



TIMBER NOTICE OF SALE

SALE NAME: BIG RED

AGREEMENT NO: 30-099057

AUCTION: August 25, 2020 starting at 10:00 a.m., COUNTY: Thurston
South Puget Sound Region Office, Enumclaw, WA

SALE LOCATION: Sale located approximately 13 miles west of Olympia.

PRODUCTS SOLD AND SALE AREA:

All timber, except leave trees 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, and the KC-2000 and KC-2100 roads in Unit #1; white Timber Sale Boundary tags, timber type change marked with pink flagging, and the B-6000 Road in Unit #2; white Timber Sale Boundary tags, underground gas pipeline right-of-way marked with pink flagging, and the KC-Line and KC-2000 Road in Unit #3; white Timber Sale Boundary tags, underground gas pipeline right-of-way marked with pink flagging, and the KC-Line, KC-1000 and KC-1001 roads in Unit #4; white Timber Sale Boundary tags, and the KC-1000 and A-5000 roads in Unit #5; white Timber Sale Boundary tags, and the A-5000 and A-5030 roads in Unit #6;

All forest products above located on part(s) of Sections 16, 21, 22, 23 and 26 all in Township 18 North, Range 4 West, W.M., containing 154 acres, more or less.

CERTIFICATION: This sale is certified under the Sustainable Forestry Initiative® program Standard (cert no: PwC-SFIFM-513) and FSC 100% raw materials under the Forest Stewardship Council® Standard (cert no: BV-FM/COC-080501). *Only Units #2 and #3 are FSC Certified.

ESTIMATED SALE VOLUMES AND QUALITY:

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

MINIMUM BID: \$1,737,000.00 BID METHOD: Sealed Bids

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

EXPIRATION DATE: October 31, 2022 ALLOCATION: Export Restricted

BID DEPOSIT: \$173,700.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: Harvesting activities are estimated to be 48 percent cable and 52 percent ground based harvest. Cable and cable-tethered equipment allowed on all slopes. Ground based equipment is limited to tracked equipment, with non-tethered self-leveling equipment limited to sustained slopes of 55 percent or less, all other tracked equipment limited to sustained slopes that are 45 percent or less. Rubber tired skidders not allowed, except 6-wheeled rubber tired skidders with over-the-tire tracks spanning both sets of rear tires are



TIMBER NOTICE OF SALE

allowed in all units on sustained slopes that are 45 percent or less. Yarding may be restricted during wet weather if rutting becomes excessive, per clause H-017.

ROADS:

9.15 stations of optional construction. 511.83 stations of required prehaul maintenance. 50.20 stations of required post haul maintenance. 9.15 stations of abandonment, if constructed. Purchaser maintenance on the KC-Line within Unit #4, the KC-1000 Road within Unit #3, Unit #4, and Unit #5, the KC-1001, KC-1002, KC-2000, KC-2010, KC-2100, B-6000A roads, the B-6000 Road within Unit #2, the A-5000 Road within Unit #5 and Unit #6, and the A-5030 Road. Designated maintenance on all other roads used.

Rock for this proposal may be obtained from the State owned Stinkfoot Quarry, as well as from existing stockpiles at the State owned Five Forks Quarry per Road Plan 6-3, at no cost to the Purchaser or any commercial rock source at the Purchaser's expense.

Rock exploration is required in the Stinkfoot Quarry per Road Plan 6-13. Purchaser is required to provide a stockpile of 3,000 cy of 2 1/2 inch minus in the Stinkfoot Quarry per Road Plan 6-65.

The construction and/or reconstruction of any roads will not be permitted from November 1 to April 30, 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 1 to April 30, a maintenance plan is required per Road Plan clause 1-26.

The hauling of forest products will not be permitted from November 1 to April 30, nor on weekends or State recognized holidays, unless authorized in writing by the Contract Administrator. If permission is granted to operate from November 1 to April 30, preventative measures may be required to protect water, soil, roads and other forest assets.

ACREAGE DETERMINATION

CRUISE METHOD: Unit acreage was determined by traversing boundaries by GPS in all units and length times width was used to determine existing road acres in Units #1, #3, and #5. GPS data files are available at DNR's website for timber sale auction packets. See cruise narrative for cruise method.

FEES: \$106,658.00 is due on day of sale. \$9.00 per MBF is due upon removal. These are in addition to the bid price.

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

Any timber harvest within two tree lengths of the Williams NW Pipeline right-of-way will require at least one week advance notice to the Williams Northwest Pipeline.

Decking timber or parking of equipment is not permitted on gas pipeline right-of-ways. No timber is to be felled into or yarded through the gas pipeline right-of-way. No equipment is to cross the gas pipelines.

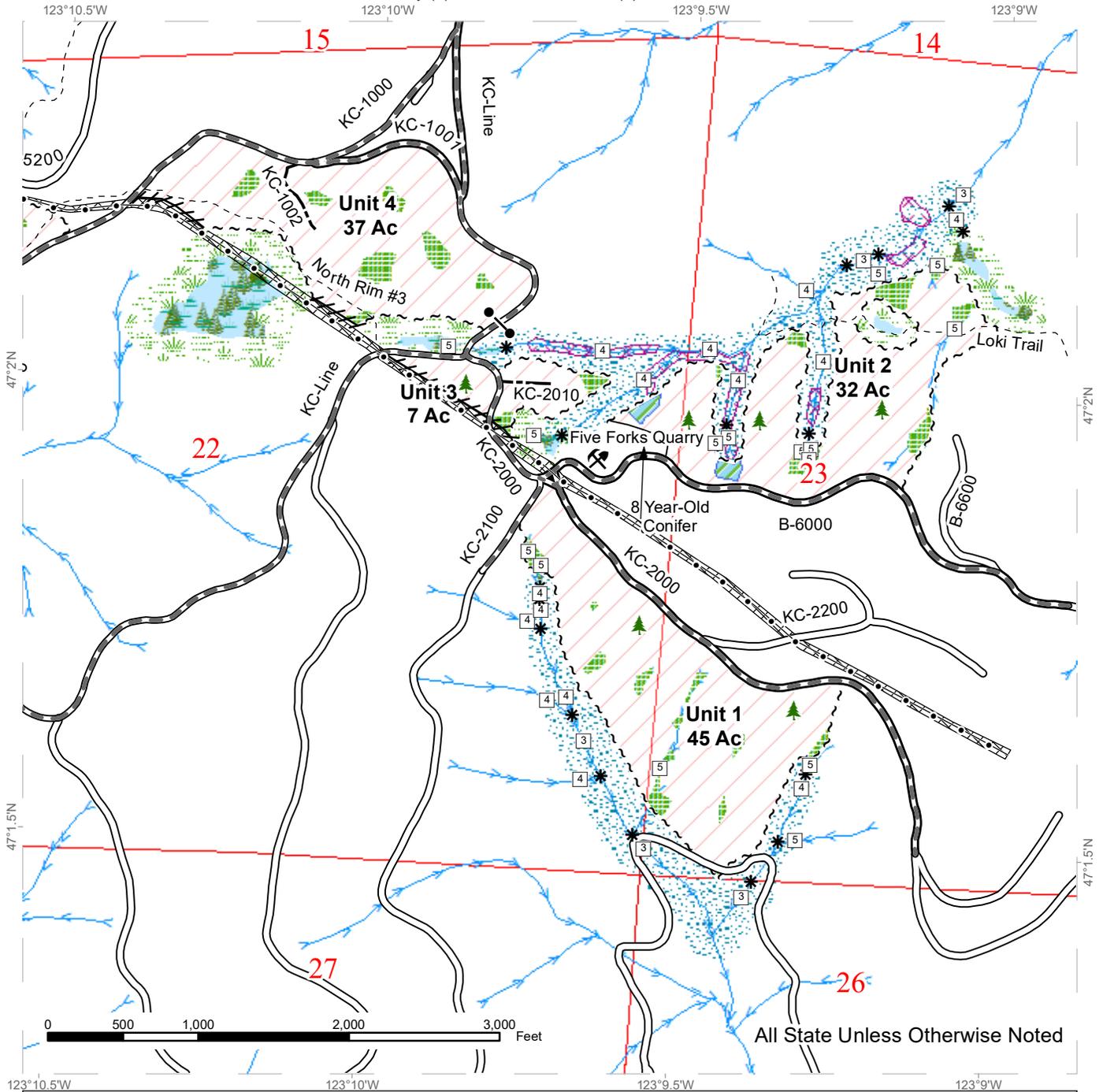
There are multiple recreation trails located in Units #2, #4, #5 and #6. These are to be restored to original pre-harvest condition following harvest per Schedule A-Recreation Trail Clean Out and Repair.

Purchaser shall cut all hardwood stems 2 inches DBH or greater, or 6 feet tall or greater, within the harvest units, leaving a stump no more than 12 inches in height.

TIMBER SALE MAP

SALE NAME: BIG RED
AGREEMENT #: 30-099057
TOWNSHIP(S): T18R4W
TRUST(S): Common School and Indemnity (3), State Forest Transfer (1)

REGION: South Puget Sound Region
COUNTY(S): Thurston
ELEVATION RGE: 920-1800



All State Unless Otherwise Noted

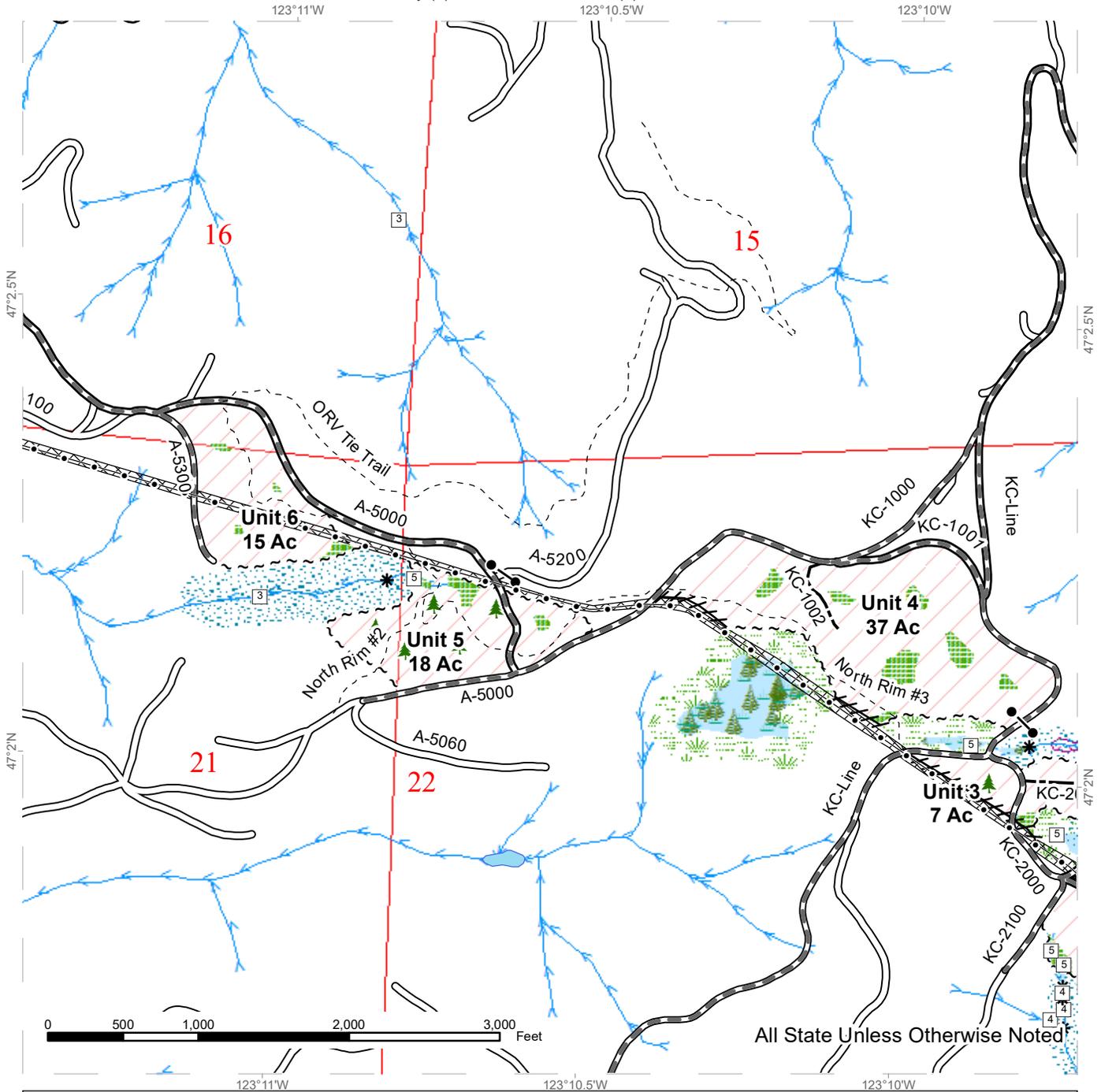
Variable Retention Harvest	Sale Boundary Tags	Streams
Leave Tree Area	Flag Line	Stream Type
Riparian Mgt Zone	Timber Type Change	Stream Type Break
Forested Wetland	Existing Roads	Recreation Trails
Wetland Mgt Zone	Required Pre-Haul Maintenance	Pipeline
Non-Tradeable Leave Tree Area	Optional Construction	Underground Utility ROW
Tailhold Restriction Area	Gate (Master-957)	
Leave Tree Area <1/4-acre	Rock Pit	



TIMBER SALE MAP

SALE NAME: BIG RED
AGREEMENT #: 30-099057
TOWNSHIP(S): T18R4W
TRUST(S): Common School and Indemnity (3), State Forest Transfer (1)

REGION: South Puget Sound Region
COUNTY(S): Thurston
ELEVATION RGE: 920-1800



All State Unless Otherwise Noted

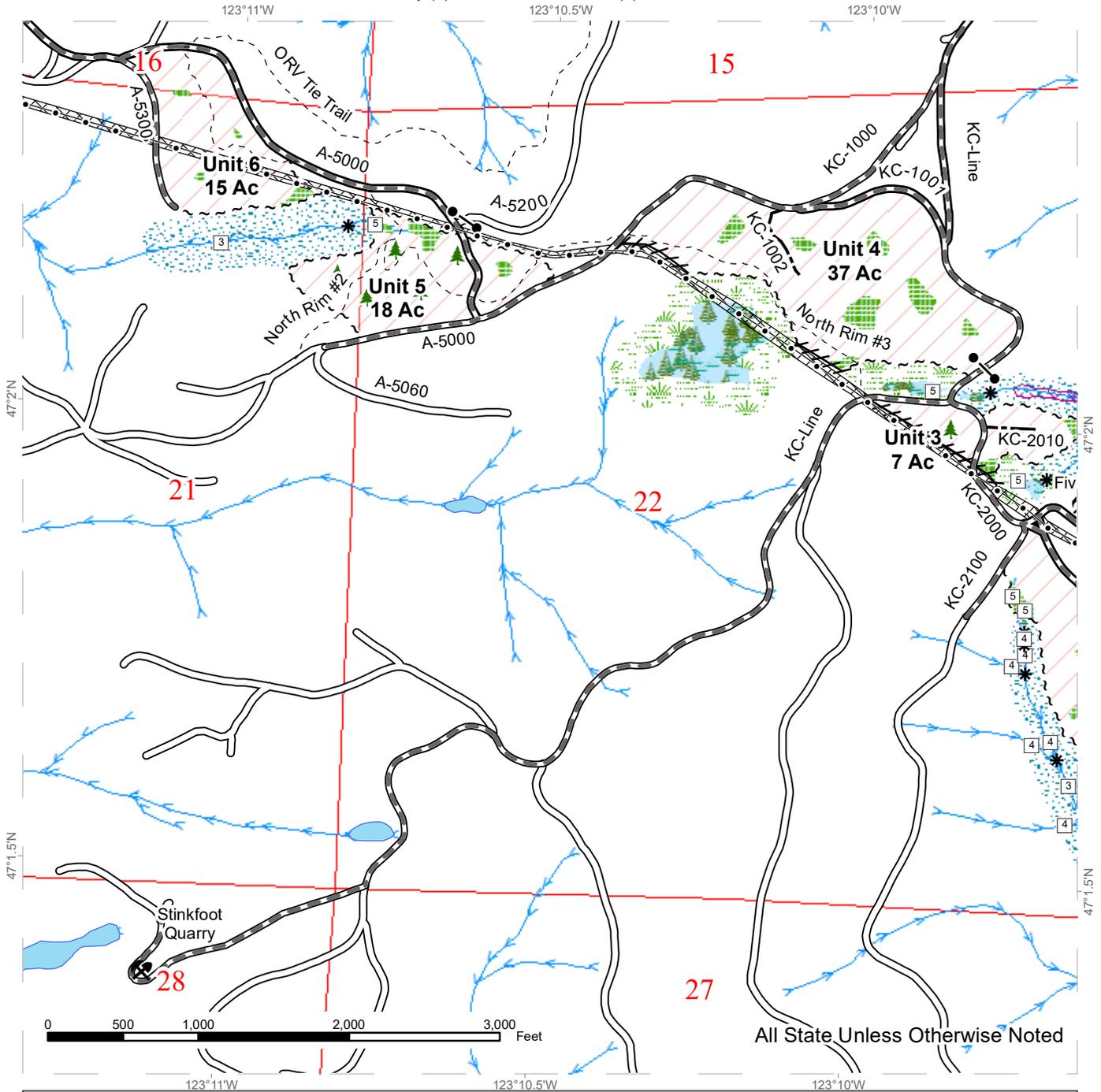
Variable Retention Harvest	Sale Boundary Tags	Streams
Leave Tree Area	Flag Line	Stream Type
Riparian Mgt Zone	Existing Roads	Stream Type Break
Forested Wetland	Required Pre-Haul Maintenance	Recreation Trails
Wetland Mgt Zone	Optional Construction	Pipeline
Tailhold Restriction Area	Gate (Master-957)	Underground Utility ROW
Leave Tree Area <1/4-acre		



TIMBER SALE MAP

SALE NAME: BIG RED
AGREEMENT #: 30-099057
TOWNSHIP(S): T18R4W
TRUST(S): Common School and Indemnity (3), State Forest Transfer (1)

REGION: South Puget Sound Region
COUNTY(S): Thurston
ELEVATION RGE: 920-1800



All State Unless Otherwise Noted

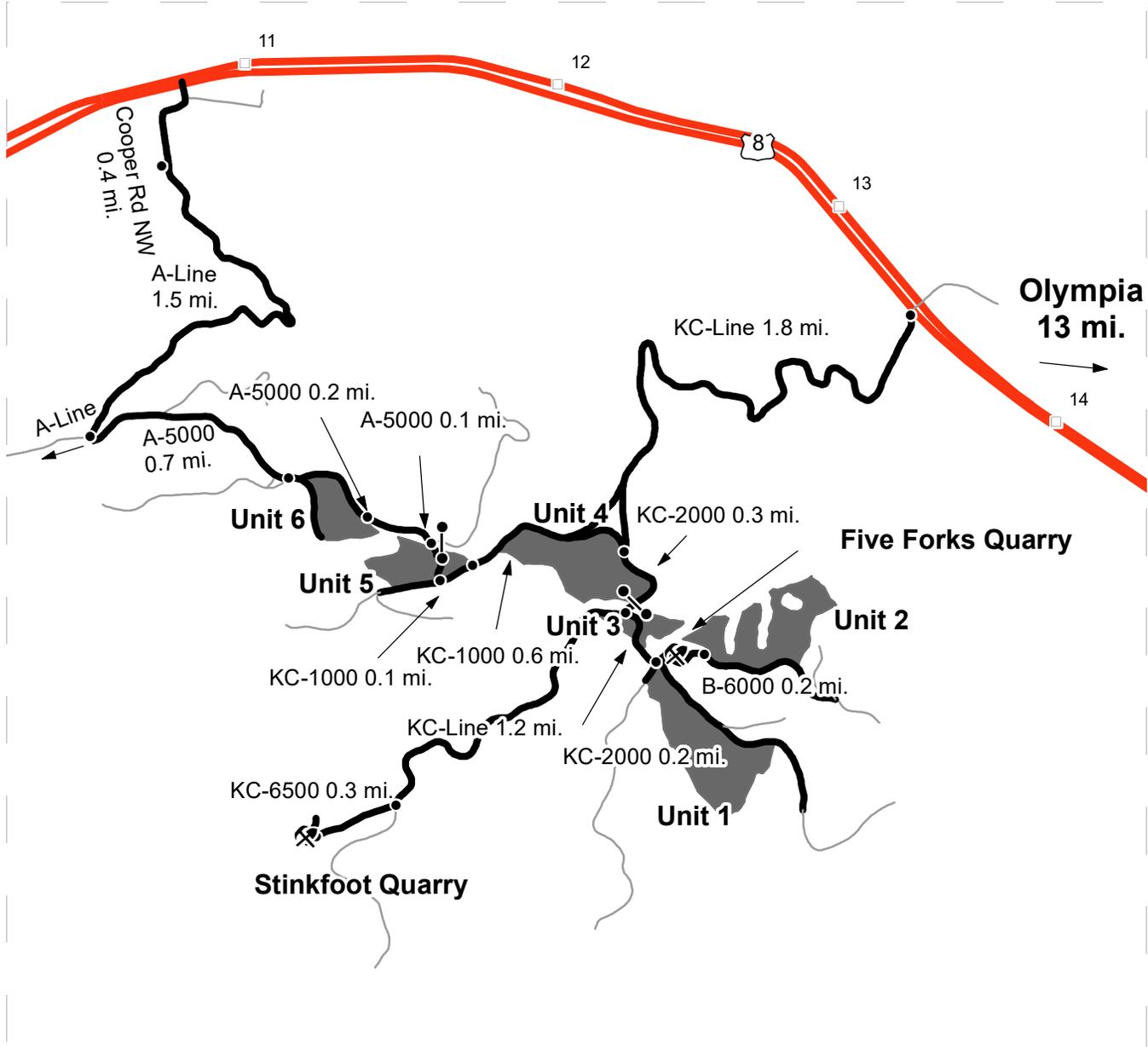
	Variable Retention Harvest		Sale Boundary Tags		Streams
	Leave Tree Area		Flag Line		Stream Type
	Riparian Mgt Zone		Existing Roads		Stream Type Break
	Forested Wetland		Required Pre-Haul Maintenance		Recreation Trails
	Wetland Mgt Zone		Optional Construction		Pipeline
	Tailhold Restriction Area		Gate (Master-957)		Underground Utility ROW
	Leave Tree Area <1/4-acre		Rock Pit		



DRIVING MAP

SALE NAME: BIG RED
AGREEMENT#: 30-099057
TOWNSHIP(S): T18R4W
TRUST(S): Common School and Indemnity (3), State Forest Transfer (1)

REGION: South Puget Sound Region
COUNTY(S): Thurston
ELEVATION RGE: 920-1800



Map may not be to scale

<ul style="list-style-type: none"> Timber Sale Unit Haul Route Other Road Milepost Markers Distance Indicator Gate (Master-957) Rock Pit 	<p><u>DRIVING DIRECTIONS:</u></p> <p>From US Highway 8 (west of milepost 14) turn south onto the KC-Line and follow 1.8 miles to Unit 4. Unit 5: turn west onto KC-1000, follow for 0.6 miles to Unit 5. Unit 6: continue another 0.1 miles and turn north onto the A-5000. Follow for 0.3 miles to Unit 6.</p> <p>Unit 3: From the KC-Line, KC-1000 junction follow the KC-2000 0.3 miles to Unit 3. Unit 1: continue another 0.2 miles to Unit 1. Unit 2/Five Forks Quarry: turn east onto the B-6000 and follow for 0.2 miles to the Quarry and Unit.</p> <p>Stinkfoot Quarry: from the KC-Line, KC-2000 junction follow the KC-Line 1.2 miles and turn west onto the KC-6500. Follow for 0.3 miles to Stinkfoot Quarry.</p>
--	--

**STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES**

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

Export Restricted Lump Sum AGREEMENT NO. 30-099057

SALE NAME: BIG RED

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

Section G: General Terms

G-001 Definitions

The following definitions apply throughout this contract;

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

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

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

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

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

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

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

G-011 Right to Remove Forest Products and Contract Area

Purchaser was the successful bidder on August 25, 2020 and the sale was confirmed on _____. The State, as owner, agrees to sell to Purchaser, and Purchaser agrees to purchase as much of the following forest products as can be cut and removed during the term of this contract: All timber, except leave trees 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, and the KC-2000 and KC-2100 roads in Unit #1; white Timber Sale Boundary tags, timber type change marked with pink flagging, and the B-6000 Road in Unit #2; white Timber Sale Boundary tags, underground gas pipeline right-of-way marked with pink flagging, and the KC-Line and KC-2000 Road in Unit #3; white Timber Sale Boundary tags, underground gas pipeline right-of-way marked with pink flagging, and the KC-Line, KC-1000 and KC-1001 roads in Unit #4; white Timber Sale Boundary tags, and the KC-1000 and A-5000 roads in Unit #5; white Timber Sale Boundary tags, and the A-5000 and A-5030 roads in Unit #6.

All forest products above located on approximately 154 acres on part(s) of Sections 16, 21, 22, 23, and 26 all in Township 18 North, Range 4 West W.M. in Thurston County(s) as designated on the sale area and as shown on the attached timber sale map.

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

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

G-020 Inspection By Purchaser

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

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

G-025 Schedules

The following attached schedules are hereby incorporated by reference:

Schedule	Title
A	Recreation Trail Clean Out and Repair

G-031 Contract Term

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

G-040 Contract Term Adjustment - No Payment

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

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

G-051 Contract Term Extension - Payment

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

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

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

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

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

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

- e. Payment of \$999.00 per acre per annum for the acres on which an operating release has not been issued in 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. TE812521-1 and 1168 (collectively referred to as ITP), or as amended hereafter by the Services. The ITP authorizes the incidental take of certain federally listed threatened and endangered species, as specified in the ITP conditions. All HCP materials, including the ITP, are available for review at the State's Regional Offices and the administrative headquarters in Olympia, Washington.

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

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

G-063 Incidental Take Permit Notification Requirements

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

G-064 Permits

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

G-065 Regulatory Disclaimer

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

G-066 Governmental Regulatory Actions

a. Risk

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

b. Sale Area

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

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

c. Adjustment of Price

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

G-070 Limitation on Damage

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

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

G-080 Scope of State Advice

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

G-091 Sale Area Adjustment

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

G-101 Forest Products Not Designated

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

The pricing schedule has not been set for the sale.

G-106 Adding Naturally Damaged Forest Products

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

G-111 Title and Risk of Loss

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

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

G-115 Forest Stewardship Council® (FSC®) Certification

Forest products purchased under this contract are FSC 100% certified as being in conformance with the Forest Stewardship Council Standard under certificate number: BV-FM/COC-080501. This only applies to Units #2 and #3.

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: PwC-SFIFM-513.

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.

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.

Road is defined as the road bed, including but not limited to its component parts, such as cut and fill slopes, 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.

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

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

G-140 Indemnity

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

G-150 Insurance

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

All insurance and surety bonds should be issued by companies admitted to do business within the State of Washington and have a rating of A-, Class VII or better in the most recently published edition of Best's Reports. If an insurer is not admitted, all insurance

policies and procedures for issuing the insurance policies must comply with Chapter 48.15 RCW and 284-15 WAC.

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

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

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

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

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

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

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

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

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

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

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

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

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

Business Auto Policy (BAP). Purchaser shall maintain business auto liability and, if necessary, commercial umbrella liability insurance with a limit not less than \$1,000,000.00 per accident. Such insurance shall cover liability arising out of "Any Auto". Business auto coverage shall be written on ISO form CA 00 01, or substitute liability form providing equivalent coverage. If necessary the policy shall be endorsed to provide contractual liability coverage and cover a "covered pollution cost or

expense" as provided in the 1990 or later editions of CA 00 01. Purchaser waives all rights against State for the recovery of damages to the extent they are covered by business auto liability or commercial umbrella liability insurance.

G-160 Agents

The State's rights and duties will be exercised by the Region Manager at 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 address of record:

G-210 Violation of Contract

G-220 State Suspends Operations

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

G-210 Violation of Contract

- a. If Purchaser violates any provision of this contract, the Contract Administrator, by written notice, may suspend those operations in violation. If the violation is capable of being remedied, Purchaser has 30 days after receipt of a suspension notice to remedy the violation. If the violation cannot be remedied (such as a violation of WAC 240-15-015) or Purchaser fails to remedy the violation within 30 days after receipt of a suspension notice, the State may terminate the rights of Purchaser under this contract and collect damages.
- b. If the contract expires pursuant to clause G-030 or G-031 without Purchaser having performed all its duties under this contract, Purchaser's right to operate is terminated and Purchaser shall not have the right to remedy the breach. This provision shall not relieve Purchaser of any payment obligations.
- c. The State has the right to remedy the breach in the absence of any indicated attempt by Purchaser or if Purchaser is unable, as determined by the State, to remedy the breach. Any expense incurred by the State shall be charged to Purchaser and shall be paid within 30 days of receipt of billing.
- d. If Purchaser's violation is a result of a failure to make a payment when due, in addition to a. and b. above, interest shall accrue on the unpaid balance at 12 percent per annum, beginning the date payment was due.

G-220 State Suspends Operation

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

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

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

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

G-230 Unauthorized Activity

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

G-240 Dispute Resolution

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

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

G-250 Compliance with All Laws

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

G-260 Venue

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

G-270 Equipment Left on State Land

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

damages to or loss of the equipment or damage caused by the moving, storing or disposal of the equipment.

G-280 Operating Release

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

G-310 Road Use Authorization

Purchaser is authorized to use the following State roads and roads for which the State has acquired easements and road use permits; the KC-Line, KC-1000, KC-1001, KC-1002, KC-2000, KC-2010, KC-2100, KC-6500, A-Line, A-5000, A-5030, A-5200, B-6000, and B-6000A roads. The State may authorize in writing the use of other roads subject to fees, restrictions, and prior rights.

G-330 Pre-work Conference

Purchaser shall arrange with the Contract Administrator to review this contract and to examine the sale area before beginning any operations. A plan of operations shall be developed and agreed upon by the Contract Administrator and Purchaser before beginning any operations. To the extent that the plan of operations is inconsistent with the contract, the terms of the contract shall prevail. State's acceptance and approval of Purchaser's plan of operations shall not be construed as any statement or warranty that the plan of operations is adequate for Purchaser's purposes or complies with applicable laws.

G-340 Preservation of Markers

Any legal land subdivision survey corners and witness objects are to be preserved. If such are destroyed or disturbed, the Purchaser shall, at the Purchaser's own expense, re-establish them through a licensed land surveyor in accordance with U.S. General Land Office standards. Corners and/or witness objects that must be disturbed or destroyed in the process of road construction or logging shall be adequately referenced and/or replaced in accordance with RCW 58.24.040(8). Such references must be approved by the Contract Administrator prior to removal of said corners and/or witness objects.

G-360 Road Use Reservation

The State shall have the right to use, without charge, all existing roads and any road constructed or reconstructed on State lands by Purchaser under this contract. The State may extend such rights to others. If the State grants such rights to others, the State shall require performance or payment, as directed by the State, for their proportionate share of maintenance based on their use.

G-370 Blocking Roads

Purchaser shall not block the A-Line, A-5000, KC-Line, KC-1000, KC- 2000 and B-6000 roads, unless authority is granted in writing by the Contract Administrator.

G-380 Road Easement and Road Use Permit Requirements

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

Easement #55-000366 entered into between the State of Washington Department of Natural Resources and Simpson Timber Company, dated February 25, 1971.

Easement #55-084100 entered into between the State of Washington Department of Natural Resources and the State of Washington Department of Transportation, dated December 3, 2008.

G-396 Public Hauling Permit

The hauling of forest products, rock or equipment may require a state, county, or city hauling permit. Purchaser is responsible for obtaining any necessary permit and any costs associated with extra maintenance or repair levied by the permitting agency. 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 \$163,124.00. The total contract price consists of a \$0.00 contract bid price plus \$163,124.00 in fees. Fees collected shall be retained by the state unless the contract is adjusted via the G-066 clause. Purchaser shall be liable for the entire purchase price, and will not be entitled to any refunds or offsets unless expressly stated in this contract.

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

P-045 Guarantee of Payment

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

P-050 Billing Procedure

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

P-080 Payment Account Refund

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

P-090 Performance Security

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

P-100 Performance Security Reduction

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

Section H: Harvesting Operations

H-013 Reserve Tree Damage Definition

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

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

- a. A reserve tree has one or more scars on its trunk exposing the cambium layer, which in total exceeds 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 unit containing the damaged leave tree, as approved by the Contract Administrator. Purchaser may be required to pay liquidated damages for Excessive Reserve Tree Damage as detailed in clause D-041.

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

H-017 Preventing Excessive Soil Disturbance

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

H-035 Fall Trees Into Sale Area

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

H-040 Purchaser Harvest Plan

Purchaser shall, as part of the plan of operations, prepare an acceptable harvest plan for all harvest units. The plan shall address the harvest operations and logging debris cleanup, which are part(s) of this contract. The harvest plan shall be approved by the Contract Administrator prior to beginning the harvest operation. Purchaser shall not deviate from the harvest plan without prior written approval by the Contract Administrator.

H-051 Branding and Painting

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

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

H-080 Snags Not to be Felled

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

H-120 Harvesting Equipment

Forest products sold under this contract shall be harvested and removed using cable, cable-tethered, and tracked ground based equipment. Cable and cable-tethered equipment allowed on all slopes. Ground based equipment is limited to tracked equipment, with non-tethered self-leveling equipment limited to sustained slopes of 55 percent or less, all other tracked equipment limited to sustained slopes that are 45 percent or less. Rubber tired skidders not allowed, except 6-wheeled rubber tired skidders with over-the-tire tracks spanning both sets of rear tires are allowed in all units on sustained slopes that are 45 percent or less. Authority to use other equipment or to operate outside the equipment specifications detailed above must be approved in writing by the State.

H-125 Log Suspension Requirements

Lead-end suspension is required for all yarding activities.

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-130 Hauling Schedule

The hauling of forest products will not be permitted from November 1 to April 30, nor on weekends or State recognized holidays, unless authorized in writing by the Contract Administrator.

H-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

- a. Equipment limitation zones are required within 30 feet of Type 5 streams.
- b. Crossings of Type 5 streams may be allowed at locations approved in writing by the Contract Administrator. Purchaser shall place a culvert or log puncheon at crossing locations (when water is present) to protect the stream bank and prevent sedimentation. All materials placed in and/or over the stream at these crossings shall be removed immediately upon completion of yarding on that skid trail.
- c. 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.
- d. No equipment shall operate, or trees felled or damaged, outside the timber sale boundary.
- e. The Purchaser shall notify all employees and contractors working on this sale that any danger tree marked or unmarked may be felled. Any marked danger tree will be replaced with a suitable tree of similar size and species as approved by the Contract Administrator.
- f. 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.
- g. Skid trail closure will occur immediately upon completion of yarding all tributary timber. Closure shall consist of creating water bars or other methods as directed by the Contract Administrator to prevent water accumulation and sediment movement.
- h. To facilitate proper reforestation in areas of high slash concentrations, purchaser shall clear plantable spots at a 11.5 foot by 11.5 foot spacing.
- i. In the event operations become inactive for long periods of time, skid trails shall be water barred prior to completion of yarding tributary timber to prevent water accumulation and sediment movement, if required by the Contract Administrator.

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

H-141 Additional Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

- a. Purchaser shall leave 2 down logs per acre. A log is defined as having a minimum diameter of 12 inches on the small end of the log and a minimum length of 20 feet or at least 100 board feet.
- b. Any timber harvest within two tree lengths of the Williams NW Pipeline right-of-way will require at least one week advance notice to the Williams Northwest Pipeline. The contact person is Kevin Scrivner (425-305-9531).
- c. No timber is to be felled into, decked on, or yarded through the gas pipeline right-of-way. No equipment is allowed to cross the gas pipelines nor park in the associated right-of-way.
- d. Areas restricting operations due to protection of potentially unstable slopes are located within and outside the sale boundary.
 - Locations inside the sale boundary are identified as Non-Tradeable Leave Trees marked with yellow Leave Tree Area tags as shown on the Timber Sale and Logging Plan Maps inside which no trees may be used as tailholds and no equipment may operate within, nor logs yarded through or over.
 - Locations outside the sale boundary are identified as Tailhold Restriction Areas on the Logging Plan and Timber Sales Maps. Trees within these areas shall not be used as tailholds.

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

H-190 Completion of Settings

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

H-220 Protection of Residual or Adjacent Trees

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

H-230 Tops and Limbs Outside the Sale Boundary

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

H-250 Additional Falling Requirements

Within the harvest units, all hardwood stems 2 inches DBH or greater, or 6 feet tall or greater, shall be felled. The remaining stump shall be no more than 12 inches in height. Areas of young or immature timber may be excluded from this requirement by the Contract Administrator.

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

Road construction and associated work provisions of the Road Plan for this sale, dated 11/28/2019 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 KC-Line within Unit #4, the KC-1000 Road within Unit #3, Unit #4, and Unit #5, the KC-1001, KC-1002, KC-2000, KC-2010, KC-2100, B-6000A roads, the B-6000 Road within Unit #2, the A-5000 Road within Unit #5 and Unit #6, and the A-5030 Road. All work shall be completed to the specifications detailed in the Road Plan.

C-060 Designated Road Maintainer

If required by the State, Purchaser shall perform maintenance and replacement work as directed by the Contract Administrator on all other roads used not covered in clause C-050. Purchaser shall furnish a statement in a form satisfactory to the State showing the costs incurred while performing this work. Costs shall be based on the rates set forth in the equipment rate schedule on file at the Region office or Engineering Division in Olympia. The State shall reimburse Purchaser for said costs within 30 days of receipt and approval of the statement.

C-080 Landing Locations Approved Prior to Construction

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

C-090 Landing Location

Landings shall be built a minimum of 50 feet off the KC-Line, KC-1000, KC-1001, KC-2000, B-6000, A-5000, and A-5030 road(s).

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

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 Type 5 streams as a result of operations under this contract and which is identified by the Contract Administrator shall be removed and deposited in a stable position. Removal of slash or debris shall be accomplished in a manner that avoids damage to the natural stream bed and bank vegetation.

S-110 Resource Protection

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

S-120 Stream Protection

No timber shall be felled into, across, or yarded through Type 3 or 4 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 or other releases of hazardous material/waste during operations conducted under this contract.

b. Hazardous Materials Spill Prevention

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

c. Hazardous Materials Spill Containment, Control and Cleanup

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

d. Hazardous Material Release Reporting

Releases of oil or hazardous materials to the environment must be reported according to the State Department of Ecology (DOE). 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 covered in part a., the Purchaser is responsible for immediately notifying all the following:

- Department of Emergency Management (contact information below).
- National Response Center (contact information below).
- Appropriate Department of Ecology (DOE) regional office (contact information below).
- DNR Contract Administrator

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

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

DOE - Central Region: 1-509-575-2490

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

DOE - Eastern Region: 1-509-329-3400

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

Department of Emergency Management 24-hour Number: 1-800-258-5990

National Response Center: 1-800-424-8802

S-131 Refuse Disposal

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

Section D: Damages

D-013 Liquidated Damages or Failure to Perform

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

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

D-041 Reserve Tree Excessive Damage

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

SIGNATURES

This agreement may be executed in any number of counterparts (including by electronic mail in portable document format (.pdf), or by facsimile) each of which shall be deemed an original but all of which, when taken together, shall constitute one and the same Agreement binding on all parties.

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

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

Purchaser

Print Name

Date: _____

Address:

Scott Sargent

South Puget Sound Region Manager

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 _____

Schedule A
Recreation Trail Clean Out and Repair

This schedule applies to the North Rim #2, North Rim #3, ORV Tie Trail and Loki Trail.

Purchaser is responsible for locating and marking the recreation trail within the sale boundary on the ground prior to harvest as approved by the Contract Administrator (CA).

- Purchaser is responsible for closing the recreation trails where they enter Units #2, #4, #5 and #6 and ensuring they remain closed at locations identified by the CA. Signage and blocking methods must be approved by the CA. Purchaser shall notify the CA a minimum of 5 calendar days before closing any trail.
- If needed, upon completion of harvest activities Purchaser shall locate the original recreation trail with pink fluorescent flagging. The CA will then approve the trail location in writing and repair/clean out can begin.

Recreation trail repair/clean out shall occur within 2 weeks of completion of harvest within 200 feet of the trail and shall consist of the following:

- Remove all logging debris from the recreation trail and the area on each side of the trail within 5 feet of the travel path.
- Trail will be repaired where holes or ruts resulted due to logging damage. The trail will be returned to its original width on mineral soils and free of organic debris.
- Existing drainage control measures shall be returned to pre-harvest condition.

The CA may require cleanout of the trail prior to completion of harvest, if there is a delay in harvesting activities.

All work described above shall be done as determined by the CA. The logging release for the unit will not be issued until repair and clean out is completed and approved in writing by the CA.



WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOREST EXCISE TAX ROAD SUMMARY SHEET

Region: South Puget Sound

Timber Sale Name: Big Red

Application Number: 30- 099057

EXCISE TAX APPLICABLE ACTIVITIES

Construction: 0 linear feet
Road to be constructed (optional and required) but not abandoned

Reconstruction: 0 linear feet
Road to be reconstructed (optional and required) but not abandoned

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

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

Pre-Haul Maintenance: 51,183 linear feet
Existing road to receive maintenance work (optional and required) prior to haul

EXCISE TAX EXEMPT ACTIVITIES

Temporary Construction: 915 linear feet
Roads to be constructed (optional and required) and then abandoned

0 linear feet
Temporary Reconstruction:
Roads to be reconstructed (optional and required) and then abandoned

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 9/18)

PRE-CRUISE NARRATIVE

Sale Name: Big Red	Region: South Puget Sound
Agreement #: 30-099057	District: Black Hills
Contact Forester: Brodrick Coval	Phone/ Location: (253)-293-0264
Alternate Contact: Andy Ritter	Phone/ Location: (360)-791-5980

Type of Sale (lump sum, mbf scale, tonnage scale or contract harvest): lump sum
Required or Optional removal of utility as pulp:
Evaluated for RFRS Implementation?: Yes. Not eligible.
Percentage cable (specify downhill vs uphill): 48% uphill cable
Percentage ground based: 52%
Species Onsite: <input checked="" type="checkbox"/> RC, <input checked="" type="checkbox"/> DF, <input checked="" type="checkbox"/> WH, <input checked="" type="checkbox"/> RA, <input type="checkbox"/> BC, <input checked="" type="checkbox"/> BLM, <input type="checkbox"/> NF, <input type="checkbox"/> SF, <input checked="" type="checkbox"/> SS, <input type="checkbox"/> 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, dimensions and error of closure if applicable)	
					RMZ/ WMZ Acres	Leave Tree Acres	Existing Road Acres			Other Acres (describe)
1		Sec22,23/ T 18N/ R04 W		47.7	0	2.8	0.1	0	44.8	GPS, B-Line 30'x160'
2		Sec 22,23/ T 18N/ R04 W		38.1	2.2	4.1	0	0	31.8	GPS
3		Sec 22/ T 18N/ R 04 W		8.2	0	0.8	0.3	0	7.1	GPS, KC-2000 30'x370'
4		Sec 22/ T 18N/ R 04 W		40.4	0	3.2	0	0	37.2	GPS
5		Sec 21,22/ T 18N/ R 04 W		18.9	0	0.5	0.5	0	17.9	GPS, A-Line 40'x588'
6		Sec 16,21/ T 18N/ R 04 W		17.2	0	0.7	0	1.4 (Pipeline ROW)	15.1	GPS
TOTAL ACRES				170.5	2.2	12.1	0.9	1.4	153.9	

HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription: (Mark leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
1	Variable Retention Harvest: Boundaries are marked with white "Timber Sale Boundary" tags and pink flagging. Clumped leave trees are marked with yellow "Leave Tree Area" tags and pink flagging.	N/A	8 leave trees per acre
2	Variable Retention Harvest: Boundaries are marked with white "Timber Sale Boundary" tags and pink flagging. Clumped leave trees are marked with yellow "Leave Tree Area" tags and pink flagging.	N/A	8 leave trees per acre

3	Variable Retention Harvest: Boundaries are marked with white "Timber Sale Boundary" tags and pink flagging. Clumped leave trees are marked with yellow "Leave Tree Area" tags and pink flagging.	N/A	8 leave trees per acre
4	Variable Retention Harvest: Boundaries are marked with white "Timber Sale Boundary" tags and pink flagging. Clumped leave trees are marked with yellow "Leave Tree Area" tags and pink flagging.	N/A	8 leave trees per acre
5	Variable Retention Harvest: Boundaries are marked with white "Timber Sale Boundary" tags and pink flagging. Clumped leave trees are marked with yellow "Leave Tree Area" tags and pink flagging.	N/A	8 leave trees per acre
6	Variable Retention Harvest: Boundaries are marked with white "Timber Sale Boundary" tags and pink flagging. Clumped leave trees are marked with yellow "Leave Tree Area" tags and pink flagging.	N/A	8 leave trees per acre

OTHER PRE-CRUISE INFORMATION:

Unit #	Estimated Volume	Access information (Gates, locks, etc.)	Photos, traverse maps required
1	See Cruise	N/A	Traverse map with contours, roads and leave trees. Photo (Scale 1" to 700')
2	See Cruise	N/A	Traverse map with contours, roads and leave trees. Photo (Scale 1" to 700')
3	See Cruise	N/A	Traverse map with contours, roads and leave trees. Photo (Scale 1" to 700')
4	See Cruise	N/A	Traverse map with contours, roads and leave trees. Photo (Scale 1" to 700')
5	See Cruise	N/A	Traverse map with contours, roads and leave trees. Photo (Scale 1" to 700')
6	See Cruise	N/A	Traverse map with contours, roads and leave trees. Photo (Scale 1" to 700')

REMARKS:

This is a six unit VRH with 48% uphill cable and 52% ground based yarding.
--

Prepared By: Brody Coval Date: June 28, 2019	Title: Forester	CC:
---	-----------------	-----

Cruise Narrative

Sale Name: Big Red	Region: South Puget Sound
App. #: 30-099057	District: Black Hills
Lead Cruiser: DPClark	Completion date: 12-11-2019 *Revised 3/20/2020 by AC
Other Cruisers: ACChaney	

Unit acreage specifications:

Unit #	Cruised acres	Cruised acres agree with sale acres? Yes/No	If acres do not agree explain why.
1	44.8	YES	
2	31.8	YES	
3	7.1	YES	
4	37.2	YES	
5	17.9	YES	
6	15.1	YES	
Total	153.9	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	27.78/46.94	16'	208	1:1	46
2	VP	27.78/40	16'	208	1:1	32
3	VP	27.78/46.94	16'	208	Cruise all	7
4	VP	27.78/40	16'	208	1:1	39
5	VP	27.78/46.94	16'	208	1:1	18
6	VP	27.78/46.94	16'	208	1:1	14

Sale/Cruise Description:

Minor species cruise intensity:	Cruised on appropriate plots.						
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:	<table style="width: 100%; border: none;"> <tr> <td style="border: none;">DF =</td> <td style="border: none;">5</td> <td style="border: none;">WH =</td> <td style="border: none;">5</td> <td style="border: none;">SS =</td> <td style="border: none;">NA</td> </tr> </table>	DF =	5	WH =	5	SS =	NA
DF =	5	WH =	5	SS =	NA		
Leave/take tree description:	All leave areas bound by tags and flags						
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 ½” in diameter, numbering not more than an average of one per foot of log length. May include logs with not more than two larger knots. Knots and knot indicators ½” in diameter and smaller shall not be a determining factor. Logs will have a growth ring count of 6 or more rings per inch in the outer third top end of the log. (min dia 8”.)</p> <p>HB – Logs meeting the following criteria: Surface characteristics for a B sort will have sound tight knots not to exceed 1 ½” in diameter. May include logs with not more than two larger knots up to 2 ½” 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. (min dia 8”.)</p>						

	<p>R – Logs meeting the following criteria: Gross diameter of 12 inches or greater, excessive knots greater than 2 ½ inches with recovery less than 65% of the net scale.</p> <p>D - Domestic</p>
--	---

Field observations:

Big Red is a high volume timber sale located mid slope and close to Highway 8 in the Black Hills district. The sale is comprised of six small to medium sized sub units totaling 154 acres on mostly gently sloped ground. The timber type for all these sub units is similar and the same age class of 60 years old. Species composition is dominated by DF with a strong secondary component of WH. A small portion of RA and a pinch of RC compliment the stocking. Trace species include SS, BLM, SF, and CW. DF has a large average diameter and log quality ranges from High B to utility. WH is mostly larger diameter logs and quality is Domestic and Utility. RA varies in size and quality. The larger RA have clean saw logs with low defect. Most of the RA tops and smaller trees are utility. RC is mostly small diameter logs. Defect is high due to old storm damage and fast growth. There are a few blowdown patches and a minor amount of mortality pockets. A utility ROW runs near and through some of the sub units. A recreational hiking and cycling trail also runs near and through some of the sub units.

Grants: 01, 03

Prepared by: DPClark

Title: Timber Cruiser

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																		
T18N R04W S22 Ty00U1 THRU T18N R04W S22 Ty00U6				Project: BIGRED										Page 1								
				Acres 153.90										Date 3/20/2020								
														Time 12:59:56PM								
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	36-40						
WH	CU	CU			100.0	104											5	9		0.00	18.0	
WH	D	2S		61	5.2	9,219	8,738	1,345				50	50	1	0	8	91	37	15	309	2.04	28.3
WH	D	3S		27	3.5	3,907	3,769	580	22	78					2	13	85	38	8	96	0.80	39.3
WH	D	4S		8	3.4	1,207	1,166	179	94	6				22	32	24	23	27	5	30	0.35	39.1
WH	D	UT		4	2.8	478	465	72	35	2	16	47		68	15	11	5	21	7	56	0.66	8.3
WH Totals				35	5.2	14,914	14,138	2,176	15	21	31	32	4	4	11	81	29	9	106	0.99	133.0	
DF	CU	CU			100.0	387											5	10		0.00	13.7	
DF	HB	2S		26	1.9	6,523	6,399	985			45	55			1		99	39	15	348	2.00	18.4
DF	HB	3S		3	1.5	726	715	110		100						8	92	39	10	146	0.89	4.9
DF	D	2S		45	4.9	11,857	11,275	1,735			31	69	3	2	3	91	37	17	413	2.55	27.3	
DF	D	3S		19	3.6	4,594	4,430	682	27	73			3	7	24	66	35	8	87	0.73	50.8	
DF	D	4S		4	.7	1,074	1,067	164	86	14			31	39	13	18	25	6	30	0.34	36.0	
DF	D	UT		3		644	644	99	22		24	54	44	32		24	24	9	93	0.93	6.9	
DF Totals				60	4.9	25,805	24,529	3,775	9	17	27	47	5	5	7	83	31	10	155	1.23	158.0	
RA	CU	CU			100.0	66											9	6		0.00	4.3	
RA	D	UT		13	2.7	242	235	36	67	33			45	10	31	14	19	7	32	0.52	7.3	
RA	D	1S		4	5.8	77	72	11				100	44	56			22	17	221	2.24	.3	
RA	D	2S		29	3.2	520	504	78			100			26	74		37	13	195	1.38	2.6	
RA	D	3S		15	6.6	276	258	40		100				9	91		37	11	145	1.05	1.8	
RA	D	4S		19	8.3	357	327	50		100				27	73		33	9	81	0.72	4.1	
RA	D	4S		20	1.4	346	341	52	100				3	31	66		33	5	40	0.38	8.6	
RA Totals				4	7.7	1,883	1,737	267	29	38	29	4	9	24	4	63	26	7	60	0.65	29.0	
SS	CU	CU															11			0.00	.0	
SS	D	2S		90	7.8	145	133	21			14	86			100		40	18	542	3.44	.2	
SS	D	3S		9	12.4	14	13	2		100				29	24	47	31	10	92	1.29	.1	
SS	D	UT		1		1	1	0		100			100				15	8	20	0.71	.1	
SS Totals				0	8.1	160	147	23		10	13	78	1	2	2	94	31	14	298	2.64	.5	
RC	CU	CU			100.0	26											3	15		0.00	1.1	
RC	D	3S		82	4.3	183	175	27	3	14	69	14		12	3	85	37	11	180	1.70	1.0	
RC	D	4S		18	2.4	39	38	6	93	7			29	16	30	25	28	6	33	0.54	1.2	
RC Totals				1	14.2	248	213	33	19	13	57	11	5	13	8	74	22	10	66	1.09	3.2	
Totals					5.2	43,011	40,764	6,274	12	19	29	40	5	6	8	82	29	9	126	1.09	323.6	

TC PSTATS		PROJECT STATISTICS							PAGE	1	
		PROJECT BIGRED							DATE	3/20/2020	
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt	
18N	04	22	BIGRED	00U1	THR	153.90	156	735	S	W	
18N	04W	22	BIGRED	00U6							
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL			156	735	4.7						
CRUISE			84	385	4.6	21,502	1.8				
DBH COUNT											
REFOREST											
COUNT			68	341	5.0						
BLANKS			4								
100 %											
STAND SUMMARY											
SAMPLE TREES		TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC	
DOUG FIR	195	62.7	21.3	83	33.7	155.3	25,805	24,529	5,989	5,918	
WHEMLOCK	141	62.2	17.9	70	25.7	108.7	14,914	14,138	3,858	3,834	
R ALDER	35	13.3	14.9	64	4.2	16.0	1,883	1,737	508	495	
WR CEDAR	10	1.3	20.5	57	0.7	3.1	248	213	84	79	
S SPRUCE	4	.2	29.8	75	0.2	1.0	160	147	40	40	
TOTAL	385	139.7	19.3	75	64.7	284.1	43,011	40,764	10,480	10,366	
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		66.7	4.9	614	646	678					
WHEMLOCK		59.4	5.0	361	380	400					
R ALDER		54.4	9.3	161	177	194					
WR CEDAR		64.6	21.5	177	225	273					
S SPRUCE		68.8	39.3	510	840	1,170					
TOTAL		76.7	4.0	474	493	513	235	120	59		
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		55.6	4.1	146	152	158					
WHEMLOCK		53.7	4.6	97	102	106					
R ALDER		49.9	8.5	46	50	54					
WR CEDAR		58.6	19.5	66	81	97					
S SPRUCE		48.6	27.8	157	218	278					
TOTAL		63.6	3.3	118	122	126	162	82	40		
CL	68.1	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR		85.0	6.8	58	63	67					
WHEMLOCK		135.7	10.9	55	62	69					
R ALDER		279.4	22.4	10	13	16					
WR CEDAR		541.1	43.3	1	1	2					
S SPRUCE		645.0	51.6	0	0	0					
TOTAL		64.2	5.1	133	140	147	164	84	41		
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		65.7	5.3	147	155	163					
WHEMLOCK		117.5	9.4	99	109	119					
R ALDER		259.8	20.8	13	16	19					
WR CEDAR		520.2	41.6	2	3	4					
S SPRUCE		619.0	49.5	1	1	2					
TOTAL		46.2	3.7	274	284	295	85	43	21		

PROJECT STATISTICS**PROJECT BIGRED**

TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
18N	04	22	BIGRED	00U1	THR	153.90	156	735	S	W
18N	04W	22	BIGRED	00U6						
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			76.1	6.1	23,036	24,529	26,022			
WHEMLOCK			125.1	10.0	12,723	14,138	15,552			
R ALDER			263.7	21.1	1,371	1,737	2,104			
WR CEDAR			540.7	43.3	121	213	305			
S SPRUCE			659.8	52.8	70	147	225			
TOTAL			<i>54.1</i>	<i>4.3</i>	<i>38,999</i>	<i>40,764</i>	<i>42,530</i>	<i>117</i>	<i>60</i>	<i>29</i>
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			69.2	5.5	5,590	5,918	6,246			
WHEMLOCK			122.3	9.8	3,459	3,834	4,209			
R ALDER			261.1	20.9	391	495	598			
WR CEDAR			510.5	40.8	47	79	112			
S SPRUCE			626.1	50.1	20	40	60			
TOTAL			<i>49.5</i>	<i>4.0</i>	<i>9,955</i>	<i>10,366</i>	<i>10,777</i>	<i>98</i>	<i>50</i>	<i>25</i>

T	TSPCSTGR	Species, Sort Grade - Board Foot Volumes (Type)										Page	1								
												Date		3/20/2020							
												Time		12:59:57PM							
T18N R04W S22 T00U1										T18N R04W S22 T00U1											
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt												
18N	04W	22	BIGRED	00U1	44.80	46	103	S	W												
Spp	S	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
					Net	Gross	Net		Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/Lf	
					Def%			Net MBF	5-7	8-11	12-15	16+	12-20	21-30	31-35	36-40	Ft	In	Ft		
DF	CU	CU			100.0	398											2	10		0.00	18.4
DF	HB	2S	26	1.4	10,101	9,958	446			53	47				100		38	15	317	1.85	31.5
DF	HB	3S	2		566	566	25		100					34	66		38	10	139	0.83	4.1
DF	DM	2S	48	3.0	18,362	17,818	798			25	75		3	2	1	94	36	17	454	2.69	39.2
DF	DM	3S	17	2.9	6,636	6,441	289	35	65				4	9	32	55	36	8	85	0.65	75.9
DF	DM	4S	4		1,650	1,650	74	82	18				47	36	4	12	22	6	28	0.34	59.6
DF	DM	UT	3		817	817	37	51			49		49	51			23	7	51	0.42	16.1
DF	Totals			75	3.3	38,530	37,250	1,669	11	14	26	50	5	5	7	83	29	10	152	1.19	244.7
WH	CU	CU			100.0	107											9	10		0.00	14.8
WH	DM	2S	64	1.9	7,470	7,324	328			53	47		2		4	94	36	14	286	1.89	25.6
WH	DM	3S	23	2.9	2,786	2,707	121	20	80						6	94	39	8	104	0.81	26.1
WH	DM	4S	10		1,119	1,119	50	91	9				31	44	5	21	25	6	30	0.35	37.4
WH	DM	UT	3		264	264	12	33			67		67			33	31	9	80	0.64	3.3
WH	Totals			23	2.8	11,746	11,414	511	14	20	34	32	6	4	4	85	29	9	106	0.96	107.2
RA	CU	CU			100.0	95											15	5		0.00	5.1
RA	DM	UT	15		143	143	6	56	44				100				12	7	23	0.45	6.2
RA	DM	2S	18	.0	170	170	8			100					100		40	13	240	1.45	.7
RA	DM	4S	31	8.3	309	284	13		100						100		40	9	110	0.75	2.6
RA	DM	4S	36		333	333	15	100						10	90		38	6	53	0.42	6.3
RA	Totals			2	11.5	1,050	930	42	45	37	18		15	4		81	25	7	45	0.48	20.9
RC	CU	CU			100.0	48											4	17		0.00	1.6
RC	DM	3S	90	2.4	312	305	14		28	45	27			23		77	36	11	175	1.42	1.7
RC	DM	4S	10		32	32	1	100					64	36			22	6	23	0.42	1.4
RC	Totals			1	14.2	392	336	15	9	26	41	24	6	24		70	21	12	72	1.03	4.7
Type Totals					3.5	51,718	49,930	2,237	12	15	28	44	6	5	6	83	29	10	132	1.09	377.5

T	TSPCSTGR	Species, Sort Grade - Board Foot Volumes (Type)										Page	1								
												Date	3/20/2020								
												Time	12:59:57PM								
T18N R04W S22 T00U2										T18N R04W S22 T00U2											
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt												
18N	04W	22	BIGRED	00U2	31.80	32	80	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	Dia	Bd	CF/ Lf	
								5-7	8-11	12-15	16+	12-20	21-30	31-35	36-40	Ft	In	Ft			
DF	CU	CU			100.0	398										14	13		0.00	11.0	
DF	HB	2S	38	.8	11,868	11,773	374			33	67		4		96	39	16	411	2.16	28.6	
DF	HB	3S	4		976	976	31		100						100	40	10	161	0.84	6.1	
DF	DM	2S	46	4.8	14,664	13,960	444			30	70		5	4	5	86	36	17	440	2.59	31.7
DF	DM	3S	9	2.0	2,718	2,663	85	3	97				6	12	23	59	34	9	96	0.82	27.8
DF	DM	4S	1		551	551	18	65	35				38	51	11		21	7	30	0.41	18.4
DF	DM	UT	2		313	313	10						100		100		16	27	550	5.33	.6
DF	Totals		66	4.0	31,489	30,237	962	1	12	27	59	4	5	5	86	32	13	243	1.64	124.3	
WH	CU	CU			100.0	144										6	8		0.00	28.5	
WH	DM	2S	41	.8	4,558	4,522	144			51	49				40	60	36	15	302	1.92	15.0
WH	DM	3S	42	6.3	4,855	4,550	145	19	81					2	12	87	39	8	94	0.77	48.3
WH	DM	4S	13	11.0	1,595	1,420	45	100					15	37	48		27	5	29	0.32	49.6
WH	DM	UT	4		408	408	13	100					100				17	5	20	0.24	20.4
WH	Totals		24	5.7	11,559	10,899	347	25	34	21	20	6	6	28	61	27	7	67	0.70	161.7	
RA	CU	CU			100.0	184										11	9		0.00	7.3	
RA	DM	UT	5	12.5	253	221	7	54	46				25	54	21		23	7	31	0.48	7.2
RA	DM	1S	3		156	156	5				100		100				16	17	180	1.99	.9
RA	DM	2S	47	3.4	2,066	1,996	63			100				32	68		36	12	189	1.35	10.5
RA	DM	3S	21	6.6	955	892	28		100					13	87		38	11	148	1.02	6.0
RA	DM	4S	15	11.6	724	640	20		100					68	32		29	9	65	0.70	9.9
RA	DM	4S	9		383	383	12	100						60	40		31	5	38	0.41	10.0
RA	Totals		9	9.2	4,719	4,287	136	12	38	47	4	5	36	59		28	9	83	0.81	51.8	
RC	CU	CU			100.0	59										3	13		0.00	3.2	
RC	DM	3S	82	4.2	348	334	11	8		92				8	92		39	11	185	1.89	1.8
RC	DM	4S	18		71	71	2	82	18						65		32	6	38	0.57	1.9
RC	Totals		1	15.5	479	405	13	21	3	76		6		7	87	20	10	59	1.20	6.8	
Type Totals				5.0	48,246	45,827	1,457	8	20	28	44	5	8	10	77	29	10	133	1.10	344.6	

T TSPCSTGR	Species, Sort Grade - Board Foot Volumes (Type)										Page 1												
	Project: BIGRED										Date 3/20/2020												
											Time 12:59:57PM												
T18N R04W S22 T00U3										T18N R04W S22 T00U3													
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt														
18N	04W	22	BIGRED	00U3	7.10	7	39	S	W														
S Spp	So T	Gr rt 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	Dia	Bd	CF/ Lf				
WH	CU	CU																					
WH	DM	2S	64	5.2	20,648	19,570	139			39	61			4	5	91	37	15	307	2.10		63.7	
WH	DM	3S	24	.3	7,303	7,284	52	21	79					14	28	57	35	8	96	0.79		75.7	
WH	DM	4S	6	3.3	1,795	1,736	12	84	16					34	23	43	27	6	31	0.32		55.4	
WH	DM	UT	6		1,672	1,672	12	10		33	57			90		10	19	12	82	0.98		20.3	
WH	Totals		60	3.7	31,418	30,262	215	10	20	27	42			7	7	11	75	28	9	121	1.15		250.4
DF	CU	CU		100.0	521												4	16		0.00		12.1	
DF	HB	2S	23	1.6	4,904	4,827	34			57	43					100	38	14	301	1.76		16.0	
DF	HB	3S	23		4,540	4,540	32		100							100	40	10	152	0.95		29.9	
DF	DM	2S	34	2.3	7,187	7,024	50			30	70			3		35	62	36	17	469	2.98	15.0	
DF	DM	3S	10		2,091	2,091	15	44	56						17	40	43	36	8	85	0.78	24.6	
DF	DM	4S	7		1,382	1,382	10	100						13		87	35	5	38	0.36		36.1	
DF	DM	UT	3		492	492	3				100			100			12	18	160	2.73		3.1	
DF	Totals		40	3.6	21,115	20,355	145	11	28	24	37			4	2	16	78	34	10	149	1.10		136.8
RC	DM	4S	100		244	244	2	100								100	35	5	40	0.60		6.1	
RC	Totals		0		244	244	2	100								100	35	5	40	0.60		6.1	
Type Totals				3.6	52,777	50,861	361	11	23	26	40			6	5	13	76	30	10	129	1.12		393.3

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)										Page 1										
		Project: BIGRED										Date 3/20/2020										
												Time 12:59:57PM										
T18N R04W S22 T00U5										T18N R04W S22 T00U5												
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt													
18N	04W	22	BIGRED	00U5	17.90	18	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	Dia	Bd	CF/ Lf		
DF	CU	CU			100.0	778												6	11		0.00	11.9
DF	HB	2S		19	6.6	3,181	2,972	53			25	75					100	40	17	418	2.56	7.1
DF	HB	3S		7	7.1	1,287	1,195	21		100							100	36	10	130	0.97	9.2
DF	DM	2S		32	8.7	5,371	4,904	88			67	33					100	40	14	280	1.75	17.5
DF	DM	3S		30	6.0	5,077	4,773	85	30	70				5	21	74		35	8	79	0.70	60.7
DF	DM	4S		12		1,732	1,732	31	93	7				7	53	23	17	28	5	33	0.31	52.9
DF	Totals			62	10.6	17,427	15,576	279	19	30	26	25		1	8	9	83	32	8	98	0.85	159.3
WH	CU	CU																10			0.00	1.7
WH	DM	2S		60	5.7	3,313	3,123	56			41	59				15	85	38	16	362	2.28	8.6
WH	DM	3S		11		558	558	10	32	68						21	79	37	8	87	0.91	6.4
WH	DM	4S		3		152	152	3	100					100				27	5	23	0.55	6.5
WH	DM	UT		26		1,338	1,338	24	28		32	40		72		28		27	9	84	0.79	15.9
WH	Totals			21	3.5	5,361	5,171	93	14	7	33	46		19	3	19	60	30	10	132	1.20	39.2
RA	DM	UT		14		506	506	9	100					9		53	38	26	6	42	0.55	12.0
RA	DM	1S		9	10.0	384	345	6				100			100			30	16	270	2.40	1.3
RA	DM	2S		10	4.5	377	359	6			100						100	36	13	210	1.66	1.7
RA	DM	3S		18	6.7	678	632	11		100							100	36	10	139	1.13	4.5
RA	DM	4S		26	4.1	1,007	965	17		100							100	36	9	89	0.73	10.9
RA	DM	4S		23	5.0	834	793	14	100					12	53		35	27	5	32	0.35	24.7
RA	Totals			14	4.9	3,786	3,602	64	36	44	10	10		4	21	7	67	30	7	65	0.66	55.1
SS	CU	CU																11			0.00	.3
SS	DM	2S		90	8.2	818	751	13				100					100	40	22	782	4.32	1.0
SS	DM	3S		10	11.0	92	82	1		100						38	62	32	11	126	1.54	.6
SS	Totals			3	8.5	910	832	15		10		90			4		96	30	16	428	3.35	1.9
Type Totals					8.4	27,483	25,181	451	20	27	24	29		5	8	10	76	31	8	99	0.88	255.6

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	BIGRED		DATE	3/20/2020		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
18N	04W	22	BIGRED	00U1	44.80	46	224	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		46	224	4.9						
CRUISE		21	103	4.9	6,769		1.5			
DBH COUNT										
REFOREST										
COUNT		25	121	4.8						
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	64	94.3	20.6	84	48.2	219.0	38,530	37,250	8,619	8,556
WHEMLOCK	29	45.7	18.1	74	19.1	81.3	11,746	11,414	2,977	2,954
R ALDER	6	9.5	12.8	64	2.4	8.4	1,050	930	268	252
WR CEDAR	4	1.6	21.4	66	0.8	3.9	392	336	110	103
TOTAL	103	151.1	19.5	79	70.8	312.7	51,718	49,930	11,974	11,865
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	63.9	8.0		628	683	737				
WHEMLOCK	55.7	10.5		327	366	404				
R ALDER	70.6	31.4		91	133	175				
WR CEDAR	64.4	36.8		169	268	366				
TOTAL	74.4	7.4		504	544	584	221	113	55	
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	57.6	7.3		141	153	164				
WHEMLOCK	50.8	9.6		84	93	102				
R ALDER	69.4	30.9		25	36	48				
WR CEDAR	51.5	29.4		56	79	102				
TOTAL	65.3	6.5		118	126	134	170	87	43	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	59.2	8.7		86	94	103				
WHEMLOCK	108.4	16.0		38	46	53				
R ALDER	312.2	46.0		5	9	14				
WR CEDAR	391.3	57.6		1	2	2				
TOTAL	55.6	8.2		139	151	163	123	63	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	44.9	6.6		205	219	234				
WHEMLOCK	104.9	15.5		69	81	94				
R ALDER	275.4	40.6		5	8	12				
WR CEDAR	405.0	59.7		2	4	6				
TOTAL	44.2	6.5		292	313	333	78	40	19	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	47.0	6.9		34,669	37,250	39,831				
WHEMLOCK	109.6	16.1		9,571	11,414	13,256				
R ALDER	252.7	37.2		584	930	1,276				
WR CEDAR	420.1	61.9		128	336	544				
TOTAL	45.5	6.7		46,586	49,930	53,274	83	42	21	

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT	BIGRED			DATE	3/20/2020	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
18N	04W	22	BIGRED	00U1	44.80	46	224	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		45.8	6.7	7,980	8,556	9,133				
WHEMLOCK		108.0	15.9	2,484	2,954	3,423				
R ALDER		252.3	37.2	159	252	346				
WR CEDAR		404.7	59.6	42	103	164				
TOTAL		45.2	6.7	11,075	11,865	12,656	82	42	20	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	BIGRED		DATE	3/20/2020		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
18N	04W	22	BIGRED	00U2	31.80	32	174	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
		PLOTS	TREES		TREES	TREES				
TOTAL		32	174	5.4						
CRUISE		16	79	4.9	4,903		1.6			
DBH COUNT										
REFOREST										
COUNT		16	94	5.9						
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	40	39.9	26.4	104	29.5	151.8	31,489	30,237	6,700	6,608
WHEMLOCK	19	89.2	14.1	57	25.9	97.2	11,559	10,899	3,036	2,996
R ALDER	16	22.6	16.9	68	8.6	35.3	4,719	4,287	1,227	1,184
WR CEDAR	4	2.4	21.9	60	1.3	6.3	479	405	176	165
TOTAL	79	154.2	18.6	71	67.4	290.6	48,246	45,827	11,139	10,953
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	38.5	6.2		883	942	1,001				
WHEMLOCK	104.9	25.4		201	269	338				
R ALDER	32.7	8.7		214	235	255				
WR CEDAR	61.2	35.0		150	230	310				
TOTAL	75.7	8.7		549	601	654	229	117	57	
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	35.7	5.8		194	206	218				
WHEMLOCK	85.5	20.7		54	69	83				
R ALDER	25.0	6.7		60	64	68				
WR CEDAR	64.0	36.6		60	94	128				
TOTAL	66.3	7.7		128	139	149	176	90	44	
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	84.0	14.8		34	40	46				
WHEMLOCK	125.7	22.2		69	89	109				
R ALDER	152.2	26.9		17	23	29				
WR CEDAR	478.7	84.6		0	2	4				
TOTAL	63.0	11.1		137	154	171	159	81	40	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	71.9	12.7		133	152	171				
WHEMLOCK	123.5	21.8		76	97	118				
R ALDER	147.3	26.0		26	35	45				
WR CEDAR	429.2	75.8		2	6	11				
TOTAL	33.8	6.0		273	291	308	46	23	11	
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	77.4	13.7		26,103	30,237	34,370				
WHEMLOCK	125.9	22.2		8,476	10,899	13,323				
R ALDER	160.0	28.3		3,076	4,287	5,498				
WR CEDAR	444.5	78.5		87	405	722				
TOTAL	40.0	7.1		42,586	45,827	49,069	64	33	16	

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT	BIGRED			DATE	3/20/2020	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
18N	04W	22	BIGRED	00U2	31.80	32	174	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		74.8	13.2	5,735	6,608	7,482				
WHEMLOCK		124.5	22.0	2,337	2,996	3,654				
R ALDER		154.6	27.3	861	1,184	1,507				
WR CEDAR		410.6	72.5	45	165	285				
TOTAL		35.3	6.2	10,271	10,953	11,636	50	25	12	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	BIGRED		DATE	3/20/2020		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
18N	04W	22	BIGRED	00U3	7.10	7	39	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		7	39	5.6						
CRUISE		7	39	5.6	1,159		3.4			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK	23	100.5	19.9	76	48.7	217.3	31,418	30,263	8,013	8,013
DOUG FIR	15	56.7	21.4	85	30.7	142.0	21,115	20,355	5,145	5,067
WR CEDAR	1	6.1	14.0	38	1.7	6.5	244	244	129	129
TOTAL	39	163.3	20.3	77	81.3	365.8	52,777	50,861	13,287	13,209
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	
WHEMLOCK		49.5	10.6	368	411	455				
DOUG FIR		75.4	22.7	540	698	857				
WR CEDAR										
TOTAL		74.8	12.4	435	497	558	223	114	56	
CL:	68.1 %	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK		49.1	10.5	99	110	122				
DOUG FIR		54.5	16.4	135	162	188				
WR CEDAR										
TOTAL		57.7	9.6	113	125	137	133	68	33	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK		114.7	46.7	54	101	147				
DOUG FIR		106.2	43.2	32	57	81				
WR CEDAR		264.6	107.7		6	13				
TOTAL		80.2	32.7	110	163	217	299	152	75	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK		107.3	43.7	122	217	312				
DOUG FIR		64.5	26.2	105	142	179				
WR CEDAR		264.6	107.7		7	14				
TOTAL		58.4	23.8	279	366	453	158	81	40	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK		115.1	46.8	16,088	30,262	44,437				
DOUG FIR		63.1	25.7	15,125	20,355	25,584				
WR CEDAR		264.6	107.7		244	507				
TOTAL		63.7	25.9	37,677	50,861	64,046	188	96	47	
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	
WHEMLOCK		110.9	45.1	4,397	8,013	11,629				
DOUG FIR		63.5	25.8	3,758	5,067	6,377				
WR CEDAR		264.6	107.7		129	267				
TOTAL		61.2	24.9	9,918	13,209	16,500	174	89	43	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	BIGRED		DATE	3/20/2020		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
18N	04W	22	BIGRED	00U4	37.20	39	164	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		39	164	4.2						
CRUISE		22	85	3.9	3,654		2.3			
DBH COUNT										
REFOREST										
COUNT		17	75	4.4						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	52	62.8	20.4	72	31.5	142.0	17,026	15,865	4,734	4,709
WHEMLOCK	30	34.4	22.9	73	20.6	98.7	12,885	12,122	3,487	3,487
S SPRUCE	2	.6	26.5	64	0.4	2.1	226	209	71	71
WR CEDAR	1	.4	25.0	60	0.3	1.3	99	84	39	39
TOTAL	85	98.2	21.3	72	52.8	244.1	30,236	28,280	8,331	8,305
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	51.2	7.4		344	371	398				
WHEMLOCK	41.8	7.9		418	454	490				
S SPRUCE	38.6	36.1		246	385	524				
WR CEDAR										
TOTAL	47.8	5.3		378	400	421	91	47	23	
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	45.0	6.5		102	109	116				
WHEMLOCK	36.5	6.9		120	129	137				
S SPRUCE	19.3	18.1		106	129	153				
WR CEDAR										
TOTAL	41.3	4.6		111	117	122	68	35	17	
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	62.1	9.9		57	63	69				
WHEMLOCK	94.0	15.0		29	34	40				
S SPRUCE	437.4	70.0		0	1	1				
WR CEDAR	624.5	99.9		0	0	1				
TOTAL	33.8	5.4		93	98	104	46	23	11	
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	50.2	8.0		131	142	153				
WHEMLOCK	85.2	13.6		85	99	112				
S SPRUCE	436.3	69.8		1	2	4				
WR CEDAR	624.5	99.9		0	1	3				
TOTAL	26.4	4.2		234	244	254	28	14	7	
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	50.0	8.0		14,595	15,865	17,135				
WHEMLOCK	85.9	13.7		10,456	12,122	13,788				
S SPRUCE	444.0	71.0		61	209	357				
WR CEDAR	624.5	99.9		0	84	168				
TOTAL	31.0	5.0		26,875	28,280	29,684	38	20	10	

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT	BIGRED			DATE	3/20/2020	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
18N	04W	22	BIGRED	00U4	37.20	39	164	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		48.9	7.8	4,340	4,709	5,077				
WHEMLOCK		85.1	13.6	3,012	3,487	3,962				
S SPRUCE		436.3	69.8	21	71	121				
WR CEDAR		624.5	99.9	0	39	77				
TOTAL		28.5	4.6	7,926	8,305	8,684	33	17	8	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	BIGRED		DATE	3/20/2020		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
18N	04W	22	BIGRED	00U5	17.90	18	62	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		18	62	3.4						
CRUISE		11	36	3.3	2,189	1.6				
DBH COUNT										
REFOREST										
COUNT		5	22	4.4						
BLANKS		2								
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	19	71.8	17.9	77	29.6	125.2	17,427	15,576	4,423	4,253
WHEMLOCK	6	22.3	19.1	58	10.2	44.4	5,361	5,171	1,404	1,404
R ALDER	9	27.6	15.1	64	8.8	34.1	3,786	3,602	1,068	1,068
S SPRUCE	2	.6	35.0	94	0.7	4.3	910	832	198	198
TOTAL	36	122.3	17.7	71	49.5	208.0	27,483	25,181	7,093	6,923
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	67.1	17.3		329	398	466				
WHEMLOCK	70.1	31.2		260	378	496				
R ALDER	56.4	19.9		129	161	193				
S SPRUCE	30.0	28.1		931	1,295	1,659				
TOTAL	89.1	15.5		324	384	443	317	162	79	
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	58.1	15.0		89	105	121				
WHEMLOCK	65.5	29.2		70	98	127				
R ALDER	57.8	20.4		38	48	58				
S SPRUCE	13.2	12.3		269	306	344				
TOTAL	77.6	13.5		87	101	114	240	123	60	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	101.0	24.5		54	72	89				
WHEMLOCK	140.2	34.0		15	22	30				
R ALDER	183.0	44.4		15	28	40				
S SPRUCE	291.2	70.6		0	1	1				
TOTAL	59.8	14.5		105	122	140	151	77	38	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	85.1	20.6		99	125	151				
WHEMLOCK	145.7	35.3		29	44	60				
R ALDER	185.5	44.9		19	34	49				
S SPRUCE	291.2	70.6		1	4	7				
TOTAL	48.2	11.7		184	208	232	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	82.3	19.9		12,469	15,576	18,683				
WHEMLOCK	153.2	37.1		3,251	5,171	7,090				
R ALDER	189.3	45.9		1,949	3,602	5,255				
S SPRUCE	296.2	71.8		235	832	1,430				
TOTAL	47.7	11.5		22,274	25,181	28,089	96	49	24	

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT	BIGRED			DATE	3/20/2020	
TWP	RGE	SECT	TRACT	TYPE	ACRES		PLOTS	TREES	CuFt	BdFt
18N	04W	22	BIGRED	00U5	17.90		18	62	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		82.6	20.0	3,401	4,253	5,105				
WHEMLOCK		149.0	36.1	897	1,404	1,911				
R ALDER		188.9	45.8	579	1,068	1,557				
S SPRUCE		291.6	70.7	58	198	338				
TOTAL		46.6	11.3	6,142	6,923	7,704	92	47	23	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	BIGRED		DATE	3/20/2020		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
18N	04W	22	BIGRED	00U6	15.10	14	72	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		14	72	5.1						
CRUISE		7	43	6.1	2,828	1.5				
DBH COUNT										
REFOREST										
COUNT		5	29	5.8						
BLANKS		2								
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
WHEMLOCK	34	151.3	17.9	82	62.5	264.4	39,947	37,051	10,075	9,984
DOUG FIR	5	9.0	31.4	100	8.6	48.5	9,841	8,691	2,037	1,987
R ALDER	4	26.9	12.6	55	6.6	23.5	1,648	1,648	533	533
TOTAL	43	187.3	18.1	79	78.9	336.3	51,437	47,390	12,645	12,504
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	
WHEMLOCK	64.3	11.0		328	368	409				
DOUG FIR	45.7	22.7		956	1,236	1,516				
R ALDER	29.5	16.8		54	65	76				
TOTAL	92.8	14.1		379	441	503	344	175	86	
CL:	68.1 %	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	55.6	9.5		88	98	107				
DOUG FIR	40.1	19.9		220	275	330				
R ALDER	30.9	17.6		17	21	25				
TOTAL	78.4	12.0		98	111	124	246	125	61	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	75.1	20.8		120	151	183				
DOUG FIR	107.3	29.7		6	9	12				
R ALDER	257.2	71.2		8	27	46				
TOTAL	66.2	18.3		153	187	222	188	96	47	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	62.2	17.2		219	264	310				
DOUG FIR	101.1	28.0		35	48	62				
R ALDER	257.2	71.2		7	23	40				
TOTAL	55.5	15.4		285	336	388	133	68	33	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	64.7	17.9		30,408	37,051	43,693				
DOUG FIR	101.4	28.1		6,249	8,691	11,134				
R ALDER	257.2	71.2		474	1,648	2,822				
TOTAL	59.2	16.4		39,620	47,390	55,160	151	77	38	
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	
WHEMLOCK	63.5	17.6		8,229	9,984	11,739				
DOUG FIR	99.7	27.6		1,438	1,987	2,536				
R ALDER	257.2	71.2		153	533	913				
TOTAL	58.1	16.1		10,491	12,504	14,518	145	74	36	

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

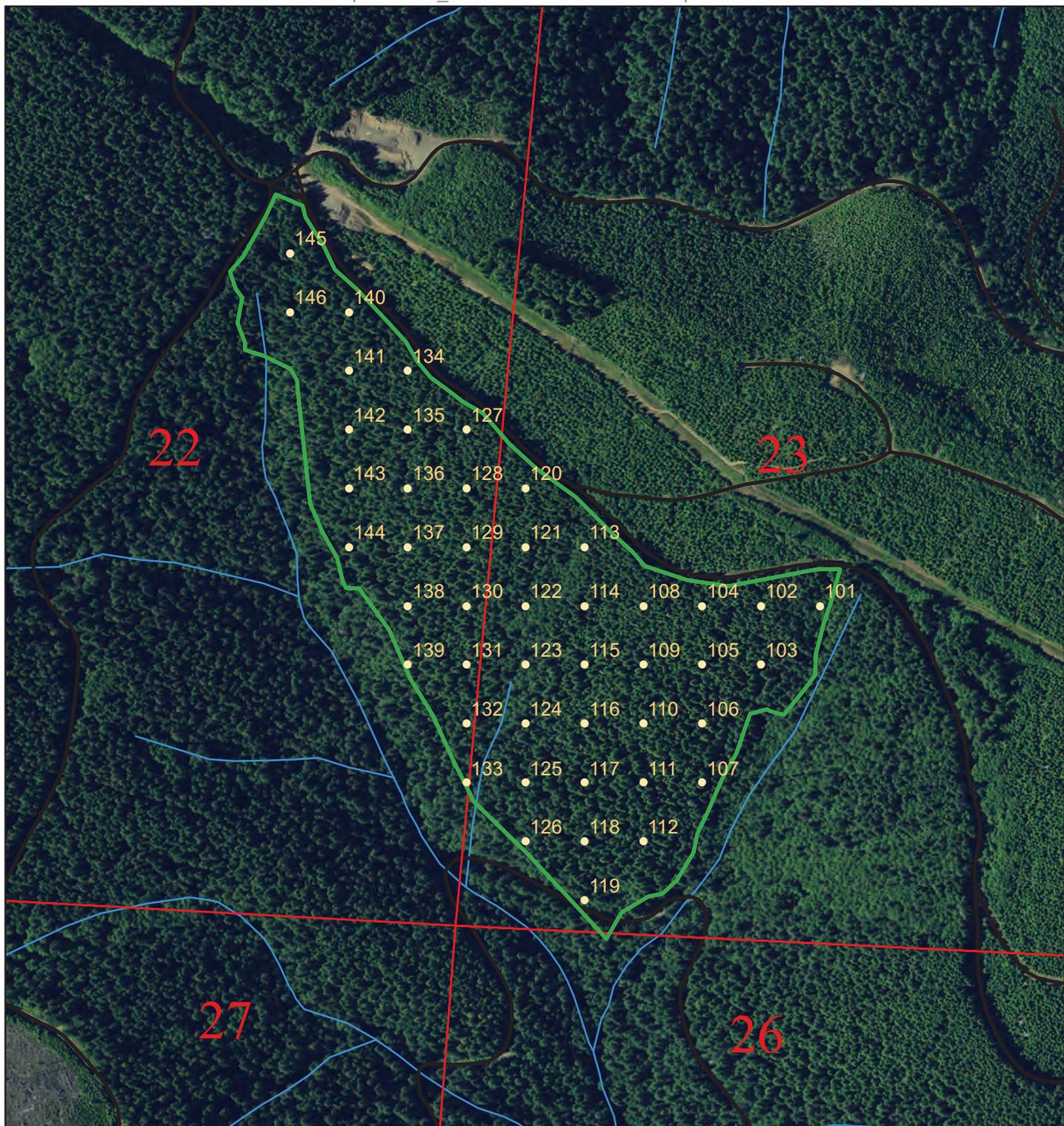
T18N R04W S22 Ty00U	44.8
T18N R04W S22 Ty00U	31.8
T18N R04W S22 Ty00U	15.1

Project BIGRED
Acres 153.90

Page No 1
Date: 3/20/2020
Time 12:59:57PM

Species	Total	Total	Total	Net Cubic Ft/		CF/ LF	Total CCF		Total MBF	
	Trees	Logs	Tons	Tree	Log		Gross	Net	Gross	Net
DOUG FIR	9,657	22,199	26,270	94.31	41.03	1.26	9,218	9,107	3,971	3,775
WHEMLOCK	9,566	17,697	19,002	61.68	33.34	1.03	5,938	5,901	2,295	2,176
R ALDER	2,042	3,794	2,150	37.28	20.07	0.69	782	761	290	267
WR CEDAR	204	329	303	59.72	37.11	1.16	129	122	38	33
S SPRUCE	32	70	161	191.55	88.14	2.63	62	62	25	23
Totals	21,502	44,088	47,885	74.19	36.19	1.12	16,128	15,954	6,619	6,274

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	19,460	40,295	45,735	78.07	37.70	1.16	15,346	15,192	6,330	6,006
H	2,042	3,794	2,150	37.28	20.07	0.69	782	761	290	267
Totals	21,502	44,088	47,885	74.19	36.19	1.12	16,128	15,954	6,619	6,274



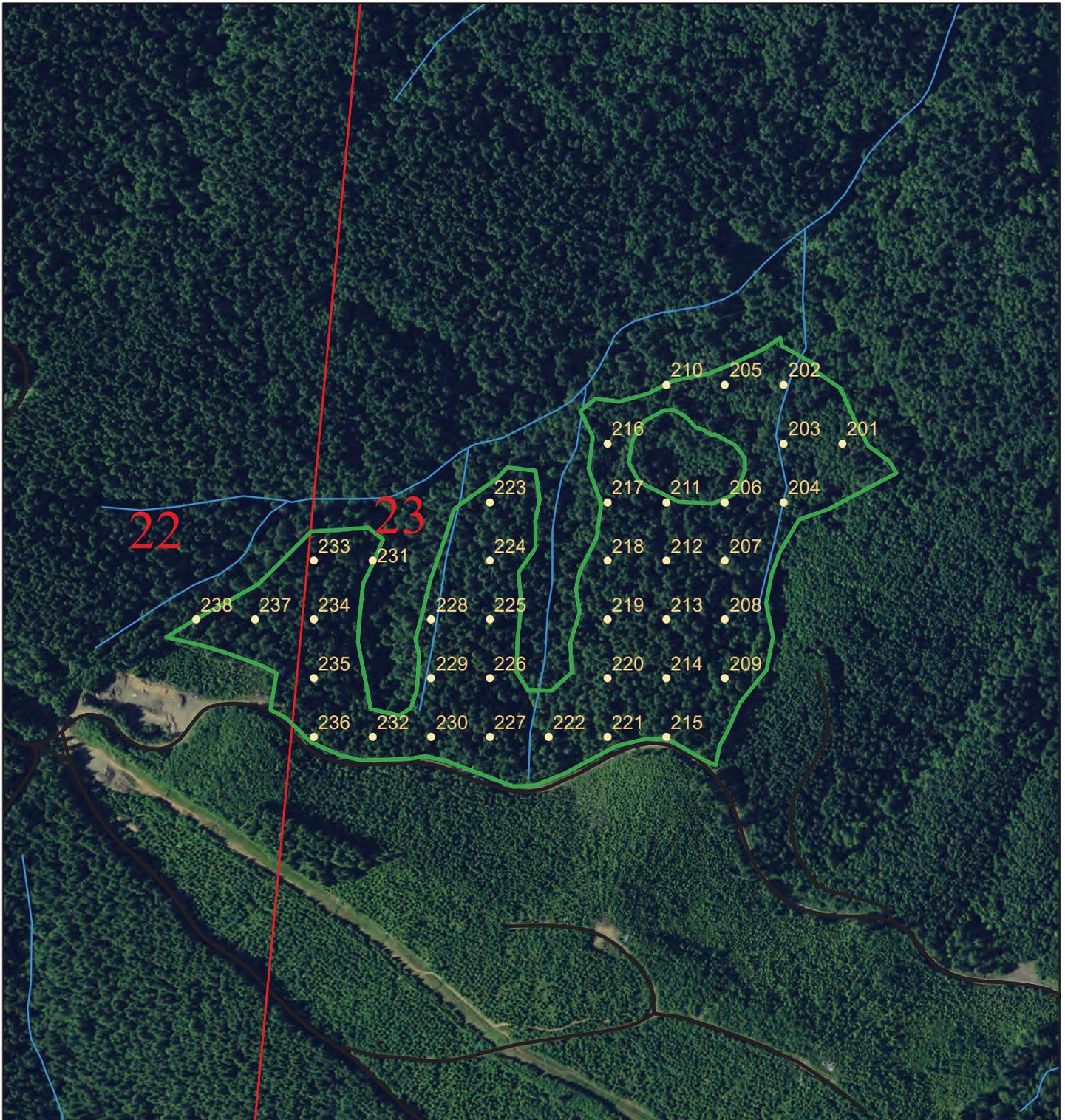
FMA POLYGON AND SAMPLE POINT INFORMATION

FMA_NM:	BIG RED U1	Township:	T18R04W
FMA_ID:	305518	DNR Region:	SO PUGET
Acres:	48	Total Sample Points:	46
County:	THURSTON	Spacing Between Points:	Width: 208 Height: 208
Imagery:	2017 Orthophoto (1-ft Color) [HXIP]	Point Rotation Degrees:	0



Legend

- Sample Points
- FMA polys
- Public Land Survey Sections



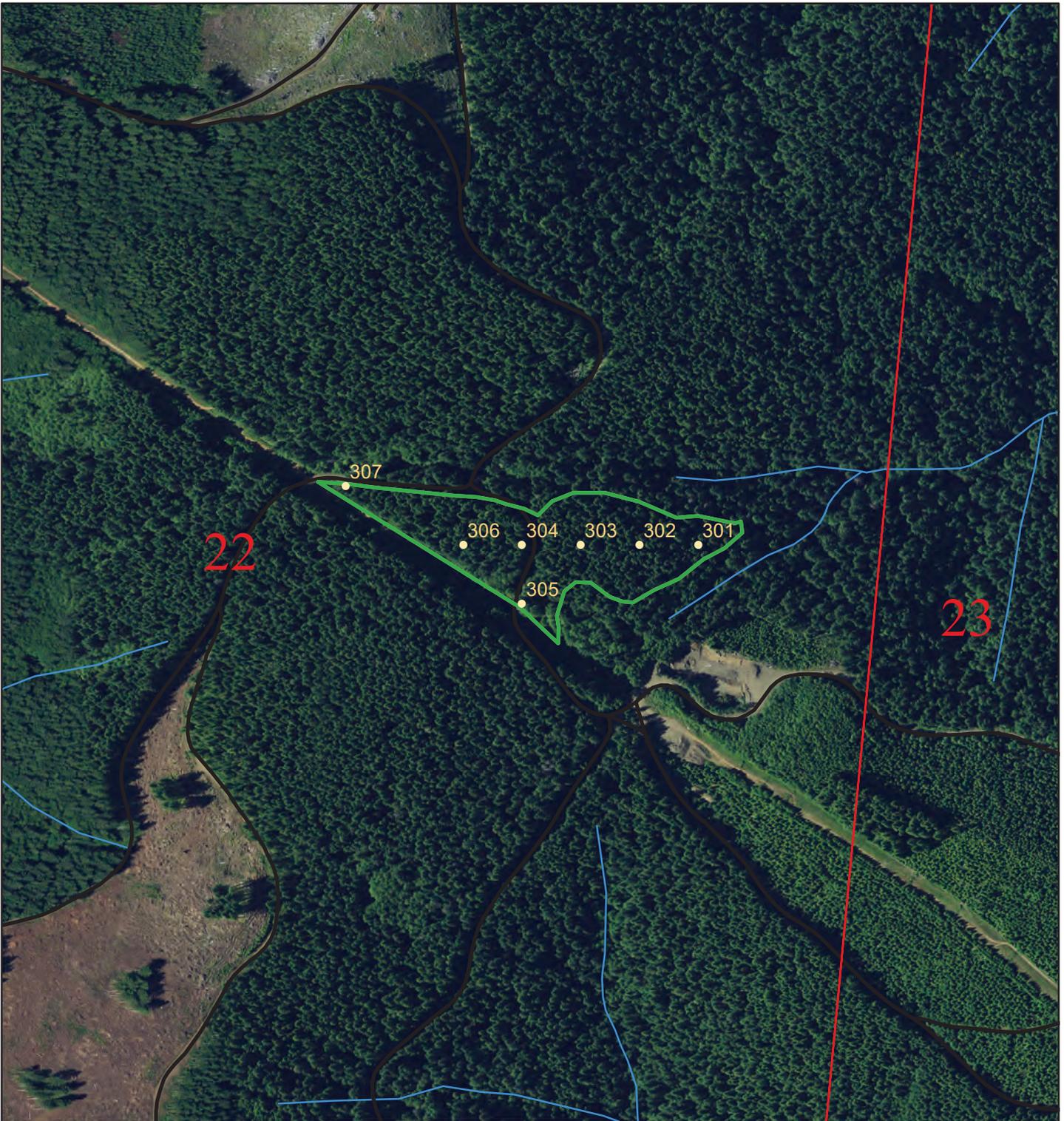
FMA POLYGON AND SAMPLE POINT INFORMATION

FMA_NM:	BIG RED U2	Township:	T18R04W
FMA_ID:	305517	DNR Region:	SO PUGET
Acres:	acres	Total Sample Points:	38
County:	THURSTON	Spacing Between Points: Width:	208
Imagery:	2017 Orthophoto (1-ft Color) [HXIP]	Point Rotation Degrees:	0
		Spacing Between Points: Height:	208



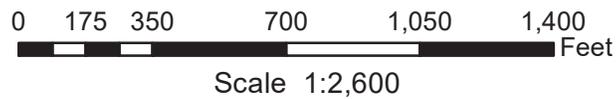
Legend

- Sample Points
- FMA polys
- Public Land Survey Sections



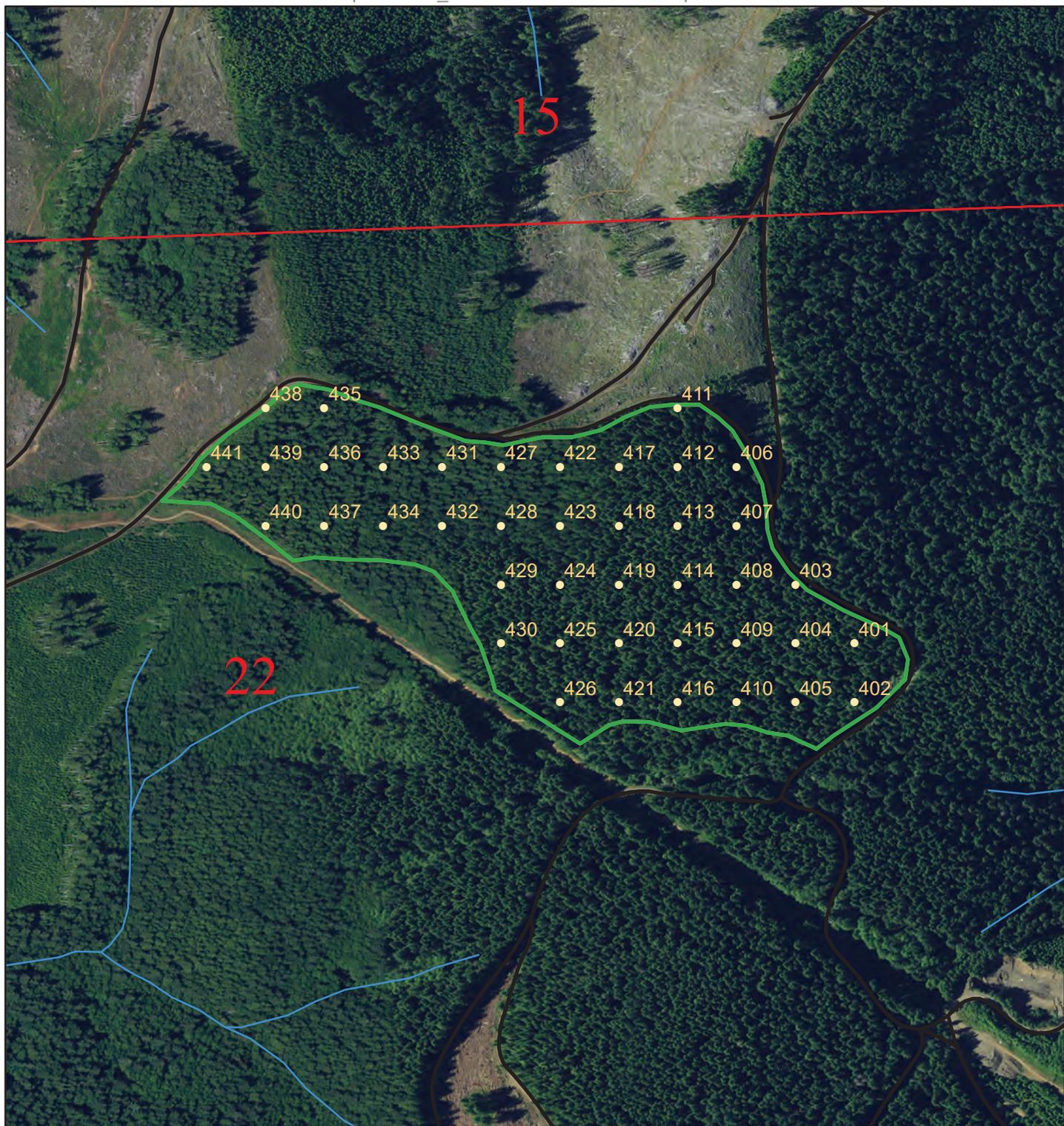
FMA POLYGON AND SAMPLE POINT INFORMATION

FMA_NM:	BIG RED U3	Township:	T18R04W
FMA_ID:	305519	DNR Region:	SO PUGET
Acres:	8	Total Sample Points:	7
County:	THURSTON	Spacing Between Points:	Width: 208 Height: 208
Imagery:	2017 Orthophoto (1-ft Color) [HXIP]	Point Rotation Degrees:	0



Legend

- Sample Points
- FMA polys
- Public Land Survey Sections



FMA POLYGON AND SAMPLE POINT INFORMATION

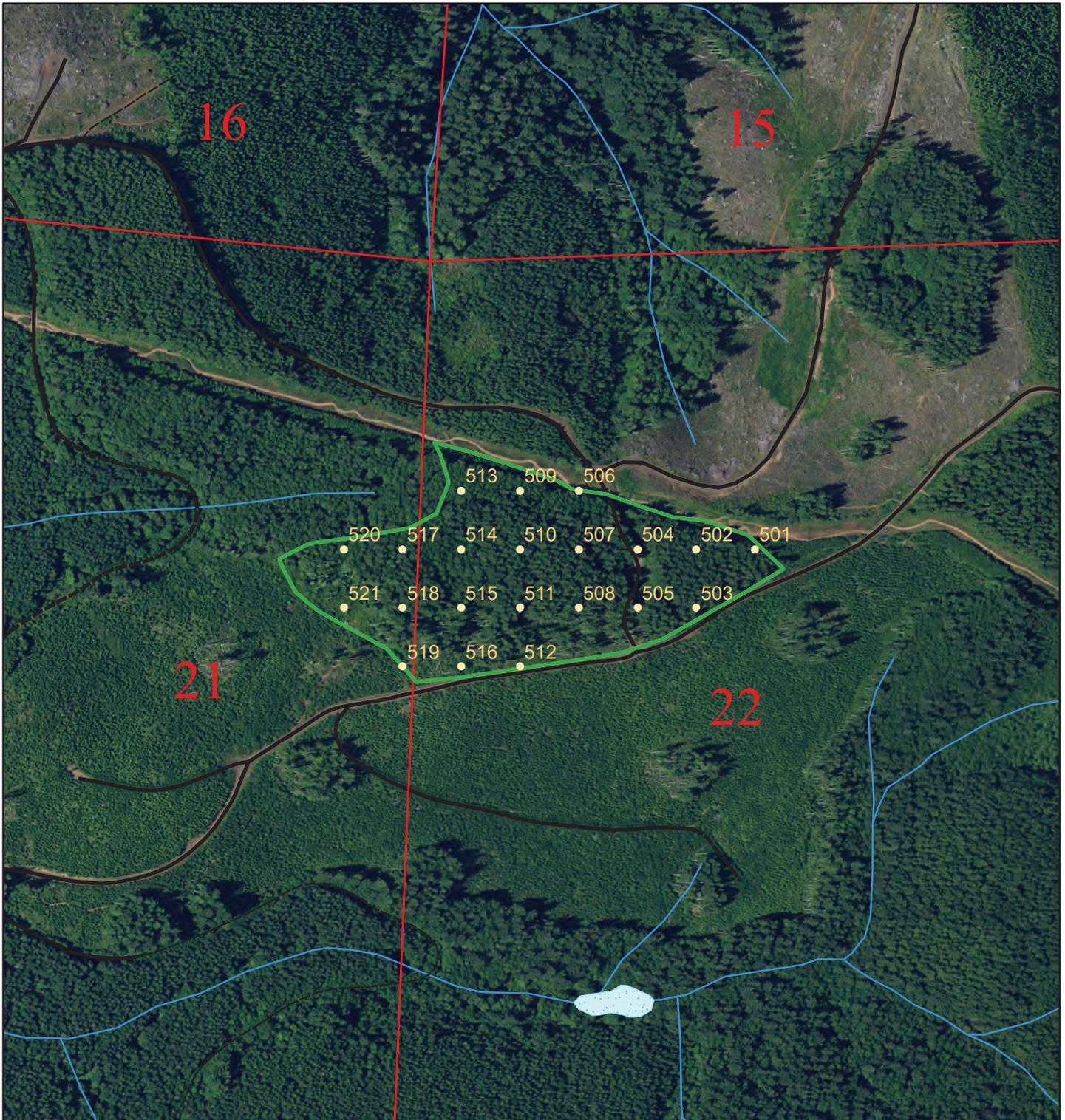
FMA_NM:	BIG RED U4	Township:	T18R04W
FMA_ID:	305520	DNR Region:	SO PUGET
Acres:	40	Total Sample Points:	41
County:	THURSTON	Spacing Between Points:	Width: 208 Height: 208
Imagery:	2017 Orthophoto (1-ft Color) [HXIP]	Point Rotation Degrees:	0



Scale 1:4,600

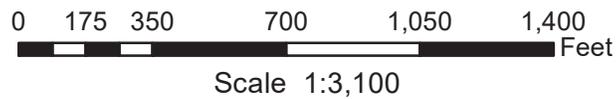
Legend

- Sample Points
- FMA polys
- Public Land Survey Sections



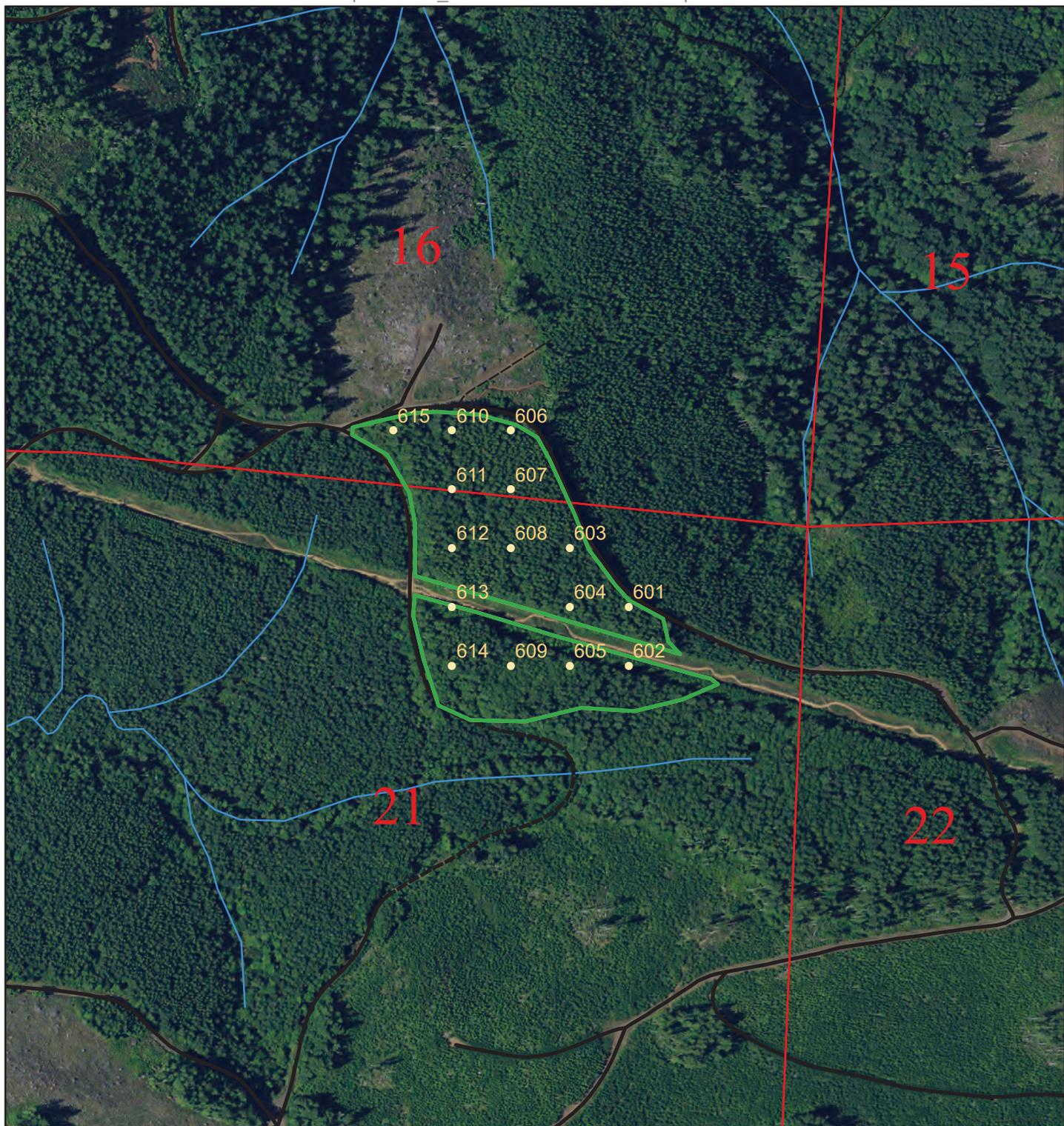
FMA POLYGON AND SAMPLE POINT INFORMATION

FMA_NM:	BIG RED U5	Township:	T18R04W
FMA_ID:	305521	DNR Region:	SO PUGET
Acres:	19	Total Sample Points:	21
County:	THURSTON	Spacing Between Points:	Width: 208 Height: 208
Imagery:	2017 Orthophoto (1-ft Color) [HXIP]	Point Rotation Degrees:	0



Legend

- Sample Points
- FMA polys
- Public Land Survey Sections



FMA POLYGON AND SAMPLE POINT INFORMATION

FMA_NM:	BIG RED U6	Township:	T18R04W
FMA_ID:	315062	DNR Region:	SO PUGET
Acres:	16	Total Sample Points:	15
County:	THURSTON	Spacing Between Points:	Width: 208 Height: 208
Imagery:	2017 Orthophoto (1-ft Color) [HXIP]	Point Rotation Degrees:	0



Scale 1:2,200

Legend

- Sample Points
- FMA polys
- Public Land Survey Sections



Forest Practices Application/Notification Notice of Decision

FPA/N No: 2421608

Effective Date: 6/4/2020

Expiration Date: 6/4/2023

Shut Down Zone 651 N

EARR Tax Credit: Eligible Non-eligible

Reference: **Big Red #30-099057**

Decision

- Notification Accepted** 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 the FPA/N.

FPA/N Classification

- Class II
- Class III
- Class IVG
- Class IVS

Number of Years Granted on Multi-Year Request

- 4 yrs
- 5 yrs

Conditions on Approval/Reasons for Disapproval

Issued By: Matt Brady

Region: South Puget Sound

Title: Resource Protection Forester

Date: 6/4/2020

Copies to: Landowner, Timber Owner and Operator

Issued in person: Landowner Timber Owner Operator

By: 

Appeal Information

You have thirty (30) days to **file** (i.e., **actually deliver**) an appeal in writing of this Decision and any related State Environmental Policy Act (SEPA) determinations to the Pollution Control Hearings Board, the Attorney General’s Office, and the Department of Natural Resources’ region office. See RCW 76.09.205. The appeal period starts when the applicant receives this decision, which usually happens electronically on the date indicated below.

You must file your appeal at all three addresses below:

Pollution Control Hearings Board	Office of the Attorney General Natural Resources Division	Department Of Natural Resources South Puget Sound Region
Physical Address 1111 Israel Road, SW Suite 301 Tumwater, WA 98501	Physical Address 1125 Washington Street, SE Olympia, WA 98504	Physical & Mailing Address 950 Farman Ave N Enumclaw, WA 98022
Mailing address Post Office Box 40903 Olympia, WA 98504-0903	Mailing Address Post Office Box 40100 Olympia, WA 98504-0100	

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

Other Applicable Laws

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

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

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

Continuing Forestland Obligations (RCW 76.09.060. RCW 76.09.070. RCW 76.09.390. and WAC 222-20-055)

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

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

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

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

DNR affidavit of mailing:

On this day 6/4/2020, I hand delivered a true and accurate copy of this document. Notice of Decision FPA #2421579

Betty Burton

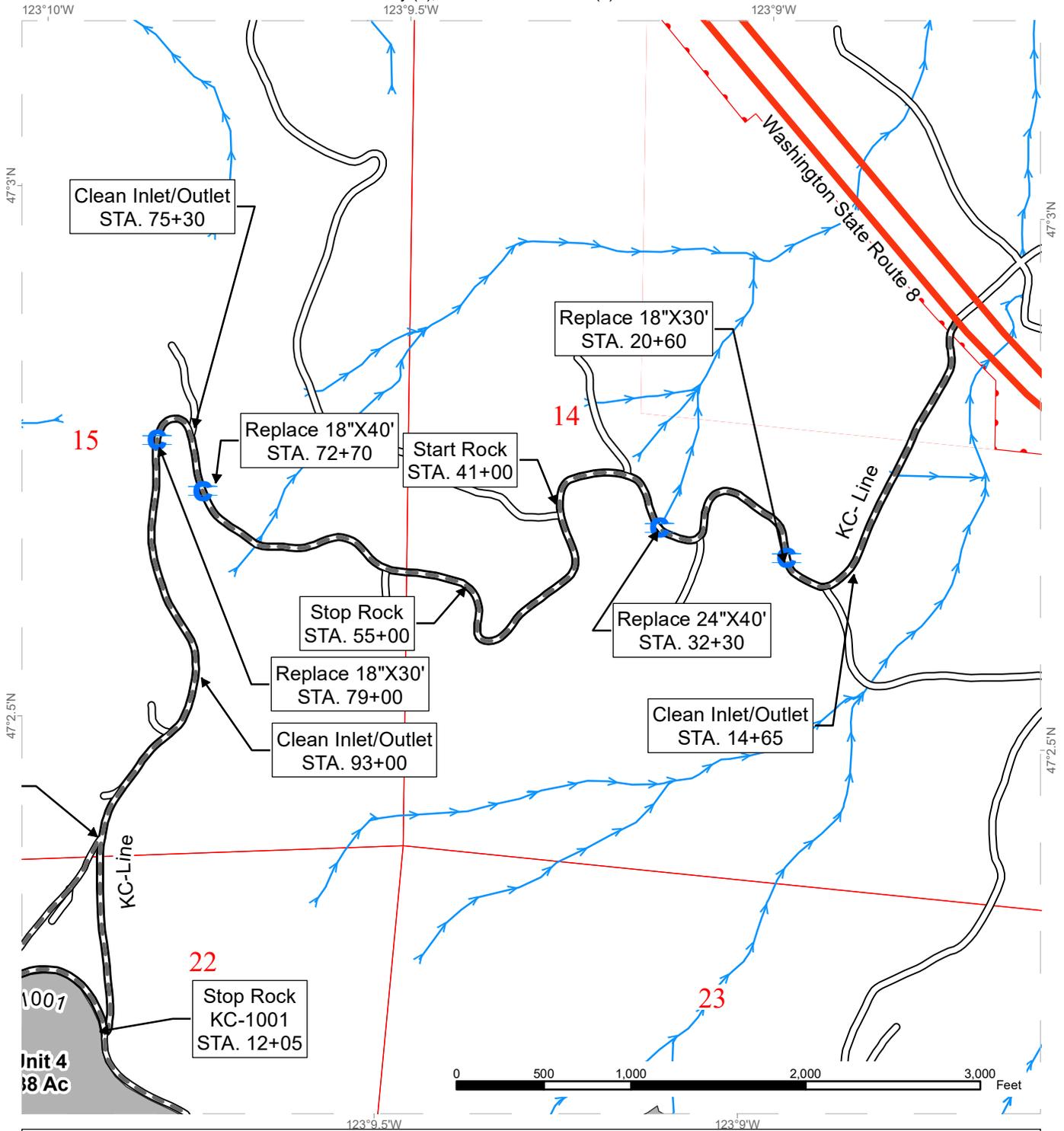
(Printed Name)


(Signature)

ROAD WORK MAP 1 OF 4

SALE NAME: BIG RED
AGREEMENT #: None
TOWNSHIP(S): T18R4W
TRUST(S): Common School and Indemnity (3), State Forest Transfer (1)

REGION: South Puget Sound Region
COUNTY(S): Thurston
ELEVATION RGE: 920-1800

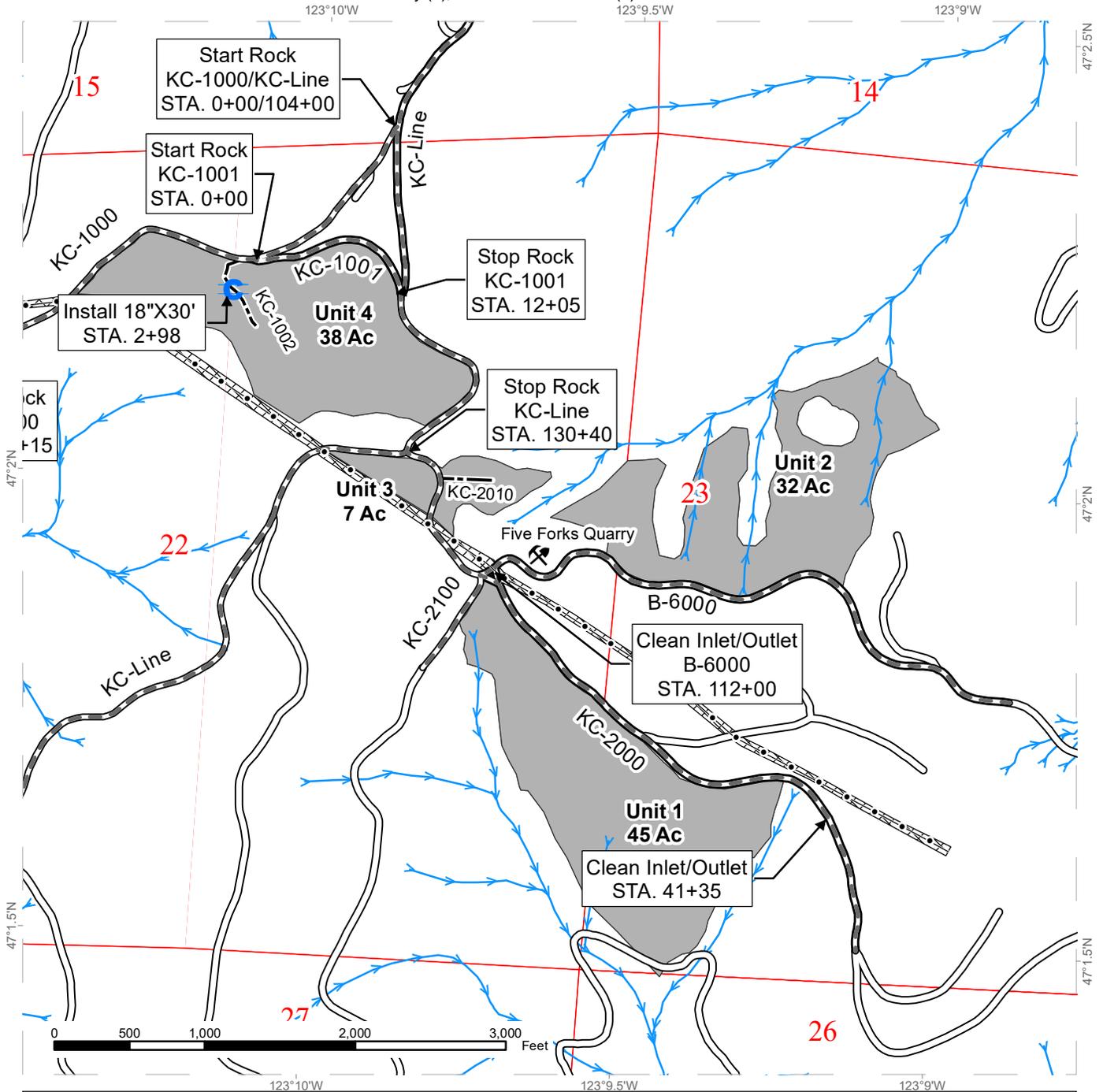


Highway	Culverts	Unit_Boundaries
Existing Roads	Watercourse	Public Land Survey Sections
Required Pre-Haul Maintenance		DNR Managed Lands

ROAD WORK MAP 2 OF 4

SALE NAME: BIG RED
AGREEMENT #: None
TOWNSHIP(S): T18R4W
TRUST(S): Common School and Indemnity (3), State Forest Transfer (1)

REGION: South Puget Sound Region
COUNTY(S): Thurston
ELEVATION RGE: 920-1800



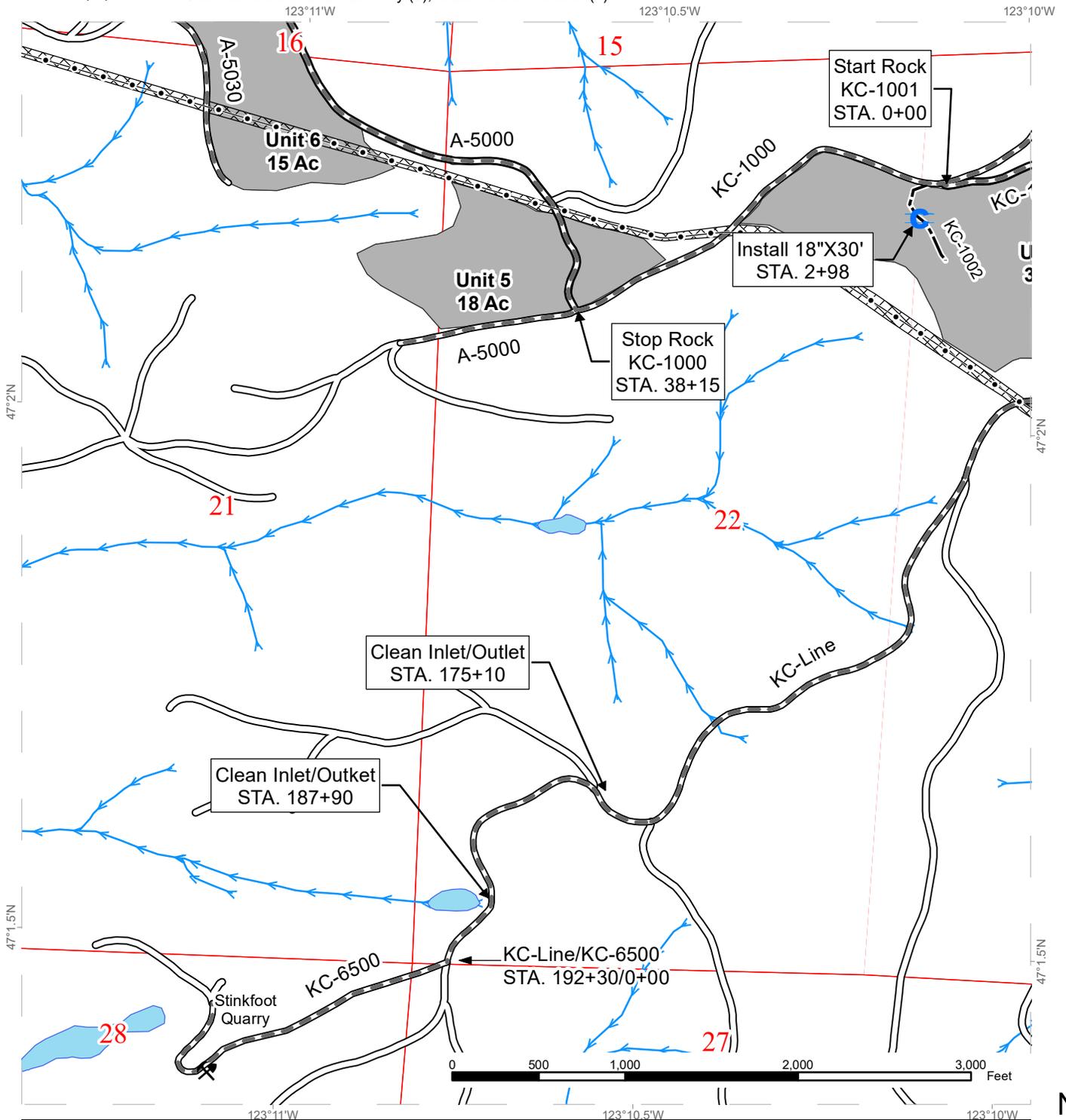
	Existing Roads		Watercourse
	Required Pre-Haul Maintenance		Unit_Boundaries
	Optional Construction		Public Land Survey Sections
	Culverts		DNR Managed Lands
	Rock Pit		



ROAD WORK MAP 3 OF 4

SALE NAME: BIG RED
AGREEMENT #: None
TOWNSHIP(S): T18R4W
TRUST(S): Common School and Indemnity (3), State Forest Transfer (1)

REGION: South Puget Sound Region
COUNTY(S): Thurston
ELEVATION RGE: 920-1800

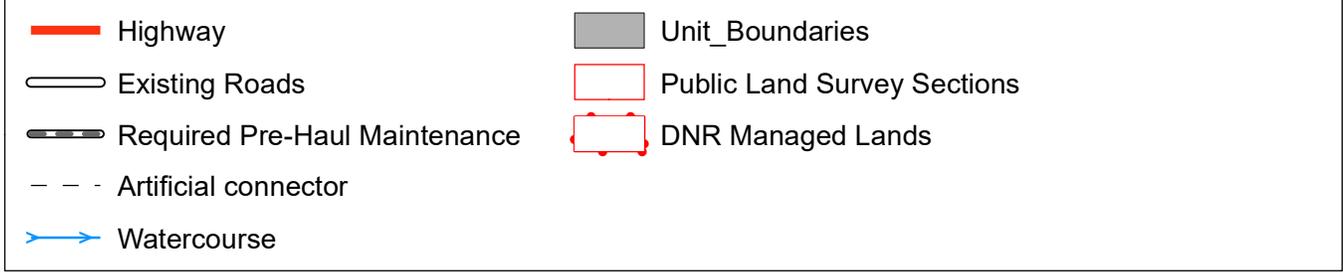
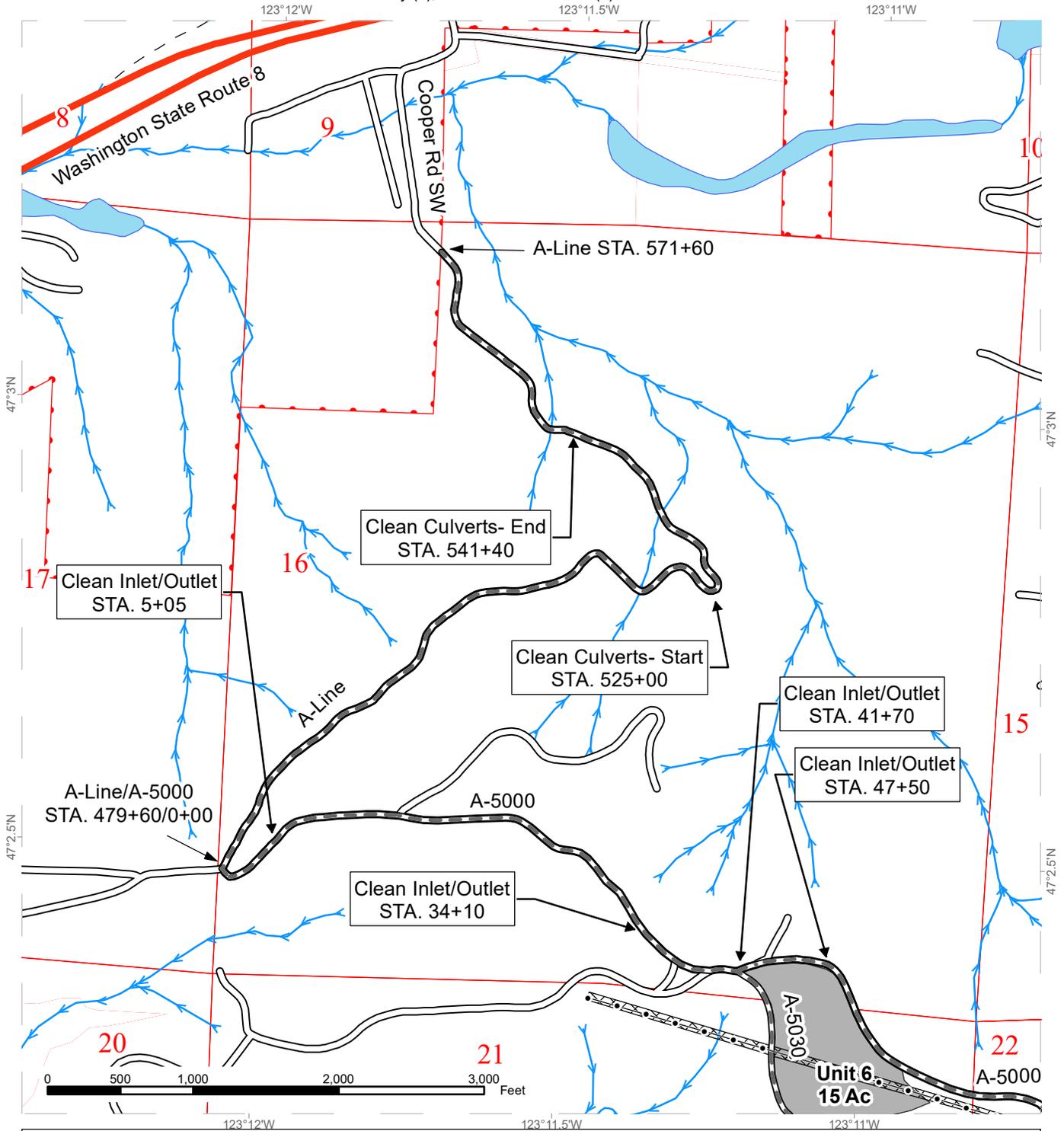


Existing Roads	Culverts	Unit_Boundaries
Required Pre-Haul Maintenance	Rock Pit	Public Land Survey Sections
Optional Construction	Watercourse	DNR Managed Lands

ROAD WORK MAP 4 OF 4

SALE NAME: BIG RED
AGREEMENT #: None
TOWNSHIP(S): T18R4W
TRUST(S): Common School and Indemnity (3), State Forest Transfer (1)

REGION: South Puget Sound Region
COUNTY(S): Thurston
ELEVATION RGE: 920-1800



STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

BIG RED TIMBER SALE ROAD PLAN
THURSTON COUNTY
DELPHI UNIT
BLACK HILLS DISTRICT

AGREEMENT NO.: 30-099057

STAFF ENGINEER: JACOB GROSS

DATE: NOVEMBER 28, 2019

DRAWN & COMPILED BY: JACOB GROSS

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>
A-Line	479+60 to 571+60	Pre-Haul Maintenance
A-5000	0+00 to 86+30	Pre-Haul Maintenance
A-5030	0+00 to 11+20	Pre-Haul Maintenance
B-6000	71+20 to 112+90	Pre-Haul Maintenance
B-6000A	0+00 to 1+10	Pre-Haul Maintenance
KC-Line	0+00 to 192+30	Pre-Haul Maintenance
KC-1000	0+00 to 38+15	Pre/Post-Haul Maintenance
KC-1001	0+00 to 12+05	Pre/Post-Haul Maintenance
KC-1002	0+00 to 5+65	Abandonment, if built
KC-2000	0+00 to 14+00	Pre-Haul Maintenance
KC-2010	0+00 to 3+50	Abandonment, if built
KC-2100	0+00 to 7+43	Pre-Haul Maintenance
KC-6500	0+00 to 15+60	Pre-Haul Maintenance

0-3 OPTIONAL ROADS

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

<u>Road</u>	<u>Stations</u>	<u>Type</u>
KC-1002	0+00 to 5+65	Construction
KC-2010	0+00 to 3+50	Construction

0-4 CONSTRUCTION

Construction includes, but is not limited to:

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

0-6 PRE-HAUL MAINTENANCE

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

- Cleaning ditches
- Cleaning culverts, and catchbasins
- Ditch reconstruction
- Reconstructing headwalls
- Constructing catchbasin and headwall
- Acquisition, manufacture and application of rock
- Cross drain culvert replacement
- Grading and shaping existing road surface and turnouts
- Live stream culvert replacement

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 9-21 ROAD ABANDONMENT.

0-12 DEVELOP ROCK SOURCE

Purchaser may develop an existing rock source. Rock source development will involve endhaul of a minimum of 1000 cubic yards of overburden to waste area. Rock source development also involves, Clearing, Stripping, Drilling, Blasting, and Crushing. Work for developing rock sources is listed in Section 6 ROCK AND SURFACING.

SECTION 1 – GENERAL

1-1 ROAD PLAN CHANGES

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

State for any submitted plan that changes the scope of work or environmental condition from the original road plan.

1-2 UNFORESEEN CONDITIONS

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

1-3 ROAD DIMENSIONS

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

1-4 ROAD TOLERANCES

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

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

1-6 ORDER OF PRECEDENCE

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

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

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

1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS

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

1-9 DAMAGED METALLIC COATING

Any 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.

SUBSECTION ROAD MARKING

1-15 ROAD MARKING

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

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

1-16 CONSTRUCTION STAKES SET BY STATE

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

1-18 REFERENCE POINT DAMAGE

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

SUBSECTION TIMING

1-20 COMPLETE BY DATE

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

1-21 HAUL APPROVAL

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

1-23 ROAD WORK PHASE APPROVAL

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

- Drainage installation
- Subgrade compaction
- Rock compaction

SUBSECTION RESTRICTIONS

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. The operation of road construction equipment is not allowed on weekends or state recognized holidays, unless authorized in writing by the Contract Administrator

<u>Activity</u>	<u>Closure Period</u>
The construction and/or reconstruction of any roads	November 1 to April 30

1-26 OPERATING DURING CLOSURE PERIOD

If permission is granted to operate during a seasonal closure period listed in Clause 1-25 ACTIVITY TIMING RESTRICTION and Contract Clause H-130 Special Harvest Requirements, the Purchaser shall comply with a maintenance plan to include further protection of water, soil, roads, and other forest assets at the Purchaser’s expense. Preventative measures shall be in place prior to operating during the closure period. Purchaser is required to maintain all haul roads at their own expense including those listed in Contract Clause C-060 DESIGNATED ROAD MAINTAINER. If other operators are using, or desire to use these roads, a joint operating plan must be developed. All parties shall follow this plan.

1-29 SEDIMENT RESTRICTION

Purchaser shall not allow silt-bearing runoff to enter any streams. Purchaser shall accomplish sediment removal through silt traps, silt fences, settling ponds, or other methods as approved, in writing by the Contract Administrator.

1-30 CLOSURE TO PREVENT DAMAGE

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

- Wheel track rutting exceeds 6 inches on jaw run roads.
- Wheel track rutting exceeds 4 inches on crushed rock roads.
- Surface or base stability problems persist.

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

1-32 BRIDGE AND ASPHALT SURFACE RESTRICTION

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

Purchaser shall remove any dirt, rock, or other material tracked or spilled on the bridge or asphalt surface(s) and have surface(s) evaluated for any damage caused by transporting equipment. Any

damage to the surface(s) will be repaired, at the Purchaser's expense, as directed by the Contract Administrator.

1-33 SNOW PLOWING RESTRICTION

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

SUBSECTION OTHER INFRASTRUCTURE

1-40 ROAD APPROACHES TO COUNTY ROADS AND STATE HIGHWAYS

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

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

SECTION 2 – MAINTENANCE

2-1 GENERAL ROAD MAINTENANCE

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

2-2 ROAD MAINTENANCE – PURCHASER MAINTENANCE

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

2-3 ROAD MAINTENANCE – DESIGNATED MAINTAINER

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

2-5 MAINTENANCE GRADING – EXISTING ROAD

On the following roads, Purchaser shall use a grader to shape the existing surface before rock application and/or timber haul.

<u>Road</u>	<u>Stations</u>
A-Line	479+60 to 571+60
A-5000	0+00 to 86+30
A-5030	0+00 to 11+20

B-6000	71+20 to 112+90
B-6000A	0+00 to 1+10
KC-Line	0+00 to 192+30
KC-1000	0+00 to 38+15
KC-1001	0+00 to 12+05
KC-2000	0+00 to 50+50
KC-2100	0+00 to 7+43
KC-6500	0+00 to 15+60

2-6 CLEANING CULVERTS

On the following roads, Purchaser shall clean the inlets and outlets of all culverts before timber haul.

<u>Road</u>	<u>Stations</u>	<u>Comments</u>
A-Line	525+00 to 541+40	Clean Inlet & Outlet, Organic Debris/Soil
A-5000	5+05, 34+10, 41+70, and 47+50	Clean Inlet & Outlet, Organic Debris/Soil
B-6000	112+00	Clean Inlet & Outlet, Organic Debris/Soil
KC-Line	14+65 to 75+30, 93+00, 175+10 to 187+90	Clean Inlet & Outlet, Organic Debris/Soil
KC-2000	41+35	Clean Inlet & Outlet, Organic Debris/Soil

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

SUBSECTION CLEARING

3-5 CLEARING

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

3-8 PROHIBITED DECKING AREAS

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

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

SUBSECTION GRUBBING

3-10 GRUBBING

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

SUBSECTION ORGANIC DEBRIS

3-20 ORGANIC DEBRIS DEFINITION

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

3-21 DISPOSAL COMPLETION

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

3-23 PROHIBITED DISPOSAL AREAS

Purchaser shall not place organic debris in the following areas:

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

3-24 BURYING ORGANIC DEBRIS RESTRICTED

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

3-25 SCATTERING ORGANIC DEBRIS

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

SECTION 4 – EXCAVATION

4-2 PIONEERING

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

- Drainage must be provided on all uncompleted construction as approved, in writing, by the Contract Administrator.

- Road pioneering operations may not undercut the final cut slope, deposit excavated material outside the grubbing limits, or restrict drainage.
- Culverts at live stream crossings must be installed during pioneering operations

4-3 ROAD GRADE AND ALIGNMENT STANDARDS

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

- Grade and alignment must have smooth continuity, without abrupt changes in direction.
- Maximum grades may not exceed 18 percent favorable and 15 percent adverse.
- Minimum curve radius is 60 feet at centerline.
- Maximum grade change for sag vertical curves is 6% in 100 feet.
- Maximum grade change for crest vertical curves is 4% in 100 feet.

4-5 CUT SLOPE RATIO

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

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

4-6 EMBANKMENT SLOPE RATIO

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

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

4-7 SHAPING CUT AND FILL SLOPE

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

4-8 CURVE WIDENING

The minimum widening placed on the inside of curves is:

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

4-9 EMBANKMENT WIDENING

The minimum embankment widening is:

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

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

SUBSECTION DITCH CONSTRUCTION

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

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

4-28 DITCH DRAINAGE

Ditches shall be constructed concurrently with construction of the subgrade. Ditches must drain to cross-drain culverts or ditchouts.

4-29 DITCHOUTS

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

SUBSECTION WASTE MATERIAL (DIRT)

4-35 WASTE MATERIAL DEFINITION

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

4-36 DISPOSAL OF WASTE MATERIAL

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

4-37 WASTE AREA LOCATION

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

<u>Road</u>	<u>Waste Area Location</u>	<u>Comments</u>	<u>Volume</u>
KC-6500	STA. 13+50	NE from expansion area of pit	2000 cy

4-38 PROHIBITED WASTE DISPOSAL AREAS

Purchaser shall not deposit waste material in the following areas, except as otherwise specified in this plan:

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

SUBSECTION SHAPING

4-55 ROAD SHAPING

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

4-56 DRY WEATHER SHAPING

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

SUBSECTION COMPACTION

4-60 FILL COMPACTION

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

4-61 SUBGRADE COMPACTION

Purchaser shall compact constructed subgrades in accordance with the COMPACTION LIST by routing equipment over the entire width except ditch. On fills deeper than 5 feet at the road shoulder Purchaser shall compact fill material in lifts no greater than 18 inches. Purchaser shall obtain written approval from the Contract Administrator for subgrade compaction before rock application.

4-62 DRY WEATHER COMPACTION

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

4-63 EXISTING SURFACE COMPACTION

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

SECTION 5 – DRAINAGE

5-1 REMOVAL OF SHOULDER BERMS

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

SUBSECTION CULVERTS

5-5 CULVERTS

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

5-7 USED CULVERT MATERIAL

On temporary roads, Purchaser may install used culverts. All other roads must have new culverts installed.

5-12 UNUSED MATERIALS STATE PROPERTY

On required roads, any materials listed on the CULVERT AND DRAINAGE LIST and materials listed in Clause 5-13 CONTINGENCY CULVERTS that are not installed will become the property of the state. Purchaser shall stockpile materials as directed by the Contract Administrator.

5-13 CONTINGENCY CULVERTS

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

<u>Road</u>	<u>Size</u>
On any portion of road used for timber or rock haul.	18"X30' Culvert 18" Culvert band

SUBSECTION CULVERT INSTALLATION

5-15 CULVERT INSTALLATION

Culvert, downspout, flume and energy dissipater installation must be in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL and the Corrugated Polyethylene Pipe Association's "Recommended Installation Practices for Corrugated Polyethylene Pipe and Fittings". Culverts shall be banded using lengths of no less than 10 feet, and no more than one length less than 16 feet. Shorter section of banded culvert shall be installed at the inlet end.

5-17 CROSS DRAIN SKEW AND SLOPE

Cross drains, on road grades in excess of 3%, must be skewed at least 30 degrees from perpendicular to the road centerline, except where the cross drain is at the low point in the road culverts will not be skewed. Cross drain culverts must be installed at a slope steeper than the incoming ditch grade, but not less than 3% or more than 12%.

5-18 CULVERT DEPTH OF COVER

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

SUBSECTION ENERGY DISSIPATERS

5-20 ENERGY DISSIPATERS

Purchaser shall install energy dissipaters in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all culverts on the CULVERT 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.

SUBSECTION CATCH BASINS, HEADWALLS, AND ARMORING

5-25 CATCH BASINS

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

5-26 HEADWALLS FOR 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

Purchaser shall place inlet and outlet protection in conjunction with or immediately following construction of the embankment. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets as designated on CULVERT LIST. Rock may not restrict the flow of water into culvert inlets or catch basins. Rock must be set in place by machine. Placement must be by zero-drop-height method only.

5-33 NATIVE SURFACE ROADS

If overwintered, native surface roads must be waterbarred by November 1. Purchaser shall construct waterbars according to the attached DRIVABLE WATERBAR DETAIL at a maximum spacing that will

produce a vertical distance of no more than 10 feet between waterbars or between natural drainage paths, and with a maximum spacing of 300 feet

SECTION 6 – ROCK AND SURFACING

SUBSECTION ROCK SOURCE

6-2 ROCK SOURCE ON STATE LAND

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

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
Stinkfoot Quarry	NE ¼ Sec. 28, T18N, R04W	2 ½ Inch Crushed, 4 Inch Jaw, Select Pit Run, Quarry Spalls.

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.

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>	<u>Quantity</u>
Five Forks Quarry	SW of the Quarry off the B-6000 road	2 ½ Inch Crushed	250 CY
Five Forks Quarry		4 Inch Jaw	1000 CY

6-5 ROCK FROM COMMERCIAL SOURCE

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

SUBSECTION ROCK SOURCE DEVELOPMENT

6-10 ROCK SOURCE DEVELOPMENT PLAN BY STATE

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

notify the Contract Administrator a minimum of 3 calendar days before starting any operations in the rock source.

<u>Source</u>	<u>Location</u>
Stinkfoot Quarry	NE ¼ Sec. 28, T18N, R04W

6-12 ROCK SOURCE SPECIFICATIONS

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

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

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

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

6-13 ROCK EXPLORATION

Purchaser shall provide at minimum a 20 ton excavator with operator for up to 4 hours of exploration of rock and other related work as directed by the Contract Administrator at the following site(s).

<u>Site</u>	<u>Location</u>
Stinkfoot Quarry	NE ¼ Sec. 28, T18N, R04W

6-14 DRILL AND SHOOT

Rock drilling and shooting must meet the following specifications:

- Oversize material remaining in the rock source at the conclusion of the timber sale may not exceed 200 cubic yards.
- Oversize material is defined as rock fragments larger than two feet in any dimension.
- Oversized rock that exceeds the maximum allowable amount must be reduced to a smaller size within the rock source.
- Purchaser shall notify the Contract Administrator a minimum of 3 working days before blasting operations.
- Purchaser shall submit an informational drilling and shooting plan to the Contract Administrator 3 working days before any drilling. The drilling and shooting plan must include, at a minimum, the mapped location and spacing of all holes to be loaded, the type of blasting agent used, the powder factor calculated and the units of same, stem amount held per hole. After drilling, the type of rock encountered while drilling e.g. hard black, soft brown, etc shall be amended to submitted plan.
- All operations must be carried out in compliance with the Regulations and Standards Applicable to Metal and Nonmetal Mining and Milling Operations (30 CFR) U.S. Department of Labor, Mine Safety and Health Administration and the Safety Standards for Construction Work (296-155 WAC), Washington Department of Labor and Industries.
- Purchaser shall block access roads before blasting operations.

SUBSECTION ROCK MANUFACTURE

6-20 ROCK CRUSHING OPERATIONS

Rock crushing operations must conform to the following specifications:

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

6-23 ROCK GRADATION TYPES

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

SUBSECTION ROCK GRADATIONS

6-32 2 ½-INCH MINUS CRUSHED ROCK

% Passing 2 ½" square sieve	100%
% Passing 2" square sieve	65 - 95%
% Passing 1" square sieve	50 – 80%
% Passing U.S. #4 sieve	30 – 50%
% Passing U.S. #40 sieve	16% maximum
% Passing U.S. #200 sieve	8% maximum

6-37 4-INCH JAW RUN ROCK

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

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

6-38 4-INCH IN-PLACE ROCK

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

In-place rock may not contain more than 5 percent by weight of organic debris and trash. No more than 50 percent of rock may be larger than 8 inches in any dimension and no rock may be larger than 12 inches in any dimension.

6-41 SELECT PIT RUN ROCK

No more than 50 percent of the rock may be larger than 6 inches in any dimension and no rock may be larger than 10 inches in any dimension. Pit Run rock may not contain more than 5 percent by weight of organic debris, and trash. Rock may require processing to meet this specification.

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.

SUBSECTION ROCK MEASUREMENT

6-55 ROCK APPLICATION MEASURED BY COMPACTED DEPTH

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

SUBSECTION ROCK STOCKPILE

6-65 ROCK STOCKPILE LOCATION

Purchaser shall stockpile rock in accordance with the ROCK LIST. Rock stockpiles must be in accordance Clause 6-67 ROCK STOCKPILE SPECIFICATIONS.

<u>Rock Source</u>	<u>Rock Type</u>	<u>Quantity (c.y.)</u>	<u>Stockpile Location</u>
Stinkfoot	2 ½ Inch Minus	3000	See Quarry Development Plan

6-67 ROCK STOCKPILE SPECIFICATIONS

Rock stockpiles listed in Clause 6-65 ROCK STOCKPILE LOCATION must meet the following specifications:

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

When completed, the stockpile must be neat and regular in shape. The stockpile height is limited to a maximum of 24 feet. Stockpiles in excess of 500 cubic yards must be built up in layers of not more than 6 feet deep. Stockpile layers must be constructed by trucks, clamshells, or other methods approved in writing by the Contract Administrator. Each layer must be completed over the entire area of the pile before depositing aggregates in the next layer. The aggregates may not be dumped so that they run down and over the lower layers in the stockpile.

Stockpiles of different types or sizes of aggregate must be spaced far enough apart, or separated by suitable walls or partitions, to prevent the mixing of the aggregates.

SUBSECTION ROCK APPLICATION

6-70 APPROVAL BEFORE ROCK APPLICATION

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

6-71 ROCK APPLICATION

Purchaser shall apply rock in accordance with the specifications and quantities shown on the ROCK LIST. Rock must be spread, shaped, and compacted full width concurrent with rock hauling operations. The Contract Administrator will direct locations for rock that is to be applied as spot patching. Road surfaces must be compacted in accordance with the COMPACTION LIST by routing equipment over the entire width.

6-73 ROCK FOR WIDENED PORTIONS

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

6-75 OPTIONAL ROCK EXCEPTION

On the following roads, if hauling takes place from May 1 to October 31 the Purchaser may place less rock than shown on the ROCK LIST, as approved in writing by the Contract Administrator. If less rock is applied, the Purchaser shall submit a written plan, for approval, describing how these roads shall be constructed, used, maintained, and treated post-haul. The Purchaser shall meet post-haul specifications in Section 9 POST-HAUL ROAD WORK, or other conditions of the approved plan as required by the Contract Administrator.

<u>Road</u>	<u>Stations</u>
KC-1002	0+00 to 5+65
KC-2010	0+00 to 3+50

SECTION 8 – EROSION CONTROL

8-1 SEDIMENT CONTROL STRUCTURES

Sediment control shall be accomplished using sediment traps, silt fences, rock berms, settling ponds or other methods as approved, in writing, by the Contract Administrator.

8-2 PROTECTION FOR EXPOSED SOIL

Purchaser shall provide and evenly spread a layer of straw to all exposed soils that have potential to deliver to typed water.

SECTION 9 – POST-HAUL ROAD WORK

SUBSECTION STRUCTURES

9-1 BARRICADES

Purchaser shall construct barricades in accordance with the BARRICADE DETAIL.

<u>Road</u>	<u>Stations</u>
KC-1002	0+50
KC-2010	0+50

9-3 CULVERT MATERIAL REMOVED FROM STATE LAND

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

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>
KC-1000	0+00 to 38+15	Grade and shape, apply rock per the ROCK LIST, compact per the COMPACTION LIST.
KC-1001	0+00 to 12+05	Grade and shape, apply rock per the ROCK LIST, compact per the COMPACTION LIST.

SUBSECTION POST-HAUL LANDING MAINTENANCE

9-10 LANDING DRAINAGE

Purchaser shall provide for drainage of the landing surface.

SUBSECTION DECOMMISSIONING AND ABANDONMENT

9-21 ROAD ABANDONMENT

If constructed/reconstructed, Purchaser shall abandon the following roads before the termination of this contract.

<u>Road</u>	<u>Stations</u>
KC-1002	0+00 to 5+65
KC-2010	0+00 to 3+50

9-22 ABANDONMENT

- Remove road shoulder berms except as directed.
- Construct non-drivable waterbars according to the attached NON-DRIVABLE WATERBAR DETAIL at a maximum spacing that will produce a vertical drop of no more than 10 feet between waterbars or between natural drainage paths and with a maximum spacing of 100 feet, or as marked in the field.
- Skew waterbars at least 30 degrees from perpendicular to the road centerline on roads in excess of 3 per cent grade.
- Key waterbars into the cut-slope to intercept the ditch. Waterbars must be outsloped to provide positive drainage. Outlets must be on stable locations.
- Remove ditch cross drain culverts and leave the resulting trench open.
- Remove used culvert material from State Land.
- Construct earth barricade as per clause 9-1 BARRICADES

SECTION 10 MATERIALS

SUBSECTION CULVERTS

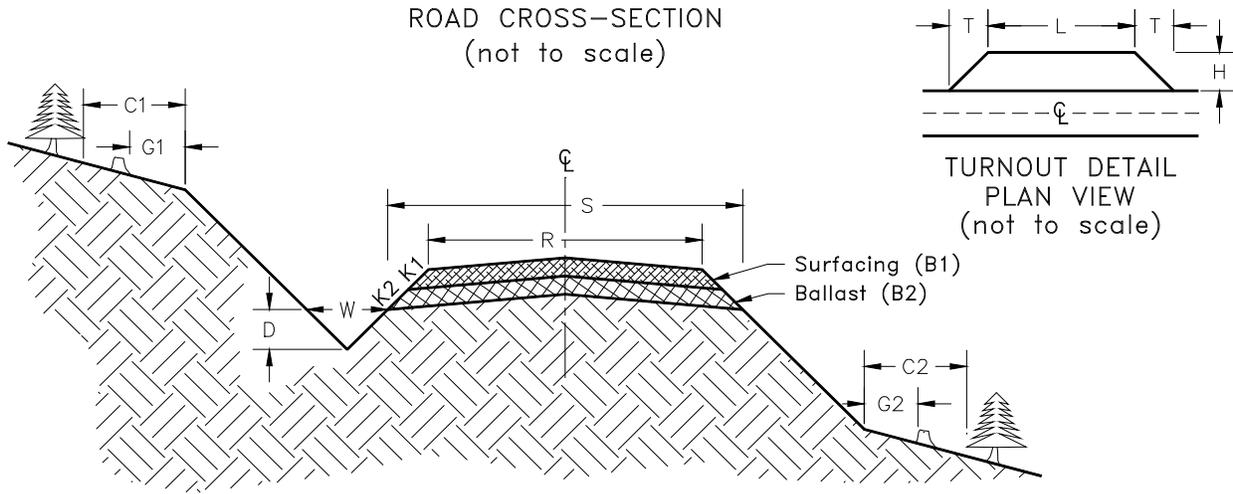
10-17 CORRUGATED PLASTIC CULVERT

Polyethylene culverts must meet AASHTO M-294 specifications, or ASTM F-2648 specifications for recycled polyethylene. Culvert segments not specifically labeled as downspouts must be Type S – double walled with a corrugated exterior and smooth interior.

10-22 PLASTIC BAND

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

TYPICAL SECTION SHEET (pg 1 of 1)



Road Number	From Station	To Station	Tolerance Class	Subgrade Width (feet)	Road Width (feet)	Ditch		Crown in. @ CL	Grubbing Limits (feet)		Clearing Limits (feet)		Cut Slope Ratio	Fill Slope Ratio
						Width (feet)	Depth (feet)		G1	G2	C1	C2		
				S	R	W	D		G1	G2	C1	C2	Clause	Clause
A-Line	479+60	571+60	A		16	3	1	4	-	-	-	-	4-5	4-6
A-5000	0+00	86+30	A		14	3	1	4	-	-	-	-	4-5	4-6
B-6000	71+20	112+90	A		14	3	1	4	-	-	-	-	4-5	4-6
B-6000A	0+00	1+10	A		14	3	1	4	-	-	-	-	4-5	4-6
KC-Line	0+00	192+30	A		16	3	1	4	-	-	-	-	4-5	4-6
KC-1000	0+00	38+15	A		14	3	1	4	-	-	-	-	4-5	4-6
KC-1001	0+00	12+05	A		14	3	1	4	-	-	-	-	4-5	4-6
KC-1002	0+00	5+65	C	16	12	3	1	4	0	0	0	0	4-5	4-6
KC-2000	0+00	50+50	A		14	3	1	4	-	-	-	-	4-5	4-6
KC-2010	0+00	3+50	C	16	12	3	1	4	0	0	0	0	4-5	4-6
KC-2100	0+00	7+43	A		12	3	1	4	-	-	-	-	4-5	4-6
KC-6500	0+00	15+60	A		12	3	1	4	-	-	-	-	4-5	4-6

COMPACTION LIST

Road	From Station	To Station	Type	Max Depth of Lift (inches)	Equipment Type	Equipment Weight (lbs)	Minimum Number of Passes	Maximum Operating Speed (mph)
			Pre/Post-haul rock	6	Smooth Drum Vibratory Roller	14,000	2 low freq. vibrate on	3.5
			Subgrade, rock	12, 6	Smooth Drum Vibratory Roller	14,000	2 low freq. vibrate on	3.5
			After pre-haul grading	6	Smooth Drum Vibratory Roller	14,000	2 low freq. vibrate on	3.5

ROCK LIST

BALLAST

Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth (inches)	C.Y./ Station	# of Stations	C.Y. Subtotal	Rock Source	Comments		
									CW	TO	TA
			K2	B2	4 Inch Jaw Run/4 Inch In-Place						
KC-1002*	0+00	5+65	1 ½ :1	12	56	5.65	341	Five Forks Quarry Stockpile	25		
KC-2010*	0+00	3+50	1 ½ :1	12	56	3.50	196				
Landing Rock*							500	Stinkfoot Quarry or Five Forks Quarry Stockpile	Landings may use select pit run in place of 4 inch Jaw.		
					Quarry Spalls						
Culvert Headwalls and Dissipaters							23		See CULVERT AND DRAINAGE LIST		

4 Inch Jaw Total 537 Cubic Yards
 Quarry Spalls Total 23 Cubic Yards
 Select Jaw Run/4 Inch Jaw 500 Cubic Yards
 Ballast Total 1,060 Cubic Yards

Included in C.Y. Subtotal

CW – Curve Widening

TO – Turn Out

TA – Turn Around

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

SURFACE

Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth (inches)	C.Y. Station	# of Stations	C.Y. Subtotal	Rock Source	Comments		
									CW	TO	TA
			K1	B1	2 ½ Inch Crushed						
Culvert Install/Replace	0+50 STA per culvert		1 ½ :1	6	10	4	40	Five Forks Stockpile/Stinkfoot Quarry	Rock to be used as bedding material or cover for new install/replacements		
KC-Line	41+00	55+00	1 ½ :1	6	24	14.00	336				
KC-Line	104+00	130+40	1 ½ :1	6	24	26.40	634	Stinkfoot Quarry	Rock to be applied POST HAUL see clause 9-5.		
KC-1000	0+00	38+15	1 ½ :1	6	24	38.15	916				
KC-1001	0+00	12+05	1 ½ :1	6	24	12.05	289				
Stockpile							3000		See pit plan for stockpile location		

2 ½ Inch Minus Crushed Total 2,215 Cubic Yards
 2 ½ Inch Minus Crushed Stockpile 3,000 Cubic Yards
 Surface Total 5,215 Cubic Yards

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

NOTE: Yardages are estimated on a compacted (In-Place) basis. Compliance of required rock will be based on compacted depth measurement. **Apply appropriate factors to determine loose amounts for estimating purposes.** Roads and rock quantities are designed for dry weather use. If Purchaser elects to haul in wet weather additional rock may be obtained from the rock pits listed in Section 6 at the Purchaser's expense and with prior written approval from the Contract Administrator.

CULVERT AND DRAINAGE LIST, pg 1 of 1

Road Number	Location	Culvert		Length (ft)			Riprap (C.Y.)			Backfill Material*	Placement Method*	Const. Staked *	Remarks
		Dia. (in)	Type	Culvert	Downspt	Flume	Inlet	Outlet	Type				
B-6000	105+00	-	-	-	-	-	-	3	QS	NT		Install Energy Dissipaters	
KC-Line	20+60	18	PD	30	-	-	1	1.5	QS	NT		Replace Cross Drain	
	32+30	24	PD	40	-	-	2	3	QS	NT		Replace Live Stream	
	72+70	18	PD	40	-	-	1	1.5	QS	NT		Replace Cross Drain	
	79+00	18	PD	40	-	-	2	3	QS	NT		Install Cross Drain	
KC-1002	2+98	18	TEMP	30	-	-	1	1.5	QS	NT		Install Cross Drain	
As Directed by C.A.		18	PD	30	-	-	1	1.5	QS	NT		Contingency	
		18	PD	BAND	-	-						Contingency	

* SEE CULVERT AND DRAINAGE SPECIFICATION DETAIL

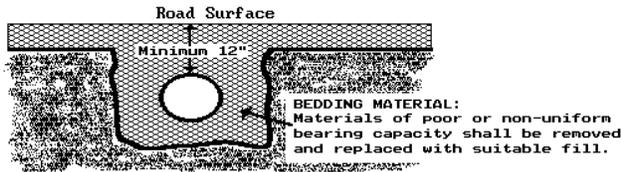
PD = Polyethylene Pipe Dual Wall AASHTO No. M294 Type S or ASTM F2648

TEMP = Temporary Culvert

Key:

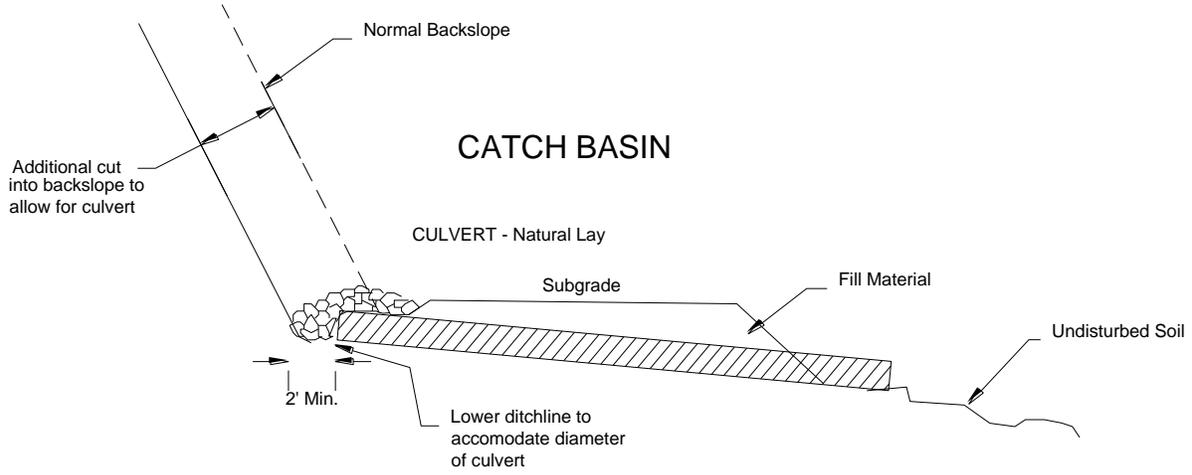
- QS - Quarry Spalls
- LL - Light Loose Riprap
- SR - Shot Rock
- NT - Native (bank run)
- SL - Select Fill
- Flume - Half round pipe
- Downsput - Full round pipe

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

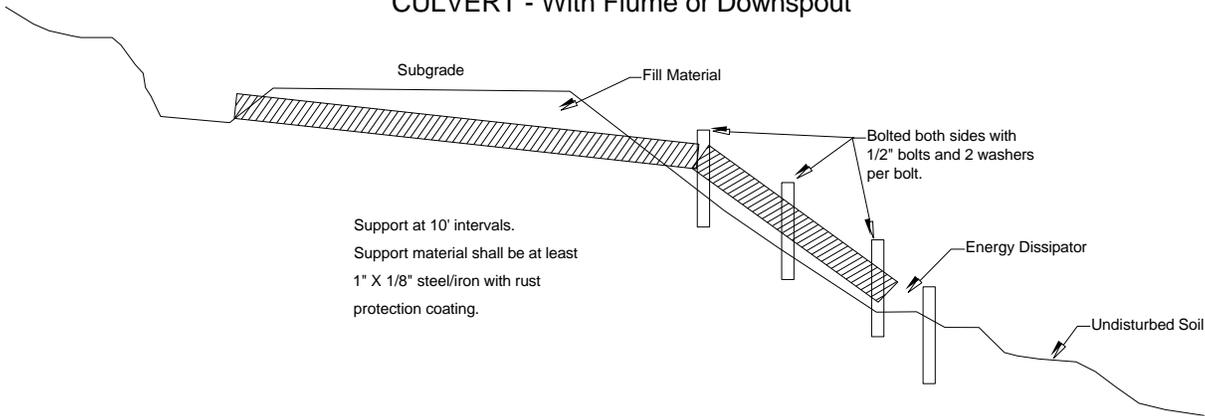


CULVERT AND DRAINAGE SPECIFICATION DETAIL

(Page 1 of 3)



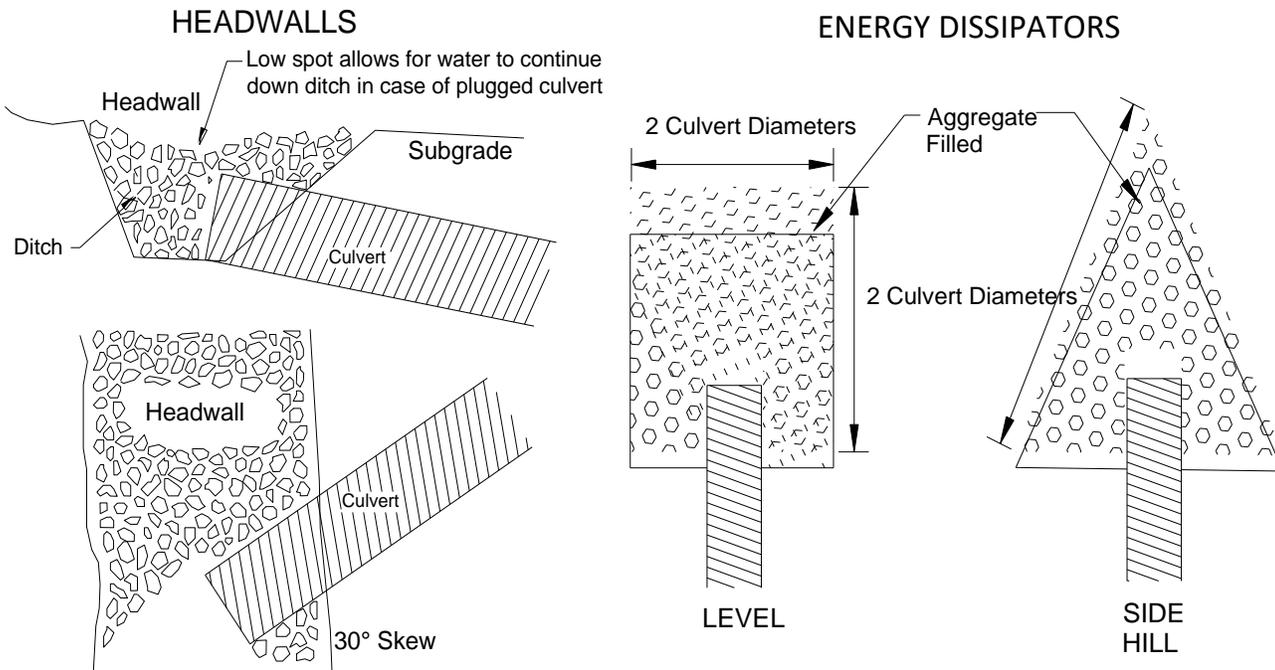
CULVERT - With Flume or Downspout



CULVERT AND DRAINAGE SPECIFICATION DETAIL

(Page 2 of 3)

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



Headwalls to be constructed of material that will resist erosion.

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

CULVERT AND DRAINAGE SPECIFICATION DETAIL

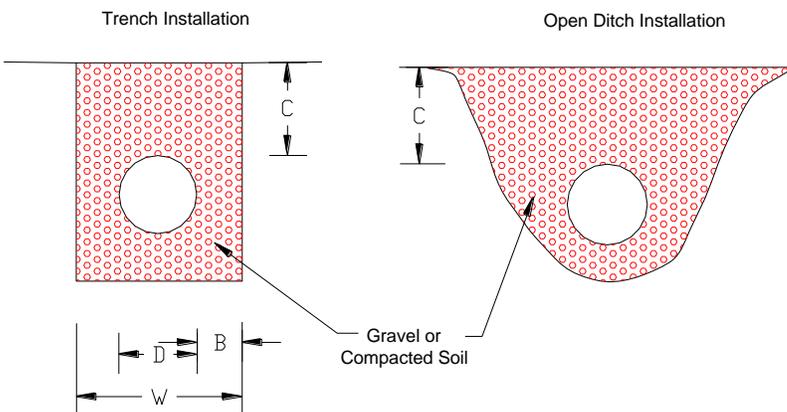
(Page 3 of 3)

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



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

FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

(Sheet 1 of 2)

Cuts and Fills

- Maintain slope lines to a stable gradient compatible with the cut slope/fill slope ratios. 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

- 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.
- Remove shoulder berms, created by grading, to facilitate drainage, except as marked or directed by the Contract Administrator.
- For roads with geotextile fabric: spread surface aggregate to fill in soft spots and wheel ruts (barrel spread) to prevent damage to the geotextile fabric.

Drainage

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

Preventative Maintenance

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

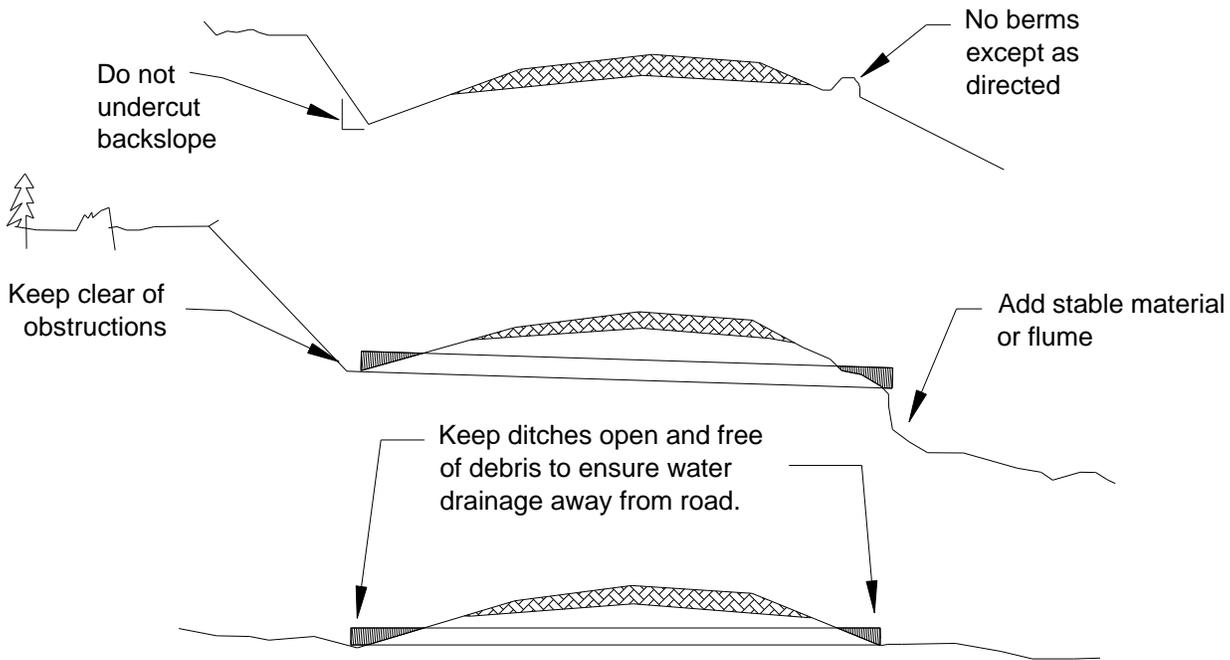
FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS (Sheet 2 of 2)

Termination of Use or End of Season

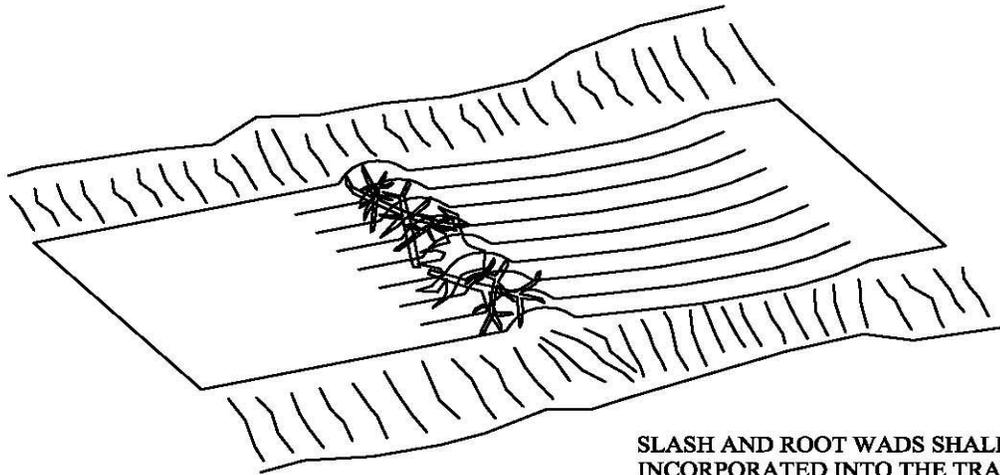
- At the conclusion of logging operations, ensure all conditions of these specifications have been met.

Debris

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

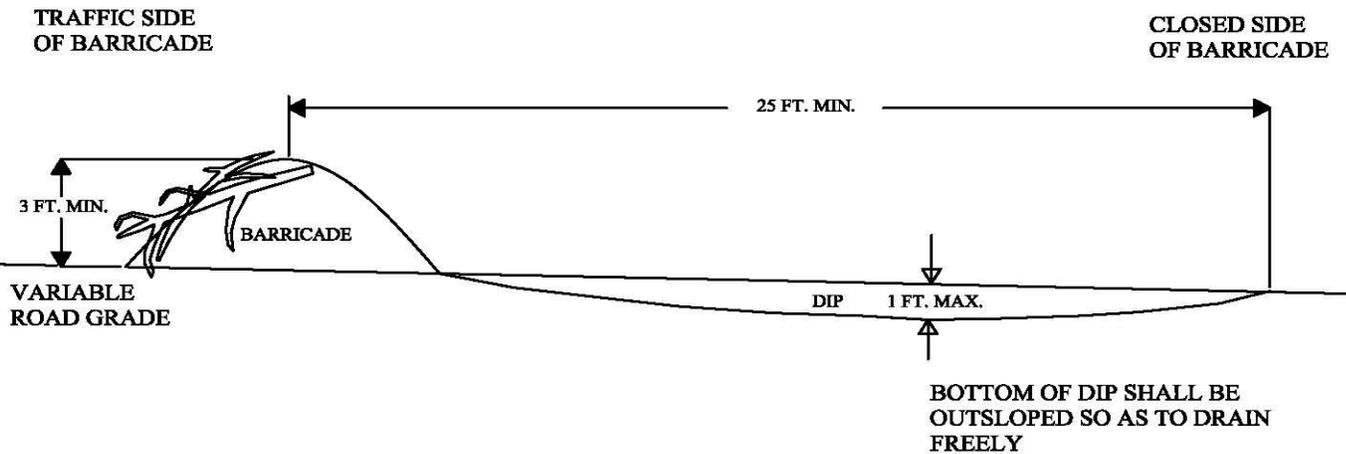


BARRICADE DETAIL



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

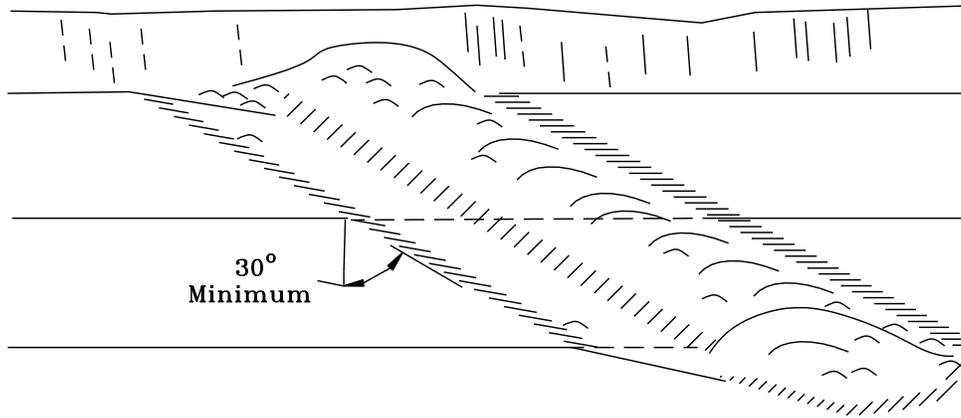
PLAN VIEW



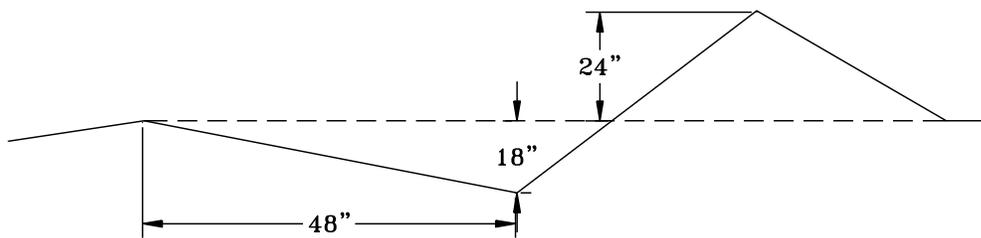
PROFILE VIEW

Non-Drivable Water Bar Detail

Cross Ditch



Cross Section at Centerline



Water Bar Detail

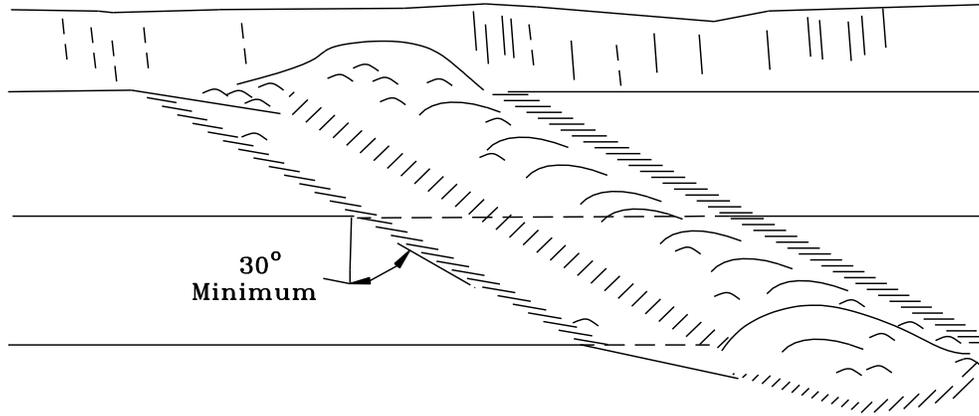
Date:
Scale : None
App#
Drawn by: M.A.D.



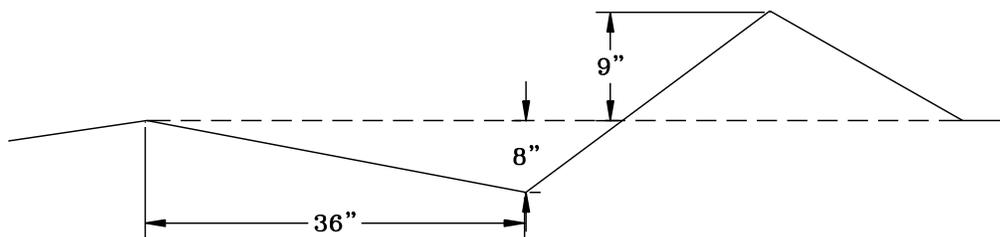
WASHINGTON STATE DEPARTMENT OF
NATURAL RESOURCES

Drivable Water Bar Detail

Cross Ditch



Cross Section at Centerline

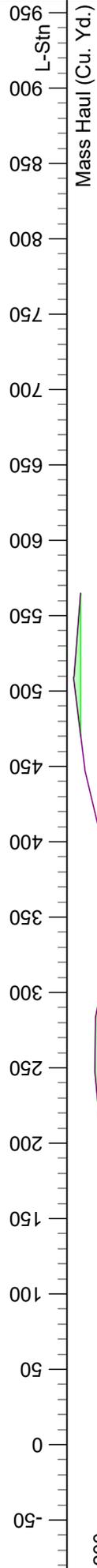
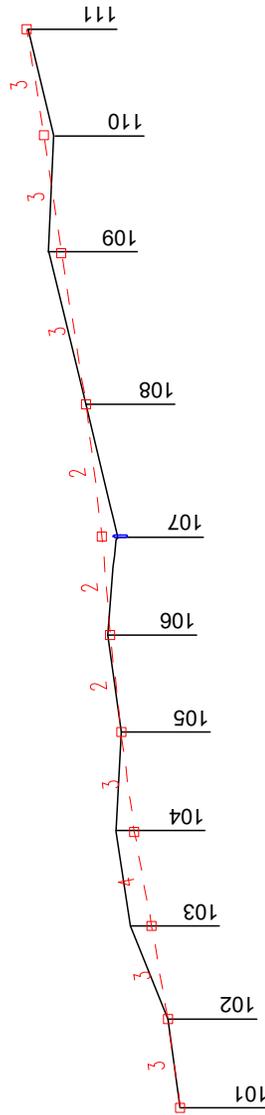
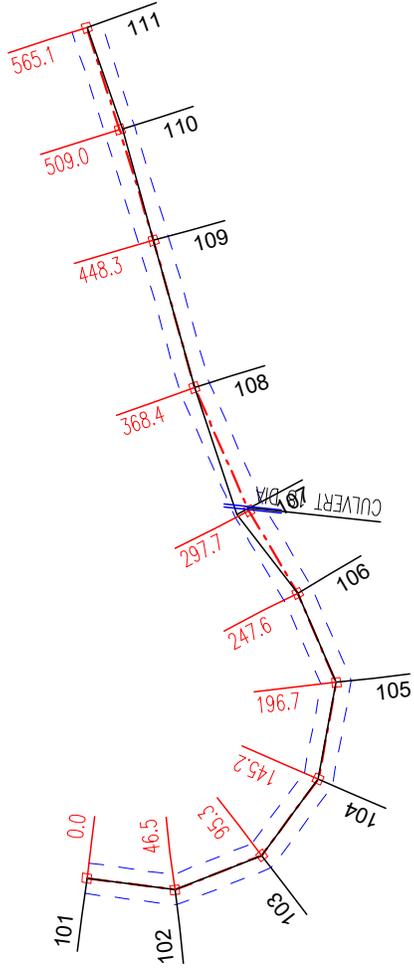


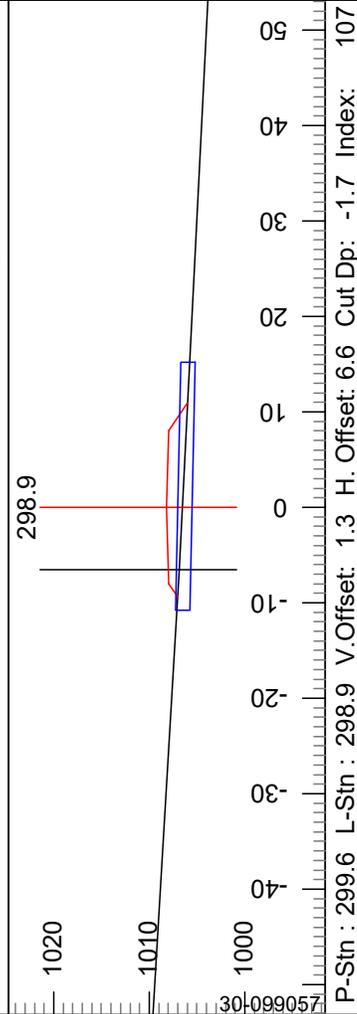
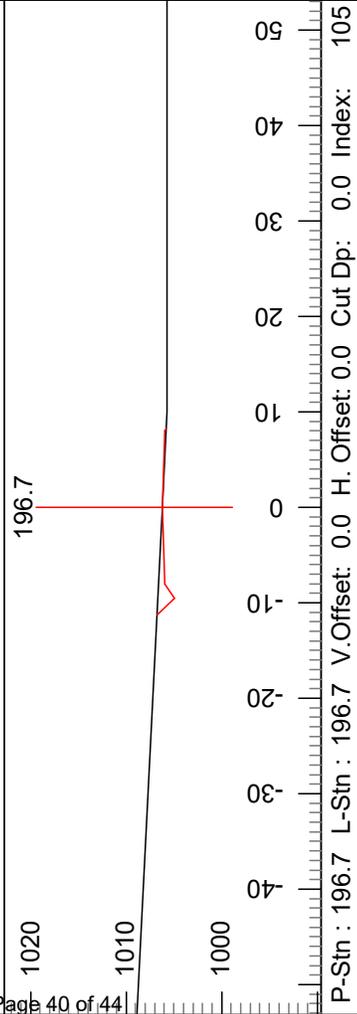
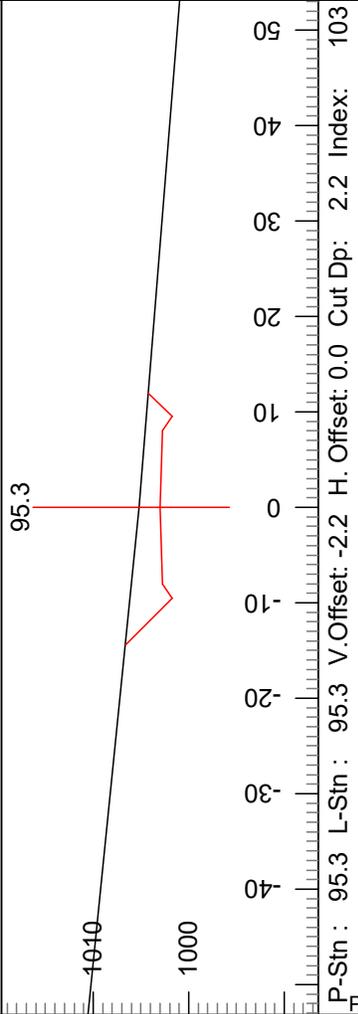
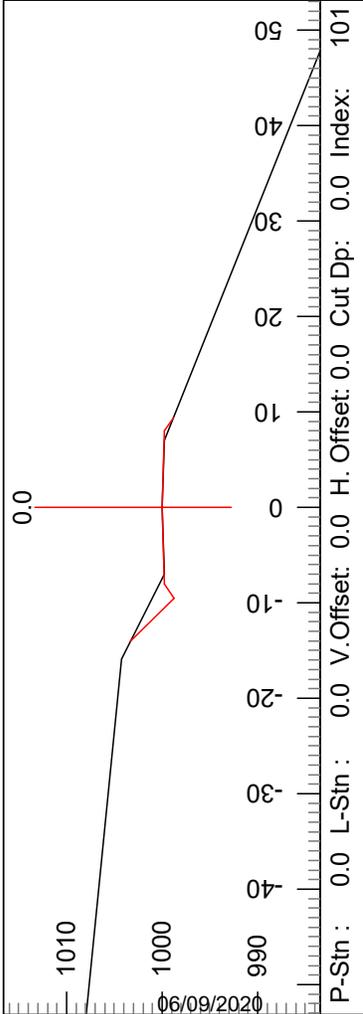
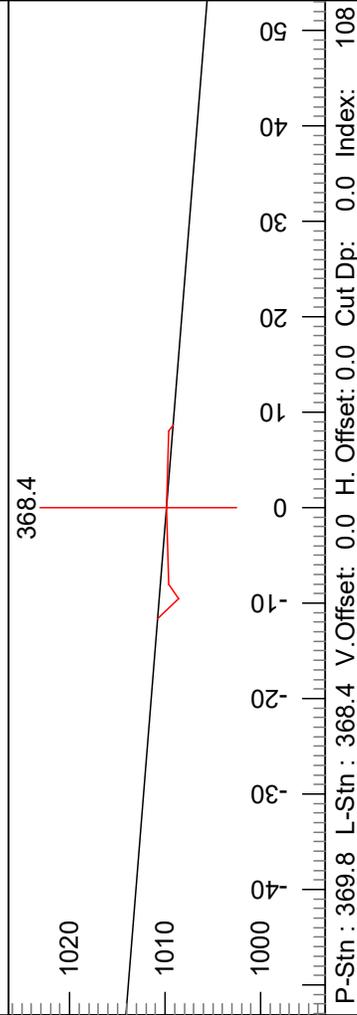
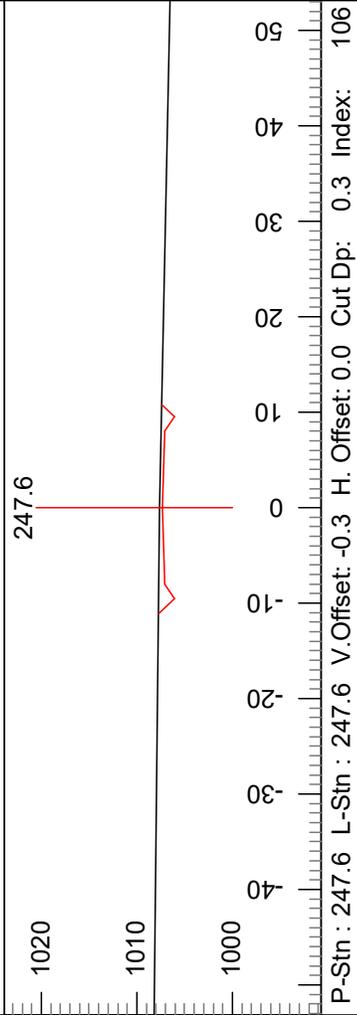
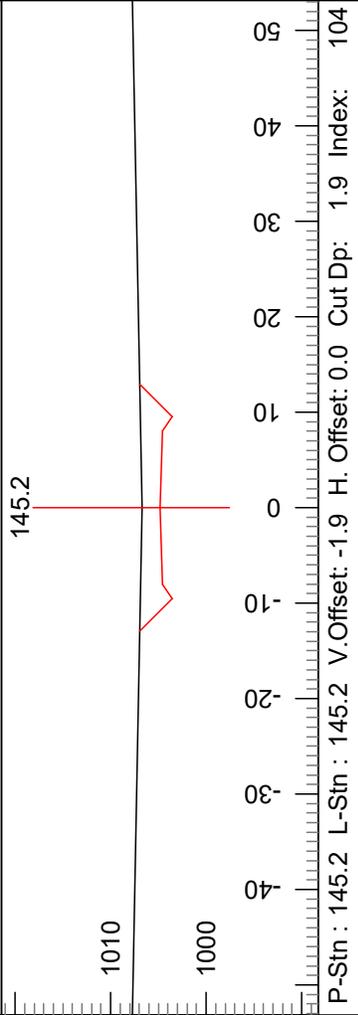
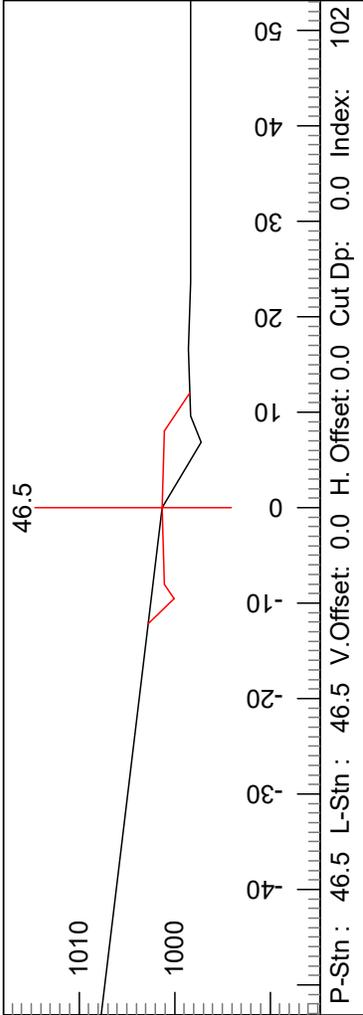
Water Bar Detail

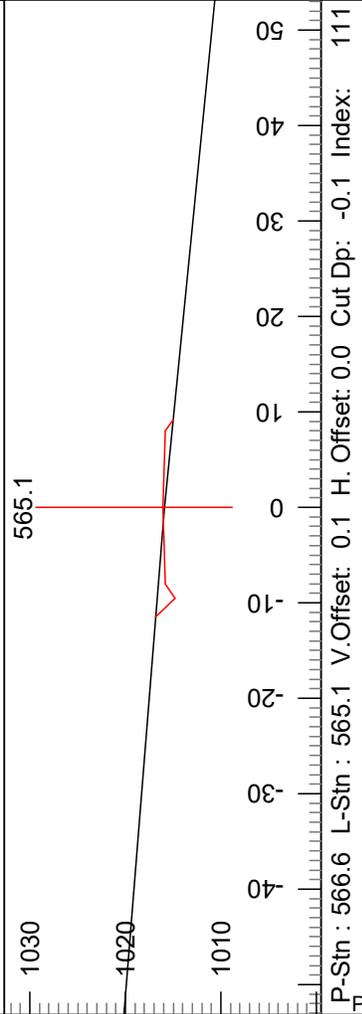
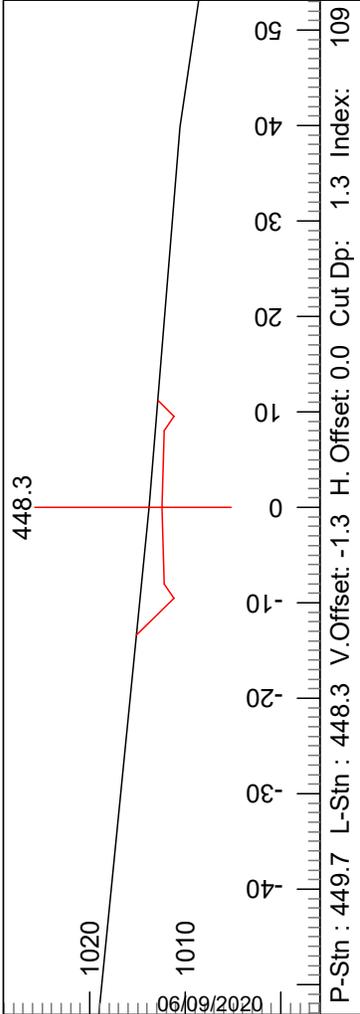
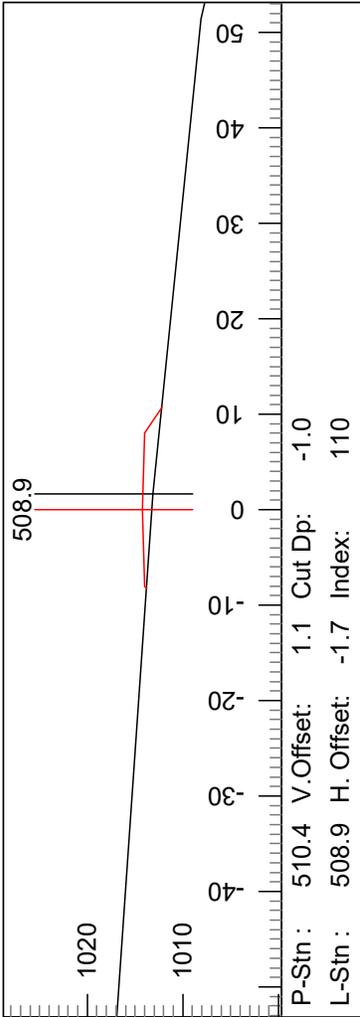
Date:
Scale : None
App#
Drawn by: M.A.D.



WASHINGTON STATE DEPARTMENT OF
NATURAL RESOURCES







06/09/2020



STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES
SOUTH PUGET SOUND REGION

STINKFOOT QUARRY DEVELOPMENT PLAN
NE ¼ NE ¼ Sec.28, T18N, R04W W.M.
Page 1 of 2

1. Rock for manufacture shall be obtained from Area A and Area B, in that order of precedence.
2. All vegetation including stumps shall be cleared a minimum of 35 feet beyond the top of all working faces. Trees shall be cleared to a minimum of ½ of the height of the tallest tree adjacent to the pit. A minimum 25 foot wide stripped area shall be maintained from working faces at all times.
3. Overburden shall be end hauled or pushed to the overburden waste area and compacted. Minimal acceptable compaction is achieved by placing waste material in 2 foot or shallower lifts and routing excavation equipment over the entire width of the lift. Final slope shall not exceed 1 ½ (H):1 (V). If overburden is pushed across the KC-6500, not less than 60 cubic yards of 2 ½" minus crushed rock shall be placed, graded, and compacted over the contaminated segment of road. This rock will be in addition to that shown on the ROCK LIST. The ditch line of the KC-6500 below the quarry site shall be re-established to the specification shown on the TYPICAL SECTION SHEET.
4. Final placement of waste material shall be approved in writing by the Contract Administrator. Final stockpile location shall be as shown on the quarry development map or as approved in writing by the Contract Administrator.
5. Root wads and organic debris larger than one cubic foot in volume shall be separated from overburden material and piled separately in an organic waste area. Organic debris placement must be approved in writing by the Contract Administrator.
6. Quarry faces shall not exceed 35 feet in height and shall have a slope no steeper than ¼ (H):1 (V).
7. The width of any pit benches shall be a minimum of 1.5 times the maximum length of the largest machine used.
8. The surface of pit floors and benches shall be uniform and free-draining at a minimum 2% outslope gradient.
9. Oversize material remaining in the quarry shall not exceed 3% of the total volume mined in the source. Oversize material is defined as rock fragments larger than two feet in any direction. Oversize material shall be placed adjacent to the southwest face or as approved in writing by the Contract Administrator.
10. At the end of operations, pit faces and walls shall be scaled and cleared of loose and overhanging material, benches shall have safety berms constructed, and all access blocked to recreational vehicles.

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES
SOUTH PUGET SOUND REGION

STINKFOOT QUARRY DEVELOPMENT PLAN
NE ¼ NE ¼ Sec.28, T18N, R04W W.M.
Page 2 of 2

11. All operations shall be carried out in compliance with all regulations of:
 - a. “Regulations and Standards Applicable to Metal and Nonmetal Mining and Milling Operations” (30 CFR) U.S. Department of Labor, Mine Safety and Health Administration.
 - b. “Safety Standards for Construction Work” (296-155 WAC) Washington Department of Labor and Industries.
12. The quarry area shall be worked and left in a condition such that future operations may proceed in an orderly manner.
13. The quarry site shall be cleared of all temporary structures, equipment, and rubbish upon completion of rock source operations. The quarry site shall be left in a neat and presentable condition.
14. At the completion of rock source operations, Purchaser shall obtain written approval of final rock source condition and compliance with the terms of this plan from the Contract Administrator.
15. Quantity and quality of material are not guaranteed by the state.

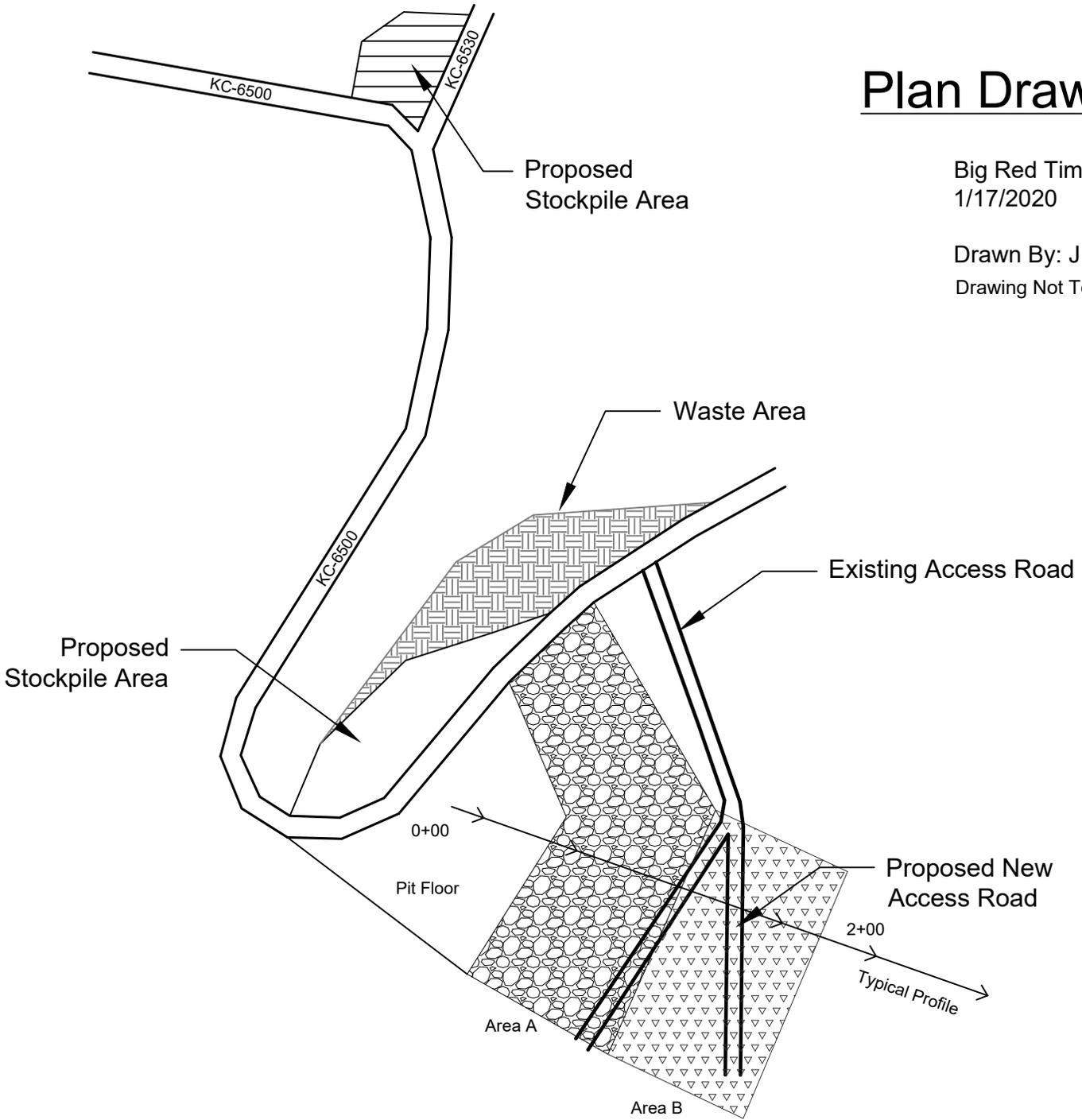
Stinkfoot Quarry

NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 28, T18N, R04W

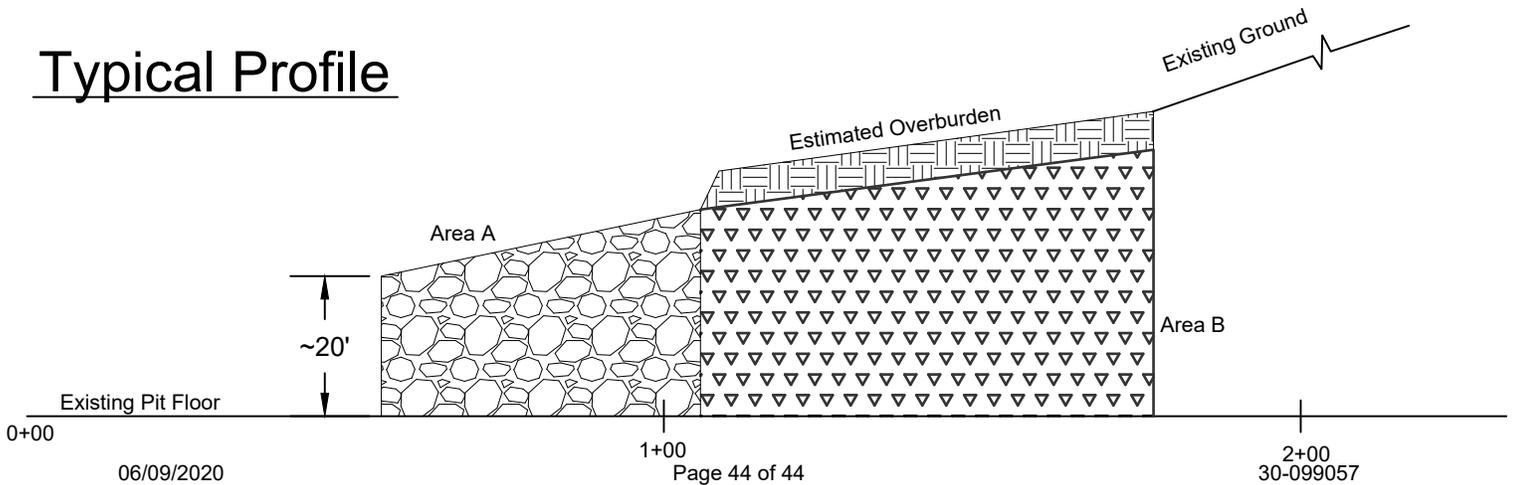
Plan Drawing

Big Red Timber Sale
1/17/2020

Drawn By: J. Gross
Drawing Not To Scale



Typical Profile



DEPARTMENT OF NATURAL RESOURCES - SOUTH PUGET SOUND REGION

FORM 9-87(Rev. 01-09)

Road Development Cost Estimate

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

REGION: SPS

UNIT: Delphi

SALE/PROJECT NAME: Big Red Timber Sale

CONTRACT NUMBER: 30-099057

LEGAL DESCRIPTION:

		A-Line, A-5000, A-5030, A-5200, B-6000, B-6000A, KC-Line, KC-1000, KC-1001, KC-2000, KC-2100, KC-6500	
		Reconstruction	Pre-haul maintenance
ROAD NUMBER:	KC-1002, KC-2010		
ROAD STANDARD:	Construction		
NUMBER OF STATIONS:	9.15	0.00	511.83
SIDESLOPE:	20-40%	30%	0%
CLEARING AND GRUBBING:	\$1,159	\$0	
EXCAVATION AND FILL:	\$1,971	\$0	
MISC. MAINTENANCE:			\$11,191
ROCK TOTALS (Cu. Yds.):			
Ballast/Quarry Spalls	1376 \$6,317	\$0	\$0
Crushed Rock	2827 \$0	\$0	\$44,478
Crushed Stockpile	3000		\$30,248
CULVERTS AND FLUMES:	\$599	\$0	\$4,620
STRUCTURES:	\$0	\$0	\$0
GENERAL EXPENSES:	\$1,005	\$0	\$7,243
MOBILIZATION:	\$6,040	\$0	\$6,040
TOTAL COSTS:	\$17,091	\$0	\$103,819
COST PER STATION:	\$1,868	\$0	\$203

ROAD DEACTIVATION AND ABANDONMENT COSTS: \$4,813

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

TOTAL (All Roads) = \$125,724

SALE VOLUME MBF = 6,274

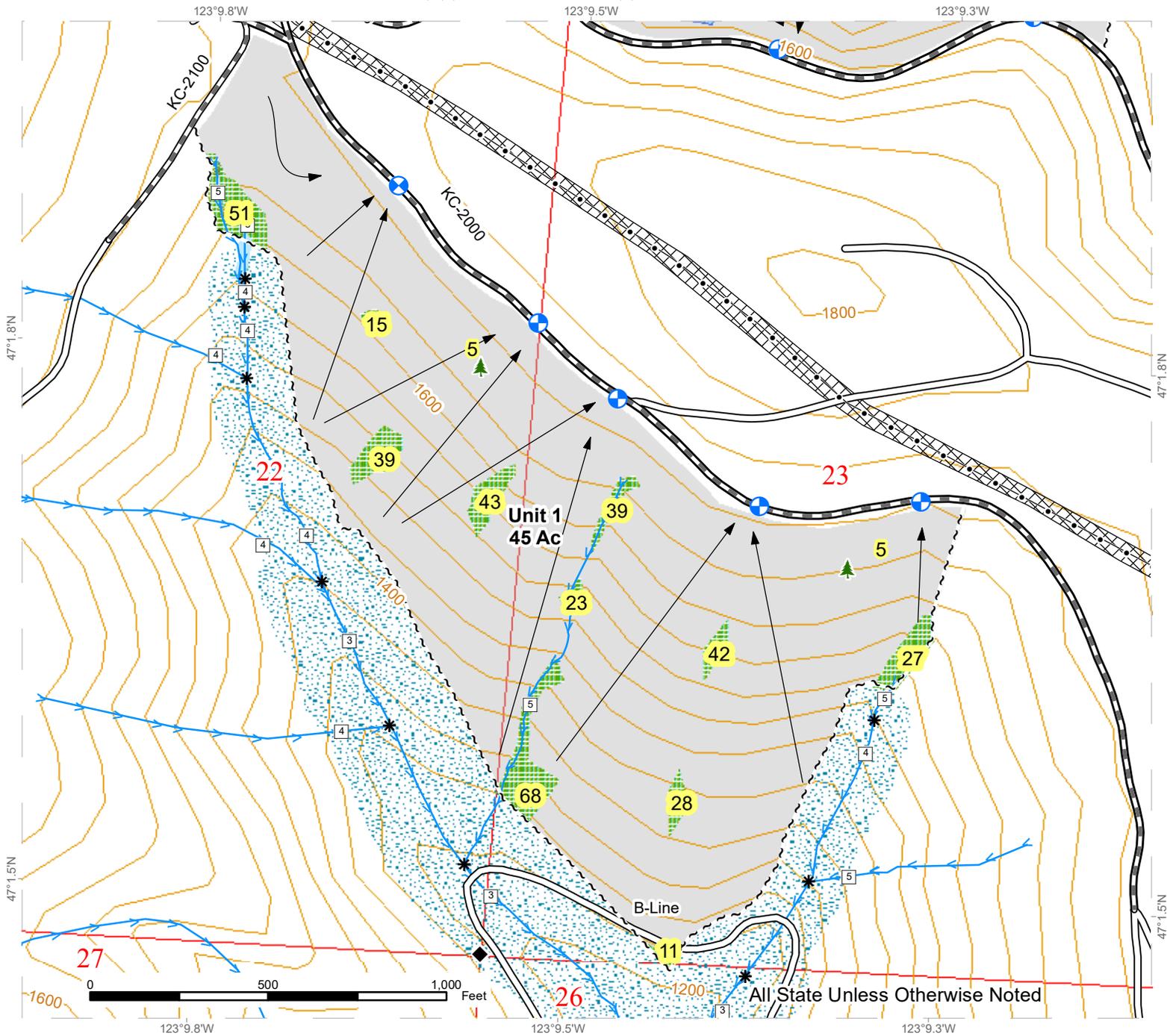
TOTAL COST PER MBF = \$20.04

Date: 11/25/19

LOGGING PLAN MAP

SALE NAME: BIG RED
AGREEMENT#: 30-099057
TOWNSHIP(S): T18R4W
TRUST(S): Common School and Indemnity (3), State Forest Transfer (1)

REGION: South Puget Sound Region
COUNTY(S): Thurston
ELEVATION RGE: 920-1800



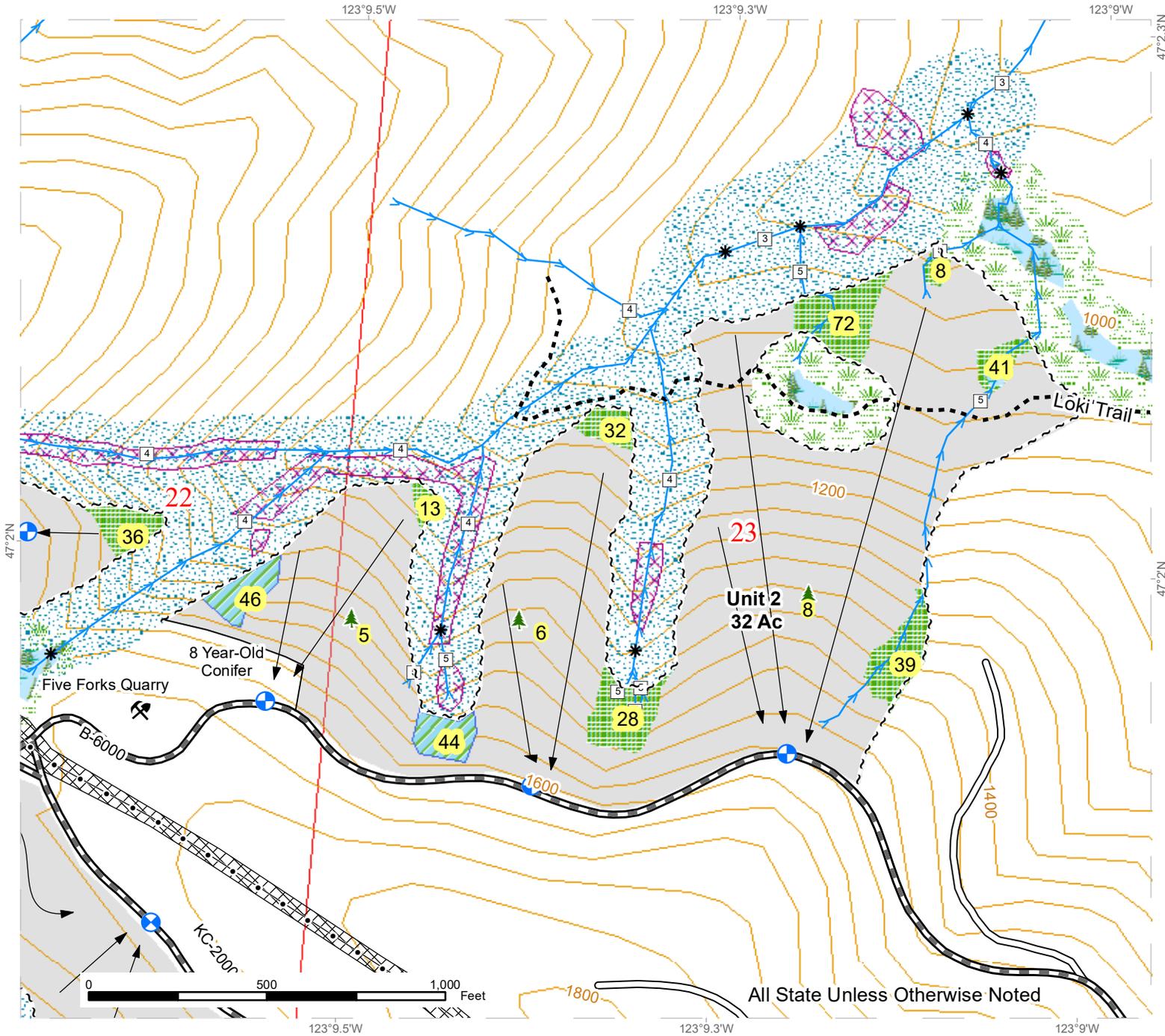
Existing Roads	Sale Boundary Tags	Forested Wetland
Required Pre-Haul Maintenance	Landing - Proposed	Leave Tree Area
Ground Harvest	Leave Tree Area <1/4-acre	Riparian Mgt Zone
Cable Harvest	Pipeline	Non-Tradeable Leave Trees
Streams		Contours 40-foot
Stream Type		Underground Utility ROW
Stream Type Break		



LOGGING PLAN MAP

SALE NAME: BIG RED
AGREEMENT#: 30-099057
TOWNSHIP(S): T18R4W
TRUST(S): Common School and Indemnity (3), State Forest Transfer (1)

REGION: South Puget Sound Region
COUNTY(S): Thurston
ELEVATION RGE: 920-1800



All State Unless Otherwise Noted

Optional Construction	Sale Boundary Tags	Tailhold Restriction Area
Existing Roads	Landing - Proposed	Forested Wetland
Required Pre-Haul Maintenance	Leave Tree Area <1/4-acre	Leave Tree Area
Ground Harvest	Rock Pit	Riparian Mgt Zone
Cable Harvest	Pipeline	Wetland Mgt Zone
Streams		Non-Tradeable Leave Trees
Stream Type		Trails
Stream Type Break		Contours 40-foot
		Underground Utility ROW



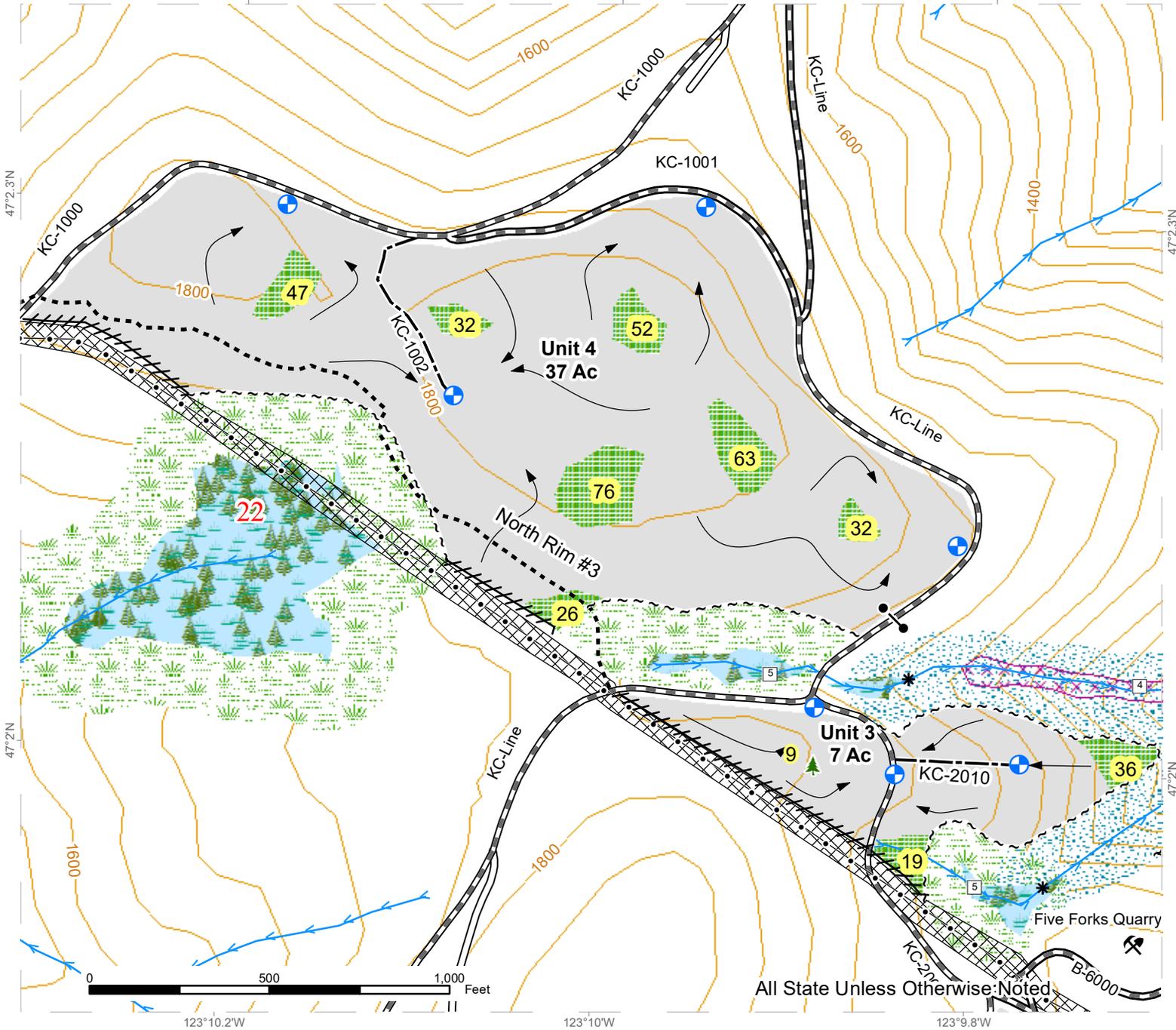
LOGGING PLAN MAP

SALE NAME: BIG RED
AGREEMENT#: 30-099057
TOWNSHIP(S): T18R4W
TRUST(S): Common School and Indemnity (3), State Forest Transfer (1)

REGION: South Puget Sound Region
COUNTY(S): Thurston
ELEVATION RGE: 920-1800

123°10.2'W 123°10'W

123°9.8'W



All State Unless Otherwise Noted

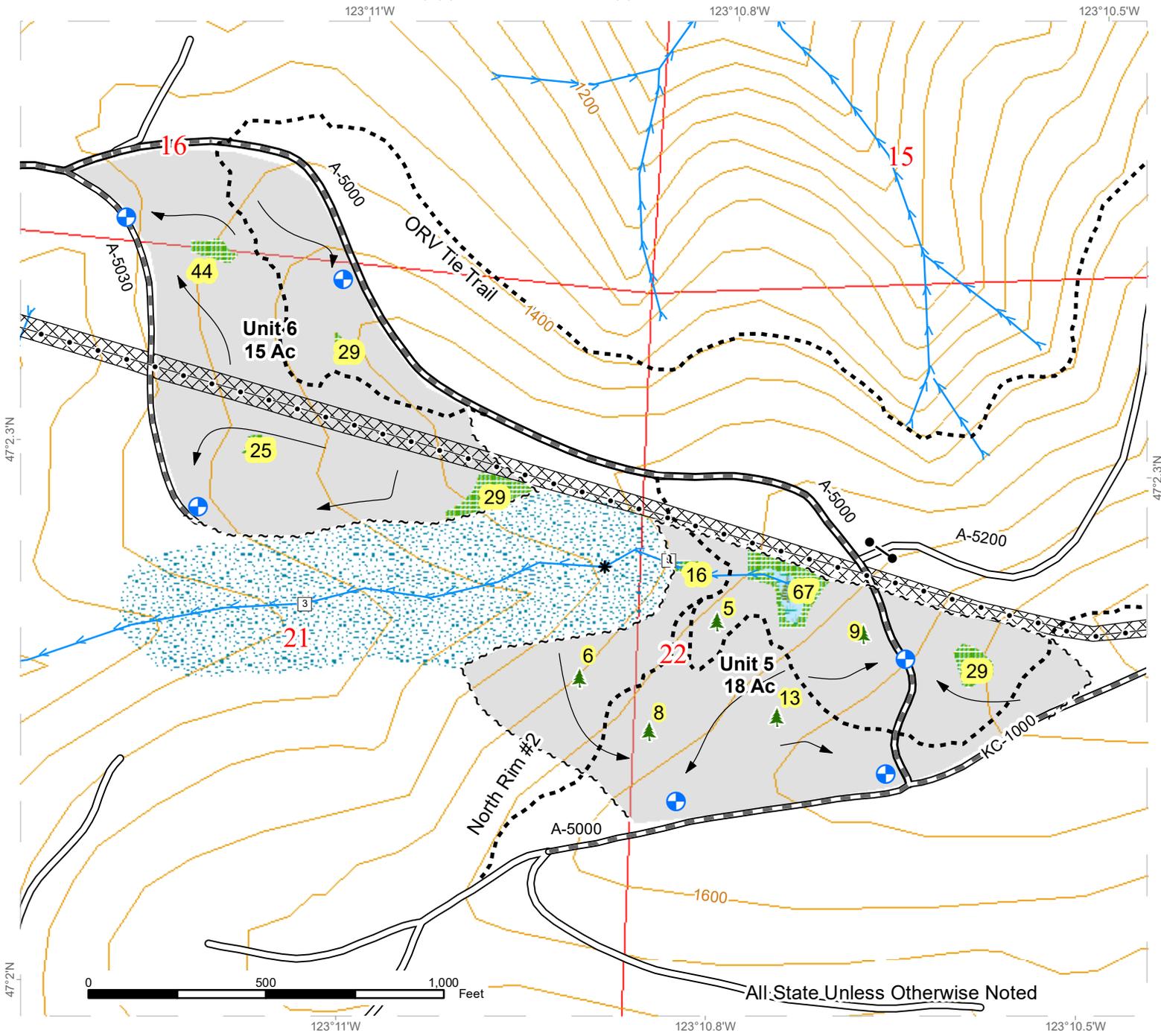
Optional Construction	Sale Boundary Tags	Tailhold Restriction Area
Existing Roads	Timber Type Change	Forested Wetland
Required Pre-Haul Maintenance	Flag Line	Leave Tree Area
Ground Harvest	Gate (Master-957)	Riparian Mgt Zone
Cable Harvest	Landing - Proposed	Wetland Mgt Zone
Streams	Leave Tree Area <1/4-acre	Trails
Stream Type	Rock Pit	Contours 40-foot
Stream Type Break	Pipeline	Underground Utility ROW



LOGGING PLAN MAP

SALE NAME: BIG RED
AGREEMENT#: 30-099057
TOWNSHIP(S): T18R4W
TRUST(S): Common School and Indemnity (3), State Forest Transfer (1)

REGION: South Puget Sound Region
COUNTY(S): Thurston
ELEVATION RGE: 920-1800



All State Unless Otherwise Noted

Existing Roads	Sale Boundary Tags	Forested Wetland
Required Pre-Haul Maintenance	Gate (Master-957)	Leave Tree Area
Ground Harvest	Landing - Proposed	Riparian Mgt Zone
Streams	Leave Tree Area <1/4-acre	Trails
Stream Type	Pipeline	Contours 40-foot
Stream Type Break		Underground Utility ROW

