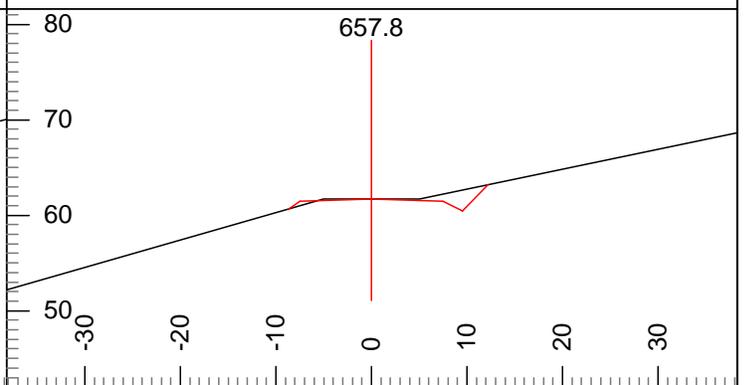
P-Stn: 323.7 V.Offset: -3.1 Cut Dp: 3.1
 L-Stn: 323.7 H. Offset: -0.1 Index: 105



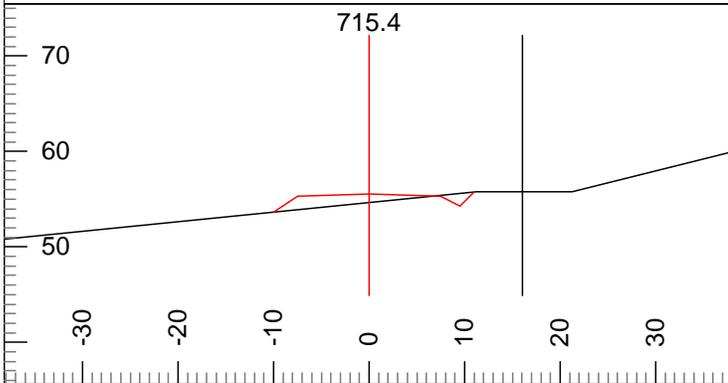
P-Stn: 442.2 V.Offset: 0.0 Cut Dp: 0.0
 L-Stn: 442.3 H. Offset: 0.0 Index: 106



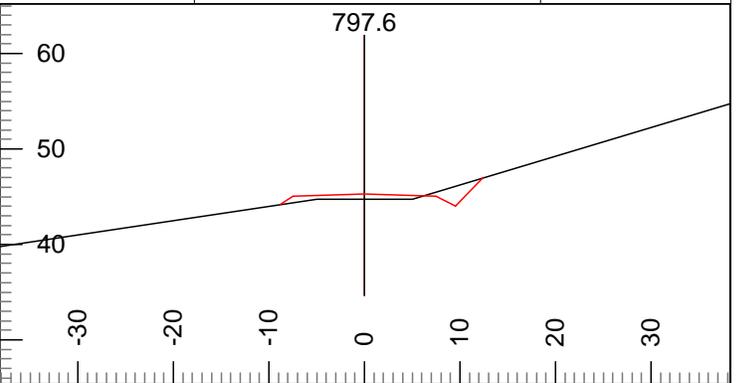
P-Stn: 537.7 V.Offset: 0.0 Cut Dp: 0.0
 L-Stn: 537.7 H. Offset: 0.0 Index: 107



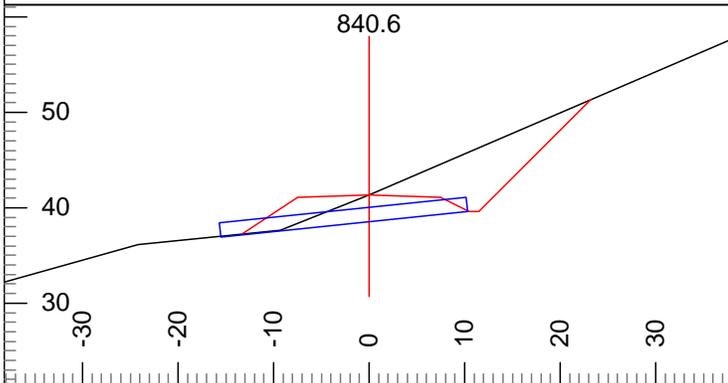
P-Stn: 657.7 V.Offset: 0.0 Cut Dp: 0.0
 L-Stn: 657.8 H. Offset: 0.0 Index: 108



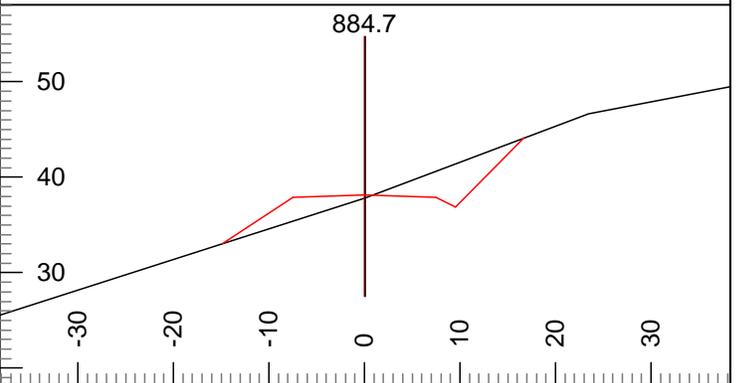
P-Stn: 717.1 V.Offset: -0.2 Cut Dp: -0.9
 L-Stn: 715.4 H. Offset: -16.2 Index: 109



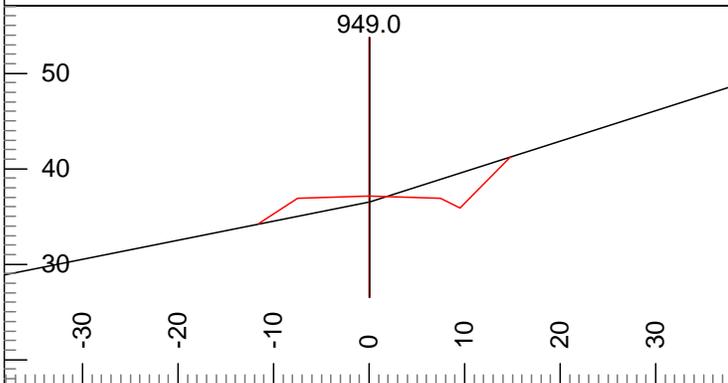
P-Stn: 801.7 V.Offset: 0.5 Cut Dp: -0.5
 L-Stn: 797.6 H. Offset: 0.0 Index: 110



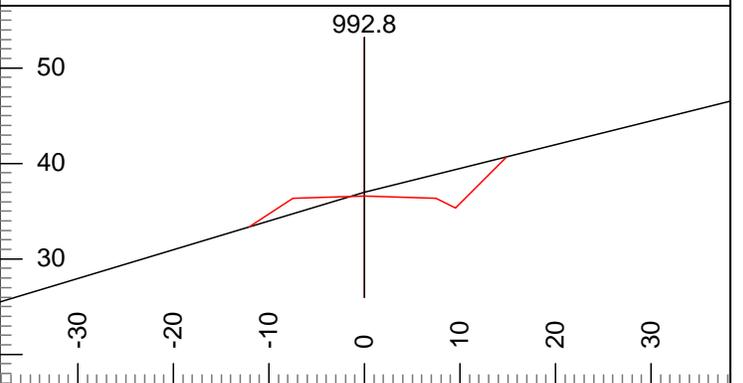
P-Stn: 844.7 V.Offset: 0.0 Cut Dp: 0.0
 L-Stn: 840.6 H. Offset: 0.0 Index: 111



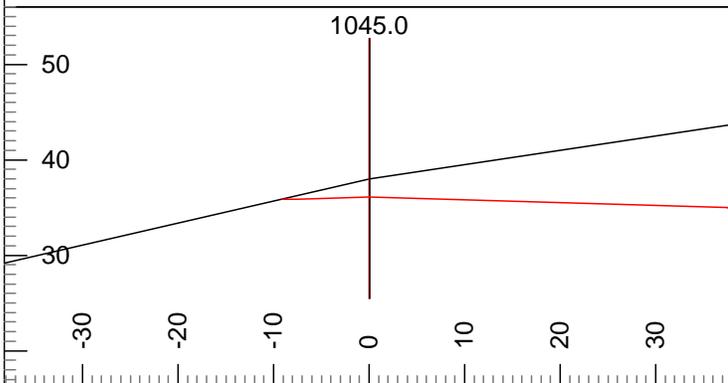
P-Stn: 888.8 V.Offset: 0.3 Cut Dp: -0.4
 L-Stn: 884.7 H. Offset: -0.1 Index: 112



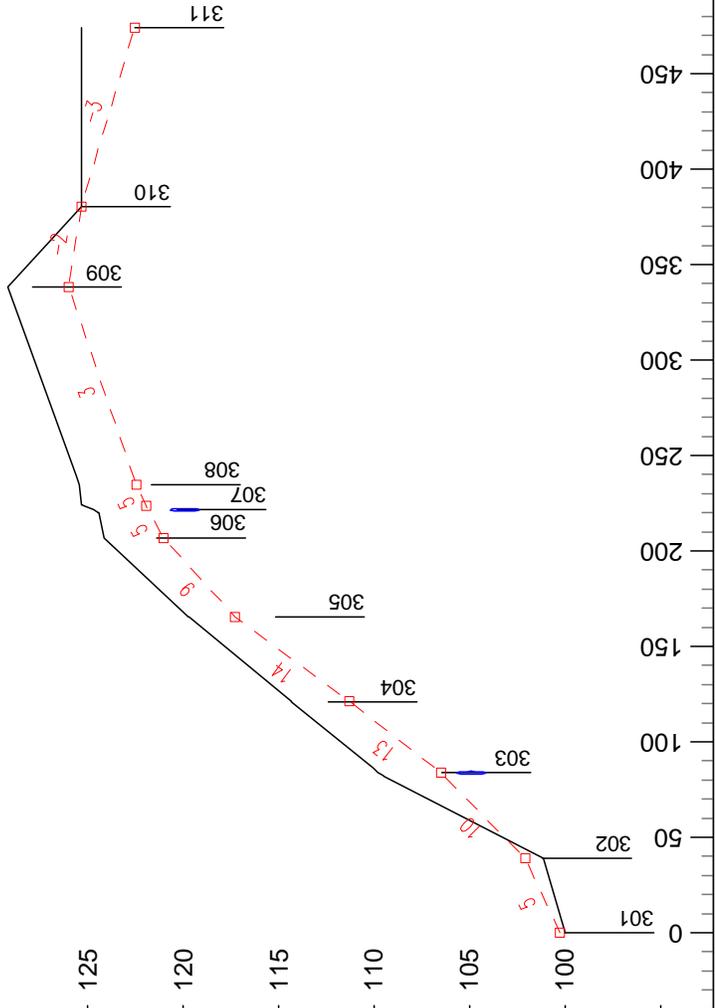
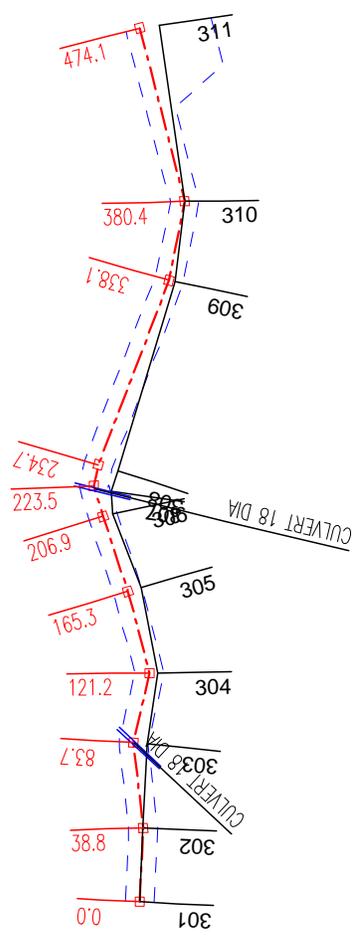
P-Stn: 953.0 V.Offset: 0.6 Cut Dp: -0.6
 L-Stn: 949.0 H. Offset: -0.1 Index: 113



P-Stn: 996.8 V.Offset: -0.4 Cut Dp: 0.4
 L-Stn: 992.8 H. Offset: 0.0 Index: 114



P-Stn: 1049.0 V.Offset: -1.9 Cut Dp: 1.9
 L-Stn: 1045.0 H. Offset: -0.1 Index: 115



L-Stn
950
900
850
800
750
700
650
600
550
500
450
400
350
300
250
200
150
100
50
0

Engineer: J. Gardner

16/04/26

Page 1 of 1

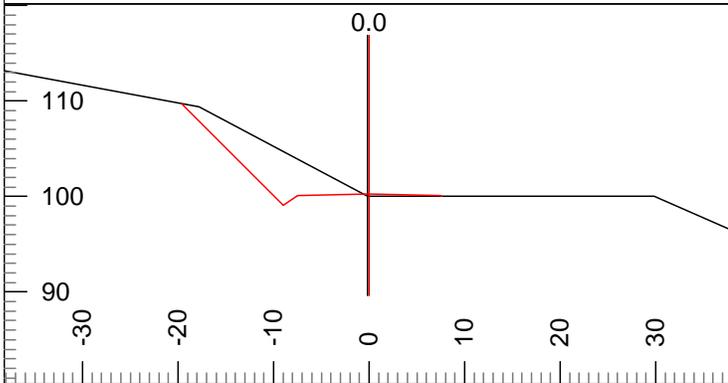
Plan Scale 1:1200

Profile Vert Scale 1:120

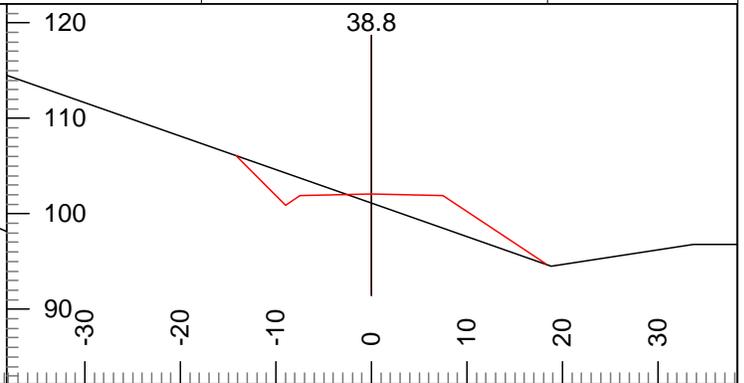
Profile Horz Scale 1:1200

Washington State Department of Natural Resources
South Puget Sound Region

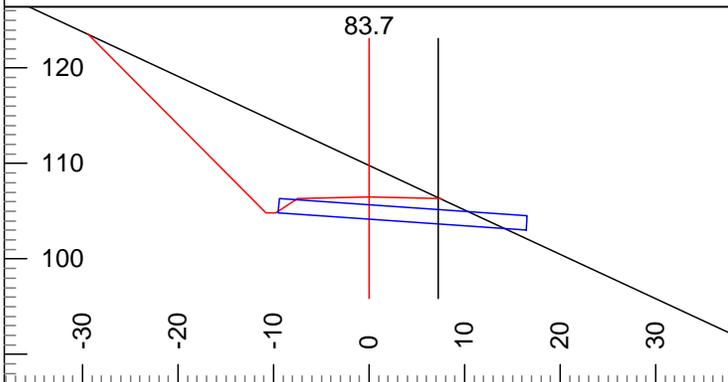
Kerswop Timber Sale
5228 RD
Contract #: 30-093067



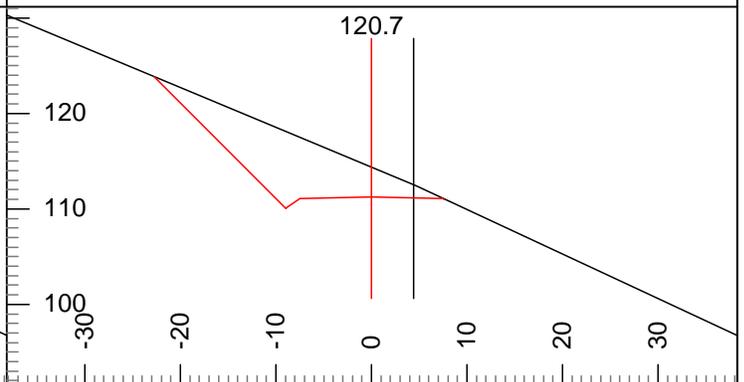
P-Stn: 0.0 V.Offset: 0.3 Cut Dp: -0.3
 L-Stn: 0.0 H. Offset: 0.1 Index: 301



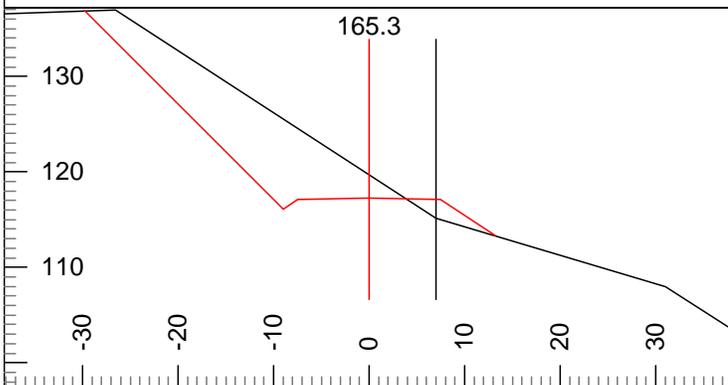
P-Stn: 38.8 V.Offset: 0.9 Cut Dp: -0.9
 L-Stn: 38.8 H. Offset: 0.0 Index: 302



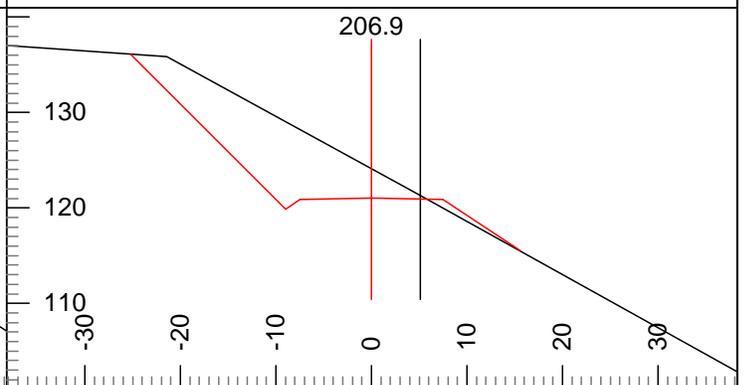
P-Stn: 82.8 V.Offset: 0.0 Cut Dp: 3.3
 L-Stn: 83.7 H. Offset: -7.2 Index: 303



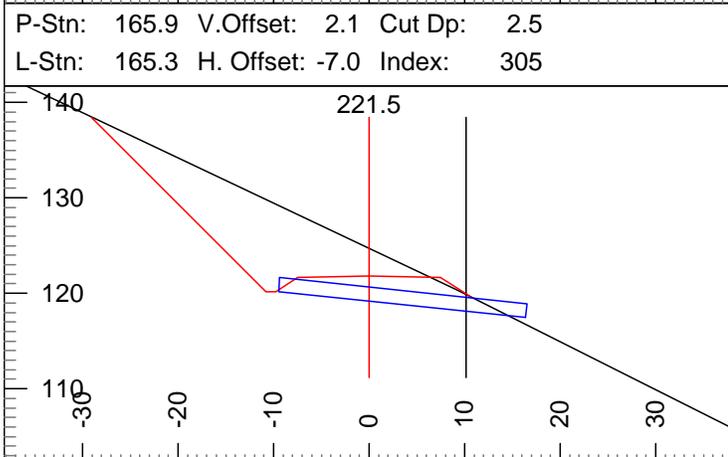
P-Stn: 120.1 V.Offset: -1.2 Cut Dp: 3.1
 L-Stn: 120.7 H. Offset: -4.5 Index: 304



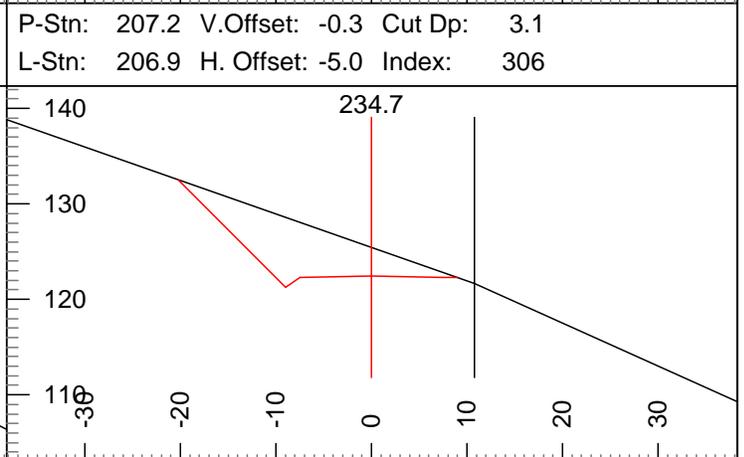
P-Stn: 165.9 V.Offset: 2.1 Cut Dp: 2.5
 L-Stn: 165.3 H. Offset: -7.0 Index: 305



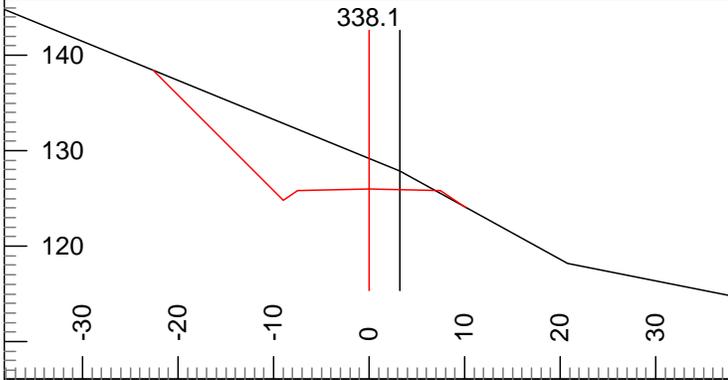
P-Stn: 207.2 V.Offset: -0.3 Cut Dp: 3.1
 L-Stn: 206.9 H. Offset: -5.0 Index: 306



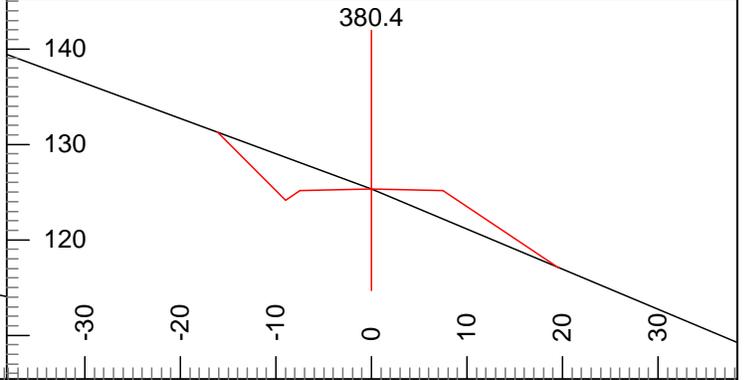
P-Stn: 219.1 V.Offset: 1.5 Cut Dp: 2.9
 L-Stn: 221.5 H. Offset: -8.4 Index: 307



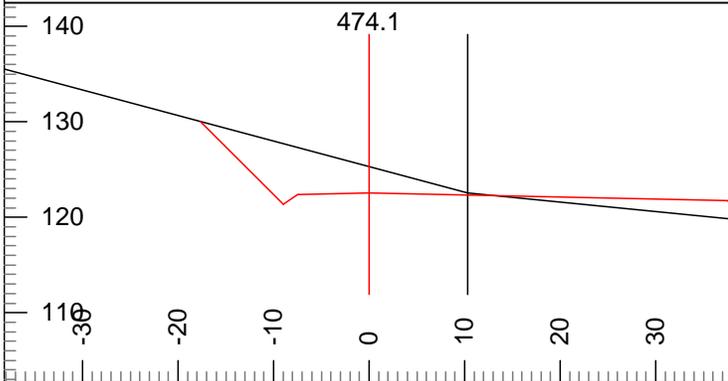
P-Stn: 230.4 V.Offset: 0.8 Cut Dp: 3.0
 L-Stn: 234.7 H. Offset: -10.8 Index: 308



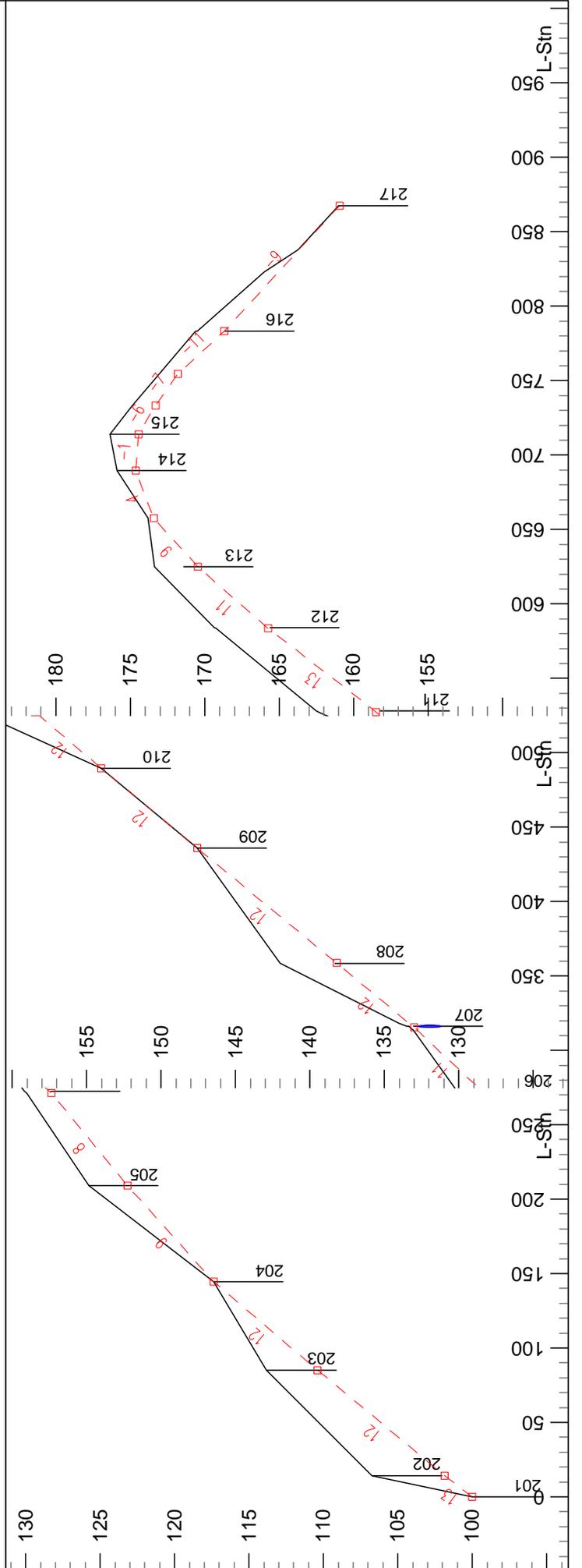
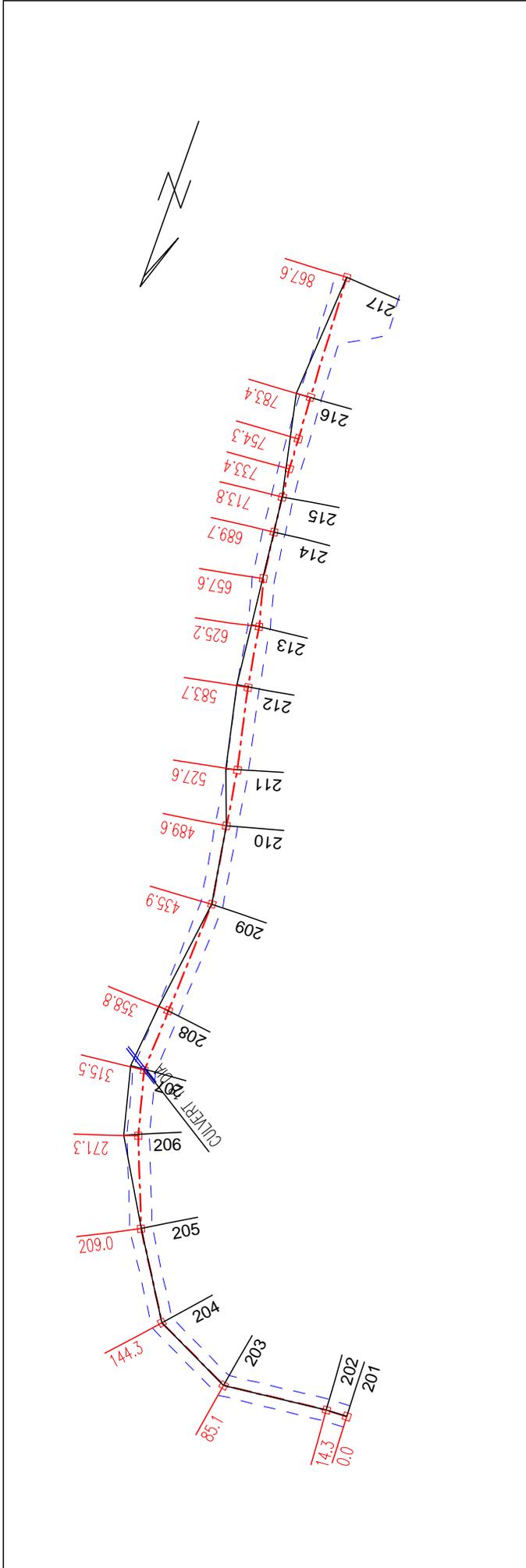
P-Stn: 334.0 V.Offset: -1.9 Cut Dp: 3.2
L-Stn: 338.1 H. Offset: -3.2 Index: 309



P-Stn: 376.5 V.Offset: 0.0 Cut Dp: 0.0
L-Stn: 380.4 H. Offset: 0.0 Index: 310



P-Stn: 469.6 V.Offset: 0.0 Cut Dp: 2.8
L-Stn: 474.1 H. Offset: -10.3 Index: 311

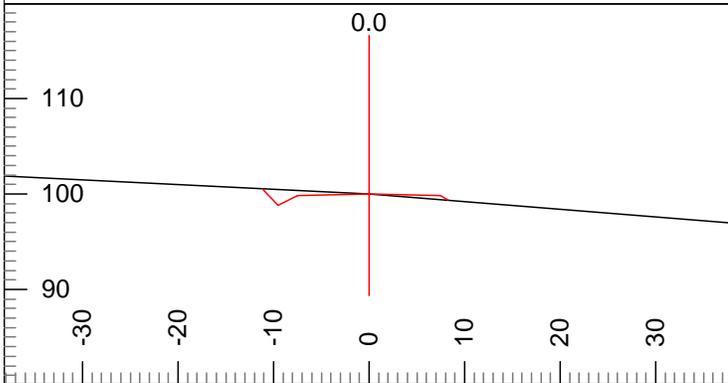


Kerswop Timber Sale
 5229 RD
 Contract #: 30-093067

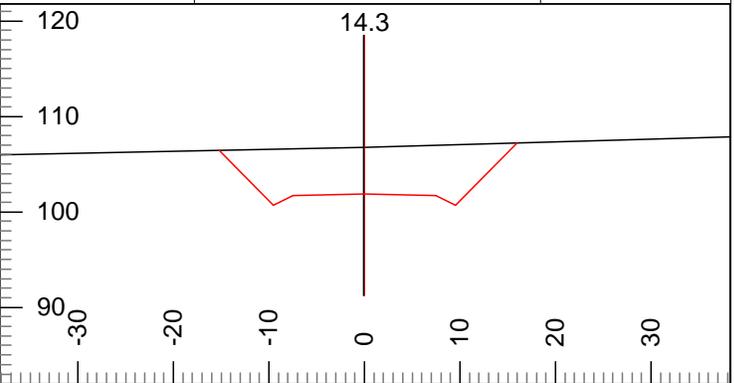
Washington State Department of Natural Resources
 South Puget Sound Region

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

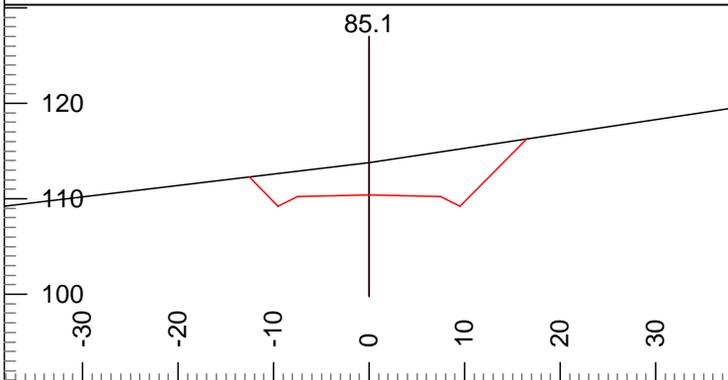
Engineer: J. Gardner
 16/04/26
 Page 1 of 1



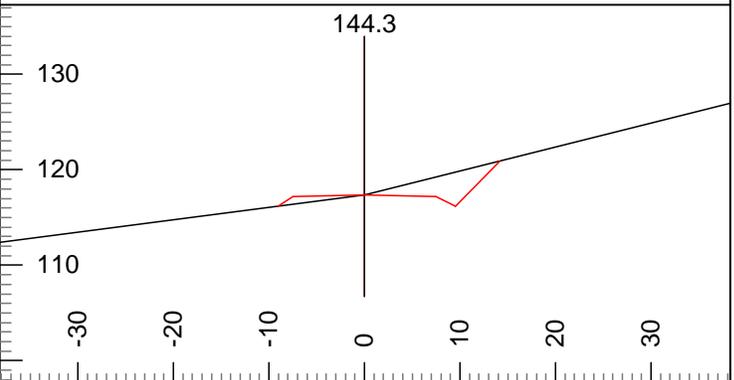
P-Stn: 0.0 V.Offset: 0.0 Cut Dp: 0.0
 L-Stn: 0.0 H. Offset: 0.0 Index: 201



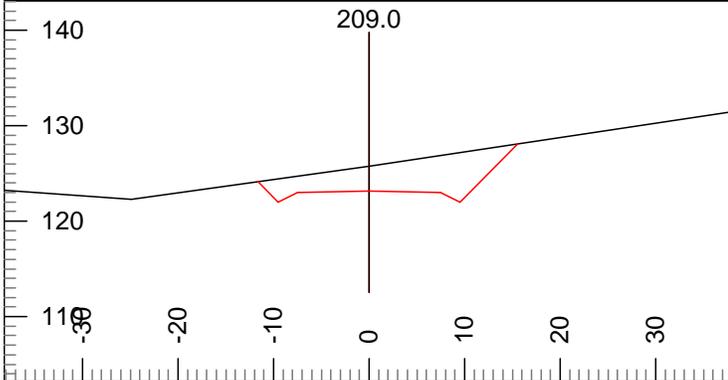
P-Stn: 14.3 V.Offset: -4.9 Cut Dp: 4.9
 L-Stn: 14.3 H. Offset: 0.0 Index: 202



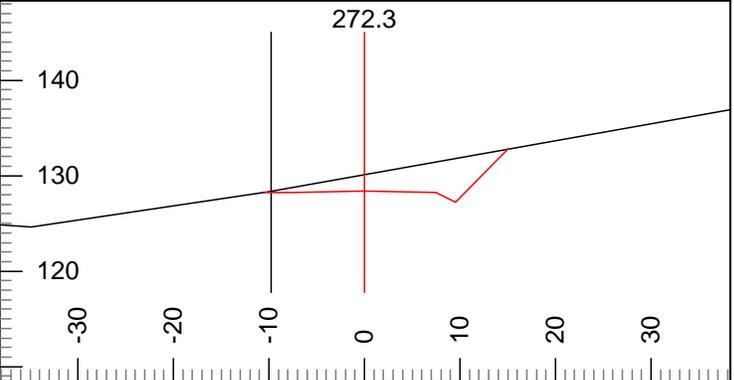
P-Stn: 85.1 V.Offset: -3.4 Cut Dp: 3.4
 L-Stn: 85.1 H. Offset: 0.0 Index: 203



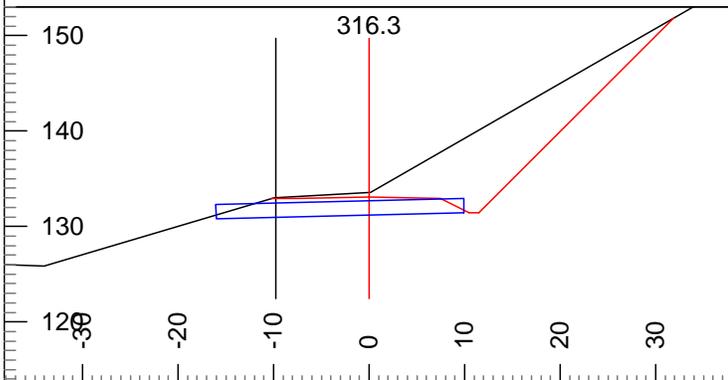
P-Stn: 144.3 V.Offset: 0.0 Cut Dp: 0.0
 L-Stn: 144.3 H. Offset: 0.0 Index: 204



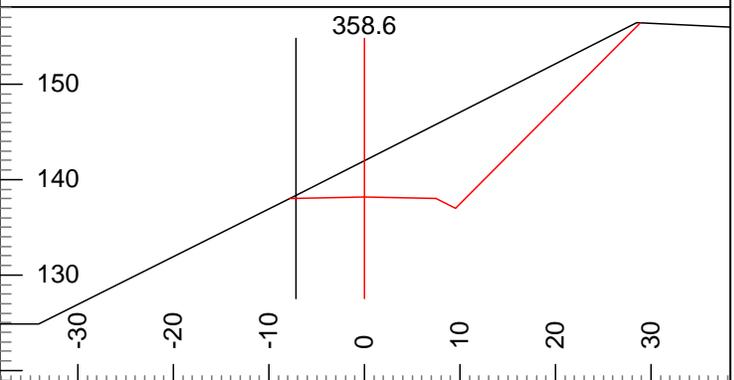
P-Stn: 209.0 V.Offset: -2.6 Cut Dp: 2.6
 L-Stn: 209.0 H. Offset: 0.0 Index: 205



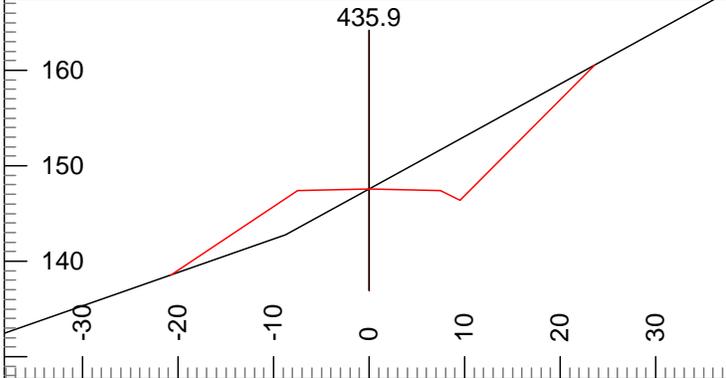
P-Stn: 272.9 V.Offset: 0.1 Cut Dp: 1.7
 L-Stn: 272.3 H. Offset: 9.9 Index: 206



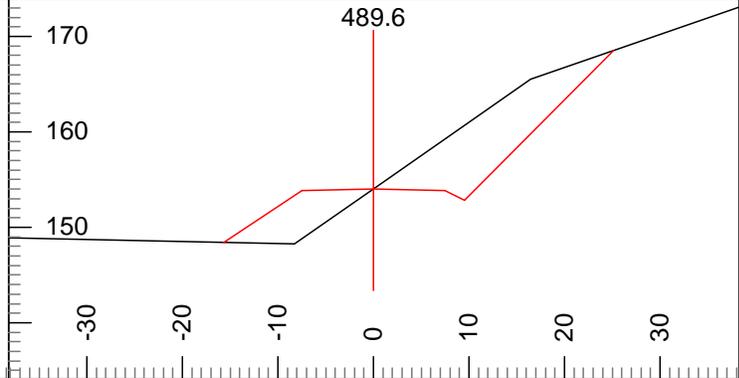
P-Stn: 320.0 V.Offset: 0.1 Cut Dp: 0.4
 L-Stn: 316.3 H. Offset: 9.9 Index: 207



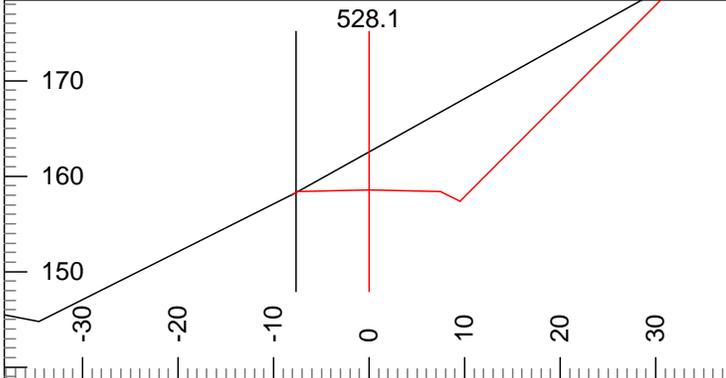
P-Stn: 364.0 V.Offset: -0.1 Cut Dp: 3.8
 L-Stn: 358.6 H. Offset: 7.2 Index: 208



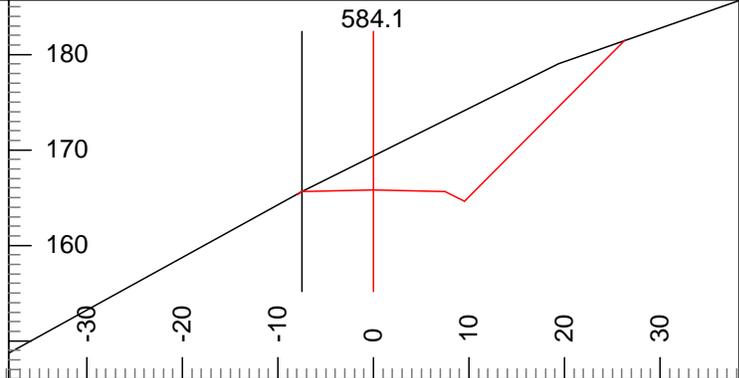
P-Stn: 441.1 V.Offset: 0.0 Cut Dp: 0.0
 L-Stn: 435.9 H. Offset: 0.0 Index: 209



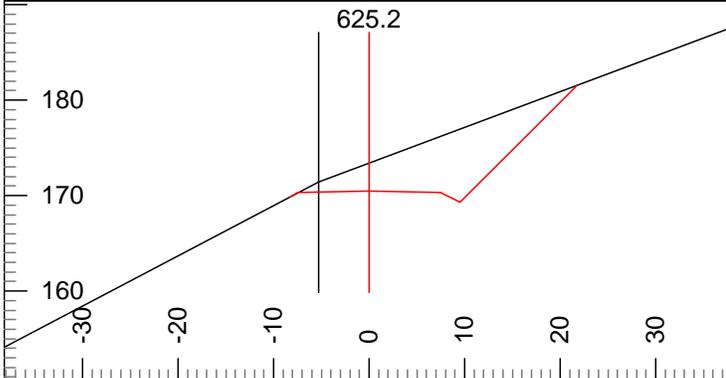
P-Stn: 494.9 V.Offset: 0.0 Cut Dp: 0.0
 L-Stn: 489.6 H. Offset: 0.0 Index: 210



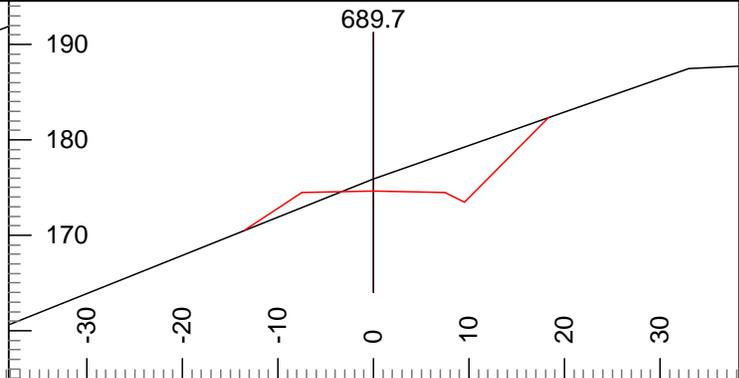
P-Stn: 533.1 V.Offset: 0.3 Cut Dp: 4.0
 L-Stn: 528.1 H. Offset: 7.7 Index: 211



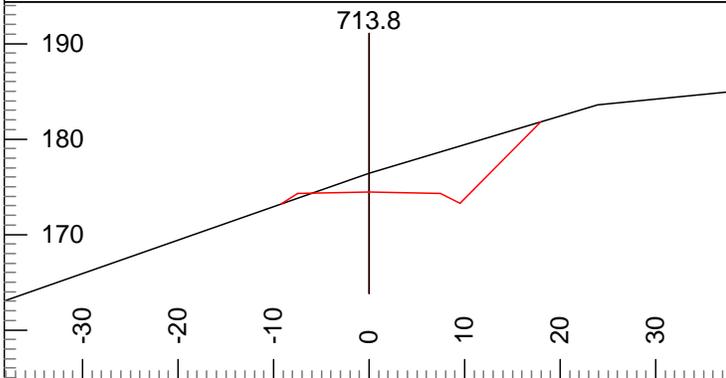
P-Stn: 590.0 V.Offset: 0.2 Cut Dp: 3.5
 L-Stn: 584.1 H. Offset: 7.5 Index: 212



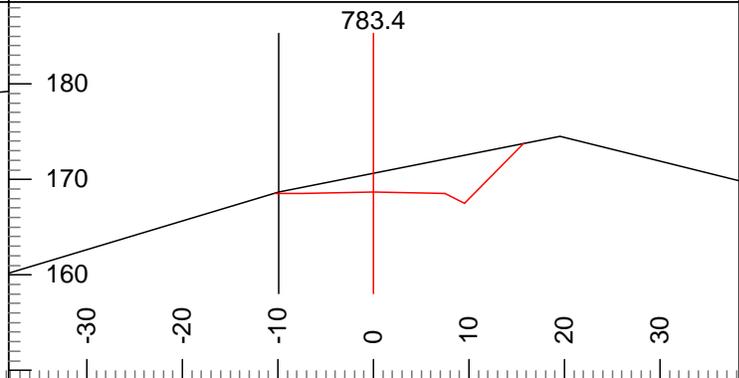
P-Stn: 631.4 V.Offset: -0.9 Cut Dp: 2.9
 L-Stn: 625.2 H. Offset: 5.2 Index: 213



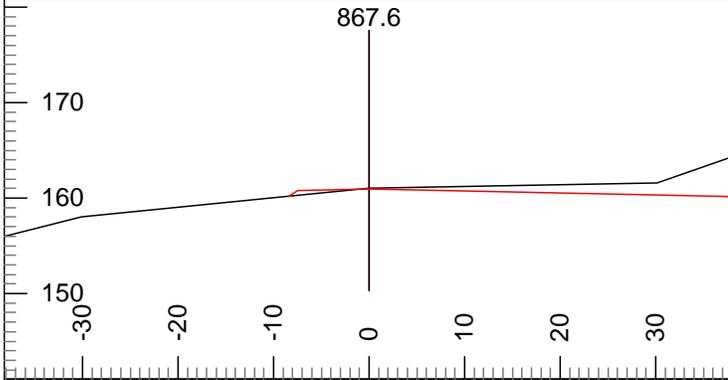
P-Stn: 695.6 V.Offset: -1.3 Cut Dp: 1.3
 L-Stn: 689.7 H. Offset: 0.0 Index: 214



P-Stn: 719.7 V.Offset: -1.9 Cut Dp: 1.9
 L-Stn: 713.8 H. Offset: 0.0 Index: 215

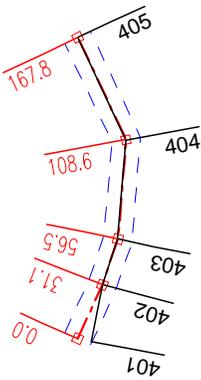
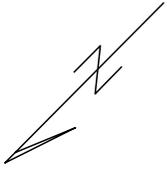


P-Stn: 790.0 V.Offset: 0.0 Cut Dp: 2.0
 L-Stn: 783.4 H. Offset: 9.9 Index: 216



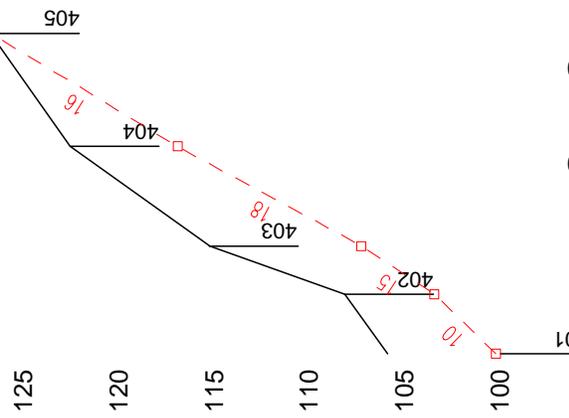
P-Stn: 875.0 V.Offset: 0.0 Cut Dp: 0.0

L-Stn: 867.6 H. Offset: 0.0 Index: 217



09/15/2016

Page 48 of 57



30-093067



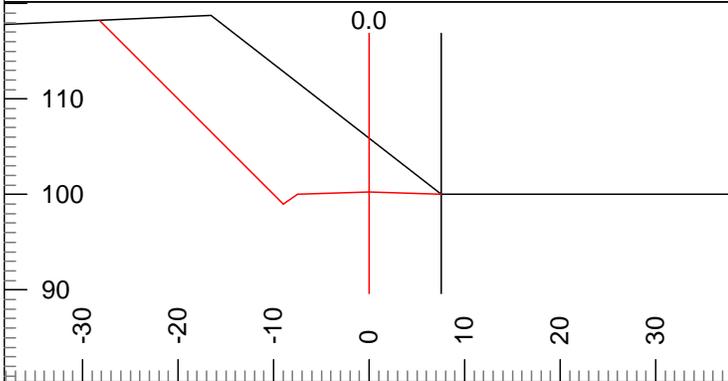
Kerswop Timber Sale
5301 RD
Contract #: 30-093067

Washington State Department of Natural Resources
South Puget Sound Region

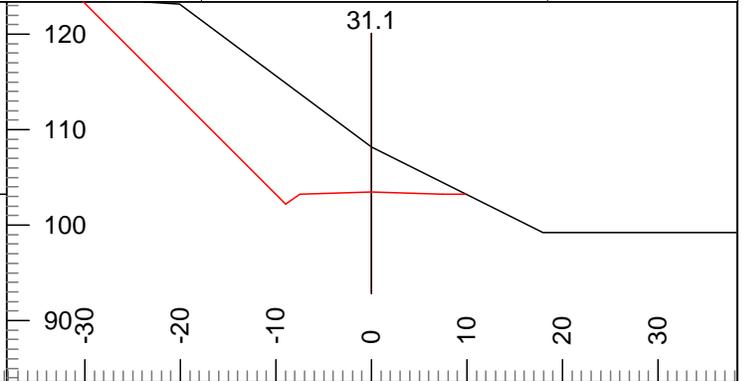
Plan Scale 1:1200
Profile Vert Scale 1:120
Profile Horz Scale 1:1200

Engineer: J. Gardner
16/04/26

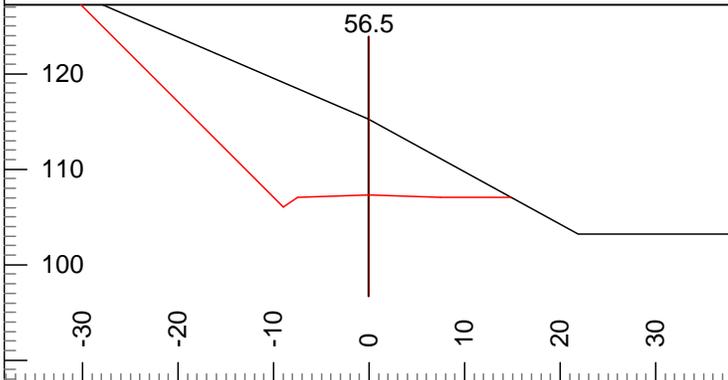
Page 1 of 1



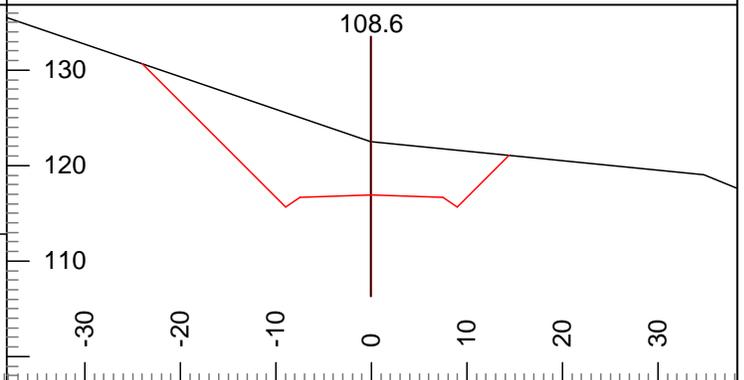
P-Stn: 0.0 V.Offset: 0.3 Cut Dp: 5.6
 L-Stn: 0.0 H. Offset: -7.4 Index: 401



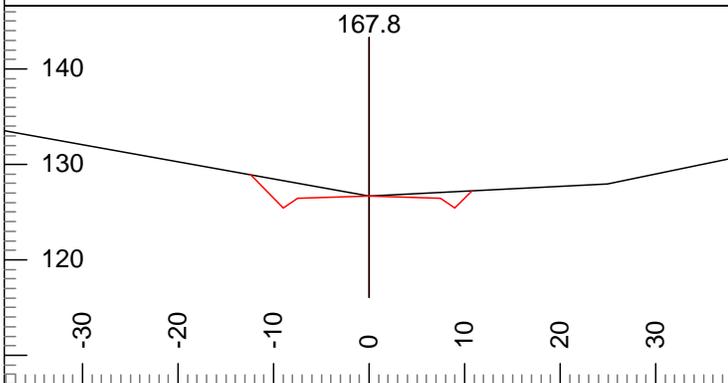
P-Stn: 30.2 V.Offset: -4.7 Cut Dp: 4.7
 L-Stn: 31.1 H. Offset: 0.0 Index: 402



P-Stn: 55.5 V.Offset: -8.0 Cut Dp: 7.9
 L-Stn: 56.5 H. Offset: 0.0 Index: 403



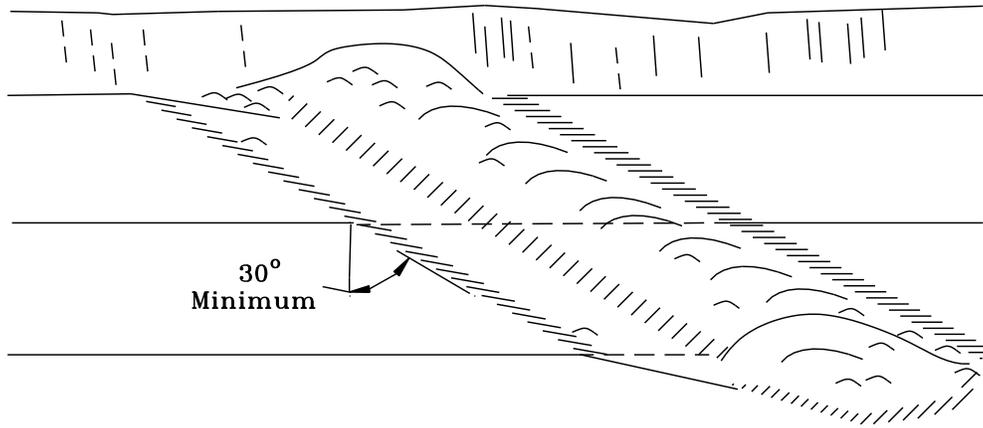
P-Stn: 107.6 V.Offset: -5.6 Cut Dp: 5.6
 L-Stn: 108.6 H. Offset: 0.1 Index: 404



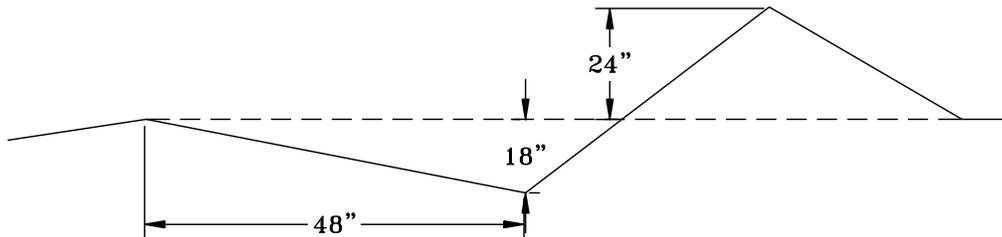
P-Stn: 166.9 V.Offset: 0.0 Cut Dp: 0.0
 L-Stn: 167.8 H. Offset: 0.0 Index: 405

Non-Drivable Water Bar Detail

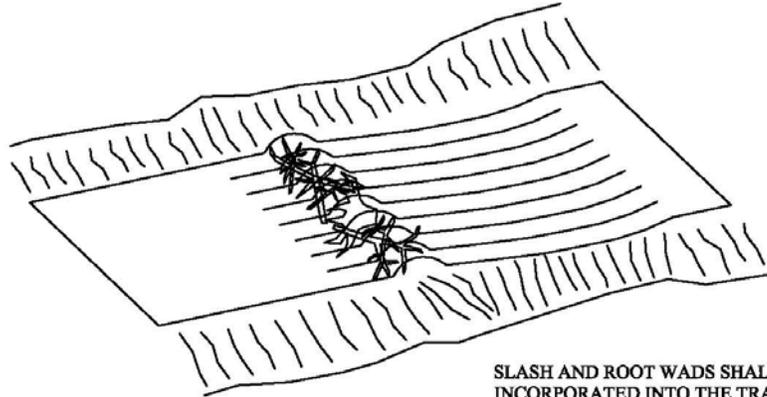
Cross Ditch



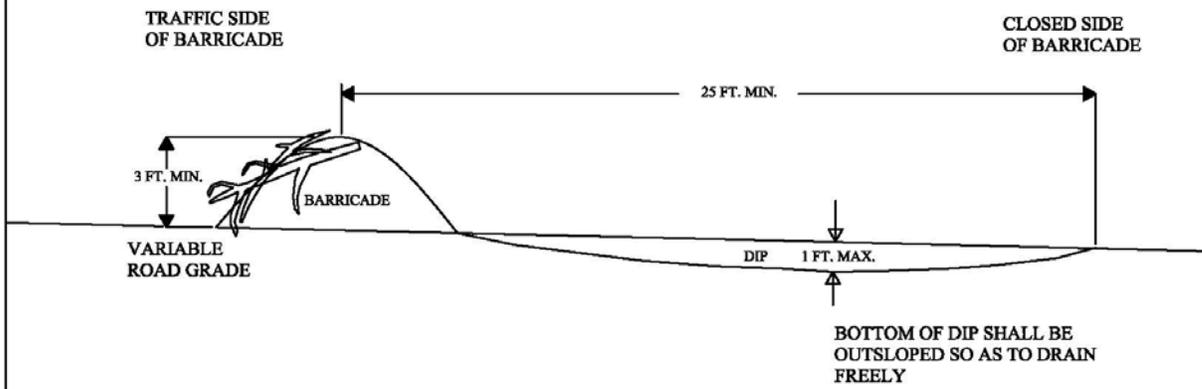
Cross Section at Centerline



BARRICADE DETAIL



PLAN VIEW

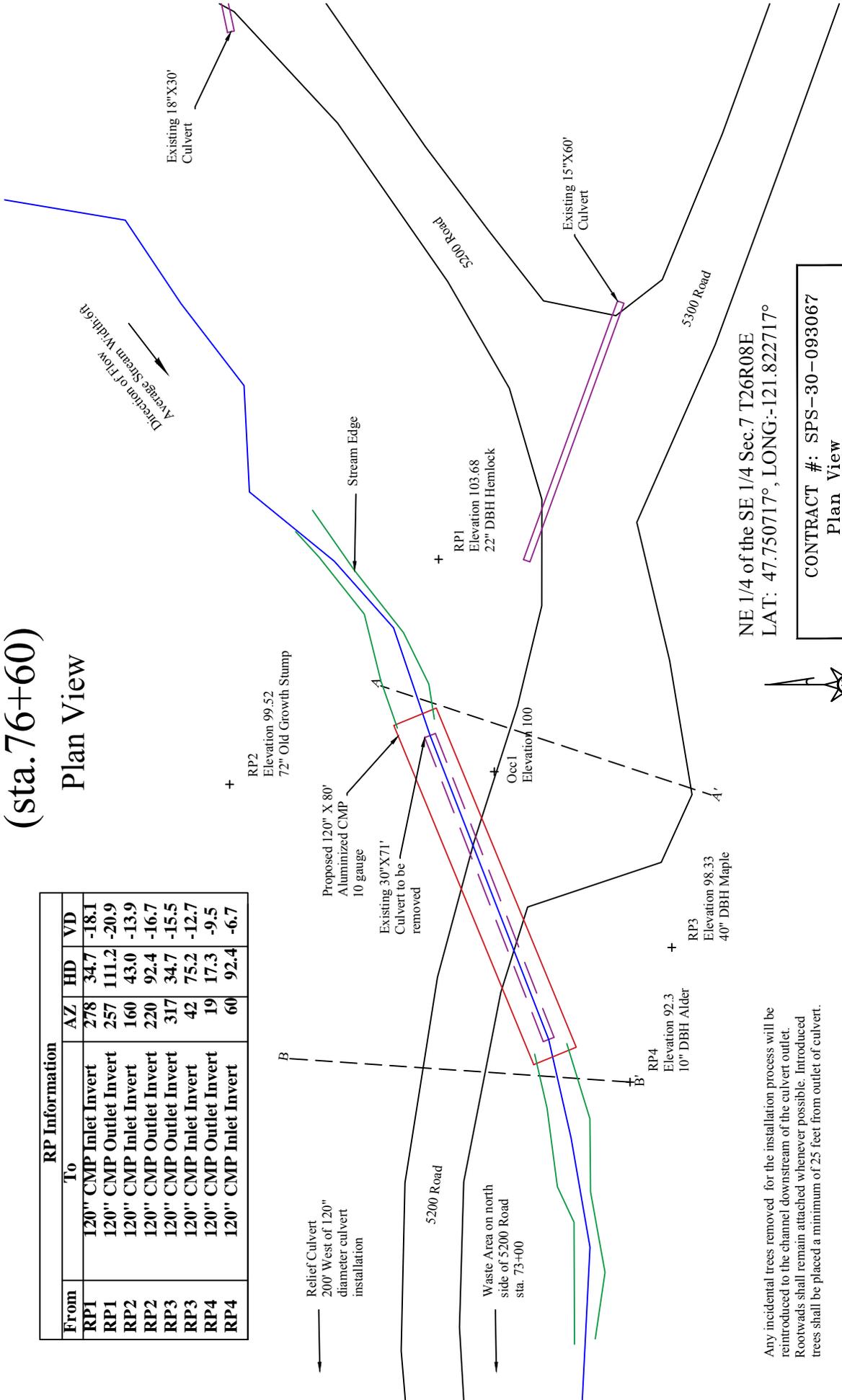


PROFILE VIEW

5200 Road Culvert Replacement (sta.76+60)

Plan View

RP Information				
From	To	AZ	HD	VD
RP1	120" CMP Inlet Invert	278	34.7	-18.1
RP1	120" CMP Outlet Invert	257	111.2	-20.9
RP2	120" CMP Inlet Invert	160	43.0	-13.9
RP2	120" CMP Outlet Invert	220	92.4	-16.7
RP3	120" CMP Inlet Invert	317	34.7	-15.5
RP3	120" CMP Outlet Invert	42	75.2	-12.7
RP4	120" CMP Inlet Invert	19	17.3	-9.5
RP4	120" CMP Outlet Invert	60	92.4	-6.7



NE 1/4 of the SE 1/4 Sec.7 T26R08E
LAT: 47.750717°, LONG:-121.822717°

CONTRACT #: SPS-30-093067 Plan View
WASHINGTON STATE DEPARTMENT OF Natural Resources SPS Region



Scale: 1"=30'
Date: 08/15/16
Page 1 of 4
Drawn By: E. Bauer



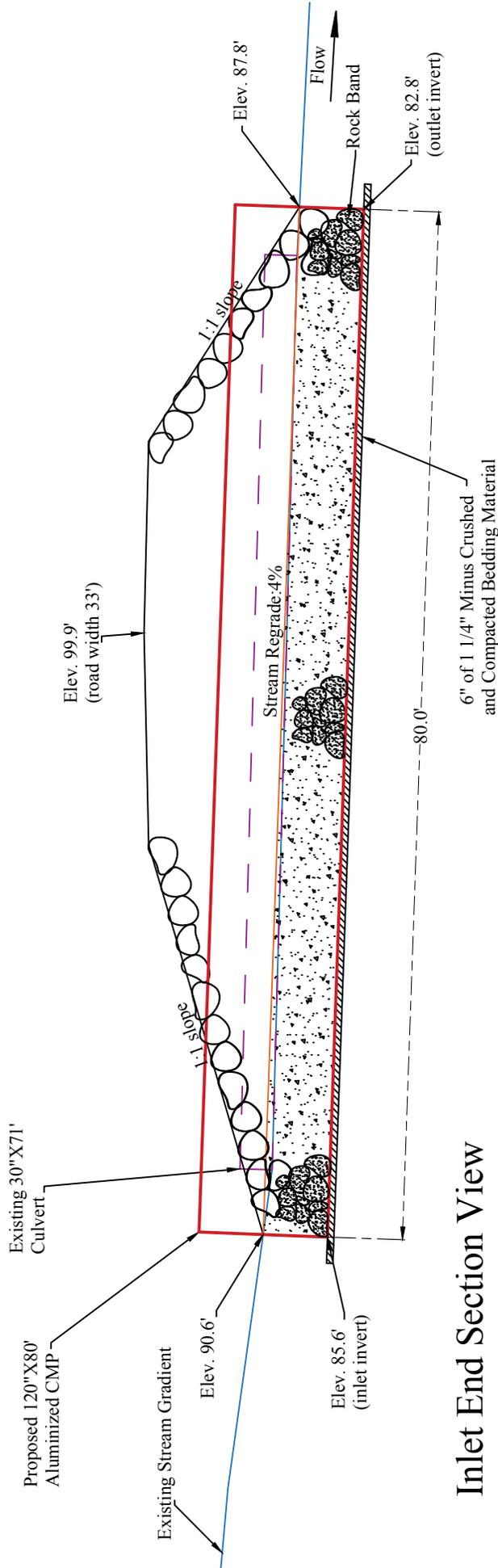
Any incidental trees removed for the installation process will be reintroduced to the channel downstream of the culvert outlet. Rootwads shall remain attached whenever possible. Introduced trees shall be placed a minimum of 25 feet from outlet of culvert.

Note: Site visit with Forest Practices, WDFW and Tulalip Tribe on April 6, 2016

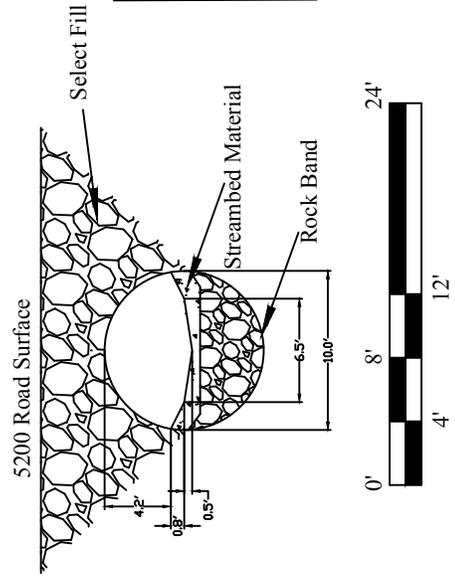
5200 Road Culvert Replacement

Profile Detail

Note: Road Surface and Fill Slopes exaggerated due to pipe skew



Inlet End Section View



Streambed Material
 Rock shall be an 6 INCH MINUS
 BANKRUN STREAMBED MATERIAL
 Estimate: 92 cubic yards
 7500 Road Pit in SW 1/4
 SW 1/4 Section 30
 T27R08E.

Rock Band Material
 Rock shall be angular.
 24 cu yds:
 100% 8"-18"

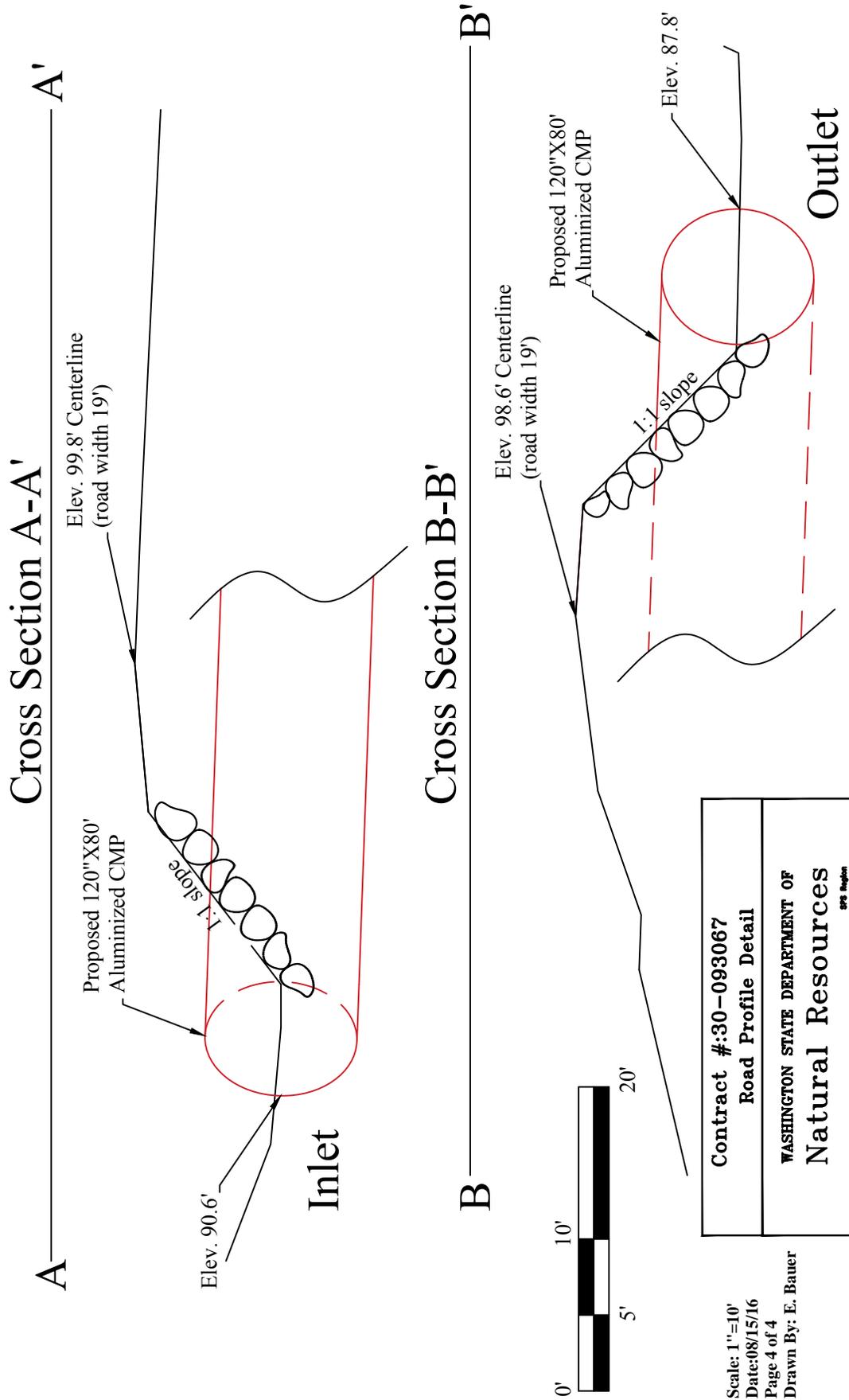
Scale: 1"=12'
 Date: 08/15/16
 Page 2 of 4
 Drawn By: E. Bauer

Contract #: 30-093067
Profile Detail & Inlet End Cross Section
 WASHINGTON STATE DEPARTMENT OF
Natural Resources
and Aquatics

Note: Volumes are estimated on In-Place basis

5200 Road Culvert Replacement

Road Cross Section Detail



Hydraulic project requirements
Project: Kerswop Timber Sale #30-093067
(Sec 6,7,8 T26N R08E, W.M.)
King County

Project timing

Work will be completed from July 1 to September 30 of any given year, unless additional days are allowed by Forest Practices in consultation with Department of Fish and Wildlife.

Controlling sediment and erosion

BMPs will be applied throughout all phases of this project to minimize the delivery of sediment to the stream.

Fill material that does not meet the specification for reuse as road fill will be placed in a stable location to prevent delivery to any water course and will be controlled from erosion by straw or available slash material or isolated by topography and/or waterbars.

Prior to starting work in areas where the bank will be disturbed, install temporary erosion control measures such as a filter fabric fence or straw wattles to prevent sediment from entering the stream. Keep in place during construction and add erosion control measures as needed to exposed soil.

After completion of work, but before removing the temporary erosion control measures, remove sediment accumulated during the project from behind the erosion control measures and deposit it in a location where it cannot enter typed water.

Stop work if high flow conditions that may cause sedimentation are encountered during the project. Do not re-start work until the flow subsides.

All exposed or disturbed areas resulting from this project with the potential to deliver sediment to any typed water shall be protected from erosion using grass seed and/or straw upon completion of the project.

Prior to releasing the water flow to the project area, all bank protection or armoring shall be completed to minimize sediment delivery to the stream or stream channel.

Clearing vegetation, minimizing disturbance

Vegetation removal will be limited to operational needs only within the extents of construction. Trees removed from within 25 feet of either side of the stream channel will be placed in the channel or along the stream banks downstream of the replacement project.

New culvert inlet elevations and locations shall be established with reference points (RPs) and clearly benchmarked prior to commencing work on this project. The RPs shall be protected to serve as post project reference.

Operating and staging heavy equipment

Limit equipment use near the stream to minimize disturbance to stream banks and vegetation.

Where possible, operate equipment from the road, road shoulder, top of the bank, or similar out-of-water location.

Operate equipment in the stream channel only when the work area is dry or within an area where the stream flow is bypassed.

Petroleum leaks and/or spills

Spill kits shall be available at all times during active operations capable of absorbing at least 10 gallons of oil, coolant, solvent or contaminated water or potential spills from each piece of equipment.

All operations shall be conducted in a manner that avoids the release of hazardous materials, including petroleum products, while working around the stream.

Equipment crossings of the stream are to be minimized.

Service, refuel, and maintain equipment in an upland area where there is no potential for hazardous materials to enter water or stream channel.

Bypass methods for flowing water

The existing culverts shall be removed and the new culvert shall be installed in the dry or in isolation from the streamflow, if flowing, by the installation of a bypass flume or culvert, or pumping the stream flow around the work area. If channel is dry and weather conditions are forecasted to remain that way throughout the duration of the project, the following bypass requirements do not apply.

Upon completion of the project, all material used in the temporary bypass shall be removed from the site and the channel bed, bank and shoreline areas restored similar to pre-project natural condition or better.

The bypass shall be sufficient size to pass all flows for the duration of the project.

Wastewater from project activities and dewatering shall be routed to an area outside the ordinary high water line to allow removal of fine sediment and contaminants prior to being discharged to the stream.

Fish protection measures

If stream is flowing, pumps used for dewatering the job site will be equipped with screens to prevent injury to fish.

Plan and conduct fish capture and removal to minimize the amount and duration of handling.

DEPARTMENT OF NATURAL RESOURCES - SOUTH PUGET SOUND REGION

FORM 9-87(Rev. 01-09)

Road Development Cost Estimate

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

REGION: SPS

UNIT: Snoqualmie

SALE/PROJECT NAME: Kerswop

CONTRACT NUMBER: 30-093067

LEGAL DESCRIPTION: Sec 5,6,7,8,18 T26N R08E. Sec 1,12 T26N R07E. Sec 30,30 T27R08E.

	5222, 5228, 5229, 5301	5200, Unit 1 Spur	5000, 5200, 5210, 5300, 7700
ROAD NUMBER:	5222, 5228, 5229, 5301	5200, Unit 1 Spur	5000, 5200, 5210, 5300, 7700
ROAD STANDARD:	Construction	Reconstruction	Pre-haul maintenance
NUMBER OF STATIONS:	25.55	7.40	243.72
SIDESLOPE:	10-60%	0-15%	0
CLEARING AND GRUBBING:	\$6,745	\$296	
EXCAVATION AND FILL:	\$9,181	\$23,816	
MISC. MAINTENANCE:			\$15,286
ROCK TOTALS (Cu. Yds.):			
1 1/4" Minus:	944 \$0	\$695	\$6,190
4" or FishRock:	16271 \$10,741	\$1,077	\$0
QS/RipRap	198 \$0	\$3,033	\$152
CULVERTS AND FLUMES:	\$2,395	\$0	\$1,198
STRUCTURES:	\$0	\$22,100	\$0
GENERAL EXPENSES:	\$2,616	\$4,592	\$2,054
MOBILIZATION:	\$3,193	\$3,193	\$3,193
TOTAL COSTS:	\$34,872	\$58,802	\$28,073
COST PER STATION:	\$1,365	\$7,946	\$115

ROAD DEACTIVATION AND ABANDONMENT COSTS: \$4,532

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

NOTE²: This appraisal does not account for all optional rock.

TOTAL (All Roads) = \$126,279

SALE VOLUME MBF = 2,426

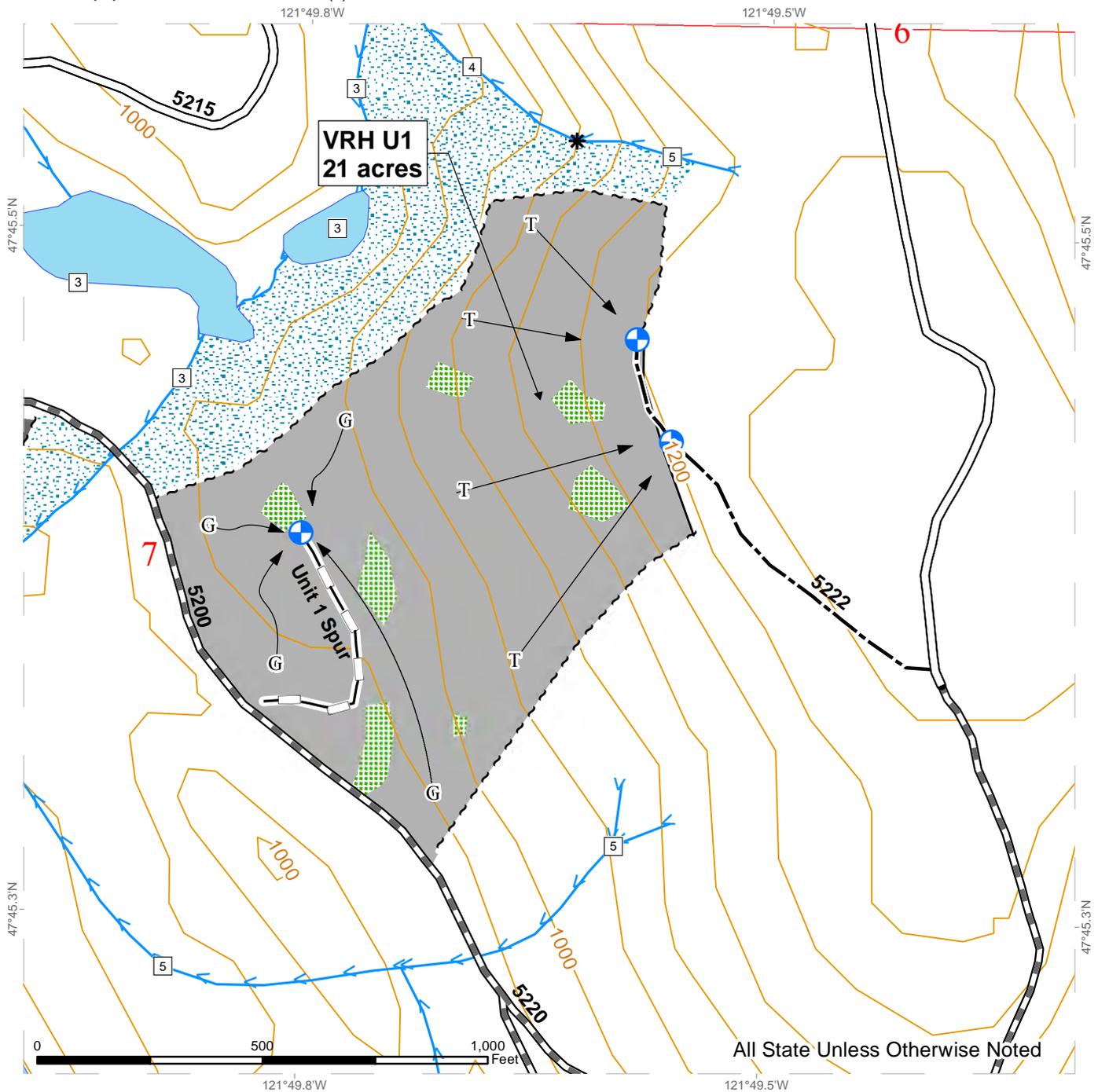
TOTAL COST PER MBF = \$52.05

Date: 04/25/16

LOGGING PLAN MAP

SALE NAME: KERSWOP
 AGREEMENT#: 93067
 TOWNSHIP(S): T26R08E
 TRUST(S): State Forest Transfer(1)

REGION: South Puget Sound Region
 COUNTY(S): KING
 ELEVATION RGE: 789-1205



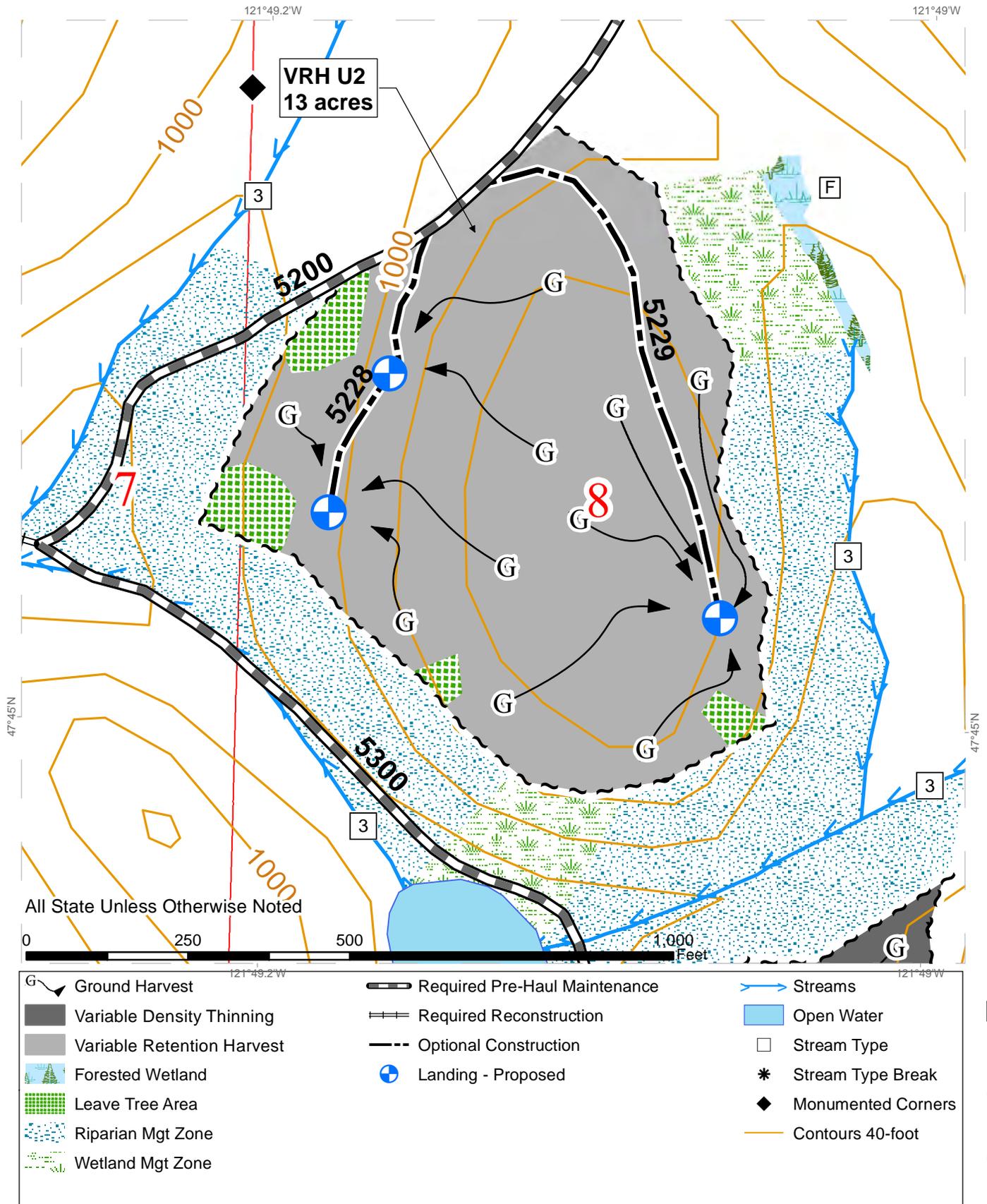
Ground Harvest	Existing Roads	Streams
Cable Harvest	Required Pre-Haul Maintenance	Open Water
Variable Density Thinning	Optional Construction	Stream Type
Variable Retention Harvest	Optional Reconstruction	Stream Type Break
Leave Tree Area	Landing - Proposed	Contours 40-foot
Riparian Mgt Zone		



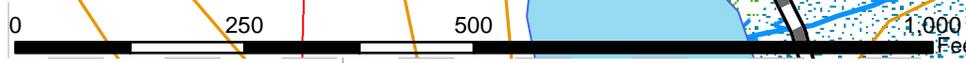
LOGGING PLAN MAP

SALE NAME: KERSWOP
 AGREEMENT#: 93067
 TOWNSHIP(S): T26R08E
 TRUST(S): State Forest Transfer(1)

REGION: South Puget Sound Region
 COUNTY(S): KING
 ELEVATION RGE: 789-1205



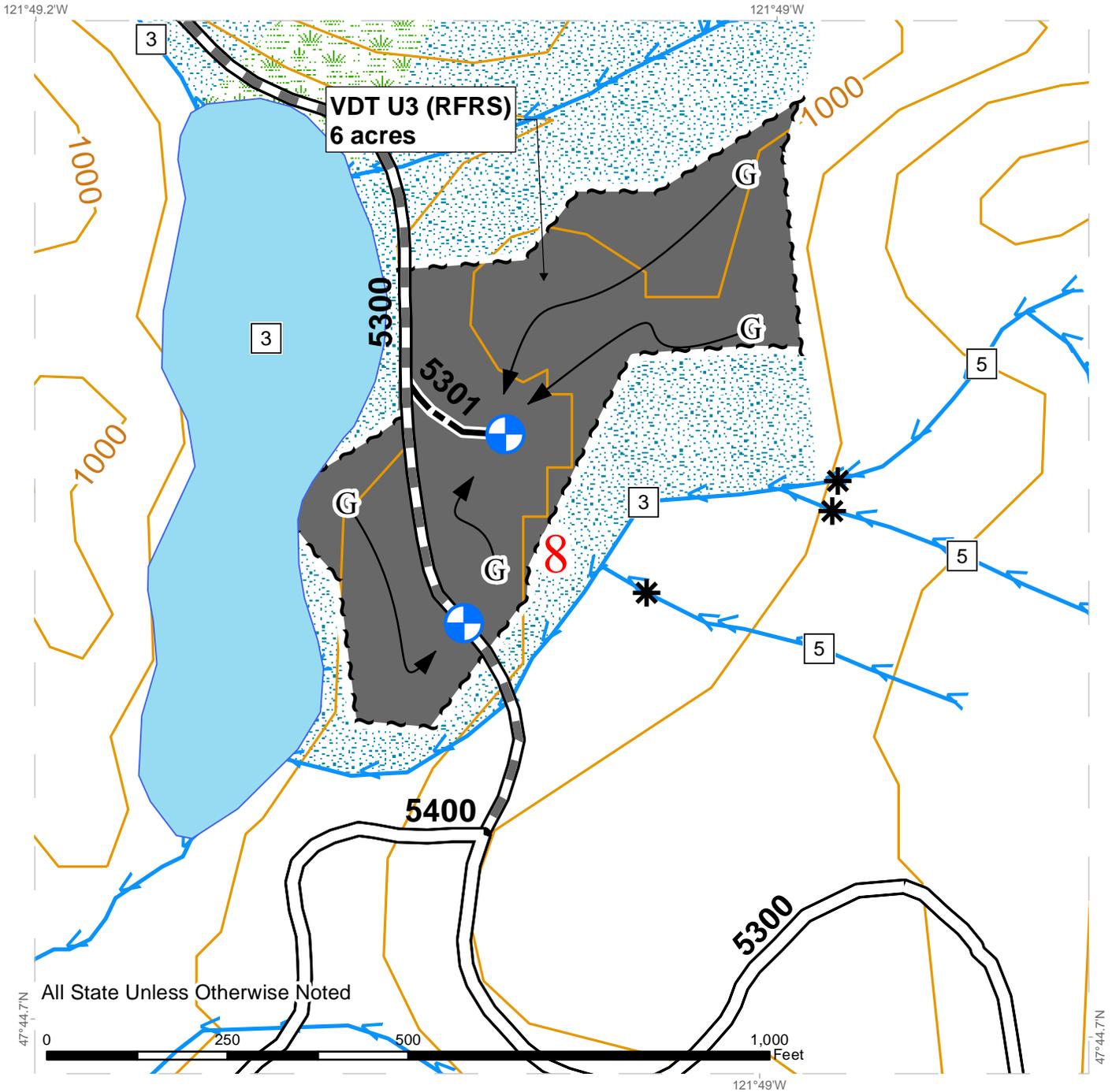
All State Unless Otherwise Noted



LOGGING PLAN MAP

SALE NAME: KERSWOP
AGREEMENT#: 93067
TOWNSHIP(S): T26R08E
TRUST(S): State Forest Transfer(1)

REGION: South Puget Sound Region
COUNTY(S): KING
ELEVATION RGE: 789-1205

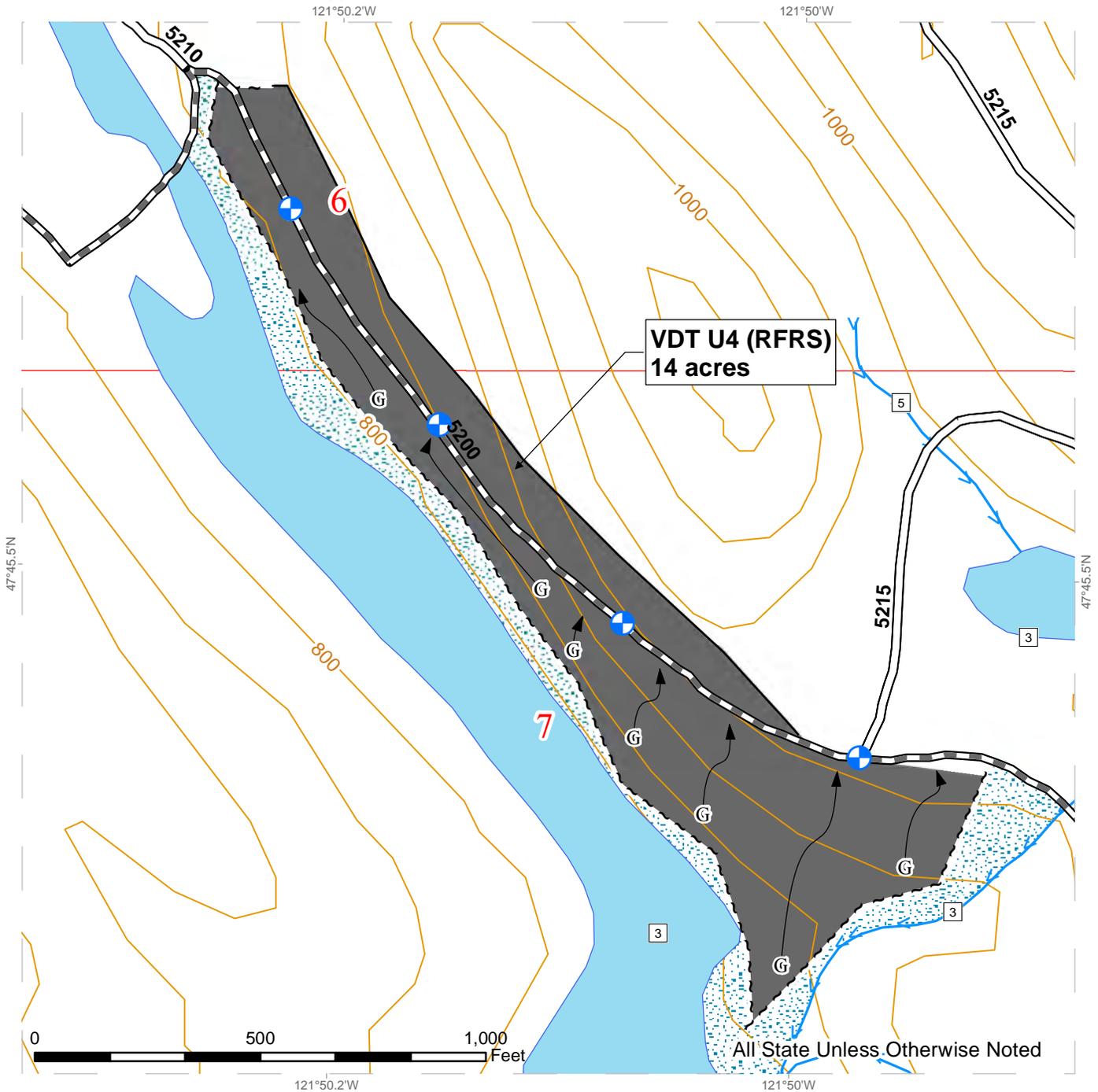


Ground Harvest	Existing Roads	Streams
Variable Density Thinning	Required Pre-Haul Maintenance	Open Water
Riparian Mgt Zone	Optional Construction	Stream Type
Wetland Mgt Zone	Landing - Proposed	Stream Type Break
	Contours 40-foot	

LOGGING PLAN MAP

SALE NAME: KERSWOP
 AGREEMENT#: 93067
 TOWNSHIP(S): T26R08E
 TRUST(S): State Forest Transfer(1)

REGION: South Puget Sound Region
 COUNTY(S): KING
 ELEVATION RGE: 789-1205



Ground Harvest	Existing Roads	Streams
Variable Density Thinning	Required Pre-Haul Maintenance	Open Water
Riparian Mgt Zone	Landing - Proposed	Stream Type
		Stream Type Break
		Contours 40-foot

