WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

TIMBER NOTICE OF SALE

***SALE NAME**: STANDING ELEVATION* ***AGREEMENT NO**: 30-100233*

AUCTION: November 19, 2020 starting at 10:00 a.m., Pacific Cascade Region Office, Castle Rock, WA **COUNTY:** Grays Harbor

SALE LOCATION: Sale located approximately 10 miles Northwest of Oakville

PRODUCTS SOLD AND SALE AREA: All timber, except leave trees marked with blue paint, trees bound by yellow "Leave Tree Area" tags, bounded by the following; Units 1 and 2, white "Timber Sale Boundary" tags, pink "Timber Harvest Boundary" flagging; Unit 3, white "Timber Sale Boundary" tags, pink "Timber Harvest Boundary" flagging, reprod, harvested private property and the Y-Line road; Unit 4-ROW, orange "Right-of-Way Boundary" tags and orange flagging,

All forest products above located on part(s) of Sections 7, 8, 16, 17, 18, 20 and 21 all in Township 16 North, Range 5 West, W.M., containing 122 acres, more or less.

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

ESTIMATED SALE VOLUMES AND QUALITY:

Species	Avg DBH	Ring Count	Total MBF	Total $/MBF	MBF by Grade 1P	2P	3P	SM	1S	2S	3S	4S	UT
Douglas fir	26	6	3,252	$474.00			18	172		2,616	387	54	5
Red alder	14		978	$154.00					23	213	161	501	80
Hemlock	16		232	$247.00						142	58	25	7
Red cedar	21		80	$920.00							75	5	
Maple	15		53	$20.00					10	11			32
Spruce	20		38	$160.00						21	9		8
Cottonwood	31		2	$20.00					2				
Sale Total			4,635										

MINIMUM BID: $474/MBF (est. value $1,830,000.00) **BID METHOD:** Sealed Bids

PERFORMANCE SECURITY: $100,000.00 **SALE TYPE:** MBF Scale

EXPIRATION DATE: October 31, 2022 **ALLOCATION:** Export Restricted

BIDDABLE SPECIES: **Douglas fir**

BID DEPOSIT: $183,000.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: This sale is estimated to be 85% ground-based and 15% cable/cable assist/tethered systems. A detailed felling and yarding plan shall be required prior to any harvest activities. Ground-based yarding is restricted to sustained slopes of 45% or less. For additional harvest requirements, refer to the H-140 clause in the contract.

ROADS: 32.50 stations of required construction. 62.25 stations of optional construction. 188.00 stations of required prehaul maintenance. 3.60 stations of abandonment. Road construction will not be permitted from November 1 to April 30 unless authorized in writing by the Contract Administrator. The hauling of forest products will not be permitted from November 1 to April 30 unless authorized in writing by the Contract Administrator.

ACREAGE DETERMINATION

CRUISE METHOD: The sale acres were determined by GPS delineation. Cruise was completed using variable plot cruise methods.

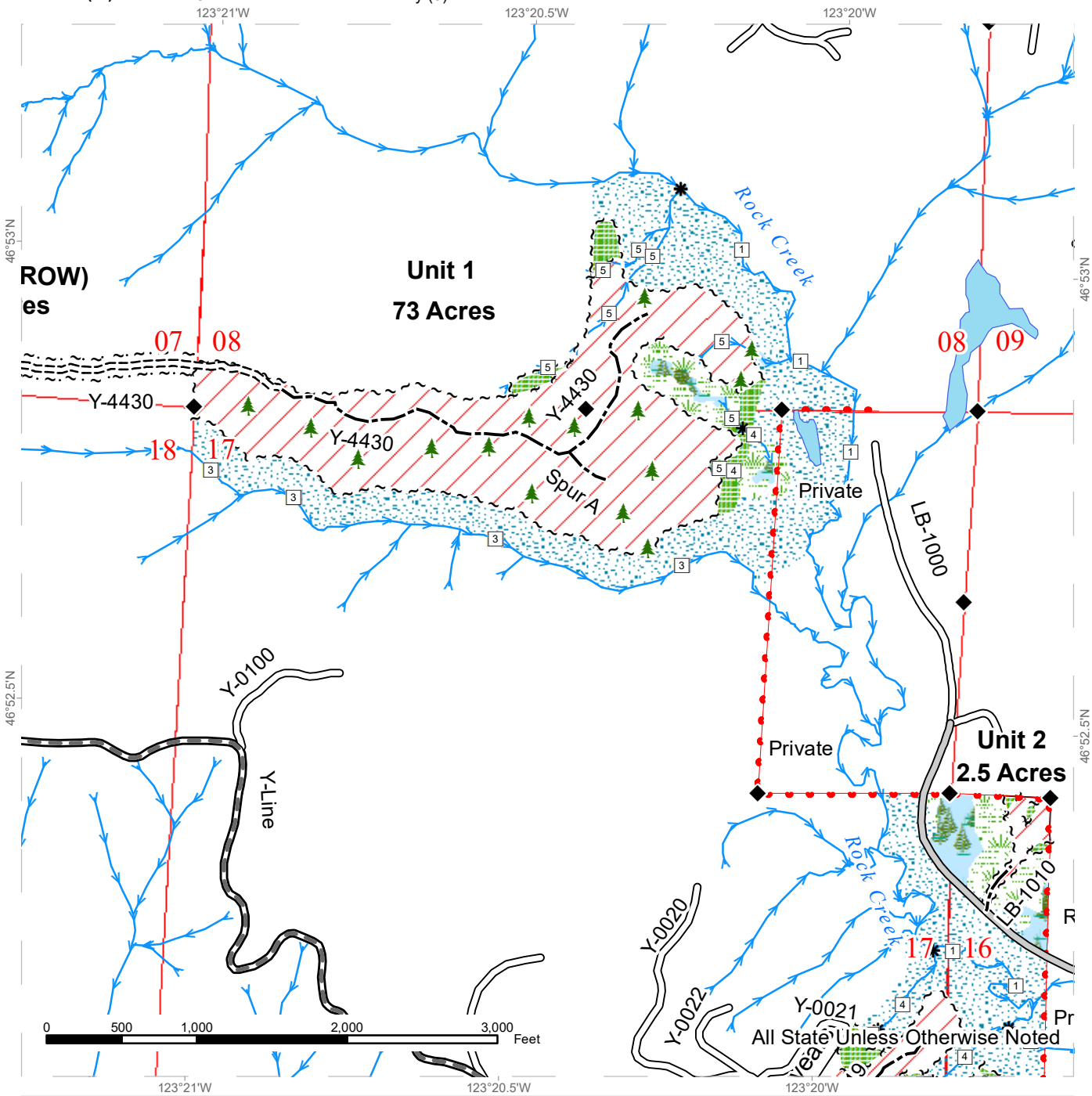
FEES: $78,795.00 is due on day of sale. $9.00 per MBF is due upon removal. These are in addition to the bid price.

SPECIAL REMARKS: This sale has approximately 18 MBF of DF poles, 181 MBF of Special Mill DF, 1,293 of high quality 2 saw DF, 63 MBF of high quality 3 saw DF, see cruise for details. PCP 1-1 gate keys may be obtained from the Pacific Cascade Region office.

TIMBER SALE MAP

SALE NAME: Standing Elevation Sorts
AGREEMENT #: 30-100233
TOWNSHIP(S): T16R5W
TRUST(S): Common School and Indemnity (3)

REGION: Pacific Cascade Region
COUNTY(S): Grays Harbor
ELEVATION RGE: 120-535



Sale Area	Sale Boundary Tags	County Road	Streams
Leave Tree Area	Leave Tree Tags	Existing Roads	Stream Type
Riparian Mgt Zone	Right of Way Tags	Required Pre-Haul Maintenance	Stream Type Break
Forested Wetland	Property Line	Required Construction	Survey Monument
Wetland Mgt Zone	Timber Type Change	Optional Construction	Leave Tree Area <1/4-acre

N

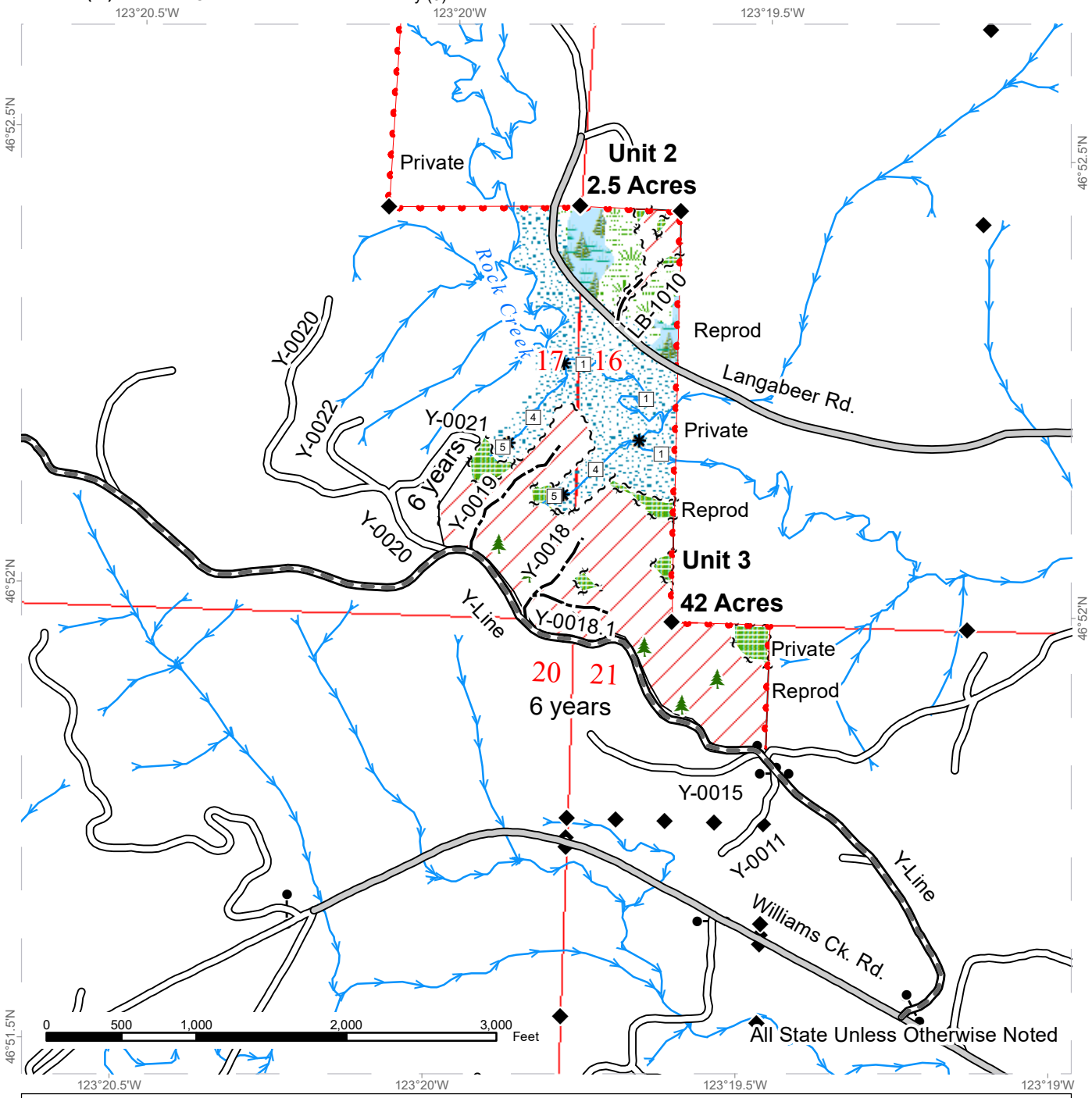
Prepared By: efal490

Modification Date: efal490 9/8/2020

TIMBER SALE MAP

SALE NAME: Standing Elevation Sorts
AGREEMENT #: 30-100233
TOWNSHIP(S): T16R5W
TRUST(S): Common School and Indemnity (3)

REGION: Pacific Cascade Region
COUNTY(S): Grays Harbor
ELEVATION RGE: 120-535



Sale Area	Sale Boundary Tags	County Road	Streams
Leave Tree Area	Leave Tree Tags	Existing Roads	Stream Type
Riparian Mgt Zone	Property Line	Required Pre-Haul Maintenance	Stream Type Break
Forested Wetland	Timber Type Change	Optional Construction	Survey Monument
Wetland Mgt Zone			Gate (<<Lock Type>>)
			Leave Tree Area <1/4-acre

N

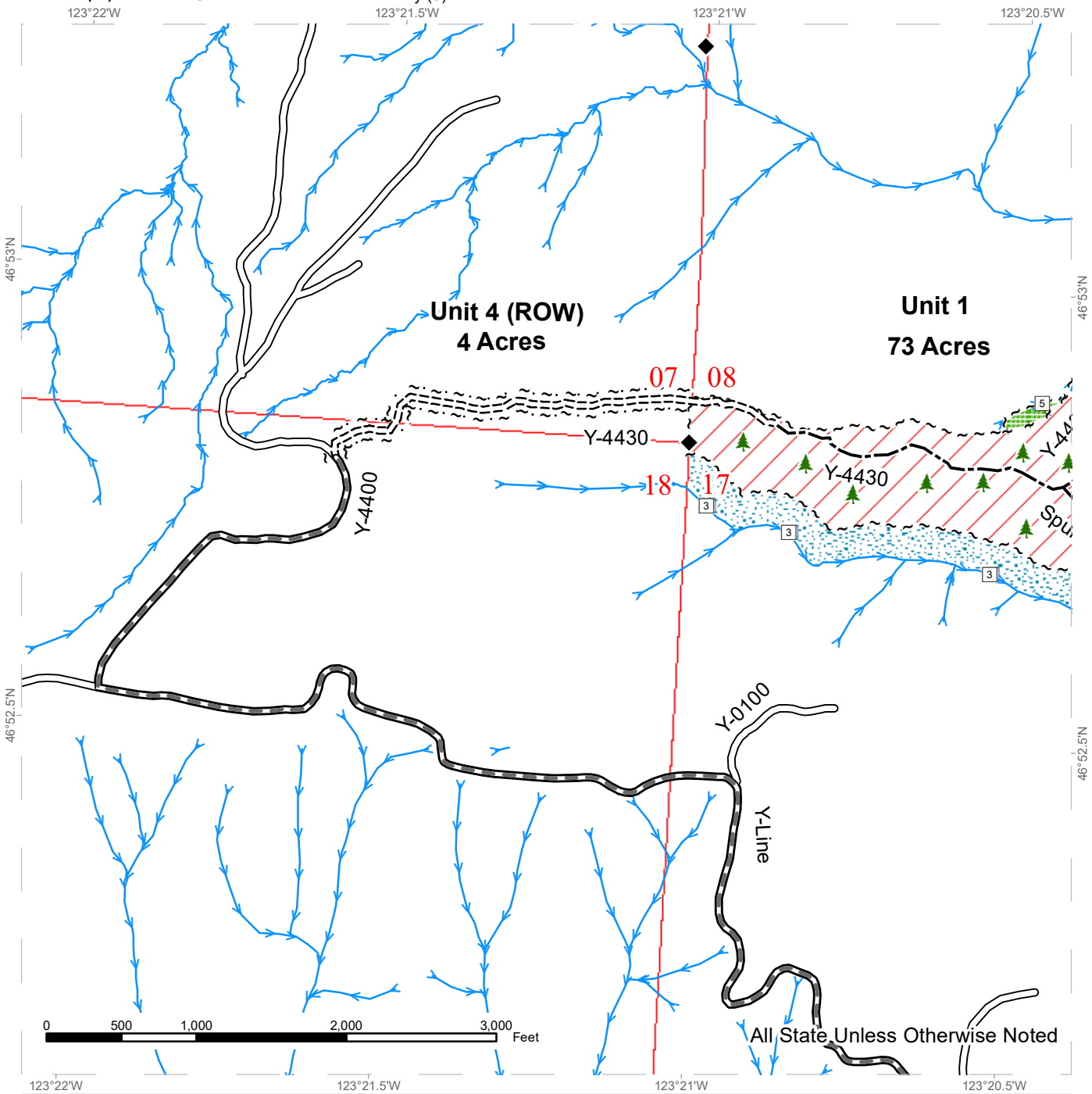
Prepared By: efal490

Modification Date: efal490 9/8/2020

TIMBER SALE MAP

SALE NAME: Standing Elevation Sorts
AGREEMENT #: 30-100233
TOWNSHIP(S): T16R5W
TRUST(S): Common School and Indemnity (3)

REGION: Pacific Cascade Region
COUNTY(S): Grays Harbor
ELEVATION RGE: 120-535



Sale Area	Sale Boundary Tags	Existing Roads	Streams
Leave Tree Area	Leave Tree Tags	Required Pre-Haul Maintenance	Stream Type
Riparian Mgt Zone	Right of Way Tags	Required Construction	Stream Type Break
		Optional Construction	Survey Monument
			Leave Tree Area <1/4-acre

N

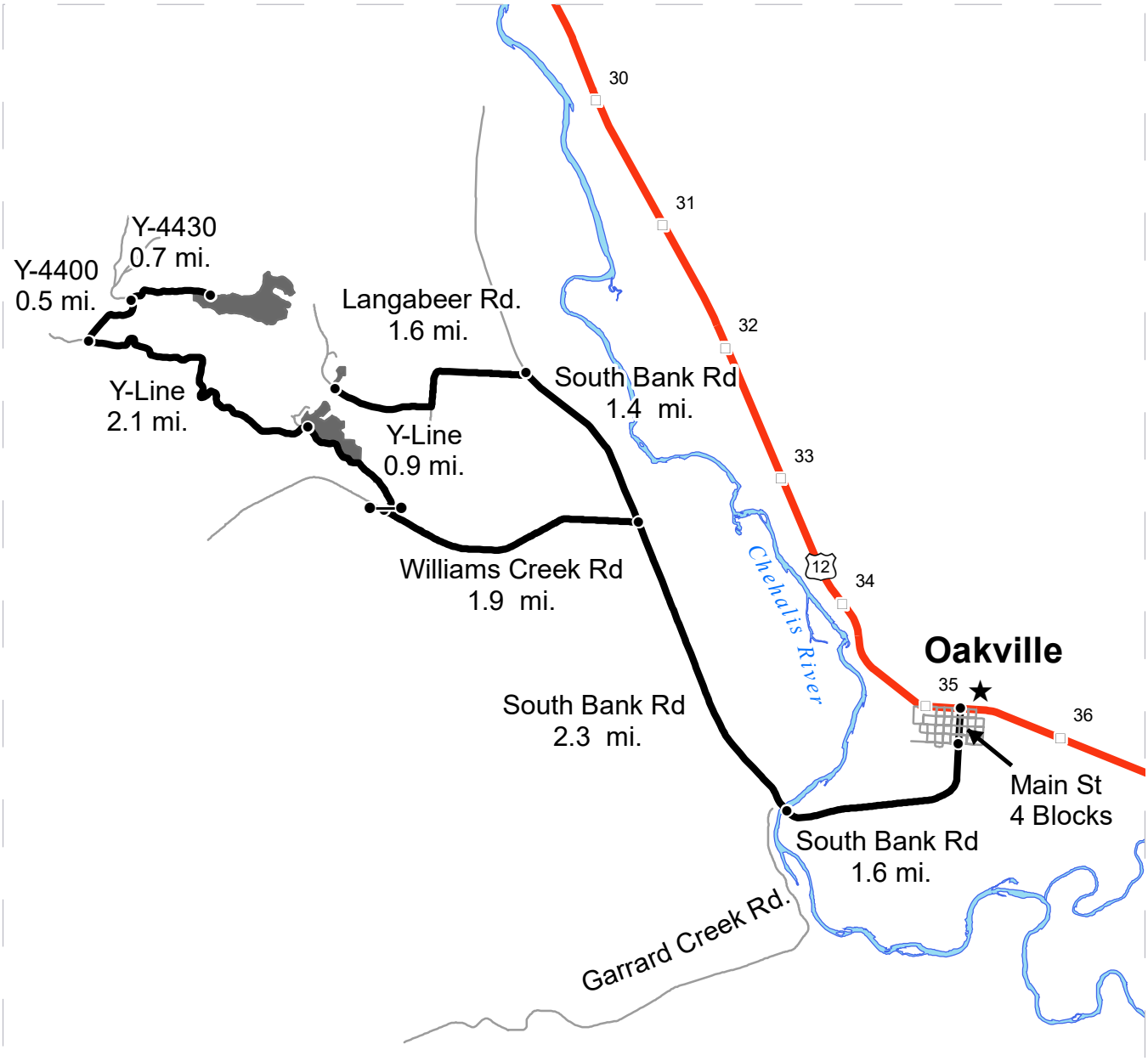
Prepared By: efal490

Modification Date: efal490 9/8/2020

DRIVING MAP

SALE NAME: Standing Elevation Sorts
AGREEMENT#: None
TOWNSHIP(S): T16R5W
TRUST(S): Common School and Indemnity (3)

REGION: Pacific Cascade Region
COUNTY(S): Grays Harbor
ELEVATION RGE: 120-535



Map may not be to scale

- Timber Sale Unit
- Haul Route
- Other Road
- Milepost Markers
- Distance Indicator
- Gate (PCP 1-1)
- Town

DRIVING DIRECTIONS:

In the town of Oakville, turn south onto Main St and follow for 4 blocks and it will turn into South Bank Rd. Stay on South Bank Rd for 3.9 mi to Williams Creek Rd. Turn left on Williams Creek Rd and follow for 1.9 miles to the Y-Line gate. Turn right onto the Y-Line and follow for 0.9 miles to Unit 3. To get to Unit 4 (ROW) and Unit 1 continue for 2.1 miles to the Y-4400. Turn right on Y-4400 and continue for 0.5 miles to reach Unit 4 (ROW). Walk 0.7 miles to access Unit 1.

To access Unit 2 continue on South Bank Rd. for 1.4 miles after junction with Williams Creek Rd. Turn left onto Langabeer Rd. and continue 1.6 mi. to reach Unit 2

N

Prepared By: efal490

Modification Date: efal490 2/11/2020

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

BILL OF SALE AND CONTRACT FOR FOREST PRODUCTS

Export Restricted MBF Scale AGREEMENT NO. 30-0100233

SALE NAME: STANDING ELEVATION

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-010 Products Sold and Sale Area

Purchaser was the successful bidder on November 19, 2020 and the sale was confirmed on _____. The State, as owner, agrees to sell to Purchaser, and Purchaser agrees to purchase, cut, and remove the following forest products: All timber, except leave trees marked with blue paint, trees bound by yellow "Leave Tree Area" tags, bounded by the following; Units 1 and 2, white "Timber Sale Boundary" tags, pink "Timber Harvest Boundary" flagging; Unit 3, white "Timber Sale Boundary" tags, pink "Timber Harvest Boundary" flagging, reprod, harvested private property and the Y-Line road; Unit 4-ROW, orange "Right-of-Way Boundary" tags and orange flagging,, located on approximately 122 acres on part(s) of Sections 7, 8, 16, 17, 18, 20, and 21 all in Township 16 North, Range 5 West W.M. in Grays Harbor County(s) as shown on the attached timber sale map and as designated on the sale area.

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-030 Contract Term

Purchaser shall remove the forest products conveyed and 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-050 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 contract value based on the contract payment rate and advertised volume.

   For the second extension, not to exceed 1 year, payment of at least 90 percent of the contract value based on the contract payment rate base and advertised volume.

   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 timber value of the contract.

To determine the unpaid portion of the contract, multiply the contract payment rate for each item by the remaining volume for each item based on the volumes from the Timber Notice of Sale. In addition, all cash deposits that can be used for timber payments, except the initial deposit, will be deducted from the unpaid portion of the contract.

e. Payment of $30.00 per acre per annum for the acres on which an operating release has not been issued for all harvest units.

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-090 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, added forest products become a part of this contract and shall be paid for at the same rate and manner as other forest products under this contract.

G-100 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 shall be paid for at the same rate and manner as other forest products under this contract.

G-110 Title and Risk of Loss

Title to the forest products conveyed passes at confirmation of the sale. Purchaser bears the risk of loss of or damage to and has an insurable interest in the forest products in this contract from the time of confirmation of the sale of forest products. In the event of loss of or damage to the forest products after passage of title, whether the cause is foreseeable or unforeseeable, the forest products shall be paid for by Purchaser. Breach of this contract shall have no effect on this provision. Title to the forest products not removed from the sale area within the period specified in this contract shall revert to the State as provided in RCW 79.15.100.

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 Castle Rock, 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; LB-1010, Spur A, Y-line, Y-0018, Y-0018.1, Y-0019, Y-4400, Y-4430. 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 Y-Line, 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:

Paul E. Isaacson and State. Dated February 24, 2009. Termination: Indefinite

G-395 Road Approach Permit

Purchaser must enter into a road approach permit with Grays Harbor County.

Purchaser must provide the State with a copy of the executed permit, or a letter from Grays Harbor County, indicating that a satisfactory road approach permit has been consummated between Purchaser and Grays Harbor County.

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:

Easement, including the terms and provisions thereof,

For: Road
In Favor of: Schafer Bros. Logging Company
Disclosed by Application No.: 50-082428
Granted: 10/10/1930
Expires: Indefinite

Easement, including the terms and provisions thereof,
For: County Road
In Favor of: Grays Harbor County
Disclosed by Application No.: 50-082430*
Granted: 9/18/1941
Expires: Indefinite

Easement, including the terms and provisions thereof,
For: Road
In Favor of: Paul E. Isaacson et al
Disclosed by Application No.: 50-084218
Granted: 9/18/2009
Expires: Indefinite

Easement, including the terms and provisions thereof,
For: Road
In Favor of: Schafer Bros. Logging Company
Disclosed by Application No.: 50-085861
Granted: 6/21/1937
Expires: Indefinite

Easement, including the terms and provisions thereof,
For: County Road
In Favor of: Grays Harbor County
Disclosed by Application No.: 50-087329
Granted: 9/18/1941
Expires: Indefinite

Easement, including the terms and provisions thereof,
For: County Road
In Favor of: Grays Harbor County
Disclosed by Application No.: 50-094173
Granted: 7/29/1936
Expires: Indefinite

Easement, including the terms and provisions thereof,
For: Road
In Favor of: Schafer Bros. Logging Company
Disclosed by Application No.: 50-094177
Granted: 10/31/1941

Expires: Indefinite

Easement, including the terms and provisions thereof,
For: Road
In Favor of: Schafer Bros. Logging Company
Disclosed by Application No.: 50-094178
Granted: 7/31/1936
Expires: Indefinite

Easement, including the terms and provisions thereof,
For: County Road
In Favor of: Grays Harbor County
Disclosed by Application No.: 50-094180*
Granted: 9/18/1941
Expires: Indefinite

Lease, including the terms and provisions thereof,
For: Land Use License
In Favor of: Washington Department of Fish & Wildlife
Disclosed by Application No.: 60-095576
Granted: 5/2/2017
Expires: 6/30/2022

Lease, including the terms and provisions thereof,
For: Minor Forest Products
In Favor of: DNR – Pacific Cascade Region
Disclosed by Application No.: 35-PC0004
Granted: 1/3/1995
Expires: Indefinite

Special Notations: *Reservation in deed for County Road rights.

Section P: Payments and Securities

P-010 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 the 'Payment for Forest Products' clause, 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-021 Payment for Forest Products

Purchaser agrees to pay the following rates per MBF Scribner net log scale for forest products conveyed and cut or removed from the sale area plus $78,795.00 on day of

sale and $9.00 per MBF upon removal in fees. Fees collected shall be retained by the state unless the contract is adjusted via the G-066 clause.

DATA MISSING

Species that are conveyed but are not listed in the table above shall be paid for at a rate to be determined by the State.

Utility logs, special cull and peelable cull logs of all species, included on loads of logs that are required to be removed and scaled per clause H-150 will be paid for on an adjusted gross scale basis at the rate of $20.00 per MBF plus fees.

P-027 Payment for Removal of Optional Forest Products

Purchaser agrees to weigh all loads and pay the rate of $2.00 per ton for forest products approved for removal from the sale area under clause H-157.

P-040 Weighing and Scaling Costs

Purchaser agrees to pay for all scaling and weighing costs for logs and other products sold under this contract. Purchaser also agrees to pay for all costs associated with the transmission and reporting of scale or weight data.

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-070 Payment for Products: Damage, Theft, Loss, or Mismanufacture

Forest products included in this agreement which are destroyed, damaged, stolen, lost, or mismanufactured shall be paid for by Purchaser on demand of the State. The rates contained in clause P-021 shall apply.

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 L: Log Definitions and Accountability

L-010 Forest Products Conveyed

Forest products conveyed are all logs or parts of logs described by the 'Products Sold and Sale Area' (G-010) clause meeting the removal requirements listed in the 'Required Removal of Forest Products' (H-150) clause.

L-020 Short Logs - Peeler Blocks

Logs or parts of logs which are removed from the sale area that fail to meet the minimum gross length requirements shall be scaled and graded as short logs or peeler blocks. Such material shall be paid for at the forest products rates specified in this contract.

L-060 Load Tickets

Purchaser shall complete and use load tickets as directed by the Contract Administrator and, if required, use other identification as directed by the State to ensure accounting of forest products removed from the sale area. A load ticket must be fixed, as designated by the Contract Administrator, to each truck and trailer load prior to leaving the landing.

Purchaser shall account for all load tickets issued by the Contract Administrator and return unused tickets at termination of the contract, or as otherwise required by the Contract Administrator. Unused tickets not returned shall be subject to liquidated damages per clause D-030.

The State may also treat load tickets either not accounted for or not returned as lost forest products per clause P-070. All costs associated with computing the billings for lost forest products shall be borne by Purchaser

L-071 Log and Load Reporting Service

This contract requires the use of a State approved third party Log and Load Reporting Service (LLRS). Purchaser shall ensure log volume measurement data and/or load and weight data is received by the LLRS within 1 business day of logs being measured or weighed. Purchaser agrees to pay the LLRS for log and load data supplied to the State.

If during the term of this contract, the State discontinues use of the LLRS, the State will notify the Purchaser in writing and the Purchaser will then be responsible to send log scale and/or weight information to the State.

L-080 Scaling Rules

Determination of volume and grade of any forest products shall be conducted by a state approved third party scaling organization and in accordance with the Westside log scaling and grading rules and Scribner Volume Table, revised July 1, 1972, contained in the Northwest Log Rules Eastside and Westside Log Scaling Handbook (developed and produced by the Northwest Log Rules Advisory Group) and in effect on the date of confirmation of this contract.

Special scaling specifications shall be noted on the State's Brand Designation form which is hereby incorporated to this contract by reference.

L-110 State Approval of Log Scaling and Weighing Locations

Forest Product measurement and weighing facilities required by this contract must be approved by the State. Forest products sold under the contract which require log scaling shall be scaled, measured, or counted by a State approved third party log scaling organization. Forest products sold under the contract which require weighing shall be weighed at a location that meets Washington State Department of Agriculture approval.

Prior to forest products being hauled, the Contract Administrator must authorize in writing the use of State approved measurement and/or weighing facilities that are at or en-route to final destinations. Forest products from this sale shall be measured or weighed at facilities, which are currently approved for use by the State and are currently authorized for this sale. The State reserves the right to verify load volume and weights with State employees or contractors at the State's own expense. The State reserves the right to revoke the authorization of previously approved measurement locations.

L-120 Long Log Taper Distribution

Forest products over 40 feet long plus trim shall be segment scaled and the lower segment diameters shall be determined using actual taper. In order to utilize taper rules for determining segment diameters for poles and pilings greater than 40 feet in length plus trim, Purchaser must request use of a Pole and Piling Scaling Specification Agreement on file in the region office. Approval for usage of a special Pole and Piling Scaling Specification Agreement may be granted at the sole discretion of the State.

Following State approval for usage of the Pole and Piling Scaling Specification Agreement, the Brand Designation form shall be amended to incorporate the long log taper rules. The volume reported by the scaling organization for forest products over 40 feet plus trim will be expanded by 5 percent and the additional 5 percent volume shall be billed to the purchaser at the contract rate.

L-130 Conversion Factors

Forest products removed from the sale area that are not measured in units specified in the 'Payment for Forest Products' clause of this contract shall be converted to board feet using Department of Natural Resources' standard conversion factors.

Section H: Harvesting Operations

H-011 Certification of Fallers and Yarder Operators

All persons engaged in the felling and yarding of timber must receive certification in writing from the Contract Administrator. Certification may be revoked when the Contract Administrator determines that non-compliance of leave tree selection criteria or cut tree selection criteria is occurring, or excessive damage to leave trees or skid trails is occurring.

Excessive damage for leave trees is defined in clause H-012.

Excessive skid trail damage is defined in clause H-015 or H-016.

When leave tree damage exceeds the limits set forth in clause H-012, Purchaser shall be subject to liquidated damages (clause D-040 or D-041).

H-013 Reserve Tree Damage Definition

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

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

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

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

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

If the Contract Administrator determines that a reserve tree has been cut or damaged, the Purchaser shall provide a replacement reserve tree of like condition, size, and species within the sale unit containing the damaged leave tree, as approved by the

Contract Administrator. Purchaser may be required to pay liquidated damages for Excessive Reserve Tree Damage as detailed in clause D-041.

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

H-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-025 Timing Requirements for Timber Removal

All timber must be removed within 60 days of being felled.

H-030 Timber Falling

Trees shall be felled and logs shall be bucked to obtain the greatest practicable utilization of forest products and other valuable materials conveyed.

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 units. The plan shall address the felling and yarding operations, 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-052 Branding and Painting

Forest products shall be branded with a brand furnished by the State prior to removal from the landing. 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-110 Stump Height

Trees shall be cut as close to the ground as practicable. Stump height shall not exceed 12 inches in height measured on the uphill side, or 2 inches above the root collar, whichever is higher.

H-120 Harvesting Equipment

Forest products sold under this contract shall be harvested and removed using cable systems, including cable assisted and tethered systems and ground based shovels. 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-127 Tailholds on Private Land

If Purchaser chooses to tailhold on private property, Purchaser shall obtain permit(s) and assumes responsibility for all costs and damages associated with the permit(s). Purchaser must provide the State with a copy of the executed permit(s) or a letter from the landowner indicating that a satisfactory tailhold permit(s) has been consummated between Purchaser and the landowner.

H-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

Track mounted machines with hydraulic boom and grapple will be allowed.

Shovels must be large enough to pick up one end of the largest log 35 feet from machine.

Ground based yarding equipment shall only operate during dry soil conditions.

Ground based yarding equipment will not be permitted on sustained slopes over 45%.

No more than 2 round trip(s) per shovel road may occur.

Self-leveling ground-based yarding equipment will not be permitted on sustained slopes over 60%.

Tethered equipment will not be permitted on sustained slopes over 75%.

Sediment Delivery from roads into streams will not be allowed. Hauling operations will be shut down as needed until conditions improve or work can be completed that eliminates the delivery of sediment.

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

H-150 Required Removal of Forest Products

Purchaser shall remove from the sale area and present for scaling or weighing all forest products conveyed in the G-010 clause that meet the following minimum dimensions:

Species	Net bd ft	Log length (ft)	Log dib
Conifer	10	12	5
Hardwoods	20	16	5

The State may treat failure to remove forest products left on the sale area that meet the above specifications as a breach of this contract. At the State's option, forest products that meet the above specifications and are left on the sale area may be scaled for volume or measured and converted to weight by the State or a third party scaling organization and billed to Purchaser at the contract payment rate. All costs associated with scaling, measuring and computing the billing will be borne by the Purchaser.

H-157 Optional Removal of Forest Products Not Designated

If in the course of operations, Purchaser decides to remove forest products that are below the minimum designated removal specifications per the 'Required Removal of Forest Products' (H-150), the payment rates in clause P-027 shall apply.

Forest products designated as optional shall be decked separately from forest products designated as required for removal. Prior to removal from the sale area, optional forest products as described in this clause must be inspected and approved by the Contract Administrator. Optional forest products may not be mixed with forest products that are required for removal by this contract and shall be removed from the sale area in separate truck loads using load tickets specified by the Contract Administrator.

All material removed under this clause is subject to the same log and load accountability rules as defined in the Log Definitions and Accountability section of this contract. Purchaser shall follow the payment procedures as required in the P-052 clause and will submit a separate summary report for all forest products removed from the sale area under the authority of this clause.

H-160 Mismanufacture

Mismanufacture is defined as forest products remaining on the sale area that would have met the specifications in clause H-150 if bucking lengths had been varied to include such products.

The State may treat mismanufacture as a breach of this contract. At the State's option, forest products that are left on the sale area may be scaled for volume by the State or a third party scaling organization and billed to Purchaser at the contract payment rate. All costs associated with scaling and computing the billing will be borne by Purchaser.

H-180 Removal of Specialized Forest Products or Firewood

Prior to the removal of conveyed specialized forest products or firewood from the sale area, Purchaser and the State shall agree in writing to the method of accounting for/and removal of such products.

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 all units, all non-merchantable hardwood stems greater than 2 inches DBH or 10 feet tall, shall be felled concurrently with felling operations. 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 6/30/2020 are hereby made a part of this contract.

C-050 Purchaser Road Maintenance and Repair

Purchaser shall perform work at their own expense on LB-1010, Spur A, Y-0018, Y-0018.1, Y-0019, Y-4400, Y-4430. 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 Y-Line. 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-140 Water Bars

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

Section S: Site Preparation and Protection

S-001 Emergency Response Plan

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

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

S-010 Fire Hazardous Conditions

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

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

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

S-030 Landing Debris Clean Up

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

S-035 Logging Debris Clean Up

Slash and debris created from harvest activities shall be treated 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 all 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 ground-based equipment may operate within 30 feet of Type 5 streams unless authority is granted in writing by the Contract Administrator.

S-130 Hazardous Materials

a. Hazardous Materials and Waste - Regulatory Compliance

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

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

S-140 Fence Repair

Purchaser shall immediately repair all fence damage resulting from operations on this sale to an equal or better condition than existed at the time of sale.

Section D: Damages

D-010 Liquidated Damages

The clauses in the DAMAGES section of this contract provide for payments by Purchaser to the State for certain breaches of the terms of this contract. These payments are agreed to as liquidated damages and not as penalties. They are reasonable estimates of anticipated harm to the State 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.

D-020 Failure to Remove Forest Products

Purchaser's failure to remove all or part of the forest products sold in this agreement prior to the expiration of the contract term results in substantial injury to the State. The value of the forest products sold at the time of breach is not readily ascertainable. Purchaser's failure to perform disrupts the State's management plans, the actual cost of which is difficult to assess. A resale involves additional time and expense and is not an adequate remedy. Therefore, Purchaser agrees to pay the State as liquidated damages a sum calculated using the following formula:

$$LD = .35V - ID - P + C + A$$

Where:

LD = Liquidated Damage value.

V = The unremoved value at the date of breach of contract. The value is determined by subtracting the removal volume to date from the State's cruise volume multiplied by the contract bid rates.

ID = Initial Deposit paid at date of contract that has not been applied to timber payments.

P = Advance payments received but not yet applied to specific contract requirements.

C = Charges assessed for contract requirements completed prior to breach of contract but not paid for.

A = Administrative Fee = $2,500.00.

The above formula reflects the Purchaser's forfeiture of the initial deposit in accordance with clause P-010 by deducting the initial deposit from the amount owed. In no event shall the liquidated damages be less than zero. Interest on the liquidated damage is owed from the date of breach until final payment, calculated using the following formula: Interest = r x LD x N.

Where:

r = daily equivalent of an annual interest at current interest rate as established by WAC 332-100-030.

LD = Liquidated damage value.

N = Number of days from date of breach to date payment is received.

D-030 Inadequate Log Accountability

Removal of forest products from the sale area without adequate branding and/or valid load tickets attached to the load and scaling forest products in a location other than the facility approved by the State can result in substantial injury to the State. Failure to properly account for loads and scaling and/or weighing information can result in loss to the State. The potential loss from not having proper branding, ticketing, scaling and/or weighing location and accountability is not readily ascertainable. Purchaser's failure to perform results in a loss of log weight and scale accountability, increases the potential for unauthorized removal of forest products, and increases the State's administration costs, the actual costs of which are difficult to assess.

Enforcement actions for unauthorized removal of forest products for each improperly branded load, improperly ticketed load, lost or unaccounted for tickets, or use of a facility not authorized for this sale or improper submission of scaling data are impractical, expensive, time consuming and are not an adequate remedy. Therefore, Purchaser agrees to pay the State, as liquidated damages, a sum of $100 each time a load of logs does not have branding as required in the contract, $250 each time a load of logs does not have a load ticket as required by the contract, $250 each time a load ticket has not been filled out as required by the plan of operations, $250 each time a load is weighed or scaled at a location not approved as required under this contract, $250 each time a log ticket summary report is not submitted properly, and if a third party Log and Load Reporting Service is required, $250 each time scaling or weight data is not properly submitted to the Log and Load Reporting Service per clause L-071, and $250 each unused ticket that is not returned to the State, for any reason.

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 harvest areas.

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	_____ Eric Wisch Pacific Cascade Region Manager
_____ Print Name	
Date: _____ Address:	Date: _____

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

STATE OF _____)
)
COUNTY OF _____)

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

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

_____
Notary Public in and for the State of

_____

My appointment expires _____

PRE-CRUISE NARRATIVE

Sale Name: Standing Elevation	Region: **Pacific Cascade**
Agreement #: 30-100233	District: Lewis District
Contact Forester:Emily Fales Phone / Location: 360-810-1010	County(s): Grays Harbor
Alternate Contact:David Sund Phone / Location: 360-880-5802	Other information: Click here to enter text.

Type of Sale: Log Sort (Contract harvest)	
Harvest System: Ground based	85%
Harvest System: Uphill Cable Click here to enter text. Enter % of sale acres	15%
Harvest System: Downhill Cable Click here to enter text.	0

UNIT ACREAGES AND METHOD OF DETERMINATION:

Unit # **Harvest R/W or RMZ WMZ**	**Legal Description** (Enter only one legal for each unit) **Sec/Twp/Rng**	**Grant or Trust**	**Gross Proposal Acres**	**Deductions from Gross Acres (No harvest acres)**				**Net Harvest Acres**	**Acreage Determination** (List method and error of closure if applicable)
				RMZ/ WMZ Acres	**Leave Tree Acres**	**Existing Road Acres**	**Other Acres (describe)**		
1	Sec 17, 18, 8, 7 T16N R05W	03 07	137	62	2.1** 4.8	0	0	72.9	GPS (Trimble)
2	Sec 16,17 T16N R05W	03	26.4	23.4	0.5	0	0	2.5	GPS (Trimble)
3	Sec 21,20,17 16 T16N R05W	03	61.5	14.5	4.8	0	0	42.2	GPS (Trimble)
4 (ROW)	Sec 7, 8, 18 T16N R05W	03	4.0	NA	NA	NA	NA	4.0	GPS (Trimble)
TOTAL ACRES			228.9	99.9	7.4** 10.1	0	0	121.6	

****2.7 Leave tree (LT) acres were bounded out of unit 1 by TBS Boundary tags to simplify the unit tags for harvest. There are 2.1 LT acres inside the TBS boundary tags which were deducted from the gross harvest acres (along with RMZ/WMZ acres) to calculate net harvest acres****

Revised 03/15/2010 (FRCD)

HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription: (Leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
1	Variable retention harvest, boundary is marked with white "Timber Sale Boundary" tags and pink TBS flagging. Leave trees are bounded by yellow "Leave Tree Area" tags and pink TBS flagging. Single Leave Trees are marked with blue paint.		8 leave trees per acre (clumped) are bounded by yellow “Leave Tree Area” tags with pink flagging, 21 individual leave trees are marked with a single band of blue paint.
2	Variable retention harvest, boundary is marked with white "Timber Sale Boundary" tags and pink TBS flagging. Leave trees are bounded by yellow "Leave Tree Area" tags and pink TBS flagging. Single Leave Trees are marked with blue paint.		8 leave trees per acre (clumped) are bounded by yellow “Leave Tree Area” tags with pink flagging, 4 individual leave trees are marked with a single band of blue paint.
3	Variable retention harvest, boundary is marked with white "Timber Sale Boundary" tags and pink TBS flagging. Leave trees are bounded by yellow "Leave Tree Area" tags and pink TBS flagging. Single Leave Trees are marked with blue paint.		8 leave trees per acre (clumped) are bounded by yellow “Leave Tree Area” tags with pink flagging, 10 individual leave trees are marked with a single band of blue paint.
4 (ROW)	Bounded by orange “Right-of-Way Boundary” tags and orange flagging.		

OTHER PRE-CRUISE INFORMATION:

Unit #	Primary,secondary Species / Estimated Volume (MBF)	Access information (Gates, locks, etc.)	Photos, traverse maps required
1	DF, RA, WRC,SS, WH / 2500 MBF	Y- Line Gate (PCP 1-1)	
2	DF, RA, WRC, WH / 150 MBF		
3	DF, WH, WRC / 2000 MBF	Y- Line Gate (PCP 1-1)	
4 (ROW)	DF, WH, WRC / 240 MBF	Y- Line Gate (PCP 1-1)	
TOTAL MBF	4890 MBF		

REMARKS:

Unit 3 has a considerable amount of standing dead trees, forest helath issues, and root rot pockets. Please take this into account when planning the cruise plot spacing.

Prepared By: Emily Fales Date: 6/2/2019	Title: State Lands Forester 1	CC:

Cruise Narrative

Sale Name: Standing Elevation	**Region:** Pacific Cascade
App. #: 30-0	**District: Lewis**
Lead Cruiser: Alex Chaney	**Completion date: 11/27/2019**
Other Cruisers: Dan Clark	

Unit acreage specifications:

Unit #	Cruised acres	Cruised acres agree with sale acres? Yes/No	If acres do not agree explain why.
1	72.9	Yes	
2	2.5	Yes	
3	42.2	Yes	
4	4	Yes	
Total	121.6	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	40/27.78	16’	208’x208’	1:1	74
2	VP	46.94/27.78	16’	208’x208’	1:1	9
3	VP	46.94/33.61	16’	208’x208’	1:1	42
4	VP	46.94/27.78	16’	208’x208’	1:1	12

Sale/Cruise Description:

Minor species cruise intensity:	Cruised on appropriate plots.					
Minimum cruise spec:	40% 0f Form- Factor at 16 feet D.O.B or 5 inch Top, and merchantable top.					
Avg. ring count by sp:	**DF =**	6	**WH =**	NA	**SS =**	NA
Leave/take tree description:	Leave tree clumps are bounded with yellow “Leave Tree Area” tags and pink flagging, individual leave trees are marked with a single band of blue paint.					
Sort Description:	**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”.) **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”.) **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. **D**- Domestic logs					

Field observations:

Standing Elevation

This sale consist of 3 units and a 4 acre right of way. You can access units 1, 3 and 4 off Williams Creek Rd and unit 2 off of Langabeer Rd.

Units 1, 2 and 3 are 70 year old dominant Douglas fir stands with some Western hemlock, Red alder, Red cedar, Big leaf maple and cottonwood throughout the stands. These units have a good mix of high quality B and domestic logs but they also have some special mill, peeler and rough logs. The average DBH for Douglas fir is 26” with a bole height of 108ft.

Unit 4 is a 4 acre right of way consisting of 60 and 70 year old timber. There’s an even mix of Douglas fir and Western hemlock with minor species of Red cedar and Red alder. The average DBH for Douglas fir is 24” with a bole height of 108ft and the average DBH for Western hemlock is 18” with a bole height of 92ft.

Overall this sale has a good mix of domestic and high quality B logs but also has some special mill, peeler and rough logs. Some damages observed throughout the sale were sweep, forks, crooks, storm damage, swollen butts and pockets of root rot. Did not see any bear damage. This sale is 85% ground based and 15% uphill cable logging. All roads are drivable but need some pre-haul maintenance. You need the PCP-1 key for the gate on the Y line to access units 1, 3 and 4 but no keys are needed to access unit 2.

Grants: 03 and 07 **Prepared by: Alex Chaney** **Title: Timber Cruiser**

TC PSPCSTGR

Species, Sort Grade - Board Foot Volumes (Project)

T16N R05W S17 Ty00U1
THRU
T16N R05W S17 Ty00U4

Project: STANDING

Acres 121.60

Page 1
Date 12/3/2019
Time 8:32:15AM

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent of Net Board Foot Volume: Log Scale Dia. 5-7	8-11	12-15	16+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
RA		CU	CU		100.0	190											9	8		0.00	19.0
RA	D	UT		8	1.6	671	661	80	49	7	14	30	35	50	14		24	7	46	0.50	14.3
RA	D	1S		2	5.1	198	188	23				100				100	37	16	355	2.57	.5
RA	D	2S		22	4.9	1,838	1,748	213			100		4	46		50	32	13	190	1.50	9.2
RA	D	3S		16	5.8	1,404	1,323	161		100			7	36	5	53	32	10	122	0.93	10.8
RA	D	4S		28	6.5	2,381	2,225	271		100			2	32	0	66	34	9	79	0.66	28.0
RA	D	4S		24	3.4	1,959	1,893	230	100				7	30	25	38	31	5	36	0.33	52.3
RA	**Totals**			21	7.0	8,642	8,038	977	28	45	23	5	7	36	8	49	28	8	60	0.57	134.2
RC		CU	CU		100.0	24											6	11		0.00	1.9
RC	D	3S		93	15.1	727	617	75	2	8	17	73	3	24	5	68	36	15	352	3.21	1.8
RC	D	4S		7	3.5	45	44	5	98	2			57	29	15		20	5	22	0.33	2.0
RC	**Totals**			2	17.0	796	661	80	9	7	16	68	7	24	5	64	20	10	116	1.90	5.7
DF		CU	CU		100.0	76											2	12		0.00	4.7
DF		HA	3P			144	144	18				100			100		34	28	1240	6.29	.1
DF		HA	SM	5		1,418	1,418	172				100				100	40	20	670	3.17	2.1
DF		HB	2S	40	3.2	10,936	10,590	1,288			17	83				100	40	18	565	2.89	18.7
DF		HB	3S	2	1.9	516	507	62		100					7	93	39	10	144	0.90	3.5
DF	D	2S		41	4.7	11,454	10,920	1,328			24	76	0	3	1	96	39	17	489	2.57	22.3
DF	D	3S		9	1.1	2,618	2,588	315	17	83			2	9	16	74	35	9	96	0.76	27.0
DF	D	4S		2	.9	451	447	54	84	16			34	51	6	8	23	6	29	0.33	15.3
DF	D	UT				43	43	5	75	4	21		25	75			23	6	34	0.35	1.3
DF		RO	3S	1	5.0	86	82	10				100				100	40	24	960	4.36	.1
DF	**Totals**			70	3.6	27,743	26,738	3,251	3	10	17	70	1	3	3	93	34	13	281	1.77	95.2
WH		CU	CU														0	7		0.00	2.4
WH	D	2S		61	3.3	1,206	1,165	142			47	53		23	3	73	38	16	377	2.31	3.1
WH	D	3S		25	3.5	497	479	58	19	81					5	95	39	9	113	0.84	4.2
WH	D	4S		10	1.8	205	202	25	92	8			13	37		50	31	5	33	0.34	6.1
WH	D	UT		4		60	60	7	100						100		31	5	30	0.29	2.0
WH	**Totals**			5	3.1	1,968	1,907	232	18	21	29	32	1	18	6	74	30	8	107	0.92	17.8
SS	D	2S		54	4.4	177	169	21			3	97		3		97	35	22	898	5.10	.2
SS	D	3S		3	11.8	8	7	1		100						100	38	11	150	1.77	.0
SS	D	UT		21		64	64	8	30			70			30	70	32	6	92	0.78	.7
SS		RO	3S	22		68	68	8				100		31		69	28	25	970	7.55	.1
SS	**Totals**			1	2.8	316	308	37	6	2	2	90		8	6	85	32	11	308	2.13	1.0
CW	D	UT		8		2	2	0		100						100	36	9	100	0.92	.0
CW	D	1S		92	5.2	21	20	2				100				100	40	19	550	3.04	.0
CW	**Totals**			0	4.8	23	22	3		8		92				100	39	15	400	2.38	.1
BM		CU	CU														3	21		0.00	1.1
BM	D	UT		59		261	261	32	61		39		4	45	39	12	27	6	47	0.59	5.5
BM	D	1S		19	5.6	90	85	10				100	100				18	16	170	2.02	.5
BM	D	2S		22	5.9	100	94	11			100			100			28	13	160	1.55	.6

TC PSPCSTGR

Species, Sort Grade - Board Foot Volumes (Project)

T16N R05W S17 Ty00U1
THRU
T16N R05W S17 Ty00U4

Project: **STANDING**

Acres **121.60**

Page **2**
Date **12/3/2019**
Time **8:32:15AM**

Spp	S T	So Gr rt ad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent of Net Board Foot Volume: Log Scale Dia. 5-7	8-11	12-15	16+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
BM	**Totals**		1	2.4	450	440	53	36		44	19	22	48	23	7	23	9	57	0.74	7.7
Totals				4.6	39,939	38,113	4,635	10	18	19	54	3	12	4	81	30	10	146	1.12	261.7

TC PSTATS

PROJECT STATISTICS

PROJECT STANDING

DATE 12/3/2019

TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
16N	05	17	ELEVATION	00U1	THR	121.60	137	558	S	W
16N	05W	17	ELEVATION	00U4						

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	137	558	4.1		
CRUISE	73	275	3.8	13,337	2.1
DBH COUNT					
REFOREST					
COUNT	60	261	4.3		
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	138	32.7	25.7	105	23.2	117.8	27,743	26,738	5,676	5,664
R ALDER	86	58.1	14.1	73	16.8	63.0	8,642	8,038	2,182	2,141
WHEMLOCK	21	10.1	15.7	61	3.4	13.7	1,968	1,907	489	489
WR CEDAR	20	2.9	21.1	44	1.5	7.1	796	661	222	217
BL MAPLE	4	5.0	14.6	45	1.5	5.8	450	440	132	132
COTWOOD	1	.0	31.0	119	0.0	.1	23	22	5	5
S SPRUCE	5	.8	19.8	49	0.4	1.7	316	308	68	68
TOTAL	*275*	*109.7*	*18.7*	*79*	*48.3*	*209.0*	*39,939*	*38,113*	*8,774*	*8,717*

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	10	15
DOUG FIR	59.2	5.1	1,263	1,332	1,400			
R ALDER	62.2	6.7	168	180	192			
WHEMLOCK	109.3	24.4	359	476	592			
WR CEDAR	100.9	23.1	540	702	864			
BL MAPLE	55.4	31.7	113	165	217			
COTWOOD								
S SPRUCE	79.9	39.7	1,224	2,030	2,836			
TOTAL	*99.3*	*6.0*	*796*	*847*	*898*	*394*	*98*	*44*

CL 68.1	COEFF		**SAMPLE TREES - CF**			# OF TREES REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	52.6	4.6	261	273	285			
R ALDER	58.4	6.3	45	48	51			
WHEMLOCK	96.8	21.6	89	114	139			
WR CEDAR	89.4	20.5	175	220	265			
BL MAPLE	57.9	33.1	35	52	69			
COTWOOD								
S SPRUCE	78.3	38.9	265	434	602			
TOTAL	*89.7*	*5.5*	*175*	*185*	*195*	*321*	*80*	*36*

CL 68.1	COEFF		**TREES/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	115.4	9.9	30	33	36			
R ALDER	137.5	11.7	51	58	65			
WHEMLOCK	296.3	25.3	8	10	13			
WR CEDAR	516.9	44.1	2	3	4			
BL MAPLE	526.8	45.0	3	5	7			
COTWOOD	1170.5	99.9	0	0	0			
S SPRUCE	974.1	83.2	0	1	1			
TOTAL	*76.5*	*6.5*	*103*	*110*	*117*	*234*	*58*	*26*

CL 68.1	COEFF		**BASAL AREA/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15

PROJECT STATISTICS

PROJECT STANDING

TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
16N	05	17	ELEVATION	00U1	THR	121.60	137	558	S	W
16N	05W	17	ELEVATION	00U4						

DOUG FIR	93.4	8.0	108	118	127			
R ALDER	131.0	11.2	56	63	70			
WHEMLOCK	257.8	22.0	11	14	17			
WR CEDAR	316.8	27.0	5	7	9			
BL MAPLE	509.1	43.5	3	6	8			
COTWOOD	1170.5	99.9	0	0	0			
S SPRUCE	516.8	44.1	1	2	2			
TOTAL	*53.1*	*4.5*	*200*	*209*	*219*	*112*	*28*	*12*

CL 68.1 SD: 1.0

	COEFF VAR.%	S.E.%	NET BF/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
DOUG FIR	95.0	8.1	24,569	26,738	28,908			
R ALDER	134.7	11.5	7,114	8,038	8,962			
WHEMLOCK	266.0	22.7	1,474	1,907	2,340			
WR CEDAR	347.6	29.7	465	661	857			
BL MAPLE	510.4	43.6	248	440	631			
COTWOOD	1170.5	99.9	0	22	44			
S SPRUCE	557.3	47.6	161	308	454			
TOTAL	*61.4*	*5.2*	*36,116*	*38,113*	*40,111*	*151*	*38*	*17*

CL 68.1 SD: 1.0

	COEFF VAR.%	S.E.%	NET CUFT FT/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
DOUG FIR	94.5	8.1	5,207	5,664	6,121			
R ALDER	133.3	11.4	1,898	2,141	2,385			
WHEMLOCK	262.2	22.4	380	489	599			
WR CEDAR	341.5	29.1	154	217	280			
BL MAPLE	511.3	43.6	75	132	190			
COTWOOD	1170.5	99.9	0	5	10			
S SPRUCE	538.0	45.9	37	68	100			
TOTAL	*56.7*	*4.8*	*8,295*	*8,717*	*9,138*	*128*	*32*	*14*

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: STANDING

Date 12/3/2019

Time 8:32:16AM

T16N R05W S17 T00U1

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
16N	05W	17	ELEVATION	00U1	72.90	74	151	S	W

T16N R05W S17 T00U1

Spp	ST	Sort	Grad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 5-7	8-11	12-15	16+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF		CU	CU		100.0	91											5	21		0.00	1.5
DF		HA	3P	1		240	240	18				100			100		34	28	1240	6.29	.2
DF		HA	SM	12		2,366	2,366	172				100				100	40	20	670	3.17	3.5
DF		HB	2S	55	1.8	11,107	10,913	796			13	87				100	40	19	662	3.17	16.5
DF		HB	3S	3	2.6	614	598	44		100					10	90	39	10	149	0.90	4.0
DF		DM	2S	20	4.8	4,259	4,056	296			29	71		12	3	85	37	17	418	2.37	9.7
DF		DM	3S	7	2.7	1,373	1,337	97	7	93			2	14	29	55	34	9	95	0.86	14.1
DF		DM	4S	1	1.8	224	220	16	87	13			27	38	16	18	26	6	30	0.35	7.2
DF		RO	3S	1	5.0	144	137	10				100				100	40	24	960	4.36	.1
DF	**Totals**			59	2.7	20,417	19,865	1,448	1	9	13	76	0	4	4	91	35	14	349	2.03	56.9
RA		CU	CU		100.0	317											10	7		0.00	28.4
RA		DM	UT	7	2.1	817	800	58	59	10	8	23	18	63	19		25	7	42	0.38	18.9
RA		DM	1S	2		128	128	9				100				100	40	16	400	2.84	.3
RA		DM	2S	19	3.4	2,048	1,980	144			100		6	68		26	30	13	192	1.43	10.3
RA		DM	3S	17	5.6	1,842	1,740	127		100			9	45		46	31	10	118	0.89	14.7
RA		DM	4S	29	7.1	3,176	2,951	215		100			2	38		60	33	8	75	0.62	39.1
RA		DM	4S	26	3.2	2,636	2,552	186	100				8	32	23	38	30	5	35	0.31	72.1
RA	**Totals**			30	7.4	10,965	10,150	740	30	47	20	3	7	45	7	41	27	7	55	0.51	183.9
WH		CU	CU														0	9		0.00	2.4
WH		DM	2S	67	2.7	1,437	1,398	102			32	68		32		68	38	17	430	2.63	3.3
WH		DM	3S	17	3.7	368	355	26	44	56						100	39	7	90	0.80	3.9
WH		DM	4S	11		229	229	17	91	9			9	44		46	31	5	33	0.32	6.9
WH		DM	UT	5		100	100	7	100						100		31	5	30	0.29	3.3
WH	**Totals**			6	2.5	2,134	2,082	152	22	11	22	46	1	27	5	68	30	8	105	0.91	19.8
RC		CU	CU		100.0	39											7	11		0.00	2.8
RC		DM	3S	94	15.8	1,123	946	69		5	15	80	4	26	4	67	35	17	422	3.79	2.2
RC		DM	4S	6	4.6	57	55	4	100				45	36	19		21	5	22	0.36	2.5
RC	**Totals**			3	18.0	1,220	1,000	73	5	5	14	75	6	26	5	63	20	11	133	2.14	7.5
SS		DM	2S	54	4.4	295	282	21			3	97		3		97	35	22	898	5.10	.3
SS		DM	3S	3	11.8	13	12	1		100						100	38	11	150	1.77	.1
SS		DM	UT	21		107	107	8	30			70			30	70	32	6	92	0.78	1.2
SS		RO	3S	22		113	113	8				100		31		69	28	25	970	7.55	.1
SS	**Totals**			2	2.8	528	513	37	6	2	2	90		8	6	85	32	11	308	2.13	1.7
Type Totals					4.7	35,265	33,611	2,450	11	21	16	52	3	18	5	74	29	9	125	0.97	269.8

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: STANDING

Date 12/3/2019

Time 8:32:16AM

T16N R05W S17 T00U2

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
16N	05W	17	ELEVATION	00U2	2.50	9	19	S	W

T16N R05W S17 T00U2

Spp	ST	Sort	Grad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 5-7	8-11	12-15	16+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF		CU	CU		100.0	67											2	12		0.00	16.6
DF		HB	2S	14	4.6	7,567	7,221	18			75	25				100	40	13	243	1.61	29.7
DF		DM	2S	72	5.0	38,638	36,725	92			13	87				100	40	19	642	3.19	57.2
DF		DM	3S	12		5,944	5,944	15	15	85			2	3	12	83	36	9	106	0.73	55.8
DF		DM	4S	1		527	527	1	76	24			51		49		24	6	30	0.35	17.6
DF		DM	UT	1		195	195	0		39	61		100				11	11	43	0.86	4.5
DF		**Totals**		95	4.4	52,938	50,612	127	3	10	20	67	1	0	2	97	33	13	279	1.81	181.5
RA		CU	CU														3	16		0.00	6.1
RA		DM	UT	18		188	188	0	100				32		68		20	5	18	0.29	10.3
RA		DM	4S	82	12.5	973	851	2		100					50	50	34	9	82	0.92	10.3
RA		**Totals**		2	10.5	1,161	1,039	3	18	82			6		53	41	22	9	39	0.66	26.8
RC		DM	3S	86	7.2	736	683	2		44	56				44	56	33	12	171	1.72	4.0
RC		DM	4S	14		106	106	0	52	48			52	48			21	6	26	0.51	4.0
RC		**Totals**		1	6.3	841	789	2	7	45	49		7	6	38	49	27	9	98	1.26	8.0
CW		DM	UT	8		90	90	0		100						100	36	9	100	0.92	.9
CW		DM	1S	92	5.2	1,041	987	2				100				100	40	19	550	3.04	1.8
CW		**Totals**		2	4.8	1,131	1,077	3		8		92				100	39	15	400	2.38	2.7
Type Totals					4.6	56,071	53,517	134	3	12	20	65	1	0	3	95	32	12	244	1.70	219.0

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: STANDING

Date 12/3/2019

Time 8:32:16AM

T16N R05W S17 T00U3 | **T16N R05W S17 T00U3**

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
16N	05W	17	ELEVATION	00U3	42.20	42	76	S	W

Spp	ST	Sort	Grade	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 5-7	8-11	12-15	16+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF		CU	CU		100.0	59											2	10		0.00	9.1
DF		HB	2S	27	5.4	10,349	9,792	413			19	81				100	40	17	475	2.68	20.6
DF		HB	3S	1		323	323	14		100						100	40	10	150	0.97	2.2
DF		DM	2S	57	4.6	21,526	20,542	867			23	77	0	1		99	39	17	513	2.63	40.0
DF		DM	3S	12	.4	4,415	4,396	186	23	77			1	7	10	82	36	9	96	0.71	46.0
DF		DM	4S	2		785	785	33	81	19			35	65			22	6	29	0.32	27.2
DF		DM	UT	1		112	112	5	83		17		17	83			24	6	33	0.33	3.4
DF	**Totals**			84	4.3	37,570	35,951	1,517	5	11	18	66	1	3	1	94	32	12	242	1.61	148.5
RA		CU	CU														2	15		0.00	5.1
RA		DM	UT	9		511	511	22	22		31	47	82	18			20	9	64	1.08	8.0
RA		DM	1S	6	8.3	349	320	14				100				100	36	16	330	2.40	1.0
RA		DM	2S	29	8.0	1,759	1,618	68			100					100	37	12	185	1.63	8.8
RA		DM	3S	14	6.6	831	776	33		100					22	78	37	11	141	1.06	5.5
RA		DM	4S	23	4.0	1,317	1,264	53		100				10		90	37	9	100	0.81	12.6
RA		DM	4S	19	4.2	1,083	1,038	44	100				3	24	34	39	33	6	40	0.41	26.1
RA	**Totals**			13	5.5	5,849	5,527	233	21	37	32	10	8	8	10	74	30	9	82	0.84	67.1
BM		CU	CU														3	21		0.00	3.1
BM		DM	UT	59		751	751	32	61		39		4	45	39	12	27	6	47	0.59	15.9
BM		DM	1S	19	5.6	260	246	10				100	100				18	16	170	2.02	1.4
BM		DM	2S	22	5.9	287	270	11			100			100			28	13	160	1.55	1.7
BM	**Totals**			3	2.4	1,298	1,267	53	36		44	19	22	48	23	7	23	9	57	0.74	22.2
RC		CU	CU															7		0.00	.5
RC		DM	3S	100		32	32	1	100							100	40	7	70	1.45	.5
RC	**Totals**			0		32	32	1	100							100	20	7	35	1.45	.9
Type Totals					4.4	44,750	42,777	1,805	8	14	21	57	3	5	3	89	31	11	179	1.34	238.7

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: STANDING

Date 12/3/2019

Time 8:32:16AM

T16N R05W S17 T00U4 | **T16N R05W S17 T00U4**

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
16N	05W	17	ELEVATION	00U4	4.00	12	29	S	W

Spp	ST	Sort	Grad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 5-7	8-11	12-15	16+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF		CU	CU															10		0.00	7.7
DF		HB	2S	38	5.5	16,109	15,219	61			24	76				100	39	17	455	2.56	33.4
DF		HB	3S	2		1,102	1,102	4		100						100	36	9	100	0.76	11.0
DF		DM	2S	47	4.9	19,331	18,383	74			40	60	1			99	39	16	418	2.27	43.9
DF		DM	3S	10	1.1	4,262	4,214	17	11	89				4	16	80	37	9	97	0.71	43.3
DF		DM	4S	3	4.7	1,019	971	4	93	7			45	10		45	23	6	27	0.30	36.5
DF	**Totals**			65	4.6	41,822	39,888	160	3	12	28	57	1	1	2	96	34	11	227	1.53	175.8
WH		CU	CU															5		0.00	28.8
WH		DM	2S	49	5.0	10,470	9,952	40			85	15			12	88	38	14	288	1.77	34.6
WH		DM	3S	41	3.3	8,387	8,110	32		100					9	91	39	10	143	0.88	56.8
WH		DM	4S	10	5.5	2,074	1,959	8	93	7			19	22		59	30	6	33	0.37	60.1
WH	**Totals**			33	4.3	20,931	20,021	80	9	41	42	7	2	2	10	86	29	9	111	0.93	180.3
RC		CU	CU															9		0.00	2.7
RC		DM	3S	73	8.9	833	758	3	11	40	50					100	40	10	149	1.32	5.1
RC		DM	4S	27		271	271	1	100				100				16	5	20	0.20	13.5
RC	**Totals**			2	6.7	1,103	1,029	4	34	29	37		26			74	20	7	48	0.74	21.3
RA		DM	3S	78	6.2	349	328	1		100						100	36	11	150	1.21	2.2
RA		DM	4S	22		87	87	0	100						100		35	5	40	0.40	2.2
RA	**Totals**			1	5.0	437	415	2	21	79					21	79	36	8	95	0.81	4.4
Type Totals					4.6	64,294	61,354	245	6	22	32	39	2	1	4	93	31	10	161	1.22	381.9

TC TSTATS

STATISTICS

PROJECT STANDING

DATE 12/3/2019

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
16N	05W	17	ELEVATION	00U1	72.90	74	305	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	74	305	4.1		
CRUISE	36	151	4.2	8,536	1.8
DBH COUNT					
REFOREST COUNT	35	154	4.4		
BLANKS	3				
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	54	20.2	27.8	104	16.2	85.4	20,417	19,865	4,089	4,076
R ALDER	66	78.5	13.1	74	20.4	73.8	10,965	10,150	2,624	2,557
WHEMLOCK	12	13.6	14.9	53	4.3	16.5	2,134	2,082	545	545
WR CEDAR	14	3.5	23.1	48	2.1	10.1	1,220	1,000	328	320
S SPRUCE	5	1.3	19.8	49	0.6	2.8	528	513	114	114
TOTAL	*151*	*117.1*	*17.2*	*76*	*45.5*	*188.6*	*35,265*	*33,611*	*7,700*	*7,612*

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	10	15
DOUG FIR	47.3	6.6	1,341	1,435	1,529			
R ALDER	66.8	8.2	164	178	193			
WHEMLOCK	125.0	37.6	338	542	745			
WR CEDAR	79.4	22.0	723	927	1,131			
S SPRUCE	79.9	39.7	1,224	2,030	2,836			
TOTAL	*106.6*	*8.7*	*711*	*779*	*847*	*454*	*113*	*50*

CL: 68.1 %	COEFF		**SAMPLE TREES - CF**			# OF TREES REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	44.1	6.1	271	288	306			
R ALDER	63.6	7.8	41	45	48			
WHEMLOCK	111.0	33.4	86	129	172			
WR CEDAR	69.9	19.4	231	286	342			
S SPRUCE	78.3	38.9	265	434	602			
TOTAL	*100.1*	*8.2*	*158*	*172*	*186*	*400*	*100*	*44*

CL: 68.1 %	COEFF		**TREES/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	115.1	13.4	17	20	23			
R ALDER	102.7	11.9	69	79	88			
WHEMLOCK	253.4	29.4	10	14	18			
WR CEDAR	490.9	57.0	1	3	5			
S SPRUCE	714.9	83.0	0	1	2			
TOTAL	*72.5*	*8.4*	*107*	*117*	*127*	*210*	*52*	*23*

CL: 68.1 %	COEFF		**BASAL AREA/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	103.1	12.0	75	85	96			
R ALDER	96.2	11.2	66	74	82			
WHEMLOCK	222.8	25.9	12	17	21			
WR CEDAR	257.4	29.9	7	10	13			
S SPRUCE	374.9	43.5	2	3	4			
TOTAL	*50.1*	*5.8*	*178*	*189*	*200*	*100*	*25*	*11*

CL: 68.1 %	COEFF		**NET BF/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15

STATISTICS

PROJECT **STANDING**

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
16N	**05W**	**17**	**ELEVATION**	**00U1**	72.90	74	305	S	W

CL: 68.1 % COEFF **NET BF/ACRE** # OF PLOTS REQ. INF. POP.

SD: 1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	105.4	12.2	17,434	19,865	22,296			
R ALDER	101.6	11.8	8,953	10,150	11,347			
WHEMLOCK	233.8	27.2	1,517	2,082	2,647			
WR CEDAR	273.7	31.8	682	1,000	1,318			
S SPRUCE	405.2	47.1	272	513	754			
TOTAL	*59.9*	*7.0*	*31,271*	*33,611*	*35,950*	*143*	*36*	*16*

CL: 68.1 % COEFF **NET CUFT FT/ACRE** # OF PLOTS REQ. INF. POP.

SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	104.6	12.2	3,581	4,076	4,571			
R ALDER	99.5	11.6	2,262	2,557	2,852			
WHEMLOCK	229.3	26.6	400	545	690			
WR CEDAR	273.9	31.8	218	320	421			
S SPRUCE	390.7	45.4	62	114	166			
TOTAL	*54.8*	*6.4*	*7,128*	*7,612*	*8,096*	*120*	*30*	*13*

TC TSTATS

STATISTICS

PAGE 1

PROJECT STANDING

DATE 12/3/2019

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
16N	05W	17	ELEVATION	00U2	2.50	9	35	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	9	35	3.9		
CRUISE	7	19	2.7	173	11.0
DBH COUNT					
REFOREST COUNT	2	7	3.5		
BLANKS					
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	13	54.1	27.1	115	41.8	217.6	52,938	50,612	10,887	10,873
R ALDER	3	10.3	16.2	59	3.7	14.7	1,161	1,039	380	380
WR CEDAR	2	4.0	20.9	56	2.1	9.5	841	789	271	271
COTWOOD	1	.9	31.0	119	0.8	4.7	1,131	1,077	248	248
TOTAL	*19*	*69.4*	*25.5*	*103*	*48.8*	*246.6*	*56,071*	*53,517*	*11,785*	*11,772*

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	10	15
DOUG FIR	62.7	18.1	1,102	1,345	1,589			
R ALDER	29.9	20.7	77	97	117			
WR CEDAR	63.2	59.2	96	235	374			
COTWOOD								
TOTAL	*85.4*	*20.1*	*818*	*1,024*	*1,230*	*308*	*77*	*34*

CL: 68.1 %	COEFF		**SAMPLE TREES - CF**			# OF TREES REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	56.2	16.2	233	277	322			
R ALDER	15.6	10.8	32	36	40			
WR CEDAR	58.5	54.8	36	80	123			
COTWOOD								
TOTAL	*74.8*	*17.6*	*180*	*218*	*257*	*236*	*59*	*26*

CL: 68.1 %	COEFF		**TREES/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	49.2	17.4	45	54	64			
R ALDER	202.5	71.5	3	10	18			
WR CEDAR	214.6	75.7	1	4	7			
COTWOOD	300.0	105.9		1	2			
TOTAL	*14.9*	*5.3*	*66*	*69*	*73*	*10*	*2*	*1*

CL: 68.1 %	COEFF		**BASAL AREA/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	48.9	17.3	180	218	255			
R ALDER	209.1	73.8	4	15	26			
WR CEDAR	198.5	70.0	3	10	16			
COTWOOD	300.0	105.9		5	10			
TOTAL	*23.2*	*8.2*	*226*	*247*	*267*	*24*	*6*	*3*

CL: 68.1 %	COEFF		**NET BF/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	52.3	18.5	41,267	50,612	59,956			
R ALDER	198.9	70.2	310	1,039	1,769			
WR CEDAR	199.7	70.5	233	789	1,344			
COTWOOD	300.0	105.9		1,077	2,217			
TOTAL	*40.3*	*14.2*	*45,904*	*53,517*	*61,130*	*73*	*18*	*8*

TC TSTATS

STATISTICS

PROJECT **STANDING**

DATE 12/3/2019

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
16N	**05W**	**17**	**ELEVATION**	**00U2**	2.50	9	35	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	10	15

CL:	68.1 %	COEFF		**NET CUFT FT/ACRE**			# OF PLOTS REQ.		INF. POP.
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR		51.1	18.0	8,914	10,873	12,833			
R ALDER		198.9	70.2	113	380	646			
WR CEDAR		198.9	70.2	81	271	461			
COTWOOD		300.0	105.9		248	510			
TOTAL		*34.3*	*12.1*	*10,345*	*11,772*	*13,198*	*53*	*13*	*6*

TC TSTATS

STATISTICS

PROJECT STANDING

DATE 12/3/2019

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
16N	05W	17	ELEVATION	00U3	42.20	42	159	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	42	159	3.8		
CRUISE	21	76	3.6	4,071	1.9
DBH COUNT					
REFOREST COUNT	20	83	4.2		
BLANKS	1				
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	55	50.6	24.2	105	32.8	161.1	37,570	35,951	7,793	7,782
R ALDER	16	31.0	17.7	69	12.6	52.8	5,849	5,527	1,718	1,718
BL MAPLE	4	14.3	14.6	45	4.3	16.6	1,298	1,267	381	381
WR CEDAR	1	.5	22.0	43	0.3	1.2	32	32	27	27
TOTAL	*76*	*96.5*	*21.0*	*84*	*50.6*	*231.7*	*44,750*	*42,777*	*9,919*	*9,908*

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	10	15
DOUG FIR	65.5	9.1	1,192	1,311	1,430			
R ALDER	42.8	11.0	181	203	226			
BL MAPLE	55.4	31.7	113	165	217			
WR CEDAR								
TOTAL	*89.7*	*10.5*	*885*	*988*	*1,092*	*321*	*80*	*36*

CL: 68.1 %	COEFF		**SAMPLE TREES - CF**			# OF TREES REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	57.1	7.9	250	271	293			
R ALDER	39.4	10.2	57	63	69			
BL MAPLE	57.9	33.1	35	52	69			
WR CEDAR								
TOTAL	*77.2*	*9.0*	*192*	*211*	*230*	*238*	*59*	*26*

CL: 68.1 %	COEFF		**TREES/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	88.5	13.6	44	51	58			
R ALDER	162.3	25.0	23	31	39			
BL MAPLE	281.8	43.4	8	14	21			
WR CEDAR	648.1	99.9	0	0	1			
TOTAL	*58.9*	*9.1*	*88*	*96*	*105*	*138*	*35*	*15*

CL: 68.1 %	COEFF		**BASAL AREA/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	69.5	10.7	144	161	178			
R ALDER	158.7	24.5	40	53	66			
BL MAPLE	271.5	41.9	10	17	24			
WR CEDAR	648.1	99.9	0	1	2			
TOTAL	*41.8*	*6.4*	*217*	*232*	*247*	*70*	*17*	*8*

CL: 68.1 %	COEFF		**NET BF/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	71.2	11.0	32,004	35,951	39,897			
R ALDER	161.8	24.9	4,148	5,527	6,906			
BL MAPLE	272.2	42.0	735	1,267	1,798			
WR CEDAR	648.1	99.9	0	32	65			
TOTAL	*52.1*	*8.0*	*39,342*	*42,777*	*46,211*	*108*	*27*	*12*

TC TSTATS

STATISTICS

PROJECT **STANDING**

DATE 12/3/2019

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
16N	**05W**	**17**	**ELEVATION**	**00U3**	42.20	42	159	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	10	15

CL: 68.1 %	COEFF		**NET CUFT FT/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	70.3	10.8	6,938	7,782	8,626			
R ALDER	160.2	24.7	1,294	1,718	2,142			
BL MAPLE	272.8	42.1	221	381	541			
WR CEDAR	648.1	99.9	0	27	54			
TOTAL	*46.3*	*7.1*	*9,201*	*9,908*	*10,614*	*85*	*21*	*9*

TC TSTATS

STATISTICS

PROJECT STANDING

DATE 12/3/2019

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
16N	05W	17	ELEVATION	00U4	4.00	12	59	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	12	59	4.9		
CRUISE	9	29	3.2	556	5.2
DBH COUNT					
REFOREST COUNT	3	17	5.7		
BLANKS					
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	16	59.4	24.2	108	38.5	189.3	41,822	39,888	9,001	9,001
WHEMLOCK	9	60.1	18.7	92	26.5	114.3	20,931	20,021	4,935	4,935
WR CEDAR	3	17.4	11.0	27	3.5	11.4	1,103	1,029	311	311
R ALDER	1	2.2	17.0	73	0.8	3.4	437	415	126	126
TOTAL	*29*	*139.1*	*20.5*	*90*	*70.4*	*318.5*	*64,294*	*61,354*	*14,374*	*14,374*

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	10	15
DOUG FIR	79.3	20.5	837	1,053	1,268			
WHEMLOCK	45.5	16.1	326	388	450			
WR CEDAR	111.3	77.0	40	173	307			
R ALDER								
TOTAL	*99.9*	*18.9*	*589*	*726*	*862*	*413*	*103*	*46*

CL: 68.1 %	COEFF		**SAMPLE TREES - CF**			# OF TREES REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	65.7	17.0	186	224	262			
WHEMLOCK	41.7	14.7	80	94	108			
WR CEDAR	113.8	78.8	13	59	106			
R ALDER								
TOTAL	*82.4*	*15.6*	*136*	*161*	*186*	*281*	*70*	*31*

CL: 68.1 %	COEFF		**TREES/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	70.8	21.3	47	59	72			
WHEMLOCK	110.1	33.1	40	60	80			
WR CEDAR	267.9	80.7	3	17	32			
R ALDER	346.4	104.3		2	4			
TOTAL	*17.3*	*5.2*	*132*	*139*	*146*	*13*	*3*	*1*

CL: 68.1 %	COEFF		**BASAL AREA/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	59.7	18.0	155	189	223			
WHEMLOCK	112.4	33.8	76	114	153			
WR CEDAR	181.1	54.5	5	11	18			
R ALDER	346.4	104.3		3	7			
TOTAL	*12.3*	*3.7*	*307*	*319*	*330*	*7*	*2*	*1*

CL: 68.1 %	COEFF		**NET BF/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	60.8	18.3	32,584	39,888	47,193			
WHEMLOCK	112.9	34.0	13,214	20,021	26,829			
WR CEDAR	187.8	56.5	447	1,029	1,611			
R ALDER	346.4	104.3		415	848			
TOTAL	*20.0*	*6.0*	*57,661*	*61,354*	*65,047*	*17*	*4*	*2*

TC TSTATS

STATISTICS

PROJECT **STANDING**

DATE 12/3/2019

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
16N	**05W**	**17**	**ELEVATION**	**00U4**	4.00	12	59	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	10	15

CL:	68.1 %	COEFF		**NET CUFT FT/ACRE**			# OF PLOTS REQ.		INF. POP.
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR		59.5	17.9	7,389	9,001	10,614			
WHEMLOCK		112.4	33.8	3,265	4,935	6,605			
WR CEDAR		203.9	61.4	120	311	502			
R ALDER		346.4	104.3		126	257			
TOTAL		*17.7*	*5.3*	*13,606*	*14,374*	*15,142*	*14*	*3*	*2*

TC PSPCTLTCM

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

T16N R05W S17 Ty00U	72.9
T16N R05W S17 Ty00U	2.5
T16N R05W S17 Ty00U	4.0

Project STANDING
Acres 121.60

Page No 1
Date: 12/3/2019
Time 8:32:17AM

Species	S T	Total Trees	Total Logs	Total Tons	Net Cubic Ft/ Tree	Net Cubic Ft/ Log	CF/ LF	Total CCF Gross	Total CCF Net	Total MBF Gross	Total MBF Net
DOUG FIR		3,982	11,005	19,669	172.96	62.58	1.80	6,901	6,887	3,374	3,251
R ALDER		7,070	14,017	7,295	36.83	18.58	0.59	2,653	2,604	1,051	977
WHEMLOCK		1,231	1,875	1,903	48.33	31.72	0.92	595	595	239	232
WR CEDAR		352	457	633	74.91	57.68	2.09	269	264	97	80
BL MAPLE		606	803	426	26.56	20.04	0.74	161	161	55	53
S SPRUCE		95	121	217	88.03	68.68	2.08	83	83	38	37
COTWOOD		2	7	15	276.01	92.00	2.36	6	6	3	3
Totals		13,337	28,285	30,159	79.48	37.47	1.14	10,669	10,600	4,857	4,635

Wood Type Species	Total Trees	Total Logs	Total Tons	Net Cubic Ft/ Tree	Net Cubic Ft/ Log	CF/ LF	Total CCF Gross	Total CCF Net	Total MBF Gross	Total MBF Net
C	5,659	13,459	22,422	138.34	58.17	1.68	7,849	7,829	3,748	3,601
H	7,677	14,826	7,736	36.09	18.69	0.60	2,820	2,771	1,108	1,034
Totals	13,337	28,285	30,159	79.48	37.47	1.14	10,669	10,600	4,857	4,635

TC PLOGSTVB

Log Stock Table - MBF

T16N R05W S17 Ty00U1
THRU
T16N R05W S17 Ty00U4

Project: STANDING
Acres 121.60

Page 1
Date 12/3/2019
Time 8:32:19AM

Spp	ST	Sort	Grade	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches 2-3 4-5	6-7 8-9	10-11 12-13	14-15 16-19	20-23 24-29	30-39 40+
RA		DM	UT	12	7		7	.7	0			7		
RA		DM	UT	13	1		1	.1	1					
RA		DM	UT	14	6		6	.6	0	6				
RA		DM	UT	16	6	22.2	4	.5				4		
RA		DM	UT	18	10		10	1.0				10		
RA		DM	UT	23	1		1	.1	1					
RA		DM	UT	24	15		15	1.5	4	6		4		
RA		DM	UT	25	7		7	.7	6	1				
RA		DM	UT	26	12		12	1.2	3			9		
RA		DM	UT	29	5		5	.6	4	1				
RA		DM	UT	31	9		9	.9	9					
RA		DM	UT	32	3		3	.3	3					
RA		DM	1S	36	15	8.3	14	1.4				14		
RA		DM	1S	40	9		9	1.0				9		
RA		DM	2S	16	9	4.8	8	.8			8			
RA		DM	2S	30	103	4.1	99	10.1			37	61		
RA		DM	2S	36	61	8.6	56	5.7			44	11		
RA		DM	2S	40	51	2.1	50	5.1			41	9		
RA		DM	3S	16	5		5	.5			5			
RA		DM	3S	20	6		6	.6			6			
RA		DM	3S	30	63	8.9	57	5.9			57			
RA		DM	3S	32	8	7.1	7	.8			7			
RA		DM	3S	36	45	5.0	43	4.4			43			
RA		DM	3S	40	44	3.5	43	4.4			43			
RA		DM	4S	20	5		5	.5		5				
RA		DM	4S	24	9		9	.9		9				
RA		DM	4S	26	6		6	.6		6				
RA		DM	4S	30	79	8.6	72	7.4		72				
RA		DM	4S	32	1	22.2	1	.1		1				
RA		DM	4S	36	25		25	2.5		25				
RA		DM	4S	40	165	7.2	153	15.7		153				
RA		DM	4S	16	3		3	.3	3					
RA		DM	4S	17	1		1	.1		1				
RA		DM	4S	18	1		1	.1	1					
RA		DM	4S	19	3		3	.3	2	1				

TC PLOGSTVB

Log Stock Table - MBF

T16N R05W S17 Ty00U1
THRU
T16N R05W S17 Ty00U4

Project: STANDING
Acres 121.60

Page 2
Date 12/3/2019
Time 8:32:19AM

Spp	ST	So Grt	Gr de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches 2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
RA		DM	4S	20	7		7	.7			7									
RA		DM	4S	21	10		10	1.0		7	3									
RA		DM	4S	22	4		4	.4		4										
RA		DM	4S	23	3	18.9	2	.3		1	1									
RA		DM	4S	26	2		2	.2		2										
RA		DM	4S	27	8		8	.9		5	4									
RA		DM	4S	29	8		8	.8		8										
RA		DM	4S	30	37	6.7	35	3.6		13	22									
RA		DM	4S	31	2		2	.2			2									
RA		DM	4S	32	21	4.9	20	2.0		6	14									
RA		DM	4S	33	15	14.6	13	1.3		10	3									
RA		DM	4S	34	6		6	.6		4	2									
RA		DM	4S	35	17		17	1.7		14	3									
RA		DM	4S	36	21	6.5	19	2.0		10	9									
RA		DM	4S	37	7		7	.7		7										
RA		DM	4S	38	17	2.1	17	1.7		11	6									
RA		DM	4S	39	3		3	.4		3										
RA		DM	4S	40	41		41	4.2		20	22									
RA		Totals			1,051	7.0	977	21.1		162	107	277	161	131	93	47				
RC		DM	3S	17	0	40.0	0	.3						0						
RC		DM	3S	20	4	50.0	2	2.7											2	
RC		DM	3S	26	1		1	.7				1								
RC		DM	3S	27	1	8.3	1	1.0							1					
RC		DM	3S	29	1	7.1	1	.9						1						
RC		DM	3S	30	18	12.3	16	19.7									3	8	5	
RC		DM	3S	32	1	8.3	1	.9					1							
RC		DM	3S	34	4	29.1	3	3.3						1			2			
RC		DM	3S	36	3	4.2	3	3.6				1	1		1					
RC		DM	3S	38	1	5.3	1	1.2						1						
RC		DM	3S	40	55	13.4	47	59.1			2	2		4	4	9	5	15	5	
RC		DM	4S	16	1		1	1.3		1										
RC		DM	4S	17	2		2	2.2		2										
RC		DM	4S	19	0		0	.2		0										
RC		DM	4S	22	1		1	1.8		1										
RC		DM	4S	24	0		0	.2				0								
RC		DM	4S	32	1	20.0	1	1.0			1									

TC PLOGSTVB

Log Stock Table - MBF

T16N R05W S17 Ty00U1
THRU
T16N R05W S17 Ty00U4

Project: STANDING
Acres 121.60

Page 3
Date 12/3/2019
Time 8:32:19AM

Spp	ST	So Grt	Grde	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches 2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
RC		Totals			97	17.0	80	1.7		4	2	4	2	7	6	9	10	23	12	
DF		HA	3P	34	18		18	.5										18		
DF		HA	SM	40	172		172	5.3								65	107			
DF		HB	2S	36	17	6.2	16	.5						12	5					
DF		HB	2S	40	1,313	3.1	1,271	39.1						82	116	287	398	307	81	
DF		HB	3S	34	4		4	.1				4								
DF		HB	3S	36	4		4	.1				4								
DF		HB	3S	40	54	2.2	53	1.6					53							
DF		DM	2S	16	3		3	.1						3						
DF		DM	2S	18	1		1	.0						1						
DF		DM	2S	24	13		13	.4										13		
DF		DM	2S	26	29	5.7	28	.9						2		14	12			
DF		DM	2S	27	2		2	.1						2						
DF		DM	2S	29	2		2	.1								2				
DF		DM	2S	31	4	5.3	4	.1						4						
DF		DM	2S	33	2		2	.1							2					
DF		DM	2S	35	2	5.9	2	.1						2						
DF		DM	2S	36	22	4.3	21	.6						16		5				
DF		DM	2S	37	3		3	.1						3						
DF		DM	2S	39	5		5	.2						5						
DF		DM	2S	40	1,303	4.8	1,241	38.2						87	198	313	297	283	63	
DF		DM	3S	16	1		1	.0					1							
DF		DM	3S	19	1		1	.0					1							
DF		DM	3S	20	3		3	.1					3							
DF		DM	3S	21	0		0	.0				0								
DF		DM	3S	22	1		1	.0				1								
DF		DM	3S	23	2		2	.0					2							
DF		DM	3S	24	1		1	.0					1							
DF		DM	3S	25	5	3.6	5	.1				3	1							
DF		DM	3S	27	9		9	.3				7	2							
DF		DM	3S	28	1		1	.0				1								
DF		DM	3S	29	6		6	.2				6								
DF		DM	3S	30	2		2	.1				2								
DF		DM	3S	31	2		2	.1				2								

TC PLOGSTVB

Log Stock Table - MBF

T16N R05W S17 Ty00U1
THRU
T16N R05W S17 Ty00U4

Project: STANDING
Acres 121.60

Page 4
Date 12/3/2019
Time 8:32:19AM

Spp	ST	Sort	Grade	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches 2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
DF		DM	3S	32	11		11	.3			2	8	1							
DF		DM	3S	33	14		14	.4			1	3	10							
DF		DM	3S	34	14		14	.4			7	2	5							
DF		DM	3S	35	10		10	.3				7	2							
DF		DM	3S	36	69	1.4	68	2.1			26	23	19							
DF		DM	3S	37	14	3.4	14	.4				10	3							
DF		DM	3S	38	7		7	.2			3	4								
DF		DM	3S	39	6		6	.2					6							
DF		DM	3S	40	140	1.4	138	4.2			16	45	77							
DF		DM	4S	15	0		0	.0				0								
DF		DM	4S	16	3		3	.1		2	0	0								
DF		DM	4S	17	6		6	.2		2	3	2								
DF		DM	4S	18	6		6	.2			1	5								
DF		DM	4S	19	1		1	.0			1									
DF		DM	4S	20	1		1	.0		1										
DF		DM	4S	21	2	10.4	2	.1		1	0									
DF		DM	4S	22	3		3	.1		2	1									
DF		DM	4S	24	8		8	.2		6	2									
DF		DM	4S	25	1	20.0	1	.0				1								
DF		DM	4S	27	9		9	.3		6	3									
DF		DM	4S	29	6		6	.2		3	2									
DF		DM	4S	31	1		1	.0		1										
DF		DM	4S	32	3		3	.1		3										
DF		DM	4S	36	2		2	.1		2										
DF		DM	4S	38	3		3	.1		3										
DF		DM	UT	11	0		0	.0					0							
DF		DM	UT	12	1		1	.0						1						
DF		DM	UT	25	4		4	.1		4										
DF		RO	3S	40	10	5.0	10	.3										10		
DF		Totals			3,374	3.6	3,251	70.2		35	69	143	188	219	321	687	815	630	144	
WH		DM	2S	25	2		2	.7							2					
WH		DM	2S	28	12		12	5.2									12			
WH		DM	2S	30	20	4.3	19	8.3										7	12	
WH		DM	2S	32	5	5.3	5	2.0						5						
WH		DM	2S	36	9	5.7	9	3.8						3		6				
WH		DM	2S	40	99	3.3	95	41.1						15	42	38				

TC PLOGSTVB

Log Stock Table - MBF

T16N R05W S17 Ty00U1
THRU
T16N R05W S17 Ty00U4

Project: STANDING
Acres 121.60

Page 5
Date 12/3/2019
Time 8:32:19AM

Spp	St	So Grt	Grade	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches 2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
WH		DM	3S	32	3	8.3	3	1.2					3							
WH		DM	3S	36	2		2	1.0			2									
WH		DM	3S	38	3		3	1.1			3									
WH		DM	3S	40	52	3.5	51	21.8			7	6	39							
WH		DM	4S	15	1		1	.2				1								
WH		DM	4S	17	1		1	.2			1									
WH		DM	4S	18	1		1	.4		1										
WH		DM	4S	19	1		1	.4			0	1								
WH		DM	4S	21	2	19.8	2	.8			1	1								
WH		DM	4S	23	1		1	.3			1									
WH		DM	4S	30	6		6	2.8		6										
WH		DM	4S	39	8		8	3.3		8										
WH		DM	4S	40	5		5	2.0		5										
WH		DM	UT	31	7		7	3.2		7										
WH		Totals			239	3.1	232	5.0		27	14	8	41	23	43	44	12	7	12	
SS		DM	2S	25	1		1	1.6						1						
SS		DM	2S	36	9		9	23.7								3		6		
SS		DM	2S	40	12	7.8	11	29.7								1		4	6	
SS		DM	3S	38	1	11.8	1	2.3					1							
SS		DM	UT	31	2		2	6.3		2										
SS		DM	UT	40	5		5	14.5									5			
SS		RO	3S	22	3		3	6.9								1		2		
SS		RO	3S	40	6		6	15.1											6	
SS		Totals			38	2.8	37	.8		2			1	1		4	5	12	12	
CW		DM	UT	36	0		0	8.3				0								
CW		DM	1S	40	3	5.2	2	91.7								1	2			
CW		Totals			3	4.8	3	.1				0				1	2			
BM		DM	UT	19	1		1	2.4			1									
BM		DM	UT	26	12		12	22.9		12										
BM		DM	UT	28	2		2	4.0			2									
BM		DM	UT	32	12		12	23.1						12						
BM		DM	UT	40	4		4	6.8			4									
BM		DM	1S	18	11	5.6	10	19.4								10				

TC PLOGSTVB

Log Stock Table - MBF

T16N R05W S17 Ty00U1
THRU
T16N R05W S17 Ty00U4

Project: STANDING
Acres 121.60

Page 6
Date 12/3/2019
Time 8:32:19AM

Spp	ST	So Grt de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches 2-3 4-5	6-7 8-9	10-11 12-13	14-15 16-19	20-23 24-29	30-39 40+
BM		DM 2S	28	12	5.9	11	21.3			11			
BM		Totals		55	2.4	53	1.2	12	7	24	10		
Total		All Species		4,857	4.6	4,635	100.0	243	200 432	393 405	463 802	844 673	181

FPA/N No:	2937371
Effective Date:	03/24/2020
Expiration Date:	03/24/2023
Shut Down Zone:	651N
EARR Tax Credit:	[x] Eligible [ ] Non-eligible
Reference:	Standing Elevation Sorts 30-100233

Forest Practices Application/Notification

Notice of Decision

Decision

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

FPA/N Classification

[ ] Class II [x] Class III [ ] Class IVG [ ] Class IVS

Number of Years Granted on Multi-Year Request

[ ] 4 years [ ] 5 years

Conditions on Approval / Reasons for Disapproval

Notify the Department of Natural Resources two business days before beginning operations. Call 360-577-2025 or email (pcforestpractices@dnr.wa.gov and the Forest Practices Forester) and provide the application number and legal description for your activity.

Issued By: Alex Lilla **Region:** Pacific Cascade

Title: Forest Practices Forester **Date:** 03/24/2020

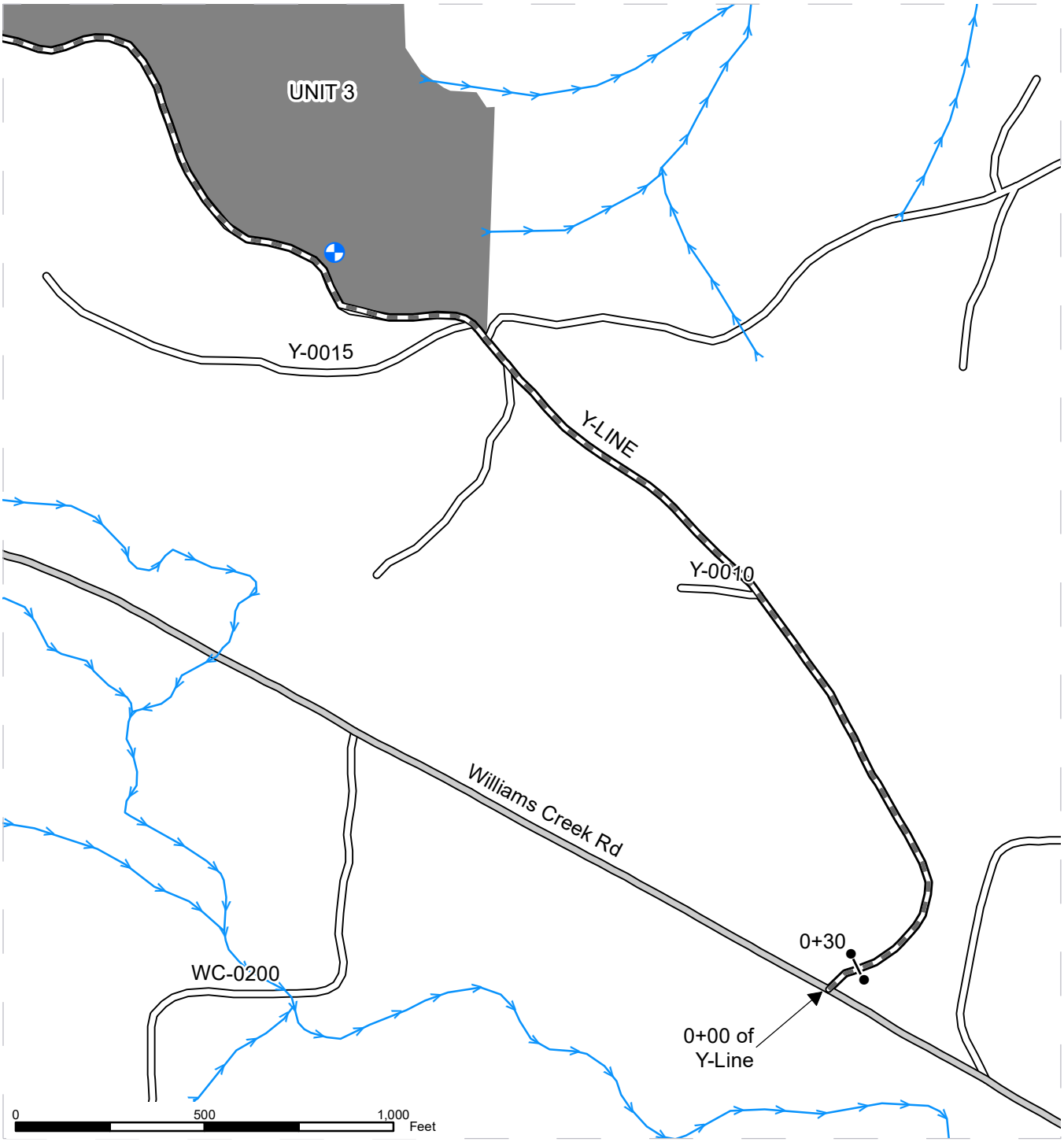
Copies to: [ ] Landowner, Timber Owner and Operator.

Issued in person: [x] Landowner [x]Timber Owner [x] Operator By: Jacqui Sahr

ROAD PLAN MAP

SALE NAME: STANDING ELEVATION
AGREEMENT#: 30-100233
TOWNSHIP(S): T16R5W
TRUST(S): Common School and Indemnity (3)

REGION: Pacific Cascade Region
COUNTY(S): Grays Harbor
ELEVATION RGE: 120-535



County Road
Existing Roads
Required Pre-Haul Maintenance
Gate
Landing - Proposed
Harvest Type

N

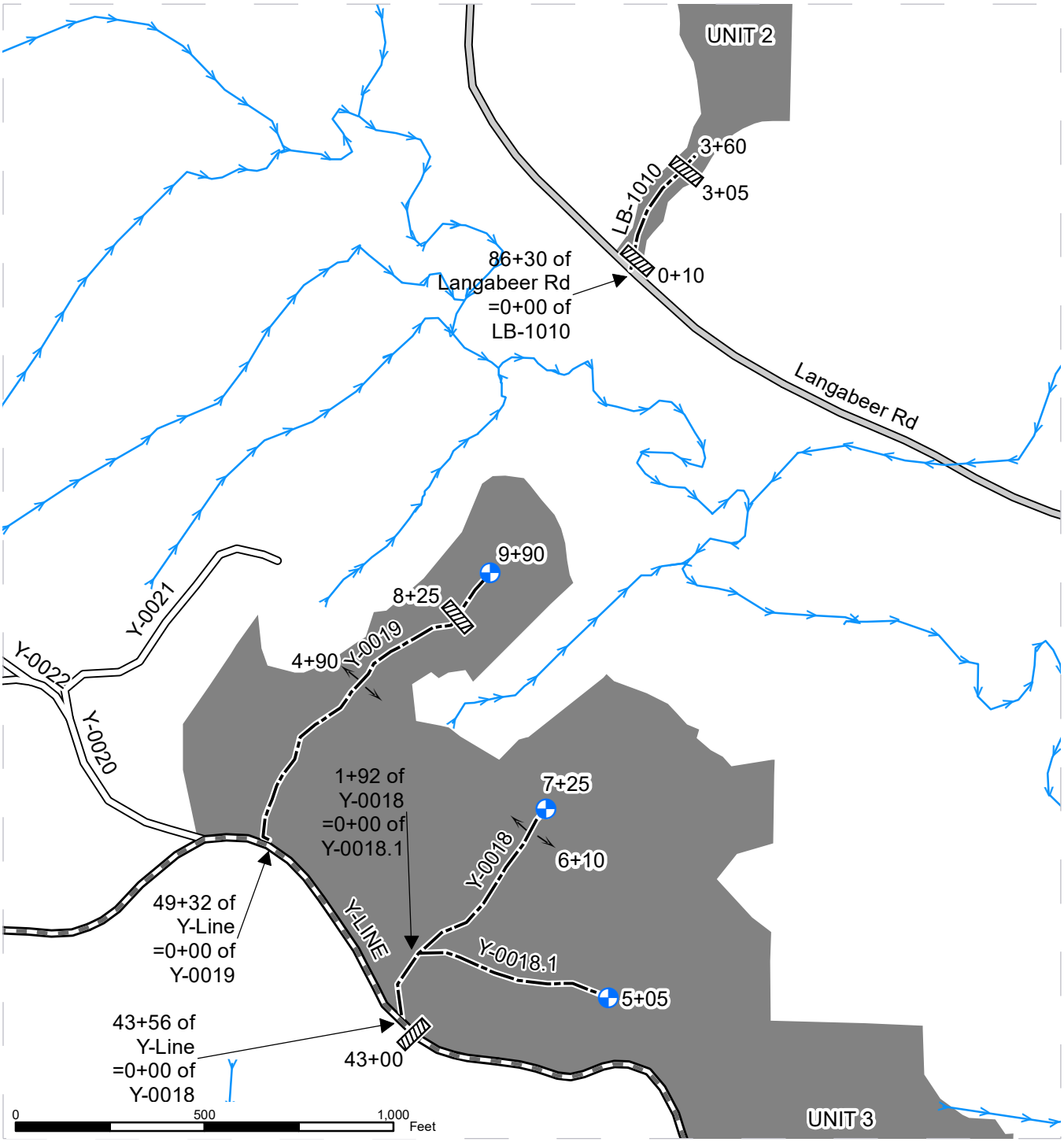
Prepared By: accc490

Modification Date: 7/1/2020

ROAD PLAN MAP

SALE NAME: STANDING ELEVATION
AGREEMENT#: 30-100233
TOWNSHIP(S): T16R5W
TRUST(S): Common School and Indemnity (3)

REGION: Pacific Cascade Region
COUNTY(S): Grays Harbor
ELEVATION RGE: 120-535



County Road
Existing Roads
Required Pre-Haul Maintenance
Optional Construction
Culvert
Landing - Proposed
Ditchout
Harvest Type

N

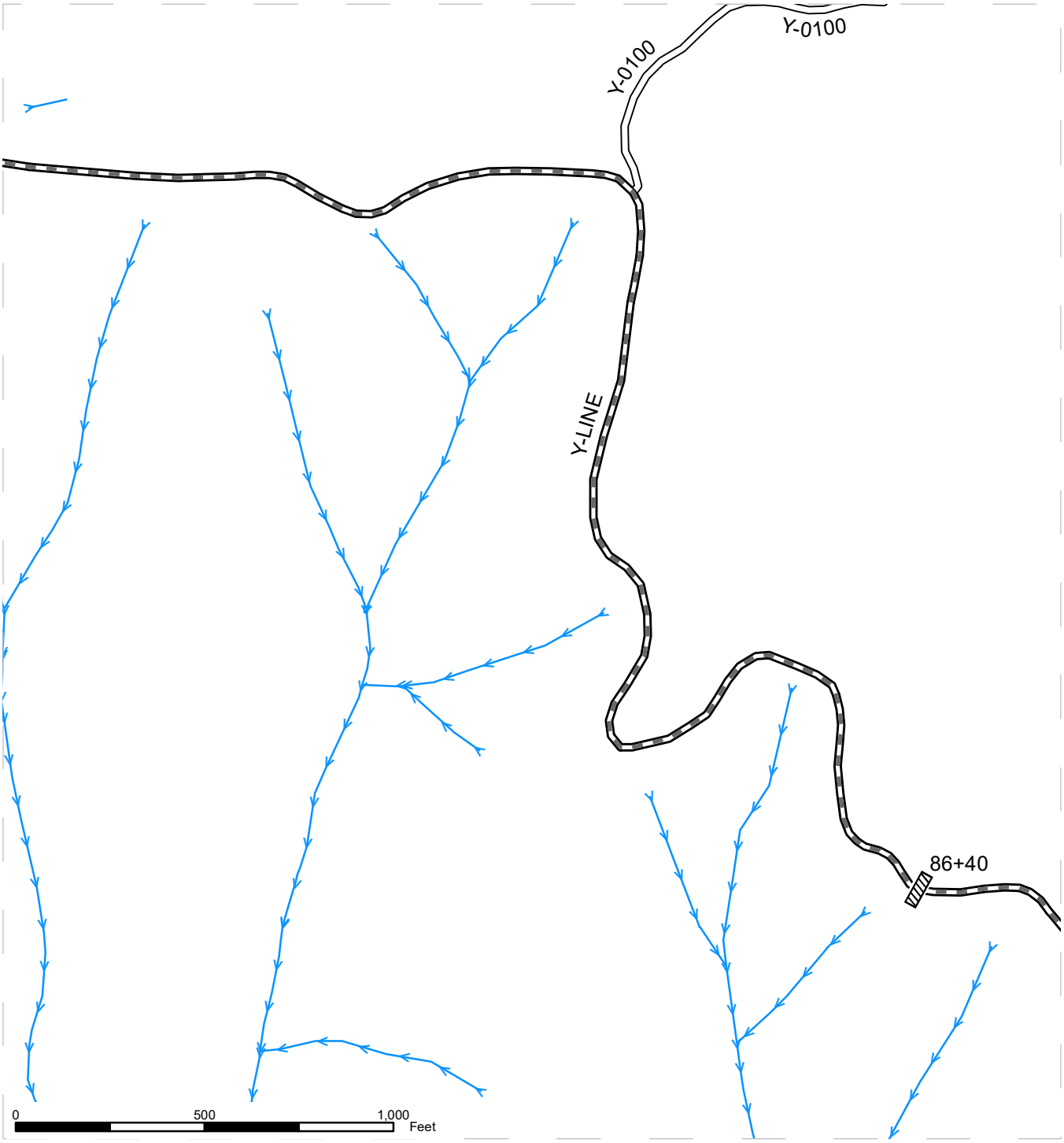
Prepared By: accc490

Modification Date: 7/1/2020

ROAD PLAN MAP

SALE NAME: STANDING ELEVATION
AGREEMENT#: 30-100233
TOWNSHIP(S): T16R5W
TRUST(S): Common School and Indemnity (3)

REGION: Pacific Cascade Region
COUNTY(S): Grays Harbor
ELEVATION RGE: 120-535



Existing Roads
Required Pre-Haul Maintenance
Culvert

N

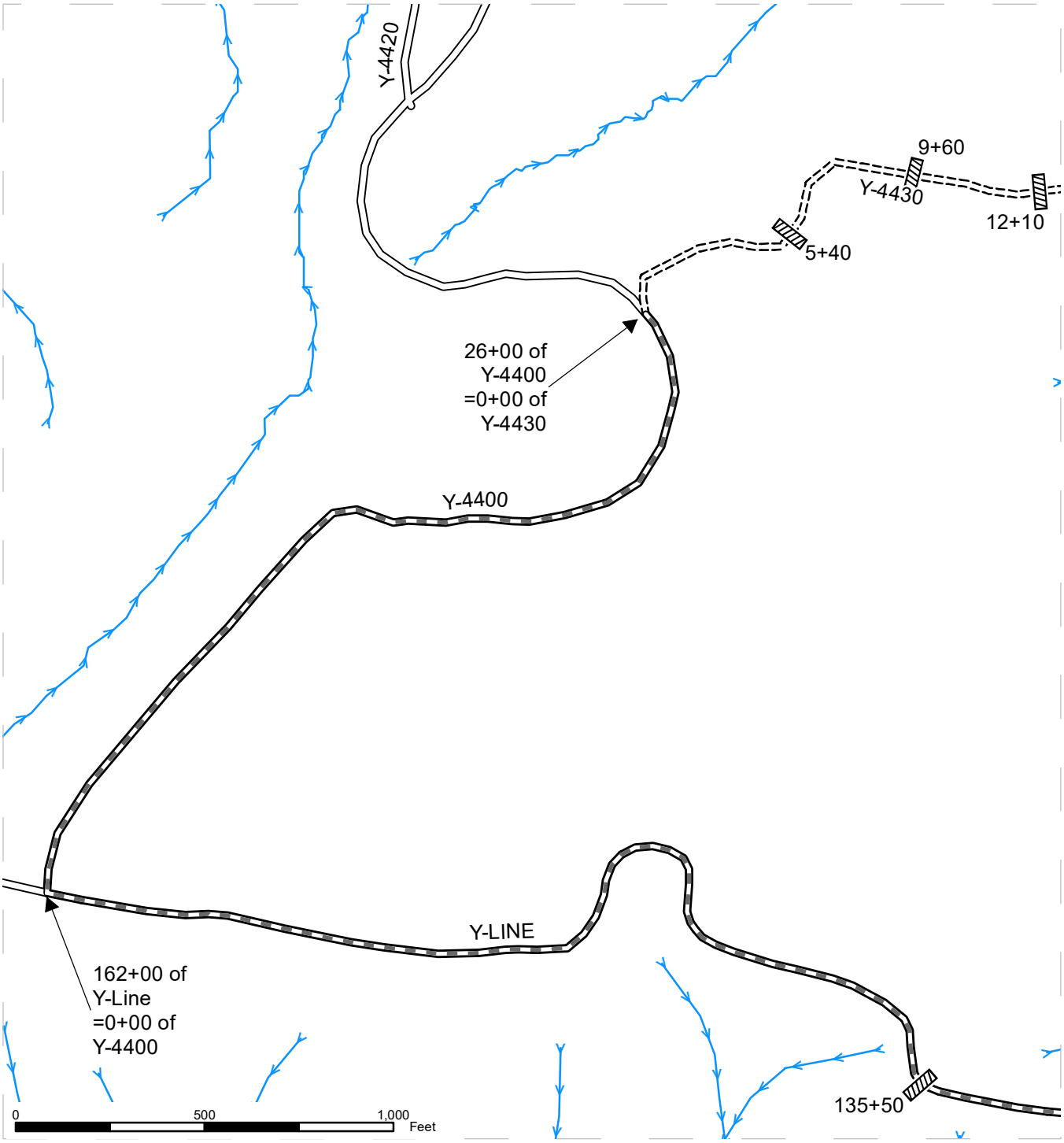
Prepared By: accc490

Modification Date: 7/1/2020

ROAD PLAN MAP

SALE NAME: STANDING ELEVATION
AGREEMENT#: 30-100233
TOWNSHIP(S): T16R5W
TRUST(S): Common School and Indemnity (3)

REGION: Pacific Cascade Region
COUNTY(S): Grays Harbor
ELEVATION RGE: 120-535



Existing Roads
Required Pre-Haul Maintenance
Required Construction
Culvert

N

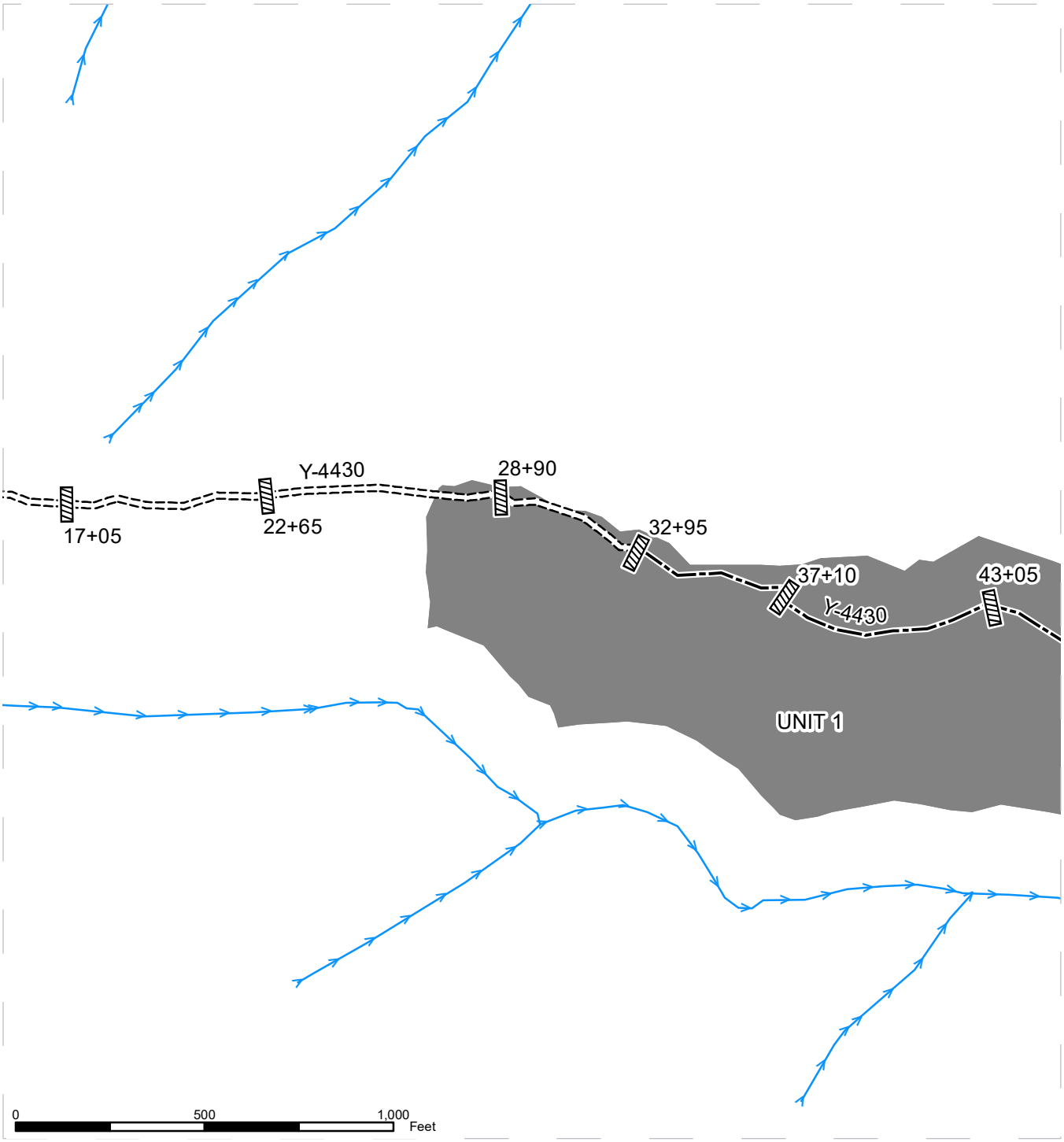
Prepared By: accc490

Modification Date: 7/1/2020

ROAD PLAN MAP

SALE NAME: STANDING ELEVATION
AGREEMENT#: 30-100233
TOWNSHIP(S): T16R5W
TRUST(S): Common School and Indemnity (3)

REGION: Pacific Cascade Region
COUNTY(S): Grays Harbor
ELEVATION RGE: 120-535



Required Construction
Optional Construction
Culvert
Harvest Type

N

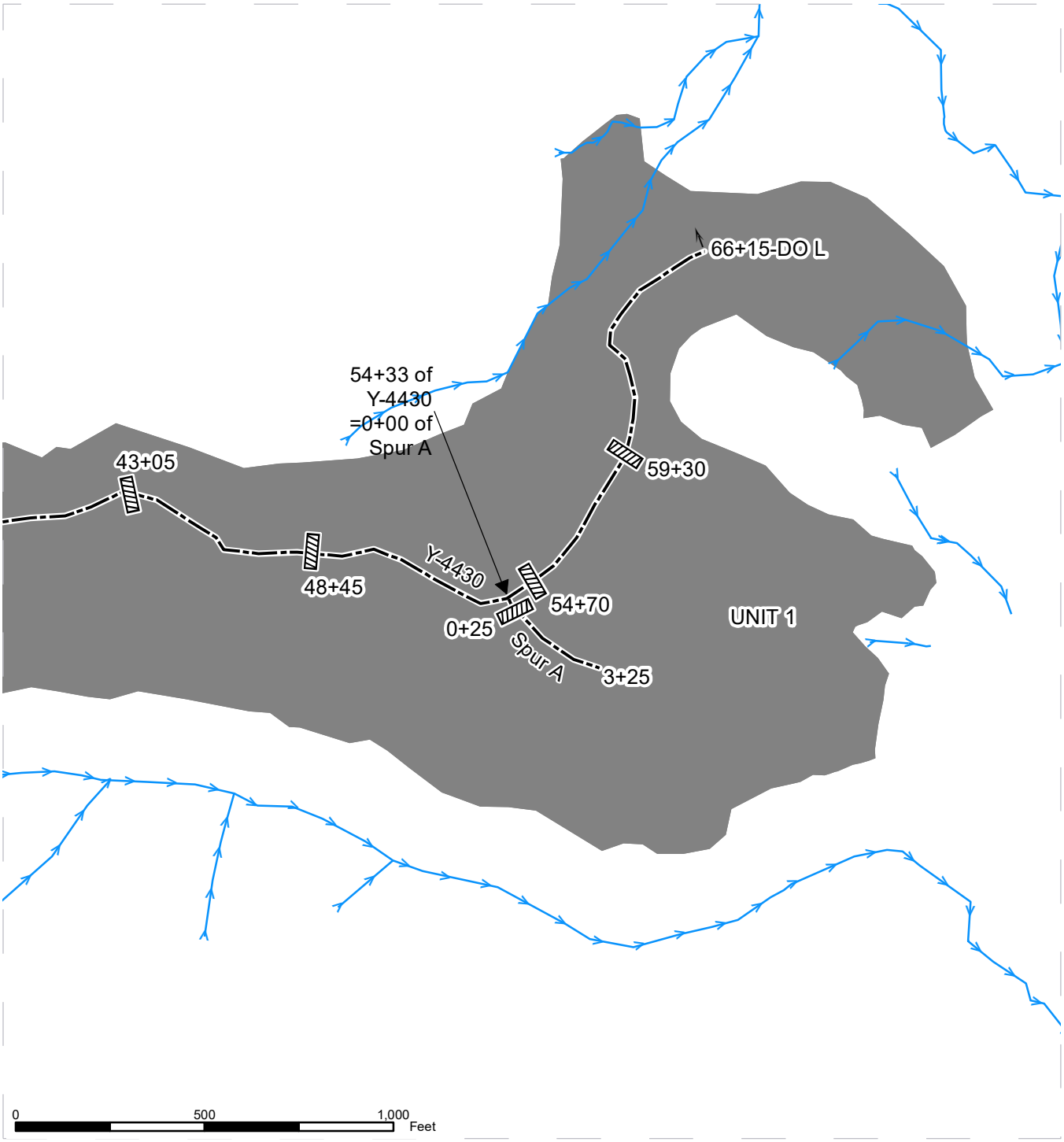
Prepared By: accc490

Modification Date: 7/1/2020

ROAD PLAN MAP

SALE NAME: STANDING ELEVATION
AGREEMENT#: 30-100233
TOWNSHIP(S): T16R5W
TRUST(S): Common School and Indemnity (3)

REGION: Pacific Cascade Region
COUNTY(S): Grays Harbor
ELEVATION RGE: 120-535



Optional Construction
Culvert
Ditchout
Harvest Type

N

Prepared By: accc490

Modification Date: 7/1/2020

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

STANDING ELEVATION TIMBER SALE ROAD PLAN
GRAYS HARBOR COUNTY
LEWIS DISTRICT
PACIFIC CASCADE REGION

AGREEMENT NO.: 30-100233 STAFF ENGINEER: RICH WALLMOW

DRAWN & COMPILED BY: ALICIA COMPTON

SECTION 0 – SCOPE OF PROJECT

0-1 ROAD PLAN SCOPE

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

0-2 REQUIRED ROADS

The specified work on the following roads is required.

Road	Stations	Type
Y-4430	0+00 to 32+95	Construction
Y-Line	0+00 to 162+00	Pre-haul Maintenance
Y-4400	0+00 to 26+00	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.

Road	Stations	Type
Y-0018	0+00 to 7+25	Construction
Y-0018.1	0+00 to 5+05	Construction
Y-0019	0+00 to 9+90	Construction
LB-1010	0+00 to 3+60	Construction
Y-4430	32+95 to 66+15	Construction
Spur A	0+00 to 3+25	Construction

0-4 CONSTRUCTION

Construction includes, but is not limited to clearing, grubbing, right-of-way debris disposal, excavation and/or embankment to subgrade, compaction, acquisition and installation of drainage structures, ditch construction, ditch-out construction, landing construction; acquisition and application of rock, and grass seeding.

0-6 PRE-HAUL MAINTENANCE

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

Road	Stations	Requirements
Y-Line	0+00 to 162+00	Grade, shape, and compact road surface. Brush road in accordance with Clause 3-1 and BRUSHING SECTION DETAIL. Install culverts per CULVERT LIST. Apply and compact rock per ROCK LIST.
Y-4400	0+00 to 26+00	Grade, shape, and compact road surface. Apply and compact rock per ROCK LIST.

0-10 ABANDONMENT

This project includes abandonment listed in Clause 9-21 ROAD ABANDONMENT.

SECTION 1 – GENERAL

1-1 ROAD PLAN CHANGES

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

1-2 NON-COMPLIANCE WITH STATE ROAD PLAN

Quantities established in this road plan are minimum acceptable values. Additional quantities required by the state due to non-compliance or the Purchaser's choice of construction techniques will be at the Purchaser's expense.

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.

1-4 ROAD TOLERANCES

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

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

1-6 ORDER OF PRECEDENCE

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

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

1-7 TEMPORARY ROAD CLOSURE

Purchaser shall notify the Contract Administrator a minimum of 5 calendar days before the closure of any road. Construction may not close any road for more than 21 consecutive calendar days.

1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS

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

1-9 DAMAGED METALLIC COATING

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

1-15 ROAD MARKING

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

- Orange paint, stakes, and/or orange flagging for pre-haul maintenance.
- Orange paint, stakes, and orange flagging for new construction centerline.

1-18 REFERENCE POINT DAMAGE

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

1-21 HAUL APPROVAL

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

1-22 WORK NOTIFICATIONS

Purchaser shall notify the Contract Administrator a minimum of 5 calendar days before work begins.

1-23 ROAD WORK PHASE APPROVAL

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

- Subgrade construction and drainage installation
- Rock application and compaction
- Abandonment

1-25 ACTIVITY TIMING RESTRICTION

The specified activities are not allowed during the listed closure period unless authorized in writing by the Contract Administrator. Restrictions for hauling forest products are specified in Contract Clause H-130 HAULING SCHEDULE.

Road	Stations	Activity	Closure Period
All roads	All stations	All road work	Oct 1st to April 30th

1-26 OPERATING DURING CLOSURE PERIOD

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

1-29 SEDIMENT RESTRICTION

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

1-30 CLOSURE TO PREVENT DAMAGE

In accordance with Contract Clause G-220.1 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 ballast roads.
- Wheel track rutting exceeds 4 inches on crushed rock roads.
- Wheel track rutting exceeds 4 inches on native surface roads.
- Surface or base stability problems persist.
- Weather is such that satisfactory results cannot be obtained in an area of operations.
- When, in the opinion of the Contract Administrator excessive road damage or rutting may occur.

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

1-32 ASPHALT SURFACE RESTRICTION

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

If tracked equipment is used on asphalt surfaces, Purchaser shall immediately cease all road construction and hauling operations. Purchaser shall remove any dirt, rock, or other material tracked or spilled on the asphalt surface(s) and have surface(s) evaluated by the Region Engineer or their designee for any damage caused by transporting equipment. Any damage to the surface(s) will be repaired, at the Purchaser's expense, as directed by the Contract Administrator.

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

1-33 SNOW PLOWING RESTRICTION

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

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.

1-41 REQUIREMENTS FOR PAVED ROAD APPROACHES

Requirements for the Langabeer Road approach:
Purchaser shall build up approaches to allow a smooth grade transition between the LB-1010 and Langabeer Road. The top of the LB-1010 road surfacing must be kept level with the surface of the Langabeer Road at all times. The surface of the LB-1010 approach must slope up from the edge of the Langabeer Road at the rate of 2 inches per foot for a distance of 10 feet, unless otherwise shown in the approach permit.

1-43 ROAD WORK AROUND UTILITIES

Road work is in close proximity to a utility. Known utilities are listed, but it is the Purchaser's responsibility to identify any utilities not listed. Purchaser shall work in accordance with all applicable laws or rules concerning utilities. Purchaser is responsible for all notification, including "call before you dig", and liabilities associated with the utilities and their rights-of-way. Purchaser shall notify the utility before starting road work.

Road	Utility
Langabeer Road	Overhead powerlines
Langabeer Road	Possible underground lines

SECTION 2 – MAINTENANCE

2-1 GENERAL ROAD MAINTENANCE

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

2-2 ROAD MAINTENANCE – PURCHASER MAINTENANCE

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

2-3 ROAD MAINTENANCE – DESIGNATED MAINTAINER

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

2-4 PASSAGE OF LIGHT VEHICLES

Purchaser shall maintain all roads in a condition that will allow the passage of light administrative vehicles.

2-5 MAINTENANCE GRADING – EXISTING ROAD

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

Road	Stations
Y-Line	0+00 to 162+00
Y-4400	0+00 to 26+00

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

3-1 BRUSHING

On the following road, Purchaser shall cut vegetative material up to 3 inches in diameter, including limbs, as shown on the BRUSHING SECTION DETAIL. Brushing must be achieved by cutting of brush, trees, and branches. Root systems and stumps of cut vegetation may not be disturbed unless directed by the Contract Administrator. Purchaser shall remove brushing debris from the road surface, ditchlines, and culvert inlets and outlets.

Road	Stations
Y-Line	0+00 to 162+00

3-5 CLEARING

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

3-7 RIGHT-OF-WAY DECKING

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

3-8 PROHIBITED DECKING AREAS

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

- Within the grubbing limits.
- Within 50 feet of any stream.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- On slopes greater than 45%.
- Against standing trees, unless approved by Contract Administrator.

3-10 GRUBBING

Purchaser shall remove all stumps between the grubbing limits specified on the TYPICAL SECTION SHEET. Purchaser shall also remove stumps with undercut roots outside the grubbing limits. Stumps over 22 inches diameter must be split. Stumps over 40 inches must be quartered. Grubbing must be completed before starting excavation and embankment.

3-12 STUMP PLACEMENT

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

3-20 ORGANIC DEBRIS DEFINITION

Organic debris is defined as all 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, and stumps that are 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 subgrade compaction, the application of rock and timber haul.

3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS

Waste areas for organic debris are located within the cleared right-of-way or in natural openings as designated by the Contract Administrator.

3-23 PROHIBITED DISPOSAL AREAS

Purchaser shall not place organic debris in the following areas:

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

3-24 BURYING ORGANIC DEBRIS RESTRICTED

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

3-25 SCATTERING ORGANIC DEBRIS

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

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

4-3 ROAD GRADE AND ALIGNMENT STANDARDS

Purchaser shall follow these standards for road grade and alignment:

- 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 6% in 100 feet.

4-4 SWITCHBACK STANDARDS

A switchback is defined as a curved segment of road between a beginning and end of the same curve, where the change of traffic travel direction is greater than 90 degrees. Purchaser shall follow these standards for switchbacks:

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

4-5 CUT SLOPE RATIO

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

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

4-6 EMBANKMENT SLOPE RATIO

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

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

4-7 SHAPING CUT AND FILL SLOPE

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

4-8 CURVE WIDENING

The minimum widening placed on the inside of curves is:

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

4-9 EMBANKMENT WIDENING

The minimum embankment widening is:

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

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

4-21 TURNOUTS

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

4-22 TURNAROUNDS

Turnarounds must be no larger than 30 feet long and 30 feet wide.

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

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

4-27 DITCH WORK – MATERIAL USE PROHIBITED

Purchaser shall not pull ditch material across the road or mix in with the road surface. Excavated material must be scattered outside the grubbing limits or disposed of as specified in Clause 4-36 DISPOSAL OF WASTE MATERIAL.

4-28 DITCH DRAINAGE

Ditches must drain to cross-drain culverts or ditchouts.

4-29 DITCHOUTS

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

Road	Stations	L or R
Y-0018	6+10	L and R
Y-0019	4+90	L and R
Y-4430	66+15	L

4-35 WASTE MATERIAL DEFINITION

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

4-36 DISPOSAL OF WASTE MATERIAL

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

4-37 WASTE AREA LOCATION

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

4-38 PROHIBITED WASTE DISPOSAL AREAS

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

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

4-48 NATIVE MATERIAL

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

4-55 ROAD SHAPING

Purchaser shall shape the subgrade and surface as shown on the TYPICAL SECTION SHEET. The subgrade and surface shape must ensure runoff in an even, un-concentrated manner, and must be uniform, firm, and rut-free. Purchaser shall accomplish all shaping using a motor grader with a minimum of 175 horsepower.

4-56 DRY WEATHER SHAPING

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

4-60 FILL COMPACTION

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

4-61 SUBGRADE COMPACTION

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

4-62 DRY WEATHER COMPACTION

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

5-5 CULVERTS

Purchaser shall install culverts as part of this contract. Culverts must be installed concurrently with subgrade work and must be installed before subgrade compaction and rock application. Culvert locations and the minimum requirements for culvert length and diameter are designated on the CULVERT LIST. Culvert, downspout, and flume lengths may be adjusted to fit as-built conditions and may not terminate directly on unprotected soil. Culverts must be new material and must meet the specifications in Clauses 10-17 through 10-22.

5-6 CULVERT TYPE

Purchaser shall install culverts made of plastic in accordance with Clauses 10-17 through 10-22.

5-10 CULVERT MARKER INSTALLATION

At all new culverts on permanent roads Purchaser shall provide and install culvert markers at the inlet in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL.

5-12 UNUSED MATERIALS STATE PROPERTY

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

5-15 CULVERT INSTALLATION

Culvert installation must be in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL and the Corrugated Polyethylene Pipe Association's "Recommended Installation Practices for Corrugated Polyethylene Pipe and Fittings". Culverts over 15 inches diameter shall be banded using lengths of no less than 10 feet, and no more than one length less than 16 feet**.** Shorter section of banded culvert shall be installed at the inlet end.

5-17 CROSS DRAIN SKEW AND SLOPE

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

5-18 CULVERT DEPTH OF COVER

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

5-20 ENERGY DISSIPATERS

Purchaser shall install energy dissipaters 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, except for temporary culverts. Placement must with a zero-drop-height only.

5-21 DOWNSPOUTS AND FLUMES

Downspouts and flumes longer than 10 feet must be staked on both sides at a maximum interval of 10 feet with 6-foot heavy-duty steel posts, and fastened securely to the posts with 1/2-inch bolts in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL.

5-25 CATCH BASINS

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

5-26 HEADWALLS FOR CROSS DRAIN CULVERTS

Purchaser shall construct headwalls in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all culverts on the CULVERT LIST that specify the placement of rock. Rock used for headwalls must be quarry spalls. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets. Minimum specifications require that rock be placed at a width of one culvert diameter on each side of the culvert opening, and to a height of one culvert diameter above the top of the culvert. Rock may not restrict the flow of water into culvert inlets or catch basins. Placement must be with a zero-drop-height only. Quarry spalls shall meet the specifications in Clause 6-43 QUARRY SPALLS.

6-5 ROCK FROM COMMERCIAL SOURCE

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

Possible Rock Source	Location
Northwest Rock, Inc.	Oakville, WA

Purchaser shall provide the Contract Administrator with laboratory LA Abrasion (T96) and Degradation (T113) test results at the Purchaser's expense at least 30 days prior to rock source approval. The Contract Administrator or representative shall be on site when the sample is collected prior to testing. The Contract Administrator or their representative may periodically sample rock from the hauling vehicle for additional testing. Rock not meeting minimum requirements listed below will not be approved.

All rock on the roads listed below shall meet a minimum Degradation value of 15% and a maximum LA Abrasion value of 25%.

Road	Stations	Rock Type
Y-Line	All Stations	1 ¼-inch crushed
Y-4400	All Stations	1 ¼-inch crushed
Y-4430	0+00 to 32+95	1 ¼-inch crushed

Possible Testing Facility	Location
Materials Testing and Consulting	Olympia, Washington
WSDOT State Materials Laboratory	Tumwater, Washington

6-22 FRACTURE REQUIREMENT FOR ROCK

A minimum of 50% by visual inspection of coarse aggregate must have at least one fractured face. Coarse aggregate is the material greater than 1/4-inch in size.

6-23 ROCK GRADATION TYPES

Purchaser shall provide 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.

6-28 1 ¼-INCH MINUS CRUSHED ROCK

% Passing 1 ¼” square sieve	100%
% Passing 5/8” square sieve	55 - 75%
% Passing U.S. #4 sieve	20 - 50%

Of the fraction passing the No. 4 sieve, 40% to 60% must pass the No. 10 sieve.

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.

6-39 6-INCH MINUS CRUSHED ROCK

% Passing 6” in one dimension	100%
% Passing 2 ½” square sieve	25 - 60%
% Passing U.S. #200 sieve	8% maximum

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

6-43 QUARRY SPALLS

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

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

6-55 ROCK APPLICATION MEASURED BY COMPACTED DEPTH

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

6-57 ROCK MEASUREMENT BY TRUCK SCALE

Measurement of the spot rock, culvert backfill, and quarry spalls is on scaled truck weight. Purchaser shall provide scaled weight using a commercial scale. Purchaser shall provide the Contract Administrator with all scale sheets.

6-59 WEIGHT PER CUBIC YARD MEASUREMENT

At the start of operations, a weight per cubic yard will be calculated as follows:

a) Measure the box of a truck to be used for rock haul.
b) Weigh the truck for tare weight at a state certified platform scale.
c) Flatten off a load of rock in the truck and calculate its exact volume in cubic yards.
d) Weigh the truck for gross weight at a state certified platform scale.
e) Divide the net weight of the load by the volume calculated in step c.

Calculated conversion factors will be valid for no more than 30 days or until rock density or moisture changes significantly, as determined by the Contract Administrator.

6-70 APPROVAL BEFORE ROCK APPLICATION

Purchaser shall obtain written approval from the Contract Administrator for subgrade construction 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 September 30 Purchaser may provide and place less rock than shown on the ROCK LIST, when approved in writing by the Contract Administrator.

If less rock is applied, Purchaser shall submit a written plan, for approval, describing how these roads will be constructed, used, maintained, and treated post-haul. Purchaser shall meet post-haul specifications in Section 9 POST-HAUL ROAD WORK, the FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS, or other conditions of the approved plan.

Road	Stations
Y-0018	0+00 to 7+25
Y-0018.1	0+00 to 5+05
Y-0019	0+00 to 9+90
LB-1010	0+50 to 3+60
Spur A	0+00 to 3+25

6-76 DRY WEATHER ROCK COMPACTION

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

SECTION 7 – STRUCTURES

7-70 GATE CLOSURE

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

Road	Station
Y-Line	0+30

SECTION 8 – EROSION CONTROL

8-2 PROTECTION FOR EXPOSED SOIL

Purchaser shall provide and evenly spread a 4-inch layer of straw to all exposed soils within 100 feet of a stream or wetland. Soils must be covered before the first anticipated storm event. Soils may not sit exposed during any rain event.

8-15 REVEGETATION

Purchaser shall spread grass seed on all exposed soils resulting from road work activities using manual dispersal. Other methods of covering must be approved in writing by the Contract Administrator. Required seed not spread by the termination of this contract will become the property of the state.

Road	Qty (lbs)*	Comments
Y-0018	19	
Y-0018.1	13	
Y-0019	26	
LB-1010	9	Abandonment only
Y-4430	170	
Spur A	8	
Total	**245**	

*Quantities are estimates only. Actual quantities may vary and are the responsibility of the Purchaser.

8-16 REVEGETATION SUPPLY

The Purchaser shall provide the grass seed.

8-17 REVEGETATION TIMING

Purchaser shall revegetate after road work is completed between March 15 and September 15, unless otherwise approved in writing by the Contract Administrator.

8-18 PROTECTION FOR SEED

Purchaser shall provide a protective cover for seed on all exposed soils within 50 feet of streams or wetlands. The protective cover may consist of straw. Seed must be covered before the first anticipated storm event.

8-19 ASSURANCE FOR SEEDED AREA

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

8-25 GRASS SEED

Purchaser shall evenly spread the seed mixture listed below on all exposed soil at a rate of 40 pounds per acre of exposed soil. Grass seed must meet the following specifications:

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

Kind and Variety of Seed in Mixture	% by Weight
Perennial Rye	35-45
Red Fescue	30-40
Highland Bent	5-15
White Clover	10-20
Inert and Other Crop	0.5

SECTION 9 – POST-HAUL ROAD WORK

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.

9-10 LANDING DRAINAGE

Purchaser shall provide for drainage of the landing surface.

9-11 LANDING EMBANKMENT

Purchaser shall slope landing embankments to the original construction specifications.

9-21 ROAD ABANDONMENT

Purchaser shall abandon the following roads at the termination of use.

Road	Stations	Type
LB-1010	0+00 to 3+60	Light abandonment

9-22 LIGHT ABANDONMENT

- Rip the surface to a minimum depth of 10 inches.
- 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 percent grade.
- Key waterbars into the cut-slope to intercept the ditch. Waterbars must be outsloped to provide positive drainage. Outlets must be on stable locations.
- Remove ditch cross drain culverts and leave the resulting trench open.
- Slope all trench walls and approach embankments no steeper than 1.5:1.
- Apply grass seed concurrently with abandonment and in accordance with Section 8 EROSION CONTROL.

10-17 CORRUGATED PLASTIC CULVERT

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

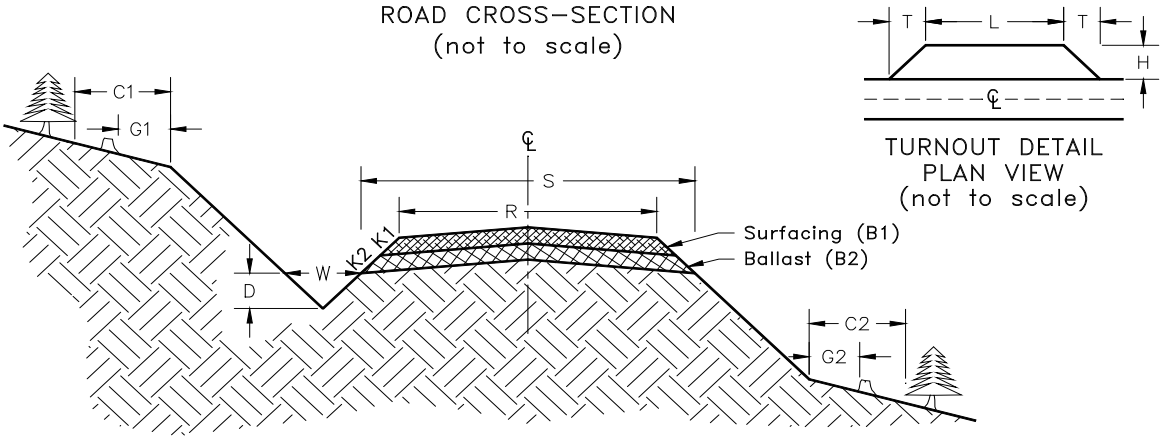
10-20 FLUME AND DOWNSPOUT

Downspouts and flumes must meet the AASHTO specification designated for the culvert. Plastic downspouts and flumes must be Type C – corrugated single walled pipe.

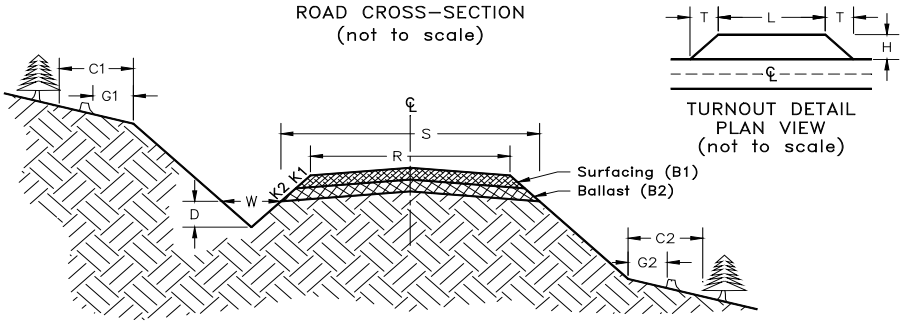
10-22 PLASTIC BAND

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



Road Number	From Station	To Station	Tolerance Class	Subgrade Width (feet)	Road Width (feet)	Ditch Width (feet)	Ditch Depth (feet)	Crown in. @ CL (inches)	Grubbing Limits (feet)		Clearing Limits (feet)	
				S	R	W	D		G1	G2	C1	C2
Y-0018	0+00	7+25	C	16	12	3	1	4	5	5	10	10
Y-0018.1	0+00	5+05	C	16	12	3	1	4	5	5	10	10
Y-0019	0+00	9+90	C	16	12	3	1	4	5	5	10	10
LB-1010	0+00	3+60	C	16	12	3	1	4	5	5	10	10
Y-4430	0+00	32+95	C	19	12	3	1	4	5	5	10	10
Y-4430	32+95	66+15	C	16	12	3	1	4	5	5	10	10
Spur A	0+00	3+25	C	16	12	3	1	4	5	5	10	10
Y-Line	0+00	162+00	A	-	12	-	-	4	-	-	-	-
Y-4400	0+00	26+00	B	-	12	-	-	4	-	-	-	-



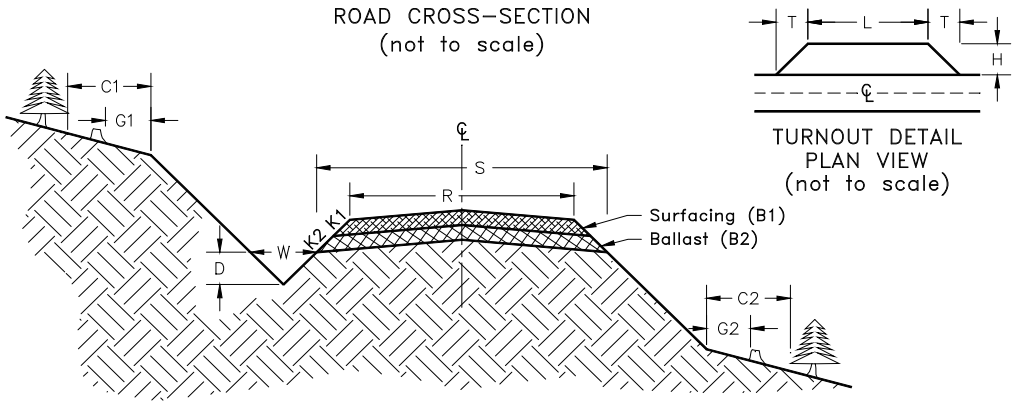
BALLAST

Road Number		From Station	To Station	Rock Slope	Compacted Rock Depth (in)	C.Y. per Station or Unit	# of Stations or Units	C.Y. Subtotal	Rock Source	Turnout Length	Turnout Width	Turnout Taper
				K2	B2	6-Inch Minus			Commercial	L	H	T
Y-0018	*	0+00	7+25	1 1/2:1	15	81	7.25	587				
	*	Turnarounds				43	1	43				
	*	Curve Widening						21				
	*	Junctions				15	1	15				
	*	Landings				68	1	68				
Y-0018.1	*	0+00	5+05		12	63	5.05	318				
	*	Curve Widening						11				
	*	Junctions				12	1	12				
	*	Landings				50	1	50				
Y-0019	*	0+00	9+90	1 1/2:1	15	81	9.90	801				
	*	Turnarounds				43	1	43				
	*	Turnouts				23	1	23		40	10	25
	*	Curve Widening						28				
	*	Junctions				15	1	15				
	*	Landings				68	1	68				
LB-1010	*	0+00	3+30	1 1/2:1	12	63	3.30	208				
		Culvert Backfill				10	1	10				
	*	Curve Widening						7				
Y-4430		0+00	32+95	1 1/2:1	15	92	32.95	3032				
		Turnarounds				43.5	2	87				
		Turnouts				23	2	46		40	10	25
		Curve Widening						106				
		Junctions				15	1	15				
Y-4430		32+95	66+15	1 1/2:1	15	81	33.20	2689				
		Turnarounds				43	1	43				
		Turnouts				23.5	2	47		40	10	25
		Curve Widening						94				
		Landings				50	1	50				
Spur A	*	0+00	3+25	1 1/2:1	12	63	3.25	205				
	*	Curve Widening						7				
	*	Junctions				12	1	12				
	*	Landings				50	1	50				

*Optional Rock in accordance with 6-75.

REQUIRED BALLAST: 6219 CY
OPTIONAL BALLAST: 2592 CY

ROCK LIST



SURFACE

Road Number		From Station	To Station	Rock Slope	Compacted Rock Depth (in)	C.Y. per Station or Unit	# of Stations or Units	C.Y. Subtotal	Rock Source	Turnout Length	Turnout Width	Turnout Taper
				K1	B1	1 1/4" MINUS CRUSHED			Commercial	L	H	T
LB-1010		Spot Rock						30		40	10	25
Y-4430		0+00	32+95	1 1/2:1	4	20	32.95	659				
		Turnarounds				10.5	2	21				
		Turnouts				6.5	2	13		40	10	25
		Curve Widening						23				
Y-Line		Culvert Backfill				20	3	60				
		10+50	23+70	1 1/2:1	6	30	13	390				
		43+00	51+20	1 1/2:1	6	30	8.2	246				
		Turnouts				10	2	20		40	10	25
		Curve Widening						24				
		Spot Rock (1+15, 101+80)				10	2	20				
		Spot Rock (27+00, 37+00)				20	2	40				
		Spot Rock (86+00, 90+60)				40	2	80				
Y-4400		0+00	26+00	1 1/2:1	4	20	26.00	520				
		Turnouts				6.5	2	13		40	10	25
		Curve Widening						18				
		Junctions				5	1	5				

REQUIRED CRUSHED ROCK: 2182 CY

Energy Dissipater

Road Number		From Station	To Station	Rock Slope	Compacted Rock Depth (in)	C.Y. per Station or Unit	# of Stations or Units	C.Y. Subtotal	Rock Source
						QUARRY SPALLS			Commercial
All Roads		All Culverts				1	19	19	

REQUIRED QUARRY SPALLS: 19 CY

CULVERT LIST

Road Number	Location	Culvert		Length (ft)			(C.Y.)			Backfill Material	Placement Method	Const. Staked
		Dia	Gauge	Culvert	Down-spout	Flume	Inlet	Outlet	Type			
		in.	if Steel									
Y-0019	8+25	18		30			0.5	0.5	6"	NT	ZDH	No
LB-1010	0+10	12		30			0.5	0.5	6"	CR	ZDH	No
LB-1010	3+05	18		30			0.5	0.5	6"	NT	ZDH	No
Y-4430	5+40	18		30			0.5	0.5	6"	NT	ZDH	No
Y-4430	9+60	18		30			0.5	0.5	6"	NT	ZDH	No
Y-4430	12+10	18		30			0.5	0.5	6"	NT	ZDH	No
Y-4430	17+05	18		30			0.5	0.5	6"	NT	ZDH	No
Y-4430	22+65	18		30			0.5	0.5	6"	NT	ZDH	No
Y-4430	28+90	18		30			0.5	0.5	6"	NT	ZDH	No
Y-4430	32+95	18		30			0.5	0.5	6"	NT	ZDH	No
Y-4430	37+10	18		30			0.5	0.5	6"	NT	ZDH	No
Y-4430	43+05	18		30			0.5	0.5	6"	NT	ZDH	No
Y-4430	48+45	18		30			0.5	0.5	6"	NT	ZDH	No
Y-4430	54+70	18		30			0.5	0.5	6"	NT	ZDH	No
Y-4430	59+30	18		30			0.5	0.5	6"	NT	ZDH	No
Spur A	0+25	18		30			0.5	0.5	6"	NT	ZDH	No
Y-Line	43+00	18		30			0.5	0.5	6"	CR	ZDH	No
Y-Line	86+40	18		40	20		0.5	-	6"	CR	ZDH	No
Y-Line	135+50	18		40	20		0.5	-	6"	CR	ZDH	No

Key:

6" - 6" Minus
NT - Native (bank run)
CR - 1 1/4 Inch Minus Crushed
BA - Ballast
ZDH - Zero Drop Height

COMPACTION LIST

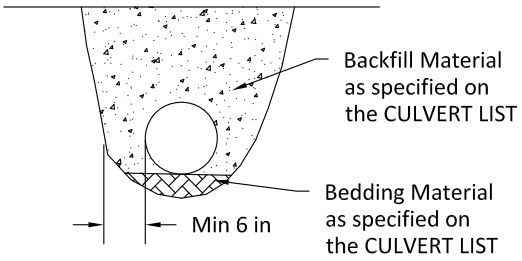
Road	From Station	To Station	Type	Max Depth Per Lift (inches)	Equipment Type	Equipment Weight (lbs)	Minimum Number of Passes	Maximum Operating Speed (mph)	Maximum Amount of Deflection (inches)
All Roads			Subgrade	12	Vibratory Smooth Drum	14,000	4	3	2
All Roads			Fill	24	Vibratory Smooth Drum	14,000	4	3	2
All Roads			Waste Area	24	Excavation	28,000	-	-	4
All Roads			Pre-haul Surface	6	Vibratory Smooth Drum	14,000	5	3	1
All Roads			Rock	9	Vibratory Smooth Drum	14,000	3	3	1

INSTALLATION REQUIREMENTS:

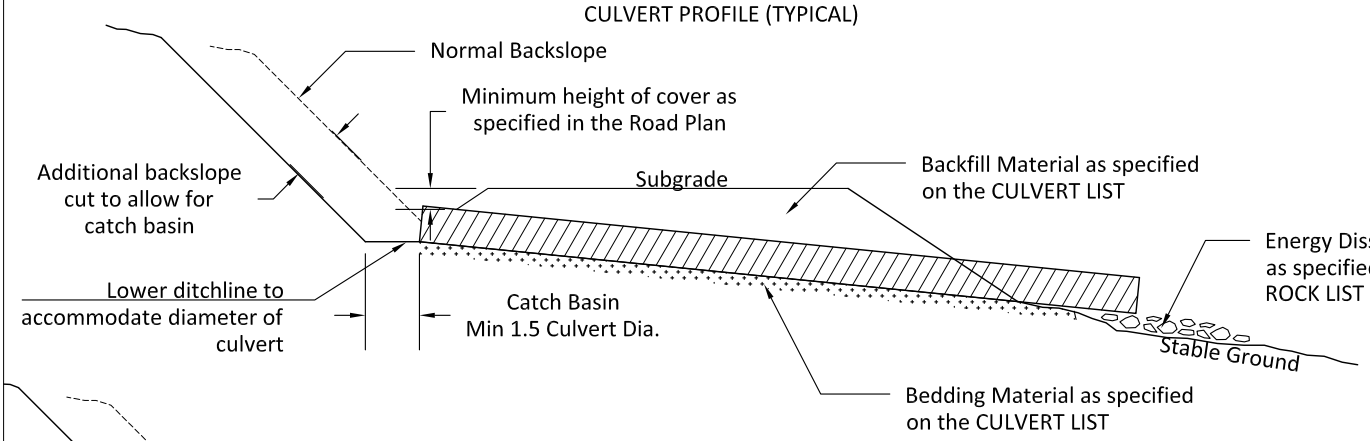
1. Proper preparation of foundation and placement of any required bedding material shall precede the installation of all culverts. This includes necessary leveling of the native trench bottom and compaction of required bedding material to form a uniform, dense, unyielding base. The pipe must be uniformly supported along the barrel.
2. Backfill material shall be compacted under the culvert haunches, around the sides, and above the culvert in accordance with the COMPACTION LIST.

ALL DRAWINGS ARE NOT TO SCALE

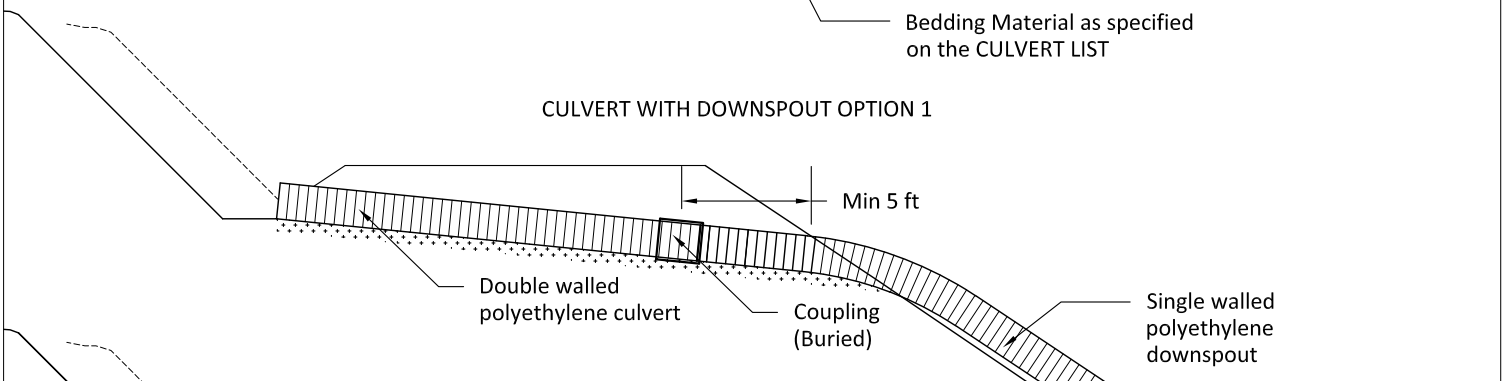
CROSS SECTION



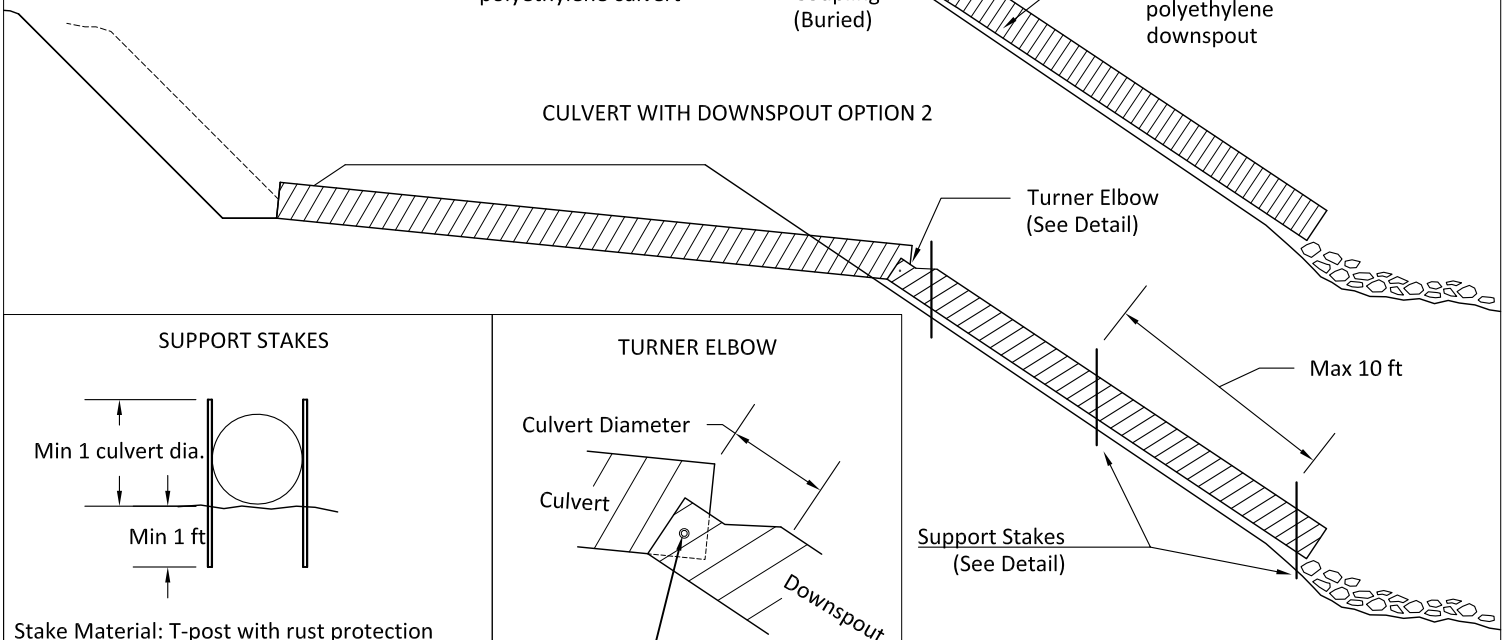
CULVERT PROFILE (TYPICAL)



CULVERT WITH DOWNSPOUT OPTION 1



CULVERT WITH DOWNSPOUT OPTION 2



SUPPORT STAKES

Stake Material: T-post with rust protection coating.
Connections: Bolt support stakes to the culvert with $\frac{5}{8}$" u-bolts, with washers on both the inside and outside of the culvert.
Alternative staking methods may be approved, in writing, by the Contract Administrator.

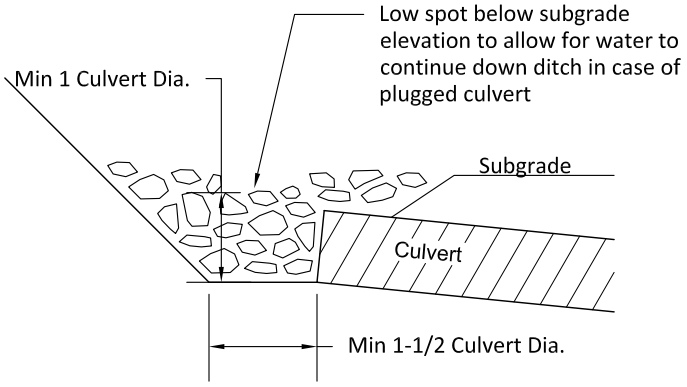
TURNER ELBOW

Bolted with $\frac{5}{8}$" galvanized bolts and washers (both sides)

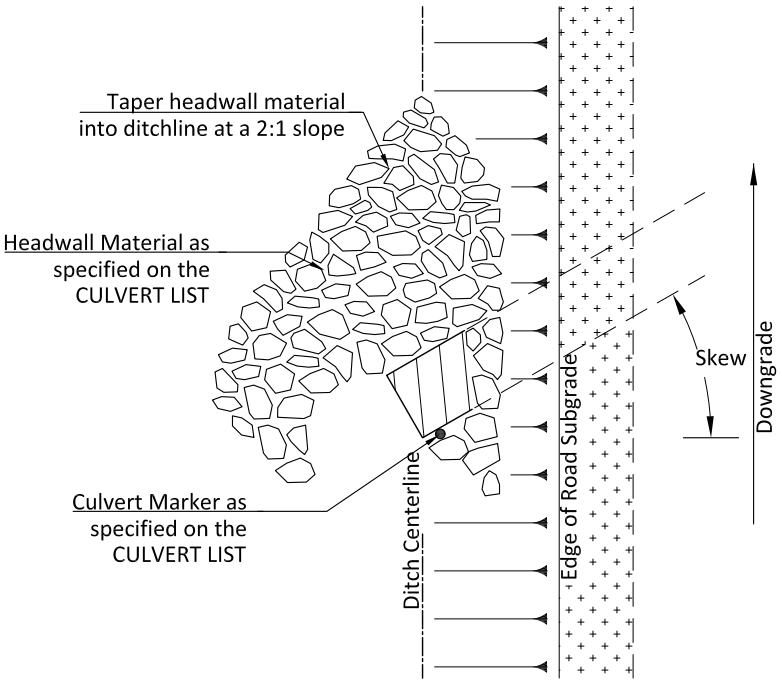
Downspout must be 6 inches larger in diameter than the culvert.

HEADWALLS

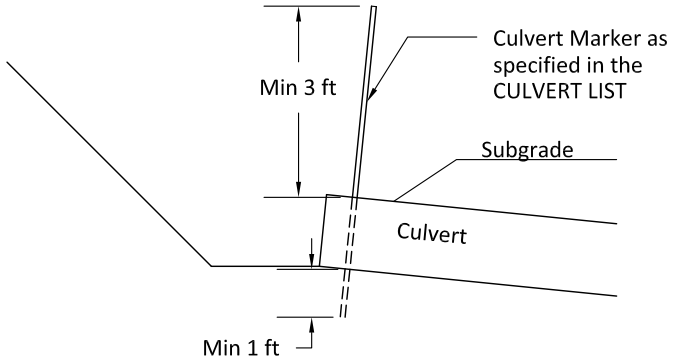
Section View



Plan View

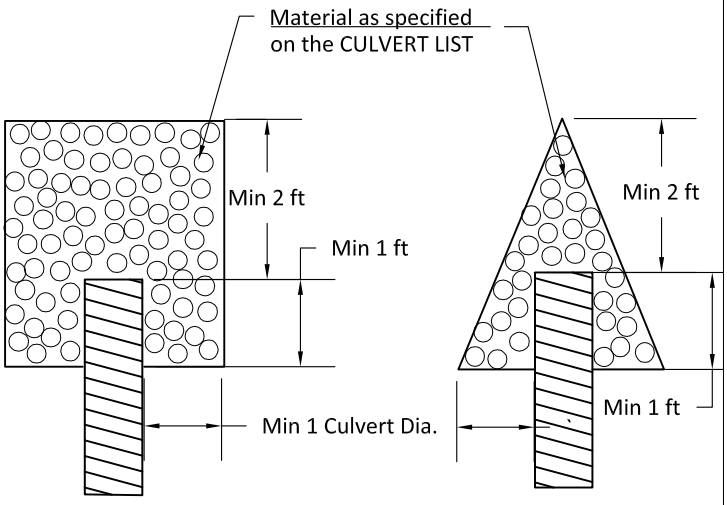


CULVERT MARKERS



Culvert Marker Material: 1 Inch I.D., Schedule 40 PVC Pipe, White. Marker must be capped on the top.
Culvert Marker Placement: Place on uphill side of culvert, between corrugations if possible.
Alternative culvert marker types may be approved, in writing, by the Contract Administrator.

ENERGY DISSIPATERS



Level

Side Hill

Min Energy Dissipater Depth: 1 Culvert Dia.

FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS
Page 1 of 2

Cuts and Fills

- Maintain slope lines to a stable gradient compatible with the cut slope/fill slope ratios. Remove slides up to 100 cubic yards in volume from ditches and the roadway. Repair fill-failures, in accordance with Clause 4-6 EMBANKMENT SLOPE RATIO, with selected material or material approved by the Contract Administrator. Remove overhanging material from the top of cut slopes.
- Waste material from slides or other sources shall be placed and compacted in stable locations identified in the road plan or approved by the Contract Administrator, so that sediment will not deliver to any streams or wetlands.
- Slide material and debris shall not be mixed into the road surface materials, unless approved by the Contract Administrator.

Surface

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

Drainage

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

Preventative Maintenance

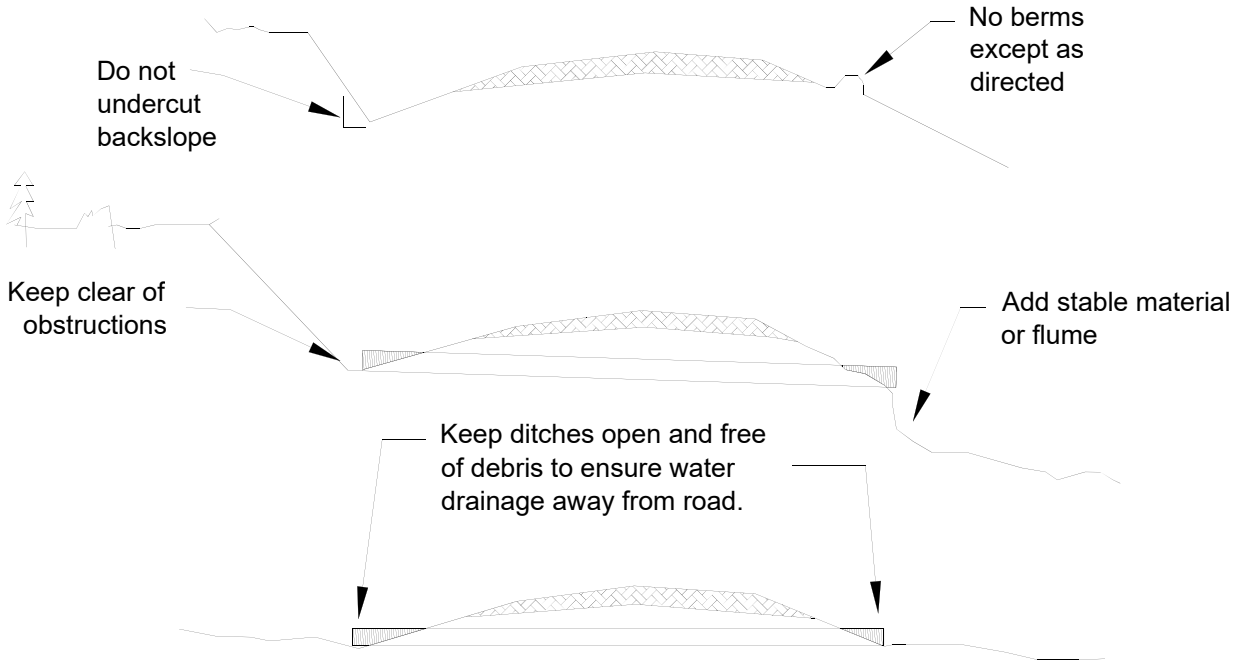
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

Termination of Use or End of Season

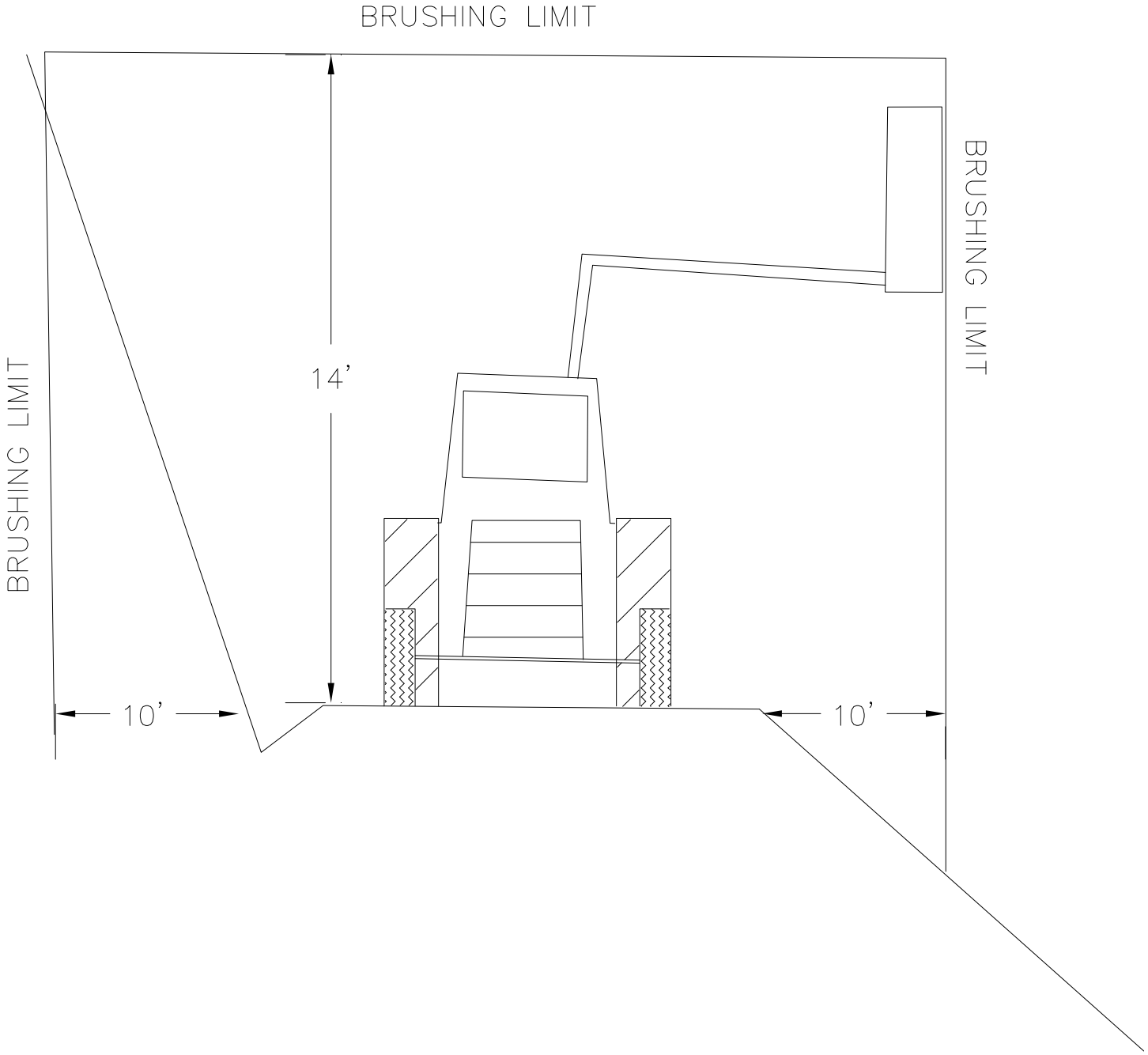
- At the conclusion of logging operations, ensure all conditions of these specifications have been met.

Debris

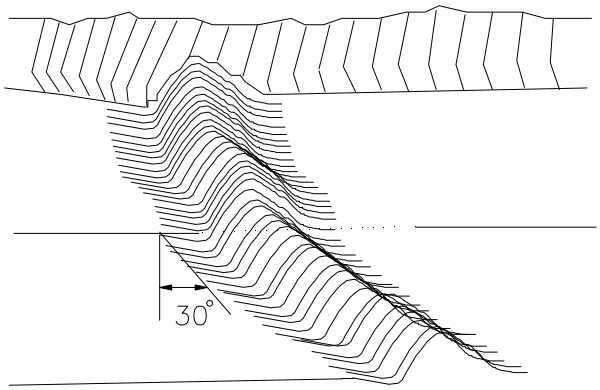
- Remove fallen timber, limbs, and stumps from the slopes, roadway, ditchlines, and culvert inlets.

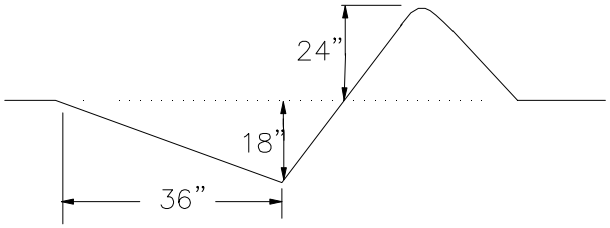


BRUSHING SECTION DETAIL



NON-DRIVABLE WATER BAR DETAIL





SUMMARY - Road Development Costs

REGION: Pacific Cascade
DISTRICT: Lewis

SALE/PROJECT NAME: Standing Elevation AGREEMENT #: 30-100233

ROAD NUMBERS: Optional: Y-0018, Y-0018.1, Y-0019, LB-1010, Y-4430 (32+95 to 66+15), Spur A

Required: Y-4430 (0+00 to 32+95), Y-Line, Y-4400

ROAD STANDARD:		Construction	Reconstruction	Maintenance
NUMBER OF STATIONS:		95.20	0.00	188.00
CLEARING & GRUBBING, EXCAVATION AND FILL, MISC.:		$38,696.33	$0.00	$6,597.15
ROAD ROCK:				
	Optional:	$59,099.25	$0.00	$0.00
	Required:	$173,372.27	$0.00	$38,760.20
	Total:	$232,471.52	$0.00	$38,760.20
STOCKPILE:		-	-	$0.00
CULVERTS AND FLUMES:		$10,546.00	$0.00	$2,980.40
STRUCTURES:		-	-	-
MOBILIZATION:		$3,203.83	$0.00	$546.21
TOTAL COSTS:		$284,917.68	$0.00	$48,883.96
COST PER STATION:		$2,993	$0	$260
ROAD DEACTIVATION & ABANDONMENT COSTS:		$479.53	$0.00	$0

10% OVERHEAD AND GENERAL EXPENSE =	**$33,380.16**
TOTAL (All Roads) =	**$367,661.33**
TOTAL (Minus Optional Rock) =	**$308,562.08**
SALE VOLUME MBF =	**4,595**
TOTAL $/MBF =	**$80.01**
TOTAL $/MBF (Minus Optional Rock) =	**$67.15**

SUMMARY OF ROAD

Sale: **Standing Elevation** Road: **Y-Line**

Required Pre-Haul Maintenance-	162+00	stations	Required Reconstruction -	0+00	stations	Required Construction -	0+00	stations
	3.07	miles		0.00	miles		0.00	miles
Required Abandonment-	0+00	stations	Optional Reconstruction -	0+00	stations	Optional Construction -	0+00	stations
	0.00	miles		0.00	miles		0.00	miles

PRE-HAUL MAINTENANCE

CLEARING

Roadside Brushing	3.07	miles	@	$855.00	per mile =	$2,624.85

EXCAVATION

Pull and clean ditch-	0.00	stations	@	$53.75	per station	$0.00

MISC.

Grade and shape existing road surface -	162.00	stations	@	$13.75	per station	$2,227.50
Roll shaped road surface w/ vibratory roller prior to rocking -	162.00	stations	@	$7.27	per station	$1,177.74

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **$6,030.09**

CULVERTS - MATERIALS & INSTALLATION

Culverts			
110	LF of 18"	$2,468.40	
		$2,468.40	
Half Rounds			
40	LF of 18"	$456.00	
		$456.00	
Culvert Stakes & Markers			
4	stakes	$32.00	
3	markers	$24.00	
		$56.00	TOTAL CULVERTS **$2,980.40**

ROCK

Culvert Backfill	0+00	60	cy. of	Crushed	@	$26.28	per c.y.=	$1,576.80	
Spot Rock	See Rock List	820	cy. of	Crushed	@	$25.90	per c.y.=	$21,238.00	
Energy Dissipator	0+00	2	cy. of	QuarrySpalls	@	$30.24	per c.y.=	$60.48	
								TOTAL ROCK	**$22,875.28**

SUBTOTAL **$31,885.77**

TOTAL **$31,885.77**

Optional Rock? NO

COST PER STATION **$196.83**

SUMMARY OF ROAD

Sale: **Standing Elevation** Road: **Y-0018**

Required Pre-Haul Maintenance-	0+00	stations	Required Reconstruction -	0+00	stations	Required Construction -	0+00	stations
	0.00	miles		0.00	miles		0.00	miles
Required Abandonment-	0+00	stations	Optional Reconstruction -	0+00	stations	Optional Construction -	7+25	stations
	0.00	miles		0.00	miles		0.14	miles

CONSTRUCTION

CLEARING/GRUBBING						
Scattering Organic Debris	7.25	sta @	$230.00	per sta	$1,667.50	
EXCAVATION						
Road Construction Earthwork	7.25	sta. @	$109.57	per sta. =	$794.38	
Construct ditchouts -	2.00	@	$57.33	each	$114.66	
Grade and shape subgrade -	7.25	stations @	$11.00	per station	$79.75	
MISC.						
Roll subgrade w/ vibratory roller prior to rocking -	7.25	stations @	$9.09	per station	$65.90	
Construct turnaround @ sta. -	1.00	@	$96.93	each	$96.93	
Construct landing	1.00	@	$387.70	each	$387.70	
Grass seed and fertilize -	18.80	lbs @	$2.80	per lbs	$52.64	
				TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC.		**$3,259.46**

ROCK

0+00	to	7+25	734	cy. of	Ballast	@	$22.39	per c.y.=	$16,434.26	
									TOTAL ROCK	**$16,434.26**

SUBTOTAL	**$19,693.72**
TOTAL	**$19,693.72**
COST PER STATION	**$2,716.38**

Optional Rock? YES

SUMMARY OF ROAD

Sale: **Standing Elevation** Road: **Y-0018.1**

Required Pre-Haul Maintenance-	0+00	stations	Required Reconstruction -	0+00	stations	Required Construction -	0+00	stations
	0.00	miles		0.00	miles		0.00	miles
Required Abandonment-	0+00	stations	Optional Reconstruction -	0+00	stations	Optional Construction -	5+05	stations
	0.00	miles		0.00	miles		0.10	miles

CONSTRUCTION

CLEARING/GRUBBING						
Scattering Organic Debris	5.05	sta @	$230.00	per sta	$1,161.50	
EXCAVATION						
Road Construction Earthwork	5.05	sta. @	$193.85	per sta. =	$978.94	
Grade and shape subgrade -	5.05	stations @	$11.00	per station	$55.55	
MISC.						
Roll subgrade w/ vibratory roller prior to rocking -	5.05	stations @	$9.09	per station	$45.90	
Construct turnaround @ sta. -	1.00	@	$96.93	each	$96.93	
Construct landing -	1.00	@	$387.70	each	$387.70	
Grass seed and fertilize -	12.80	lbs @	$2.80	per lbs	$35.84	
		TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC.				**$2,762.36**

ROCK

0+00	to	5+05	391	cy. of	Ballast	@	$22.41	per c.y.=	$8,762.31	
									TOTAL ROCK	**$8,762.31**

SUBTOTAL	**$11,524.67**
TOTAL	**$11,524.67**
COST PER STATION	**$2,282.11**

Optional Rock? YES

SUMMARY OF ROAD

Sale: **Standing Elevation** Road: **Y-0019**

Required Pre-Haul Maintenance-	0+00	stations	Required Reconstruction -	0+00	stations	Required Construction -	0+00	stations
	0.00	miles		0.00	miles		0.00	miles
Required Abandonment-	0+00	stations	Optional Reconstruction -	0+00	stations	Optional Construction -	9+90	stations
	0.00	miles		0.00	miles		0.19	miles

CONSTRUCTION

CLEARING/GRUBBING						
Scattering Organic Debris	9.90	sta @	$230.00	per sta	$2,277.00	
EXCAVATION						
Road Construction Earthwork	9.90	sta. @	$109.57	per sta. =	$1,084.74	
Construct ditchouts -	2.00	@	$57.33	each	$114.66	
Grade and shape subgrade -	9.90	stations @	$11.00	per station	$108.90	
MISC.						
Roll subgrade w/ vibratory roller prior to rocking -	9.90	stations @	$9.09	per station	$89.99	
Construct turnouts @ sta. -	1.00	@	$96.93	each	$96.93	
Construct turnaround @ sta. -	1.00	@	$96.93	each	$96.93	
Construct landing -	1.00	@	$387.70	each	$387.70	
Grass seed and fertilize -	25.60	lbs @	$2.80	per lbs	$71.68	
				TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC.		**$4,328.53**

CULVERTS - MATERIALS & INSTALLATION

Culverts				
30	LF of 18"	$673.20		
		$673.20		
Culvert Stakes & Markers				
1	markers	$8.00		
		$8.00	TOTAL CULVERTS	**$681.20**

ROCK

0+00	to	9+90	978	cy. of	Ballast	@	$22.53	per c.y.=	$22,034.34	
Energy Dissipator		0+00	1	cy. of	QuarrySpalls	@	$35.42	per c.y.=	$35.42	
									TOTAL ROCK	**$22,069.76**

SUBTOTAL	**$27,079.49**
TOTAL	**$27,079.49**
COST PER STATION	**$2,735.30**

Optional Rock? YES

SUMMARY OF ROAD

Sale: **Standing Elevation** Road: **Y-4400**

Required Pre-Haul Maintenance-	26+00	stations	Required Reconstruction -	0+00	stations	Required Construction -	0+00	stations
	0.49	miles		0.00	miles		0.00	miles
Required Abandonment-	0+00	stations	Optional Reconstruction -	0+00	stations	Optional Construction -	0+00	stations
	0.00	miles		0.00	miles		0.00	miles

PRE-HAUL MAINTENANCE

MISC.

Roll shaped road surface w/ vibratory roller prior to rocking -	26.00	stations @	$21.81	per station	$567.06	
				TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC.		**$567.06**

ROCK

0+00	to	26+00	556	cy. of	Crushed	@	$28.57	per c.y.=	$15,884.92	
									TOTAL ROCK	**$15,884.92**

SUBTOTAL	**$16,451.98**
TOTAL	**$16,451.98**
COST PER STATION	**$632.77**

Optional Rock? NO

SUMMARY OF ROAD

Sale: **Standing Elevation** Road: **Y-4430**

Required Pre-Haul Maintenance-	0+00	stations	Required Reconstruction -	0+00	stations	Required Construction -	32+95	stations
	0.00	miles		0.00	miles			miles
Required Abandonment-	0+00	stations	Optional Reconstruction -	0+00	stations	Optional Construction -	0+00	stations
	0.00	miles		0.00	miles		0.00	miles

CONSTRUCTION

CLEARING/GRUBBING						
Scattering Organic Debris	32.95	sta @	$230.00	per sta	$7,578.50	
EXCAVATION						
Road Construction Earthwork	32.95	sta. @	$109.57	per sta. =	$3,610.33	
Grade and shape subgrade -	32.95	stations @	$11.00	per station	$362.45	
MISC.						
Roll subgrade w/ vibratory roller prior to rocking -	32.95	stations @	$9.09	per station	$299.52	
Construct turnouts @ sta. -	2.00	@	$96.93	each	$193.86	
Grass seed and fertilize -	84.80	lbs @	$2.80	per lbs	$237.44	
				TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC.		**$12,282.10**

CULVERTS - MATERIALS & INSTALLATION

Culverts			
150	LF of 18"	$3,366.00	
		$3,366.00	
Culvert Stakes & Markers			
5	markers	$40.00	
		$40.00	
		TOTAL CULVERTS	**$3,406.00**

ROCK

Energy Dissipator	0+00		5	cy. of	QuarrySpalls	@	$38.39	per c.y.=	$191.95
0+00	to	32+95	3,286	cy. of	Ballast	@	$25.50	per c.y.=	$83,793.00
								TOTAL ROCK	**$96,837.15**

SUBTOTAL	**$112,525.25**
TOTAL	**$112,525.25**
COST PER STATION	**$3,415.03**

Optional Rock? NO

SUMMARY OF ROAD

Sale: **Standing Elevation** Road: **Y-4430**

Required Pre-Haul Maintenance-	0+00	stations	Required Reconstruction -	0+00	stations	Required Construction -	0+00	stations
	0.00	miles		0.00	miles		0.00	miles
Required Abandonment-	0+00	stations	Optional Reconstruction -	0+00	stations	Optional Construction -	33+20	stations
	0.00	miles		0.00	miles		0.63	miles

CONSTRUCTION

CLEARING/GRUBBING						
Scattering Organic Debris	33.20	sta @	$230.00	per sta	$7,636.00	
EXCAVATION						
Road Construction Earthwork	33.20	sta. @	$109.57	per sta. =	$3,637.72	
Construct ditchouts -	1.00	@	$57.33	each	$57.33	
Grade and shape subgrade -	33.20	stations @	$11.00	per station	$365.20	
MISC.						
Roll subgrade w/ vibratory roller prior to rocking -	33.20	stations @	$9.09	per station	$301.79	
Construct turnouts @ sta. -	2.00	@	$96.93	each	$193.86	
Construct turnaround @ sta. -	1.00	@	$96.93	each	$96.93	
Construct landing -	1.00	@	$387.70	each	$387.70	
Grass seed and fertilize -	85.20	lbs @	$2.80	per lbs	$238.56	
		TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC.				**$12,915.09**

CULVERTS - MATERIALS & INSTALLATION

Culverts			
210	LF of 18"	$4,712.40	
		$4,712.40	
Culvert Stakes & Markers			
7	markers	$56.00	
		$56.00	
		TOTAL CULVERTS	**$4,768.40**

ROCK

Energy Dissipator		1+30	7	cy. of	QuarrySpalls	@	$39.15	per c.y.=	$274.05
32+95	to	66+15	2,923	cy. of	Ballast	@	$26.09	per c.y.=	$76,261.07
								TOTAL ROCK	**$76,535.12**

SUBTOTAL	**$94,218.61**
TOTAL	**$94,218.61**
COST PER STATION	**$2,837.91**

Optional Rock? NO

SUMMARY OF ROAD

Sale: **Standing Elevation** Road: **Spur A**

Required Pre-Haul Maintenance-	0+00	stations	Required Reconstruction -	0+00	stations	Required Construction -	0+00	stations
	0.00	miles		0.00	miles		0.00	miles
Required Abandonment-	0+00	stations	Optional Reconstruction -	0+00	stations	Optional Construction -	3+25	stations
	0.00	miles		0.00	miles		0.06	miles

CONSTRUCTION

CLEARING/GRUBBING						
Scattering Organic Debris	3.25	sta @	$230.00	per sta	$747.50	
EXCAVATION						
Road Construction Earthwork	3.25	sta. @	$193.85	per sta. =	$630.01	
Grade and shape subgrade -	3.25	stations @	$11.00	per station	$35.75	
MISC.						
Roll subgrade w/ vibratory roller prior to rocking -	3.25	stations @	$9.09	per station	$29.54	
Construct landing -	1.00	@	$387.70	each	$387.70	
Grass seed and fertilize -	8.40	lbs @	$2.80	per lbs	$23.52	
				TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC.		**$1,854.02**

CULVERTS - MATERIALS & INSTALLATION

Culverts

30	LF of 18"	$673.20
		$673.20

Culvert Stakes & Markers

1	markers	$8.00
		$8.00

TOTAL CULVERTS **$681.20**

ROCK

Energy Dissipator		0+00	1	cy. of	QuarrySpalls	@	$38.98	per c.y.=	$38.98
0+00	to	3+25	274	cy. of	Ballast	@	$26.14	per c.y.=	$7,162.36
								TOTAL ROCK	**$7,201.34**

SUBTOTAL **$9,736.56**

TOTAL **$9,736.56**

Optional Rock? YES

COST PER STATION **$2,995.86**

SUMMARY OF ROAD

Sale: **Standing Elevation** Road: **LB-1010**

Required Pre-Haul Maintenance-	0+00	stations	Required Reconstruction -	0+00	stations	Required Construction -	0+00	stations
	0.00	miles		0.00	miles		0.00	miles
Required Abandonment-	3+60	stations	Optional Reconstruction -	0+00	stations	Optional Construction -	3+60	stations
	0.07	miles		0.00	miles		0.07	miles

CONSTRUCTION

CLEARING/GRUBBING

Scattering Organic Debris	3.60	sta @	$230.00	per sta	$828.00

EXCAVATION

Road Construction Earthwork	3.60	sta. @	$109.57	per sta. =	$394.45
Grade and shape subgrade -	3.60	stations @	$11.00	per station	$39.60

MISC.

Roll subgrade w/ vibratory roller prior to rocking -	3.60	stations @	$9.09	per station	$32.72

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **$1,294.77**

CULVERTS - MATERIALS & INSTALLATION

Culverts		
30	LF of 18"	$673.20
30	LF of 12"	$336.00
		$1,009.20

TOTAL CULVERTS **$1,009.20**

ROCK

Culvert Backfill	0+00	10	cy. of	Ballast	@	$16.82	per c.y.=	$168.20
Spot Rock	0+00	30	cy. of	Crushed	@	$26.20	per c.y.=	$786.00
0+00 to	3+30	215	cy. of	Ballast	@	$16.82	per c.y.=	$3,616.30
Energy Dissipator	0+00	2	cy. of	QuarrySpalls	@	$30.54	per c.y.=	$61.08

TOTAL ROCK **$4,631.58**

ABANDONMENT

Construct waterbar -	1.00	@	$57.33	each	$57.33
Construct Spoil Berm -	1.00	@	$172.00	each	$172.00
Grass seed and fertilize -	9.00	lbs @	$2.80	per lbs	$25.20
Remove culverts from state lands -	2.00	@	$225.00	total	$225.00

TOTAL ADDITIONAL REQUIREMENTS **$479.53**

SUBTOTAL **$7,415.08**

TOTAL **$7,415.08**

Optional Rock? YES

COST PER STATION **$2,059.74**

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOREST EXCISE TAX ROAD SUMMARY SHEET

Region: Pacific Cascade

Timber Sale Name: Standing Elevation

Application Number: 30- 100233

EXCISE TAX APPLICABLE ACTIVITIES

Construction: 9,160 **linear feet**
Road to be constructed (optional and required) but not abandoned

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

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

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

Pre-Haul Maintenance: 18,800 **linear feet**
Existing road to receive maintenance work (optional and required) prior to haul

EXCISE TAX EXEMPT ACTIVITIES

Temporary Construction: 360 **linear feet**
Roads to be constructed (optional and required) and then abandoned

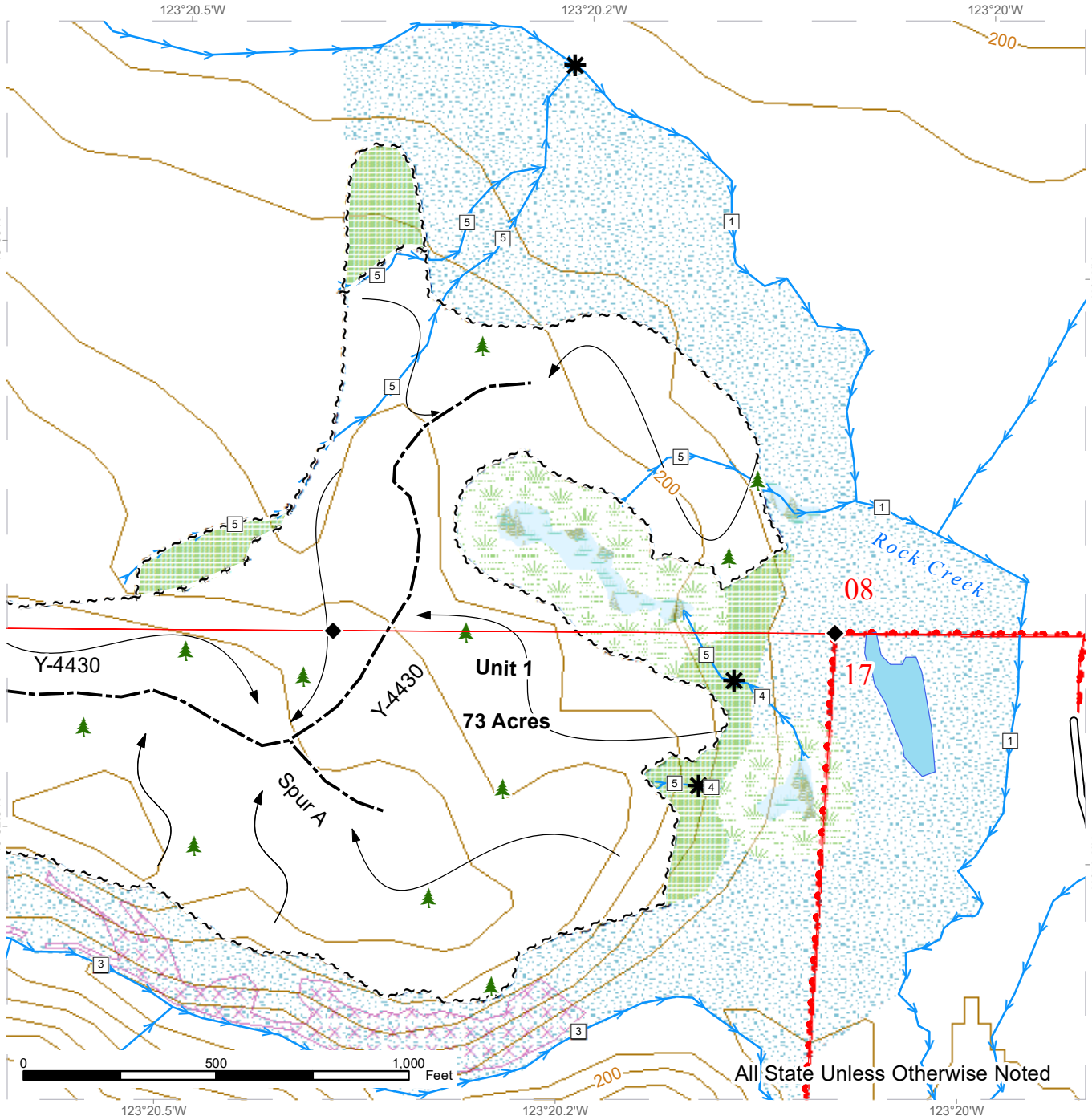
Temporary Reconstruction: **linear feet**
Roads to be reconstructed (optional and required) and then abandoned

All parties must make their own assessment of the taxable or non-taxable status of any work performed under the timber sale contact. The Department of Revenue bears responsibility for determining forest road excise taxes. The Department of Natural Resources developed this form to help estimate the impact of forest excise taxes. However, the information provided may not precisely calculate the actual amount of taxes due. The Department of Revenue is available for consultation by calling 1.800.548.8829.
(Revised 9/18)

LOGGING PLAN MAP

SALE NAME: Standing Elevation
AGREEMENT#: 30-100233
TOWNSHIP(S): T16R5W
TRUST(S): Common School and Indemnity (3)

REGION: Pacific Cascade Region
COUNTY(S): Grays Harbor
ELEVATION RGE: 120-535



Ground Harvest
Sale Boundary Tags
Leave Tree Tags
Property Line
Leave Tree Area
Potentially Unstable Slopes
Riparian Mgt Zone
Forested Wetland
Wetland Mgt Zone
Existing Roads
Optional Construction
Streams
Stream Type
Stream Type Break
Survey Monument
Leave Tree Area <1/4-acre

N

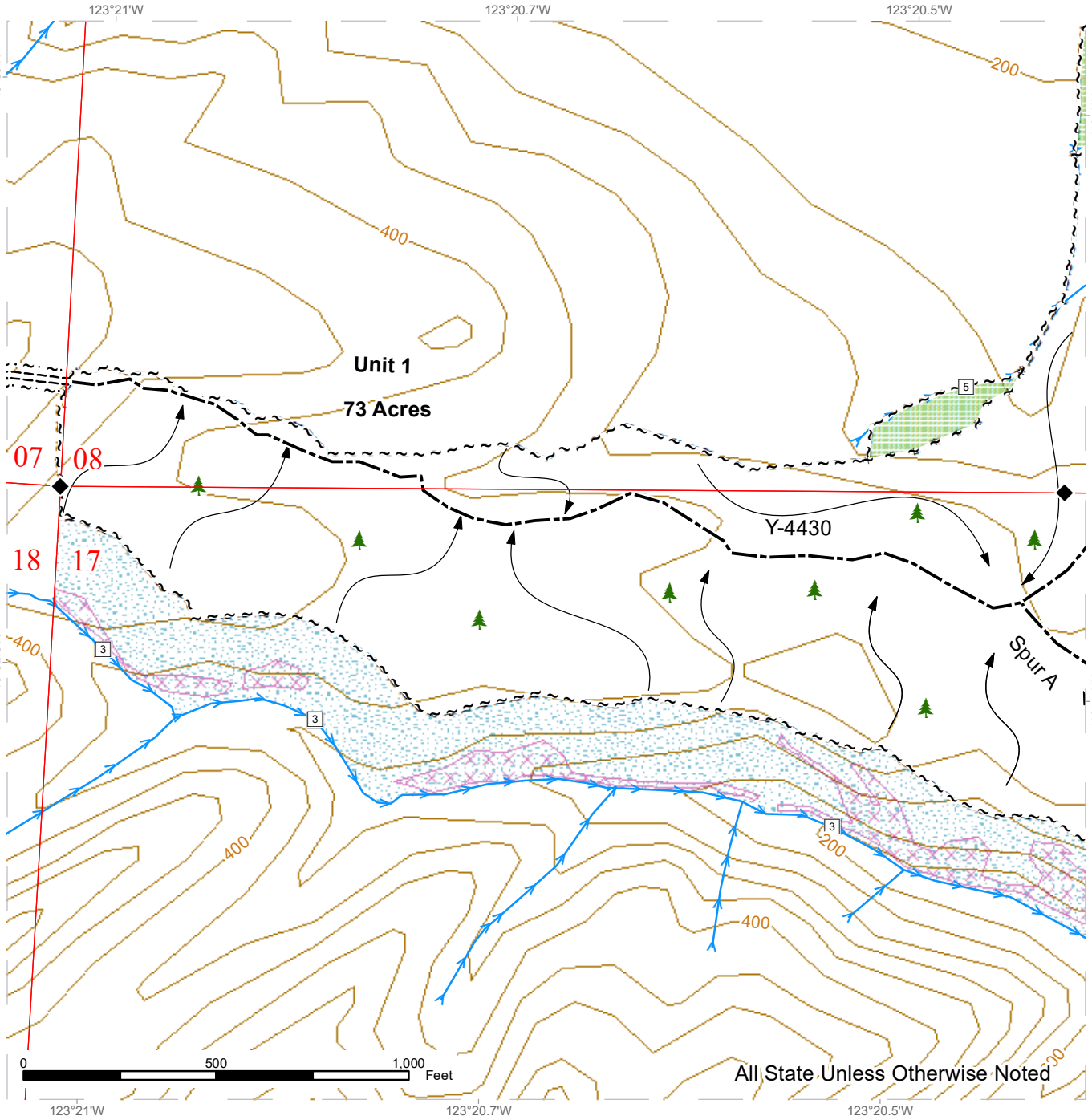
Prepared By: efal490

Modification Date: efal490 10/10/2019

LOGGING PLAN MAP

SALE NAME: Standing Elevation
AGREEMENT#: 30-100233
TOWNSHIP(S): T16R5W
TRUST(S): Common School and Indemnity (3)

REGION: Pacific Cascade Region
COUNTY(S): Grays Harbor
ELEVATION RGE: 120-535



Ground Harvest	Leave Tree Area	Streams
Sale Boundary Tags	Potentially Unstable Slopes	Stream Type
Leave Tree Tags	Riparian Mgt Zone	Stream Type Break
Right of Way Tags	Required Construction	Survey Monument
	Optional Construction	Leave Tree Area <1/4-acre

N

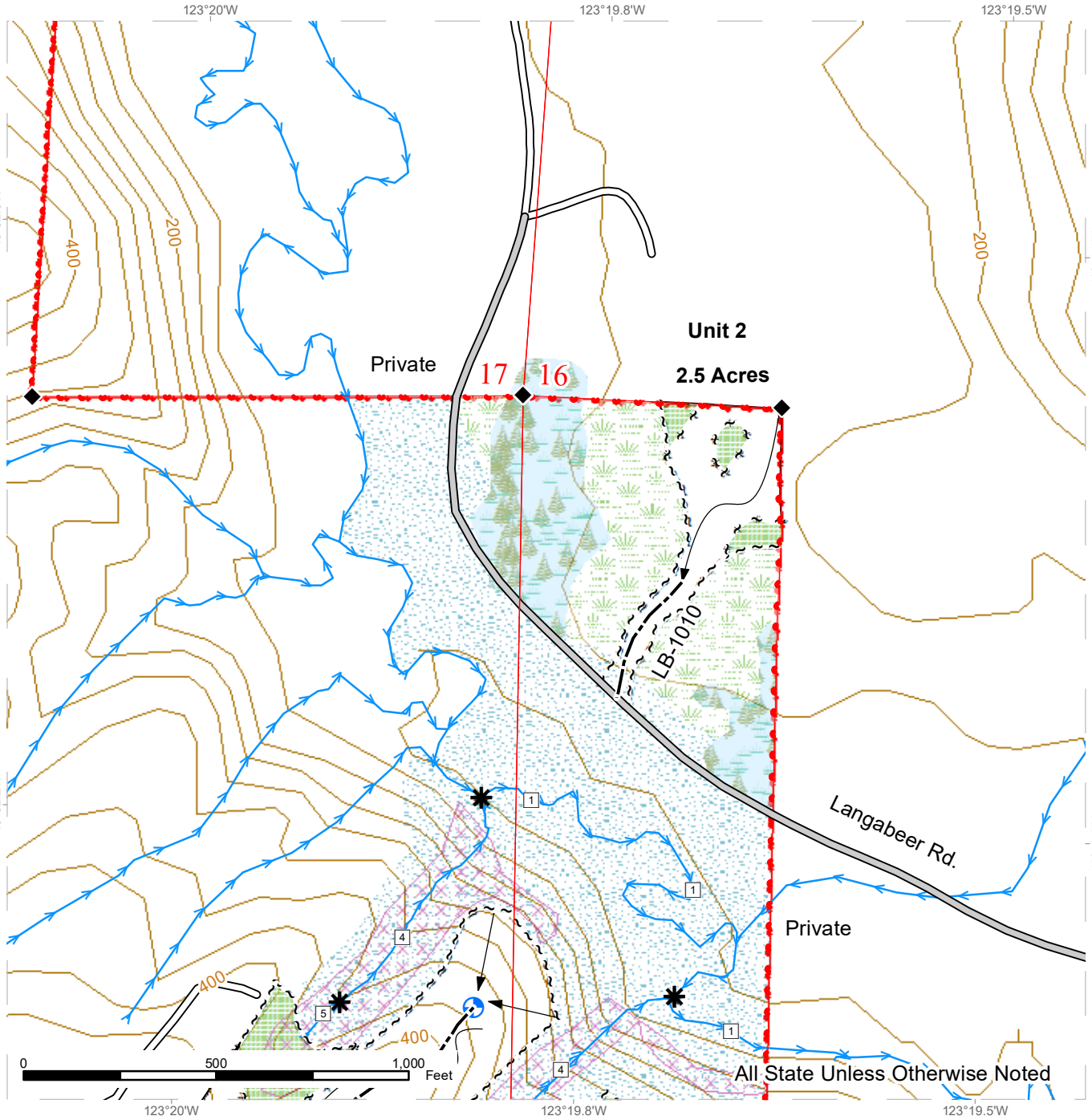
Prepared By: efal490

Modification Date: efal490 10/10/2019

LOGGING PLAN MAP

SALE NAME: Standing Elevation
AGREEMENT#: 30-100233
TOWNSHIP(S): T16R5W
TRUST(S): Common School and Indemnity (3)

REGION: Pacific Cascade Region
COUNTY(S): Grays Harbor
ELEVATION RGE: 120-535



Ground Harvest	Leave Tree Area	Streams
Cable Harvest	Potentially Unstable Slopes	Stream Type
Sale Boundary Tags	Riparian Mgt Zone	Stream Type Break
Timber Type Change	Forested Wetland	Survey Monument
Leave Tree Tags	Wetland Mgt Zone	Landing - Proposed
Property Line	County Road	
	Existing Roads	
	Optional Construction	

N

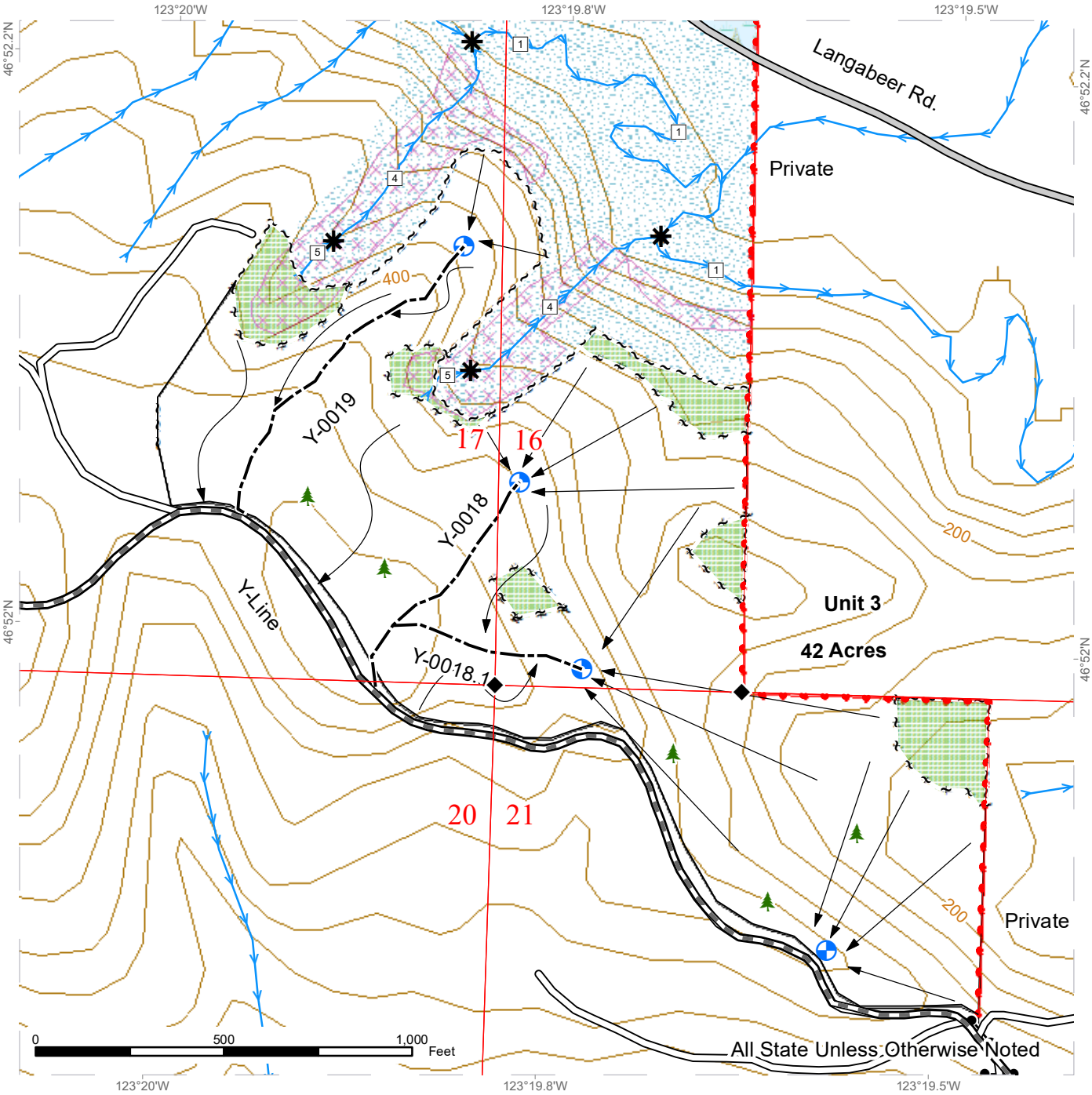
Prepared By: efal490

Modification Date: efal490 10/10/2019

LOGGING PLAN MAP

SALE NAME: Standing Elevation
AGREEMENT#: 30-100233
TOWNSHIP(S): T16R5W
TRUST(S): Common School and Indemnity (3)

REGION: Pacific Cascade Region
COUNTY(S): Grays Harbor
ELEVATION RGE: 120-535



Ground Harvest	Leave Tree Area	Streams
Cable Harvest	Potentially Unstable Slopes	Stream Type
Sale Boundary Tags	Riparian Mgt Zone	Stream Type Break
Timber Type Change	Forested Wetland	Survey Monument
Leave Tree Tags	County Road	Landing - Proposed
Property Line	Existing Roads	Leave Tree Area <1/4-acre
	Required Pre-Haul Maintenance	
	Optional Construction	

N

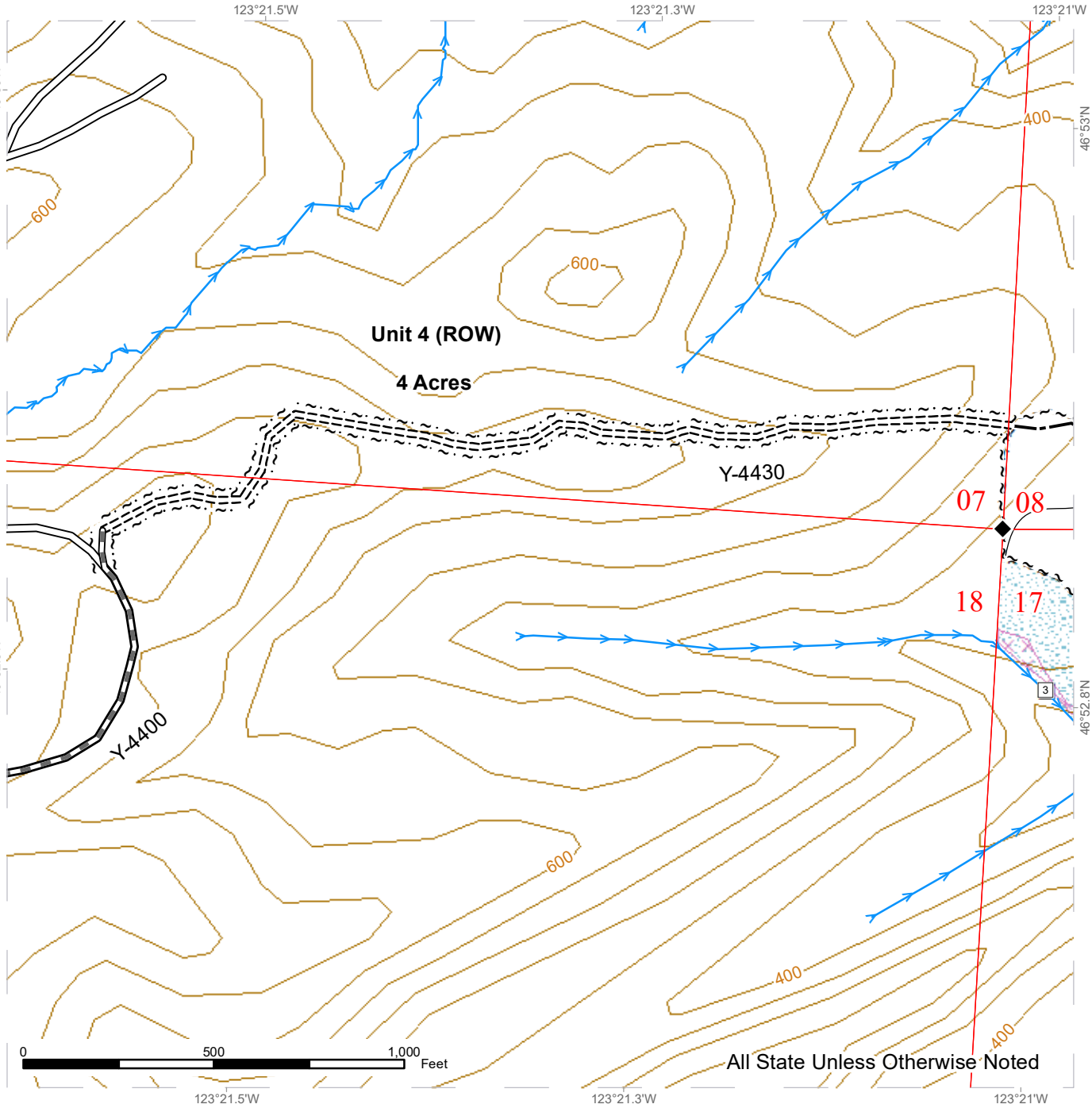
Prepared By: efal490

Modification Date: efal490 10/10/2019

LOGGING PLAN MAP

SALE NAME: Standing Elevation
AGREEMENT#: 30-100233
TOWNSHIP(S): T16R5W
TRUST(S): Common School and Indemnity (3)

REGION: Pacific Cascade Region
COUNTY(S): Grays Harbor
ELEVATION RGE: 120-535



Ground Harvest
Sale Boundary Tags
Right of Way Tags
Potentially Unstable Slopes
Riparian Mgt Zone
Existing Roads
Required Pre-Haul Maintenance
Required Construction
Optional Construction
Streams
Stream Type
Stream Type Break
Survey Monument

N

Prepared By: efal490

Modification Date: efal490 10/10/2019

RECORD SEARCH
EASEMENT EXCHANGE ROAD

Application No: 55-084217
Region: PACIFIC CASCADE
County: GRAYS HARBOR
Grantee: DEPARTMENT OF NATURAL RESOURCES
Grantor: PAUL E. ISAACSON
Address: 7333 CANTERWOOD DR SE, OLYMPIA, WA 98513
Telephone:

Portions of:	Sec.	Twp.	Rge	Trust	Parcel #
NE¼NW¼	21	16N	05W	PRIVATE	00

Acres: 1.14 ± **Miles:** 0.16 ±

Encumbrances

No encumbrances of record.

Pending Applications

No pending applications of record.

Special Notations

No special notations of record.

Title Examiner: John Graham **Date:** February 24, 2009

Application: JW
Register/TB

Document: _____
Register/TB

Proof read by: _____ Date: 2-25-2009

Form updated October 5, 2007

When recorded return to:
Department of Natural Resources
Pacific Cascade Region
Attn: Michelle Metcalf
PO Box 280
Castle Rock, WA98611

197182

REAL ESTATE EXCISE TAX
$ 201.45 Paid 10-1-09
RONALD A. STRABBING, TREASURER
Grays Harbor County, Montesano, Wash.
By E Gentile Deputy

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES
PETER GOLDMARK, Commissioner of Public Lands

EASEMENT EXCHANGE

Grantor(s): State of Washington, Department of Natural Resources and Paul E. Isaacson, as his separate property and heirs and devisees of the Estate of David E. Isaacson, deceased
Grantee(s): Paul E. Isaacson, as his separate property and heirs and devisees of the Estate of David E. Isaacson, deceased and State of Washington, Department of Natural Resources
Legal Description: Isaacson: NE1/4NW1/4, Sec. 21, T16N, R5W
State of Washington: NW1/4NW1/4, S21, T16N, R5W
Assessor's Property Tax Parcel or Account Number: 16052112000, 160521220000
Cross Reference:

DNR Easement No. 55-084217 and 50-084218

This Agreement is between PAUL E. ISAACSON, AS HIS SEPARATE PROPERTY AND THE HEIRS AND DEVISEES OF THE ESTATE OF DAVID E. ISAACSON, DECEASED herein called "Exchanger" and the STATE OF WASHINGTON, acting by and through the Department of Natural Resources, herein called "State" dated as of September 18, 2009 _____ "Effective Date".

Consideration.
In exchange for the mutual promises and covenants herein contained, and other good and valuable consideration, the mutual receipt and sufficiency of which is hereby acknowledged, the parties agree to the following terms and conditions.

In addition to the conveyance of easements, State shall pay Twelve Thousand Eight Hundred Forty and No/ 100 Dollars ($12,840) in U.S. currency to Exchanger concurrent with executing this Agreement.

2009-10010017 10/01/2009 11:50 AM ESMT
Page 1 of 18 R 79.00 Grays Harbor Co, WA
DNR

State will not remove any timber from the Easement Area until Exchanger has approved the removal and State has made provisions to compensate Exchanger for the fair market value of the timber.

Conveyances.

A. To State. Exchanger hereby grants and conveys, to State, its successors and assigns, a permanent, non-exclusive easement over a parcel of land in Grays Harbor County legally described as set forth in Exhibit A, said easement to be sixty (60) feet in width running thirty (30) on each side of a center line of a road located or to be constructed approximately as shown on Exhibit B-1 (hereafter Easement Area or Road).

B. To Exchanger. State hereby grants and conveys, to Exchanger, its successors and assigns, a permanent, non-exclusive easement over a parcel of land in Grays Harbor County legally described as set forth in Exhibit A, said easement to be sixty (60) feet in width running thirty (30) feet on each side of a center line of a road located approximately as shown on Exhibit B-2 (hereafter Easement Area or Road).

Purpose. The easements are conveyed to provide ingress and egress to and from lands owned or hereafter acquired by each party for resource management and administrative activities, including, but not limited to, hauling timber products, valuable materials such as sand, gravel, stone and minerals, special forest products such as tree boughs and brush; performing management activities associated with forestlands, such as reforestation, routine ongoing inventory and stocking control; leasing and managing communication, grazing and agricultural sites; and leasing for resource activities consistent with county zoning and other terms and conditions included in this easement. Authorized use shall include the right to travel, maintain, repair, construct or reconstruct each respective Easement Area subject to the restrictions set forth hereafter. No rights of public access are granted by either party under this Agreement.

Nature of Estate. These easements shall be deemed appurtenant to real property located in Grays Harbor County legally described as set forth in Exhibit C (hereafter Benefited Parcels); *Provided*, however, that either party may add after acquired property to the easement area, subject to agreement between the parties pertaining to re-allocation of easement costs pertaining to such after acquired property.

Reservations. Each fee owner reserves all rights incident to fee ownership of the Easement Area on their respective lands and the profits thereon (including timber) and the right of use for any purpose including but not limited to the right to remove profits within the Easement Area on its land; the right at all times to cross and re-cross the Easement Area at any place on grade or otherwise; and the right to use, maintain, patrol, reconstruct or repair the Easement Area so long as it does not unreasonably interfere with the rights granted herein. Each fee

owner may grant to third parties any and all rights reserved on its land. Timber or other profits of the land may be removed by the easement holder where reasonably necessary to use the easement area, but the fee owner shall be entitled to the market value of the material removed.

Export Restrictions. Any export-restricted timber originating from state land under this Agreement shall not be exported until processed. Exchanger shall comply with all applicable requirements of WAC 240-15-015 (relating to the prohibitions on export and substitution), WAC 240-15-025 (relating to reporting requirements), and WAC 240-15-030 (relating to enforcement). All export restricted timber from state lands shall be painted and branded in compliance with WAC 240-15-030(2). If Exchanger knowingly violates any of the prohibitions in WAC 240-15-015, Exchanger shall be barred from bidding on or purchasing export restricted timber as provided. Exchanger shall comply with the Export Administration Act of 1979 (50 U.S.C. App. Subsection 2406(i)) which prohibits the export of unprocessed western cedar logs harvested from state lands.

Compliance with Laws. For all activities conducted pursuant to this Agreement, each party shall, at its own expense, comply with all applicable laws.

Permittees. Each easement holder may permit its respective employees, agents, contractors, licensees, lessees, purchasers of timber or other profits and their agents, herein individually referred to as "Permittee" and collectively referred to as "Permittees", to exercise the rights granted to the easement holder herein. Acts or omissions of the Permittees operating under this Agreement shall be deemed an act of the easement holder. Restrictions or requirements placed on the easement holder herein shall apply equally to the Permittees.

Maintenance. Maintenance is defined as work normally necessary to preserve and keep the Roads in their present condition or as hereafter improved. At a minimum, the Roads will be maintained to meet applicable forest practices standards set forth in Chapter 222-24 WAC as now written or hereafter amended.

When a Road is being used solely by one party, that party shall be solely responsible for maintaining that portion of the Road so used to the standards existing at the time sole use is commenced. During periods when either party and/or other parties with an easement or license jointly use the Road(s), or any portion thereof, the cost of maintenance and resurfacing shall be allocated among such users on the basis of their respective use including that of their Permittees.

During periods of joint maintenance, the users shall meet at times to be set by mutual agreement and establish necessary maintenance provisions. Such provisions shall include, but not be limited to the following:

(1) The appointment of a maintainer, which may be one of the parties or any third party, to perform or contract the maintenance;

(2) The extent of resurfacing necessary to keep the Road safe and to reduce environmental impacts; and

(3) A method of payment by which each party using the Road or a portion thereof shall pay its pro rata share of the cost of maintenance and resurfacing.

Repairs. Each party shall repair, or cause to be repaired at its sole cost, that damage to the Road arising out of the easement holder's use, which is in excess of that which it would cause through normal and prudent usage. Damage caused by an unauthorized user shall be repaired at the expense of the easement holder if the easement holder is the sole user of the road, the fee owner if the fee owner is the sole user of the road and shared jointly if there is joint use of the road.

Improvements. The easement holder will not make improvements to the Easement Area without prior written consent of the fee owner, which shall not be unreasonably withheld. Unless the parties agree in writing to share the cost of improvements, improvements shall be at the sole expense of the improver. Any improvements to the Easement Area shall become the property of the fee owner unless otherwise agreed in writing.

Compliance with Habitat Conservation Plan. The Easement Area is located within an area that is subject to the State's Habitat Conservation Plan adopted in connection with Incidental Take Permit No. PRT-812521 as supplemented by Permit No. 1168 (collectively "ITP"). As long as the Habitat Conservation Plan remains in effect, Exchanger and all Permittees acting under Exchanger shall comply with the terms and conditions set forth in Exhibit D while operating on the Easement Area located on state owned land.

Prior Right. The easements granted by this Agreement are subject to all matters of public record.

Operational Restrictions. Site-specific operational requirements are listed in Exhibit E. Non-compliance with these requirements shall constitute a breach of the easement and may result in the fee owner requiring the easement holder to suspend operations until the breach is remedied.

Construction/Operation Plan(s). Pre-Construction. Thirty (30) days prior to any construction or reconstruction of (a) Road(s) by an easement holder on lands of the fee owner, the easement holder will submit a written plan of construction to the fee owner outlining the construction or activity for approval, which shall not be unreasonably withheld. All construction and reconstruction shall comply with applicable state and local laws. In the event of an emergency that requires immediate action to protect person or property, an easement holder may take reasonable corrective action without prior notice to the fee owner, but in such case will notify fee owner within 24 hours.

Notice of Operation. When an easement holder or one of its Permittees plans to use any portion of the Roads for the purpose of hauling timber or other profits, such party shall notify the fee owner thereof at least five (5) days prior to the commencement of such use, advising of the portion of Road to be used, the approximate dates when such use will begin and end, and of the approximate volumes of timber, forest products, or other profits to be hauled and promptly upon the completion of such use notify the other party thereof.

Waste. An easement holder shall not cause nor permit any filling activity to occur in or on the Easement Areas, except by prior written approval of the fee owner. An easement holder shall not deposit refuse, garbage, or other waste matter or use, store, generate, process, transport, handle, release, or dispose of any hazardous substance, or other pollutants in or on the Easement Areas except in accordance with all applicable laws. The term hazardous substance means any substance or material as those terms are now or are hereafter defined or regulated under any federal, state, or local law including but not limited to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA 42 USC 9601 *et seq.*), or the Washington Model Toxic Control Act (MTCA RCW 70.105D.010.). An easement holder shall immediately notify the fee owner if the easement holder becomes aware of any release or threatened release of hazardous substance on the Easement Areas or adjoining property. If a release of hazardous substance occurs in, on, under, or above the Easement Areas arising out of any action of the easement holder, its contractors, subcontractors, invitees, agents, employees, licensees, or permittees, the easement holder shall, at its sole expense, promptly take all actions necessary or advisable to clean up, contain, and remove the hazardous substance in accordance with applicable laws.

Survey Markers. An easement holder shall not destroy any land survey corner monuments and reference points (including but not limited to corner markers, witness objects, or line markers) without prior written approval from the landowner, which shall not be unreasonably withheld. Monuments or reference points that must necessarily be disturbed or destroyed during road construction or maintenance activities must be adequately referenced and replaced, at the easement holder's cost, under the direction of a State of Washington Professional Land Surveyor, in accordance with all applicable laws of the State of Washington in force at the time of construction, including but not limited to RCW 58.24, and all Department of Natural Resources regulations pertaining to preservation of such monuments and reference points.

Insurance. The State of Washington, including all its agencies and departments, is self insured for all exposures to tort liability, general liability, property damage liability and vehicle liability, as provided in statute, but only as respects the negligence of the State.

Before using any of said rights granted herein and at its own expense, the Exchanger shall obtain and keep in force during the term of this agreement and require its contractors, sub-contractors, or other permittees to obtain while operating on the Easement area, the following

liability insurance policies, insuring Exchanger against liability arising out of its operations, including use of vehicles. In addition the State shall require its Permittees and Assignees to obtain and keep in force the same insurance. The limits of insurance, which may be increased by mutual agreement of both parties, as deemed necessary, shall not be less than as follows:

(a) Commercial General Liability (CGL) insurance with a limit of not less than $1,000,000 per each occurrence or Personal Liability insurance, as applicable, under a personal liability policy, commercial liability insurance policy, or package property and liability insurance policy. If such CGL insurance contains aggregate limits, the general aggregate limits shall be at least twice the "each occurrence" limit, and the products-completed operations aggregate limit shall be at least twice the "each occurrence" limit.

(b) Employer's liability ("Stop Gap") insurance, and if necessary, commercial umbrella liability insurance with limits not less than $1,000,000 each accident for bodily injury by accident or $1,000,000 each employee for bodily injury by disease.

(c) Business Auto Policy (BAP) insurance, and if necessary, commercial umbrella liability insurance with a limit of not less than $1,000,000 per accident, with such insurance covering liability arising out of "Any Auto".

(d) Exchanger shall comply with all State of Washington workers' compensation statutes and regulations. Except as prohibited by law, Exchanger waives all rights of subrogation against State for recovery of damages to the extent they are covered by workers compensation, employers' liability, commercial general liability or commercial umbrella liability insurance. All contractors, subcontractors, or other permittees of Exchanger and State must comply with all State of Washington workers' compensation statutes and regulations.

All insurance should be purchased on an occurrence basis and should be issued by companies admitted to do business within the State of Washington and have a rating of A- or better in the most recently published edition of Best's Reports. Any exception to the State's requirements shall be reviewed and approved in advance by the Risk Manager for the Department of Natural Resources. Any exception to the Exchanger's requirements shall be reviewed and approved by the Exchanger. If an insurer is not admitted, all insurance polices 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, its elected and appointed officials, agents and employees shall be named as an additional insured by the Exchanger on all general liability, excess, and umbrella insurance policies.

Before using any said rights granted herein, Exchanger shall furnish State with a certificate(s) of insurance, executed by a duly authorized representative of each insurer, showing compliance with the insurance requirements specified above. Certificate(s) must reference the State's easement number. The State shall furnish, upon request, a certificate of insurance showing compliance with the insurance requirements specified above.

State shall be provided written notice before cancellation or non-renewal of any insurance referred to herein, as prescribed in statute (Chapter 48.18 RCW or Chapter 48.15 RCW).

Exchanger shall include all Permittees as insureds under all required insurance policies or require separate certificates of insurance and endorsements for each. Contractors, sub-contractors and permittees of both State and Exchanger must comply with all insurance requirements stated herein. Failure of contractors, sub-contractors and permittees to comply with State's insurance requirements does not limit Exchanger liability or responsibility.

State shall require its contractors to provide certificates of insurance to the State and shall require sub-contractors and permittees to be insured under the contractor's policy or have in its possession separate certificates of insurance and endorsements. Failure of contractors, sub-contractors and permittees to comply with State's insurance requirements does not limit State's liability or responsibility.

State and Exchanger shall furnish upon request certificates of insurance and endorsements for any or all Permittees.

All insurance provided by the Exchanger in compliance with this agreement shall be primary as to any other insurance or self-insurance programs afforded to or maintained by State. Exchanger 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 agreement.

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

If Exchanger is self-insured, evidence of its status as a self-insured entity shall be provided to State. If requested by State, Exchanger must describe its financial condition and the self-insured funding mechanism.

Indemnity by the State. State shall defend, indemnify and hold harmless the Exchanger from all claims that arise out of the negligence of the State or its Permittees in their use of the easement. A "claim" as used in this section means any financial loss, claim, suit, action, damage, or expense, including but not limited to attorneys' fees, attributable to bodily injury, sickness, disease or death, or injury to or destruction of tangible property including the resulting loss of use. Notwithstanding the foregoing, State's obligation to defend, indemnify,

and hold harmless the Exchanger from any judgment, decree or arbitration award shall extend only to the percentage of negligence of State and its Permittee in contribution to such claim. State waives its immunity under Title 51 RCW only to the extent it is required to indemnify, defend and hold harmless Exchanger and its Permittee. This indemnification shall survive the expiration or termination of the easement.

Indemnity by the Exchanger. Exchanger shall defend, indemnify and hold harmless State from all claims that arise out of the negligence of the Exchanger or its Permittee in their use of the easement. A "claim" as used in this section means any financial loss, claim, suit, action, damage, or expense, including but not limited to attorneys' fees, attributable to bodily injury, sickness, disease or death, or injury to or destruction of tangible property including the resulting loss of use. Notwithstanding the foregoing, Exchanger's obligation to defend, indemnify, and hold harmless State from any judgment, decree or arbitration award shall extend only to the percentage of negligence of Exchanger and its Permittee in contribution to such claim. Exchanger waives its immunity under Title 51 RCW only to the extent it is required to indemnify, defend and hold harmless State and its Permittee. This indemnification shall survive the expiration or termination of the easement.

Notice. Unless otherwise specified herein, any notices required or permitted under this Agreement may be delivered personally, sent by facsimile machine or mailed certified, return receipt requested, to the following addresses or to such other place as the parties hereafter direct. Notice will be deemed given upon delivery or upon confirmation of facsimile, whichever is applicable.

To State:	To Exchanger:
DEPARTMENT OF NATURAL RESOURCES	PAUL E. ISAACSON
PO BOX 280	7333 CANTERWOOD DR SE
CASTLE ROCK, WA 98611	OLYMPIA, WA 98513

Integrated agreement; modifications. This Agreement constitutes the entire agreement and understanding of the parties with respect to the subject matter of the Agreement and supersedes all prior negotiations and representations. This Agreement shall not be modified except by written approval of both parties. The parties agree to execute any additional documents reasonably necessary to effectuate the provisions and purposes of this Easement.

Severability. If any provision of this Agreement is held to be invalid or unenforceable, it shall not affect the validity of any other provision herein, and to this end the provisions of this Agreement are declared to be severable. If any such invalidity becomes known or apparent to the parties, the parties agree to negotiate promptly in good faith in an attempt to amend such provision as nearly as possible to be consistent with the intent of this Agreement.

Waiver. Failure of either party to insist upon the strict performance of any of the terms and conditions of this Agreement, or failure to exercise any rights or remedies provided in this Agreement or by law, or to notify the other party in the event of breach, shall not release the other party of any of its obligations under this Agreement, nor shall any purported oral modification or rescission of this Agreement by either party operate as a waiver of any of the terms hereof. No waiver by either party of any breach, default, or violation of any term, warranty, representation, agreement, covenant, right, condition, or provision of this Agreement shall constitute waiver of any subsequent breach, default, or violation of the same or other term, warranty, representation, agreement, covenant, right, condition, or provision.

Successors and Assigns. This Agreement shall be binding upon and shall inure to the benefit of the parties, their successors and assigns.

Construction. The terms of this Agreement shall be given their ordinary meaning unless defined herein and shall not be presumptively construed against either party.

Exhibits. All exhibits referenced in this Agreement are incorporated as part of the Agreement.

Headings. The headings in this Easement are for convenience only and are not intended to, and shall not be construed to, limit, enlarge, or affect the scope or intent of this Easement nor the meaning of any of its provisions.

Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, and all of which counterparts together shall constitute the same instrument which may be sufficiently evidenced by one counterpart. Execution of this Agreement at different times and places by the parties shall not affect its validity so long as all the parties execute a counterpart of this Agreement.

IN WITNESS WHEREOF, the parties hereto have executed this instrument, in duplicate to become effective as of the day and year first above written.

Dated: July 28, 2009. By: Paul E Isaacson

Title: owner

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

Dated: 9/18/, 2009. By: Peter Goldmark
PETER GOLDMARK
Commissioner of Public Lands

Affix Seal of Commissioner
of Public Lands

Approved as to Form only
this 13 day of January, 2004
by James Schwartz
Assistant Attorney General
for the State of Washington

INDIVIDUAL ACKNOWLEDGEMENT

STATE OF WASHINGTON

County of Thurston

I certify that I know or have satisfactory evidence that PAUL E. ISAACSON, AS HIS SEPARATE PROPERTY AND THE HEIRS AND DEVISEES OF THE ESTATE OF DAVID E. ISAACSON, DECEASED is the person who appeared before me, and said person acknowledged that (he/she) signed this instrument and acknowledged it to be (his/her) free and voluntary act for the uses and purposes mentioned in this instrument.

Dated: 7-28-09

(Signature)

(Seal or stamp)

AMANDA L. HENDERSON
COMMISSION EXPIRES
NOTARY
PUBLIC
7-19-12
STATE OF WASHINGTON

Amanda L Henderson
(Print Name)

Notary Public in and for the State of Washington, residing at Olympia.

My appointment expires 7-19-12.

STATE ACKNOWLEDGEMENT

State of Washington

County of Thurston

I certify that I know or have satisfactory evidence that PETER GOLDMARK is the person who appeared before me, and said person acknowledged that he signed this instrument, on oath stated that he was authorized to execute the instrument and acknowledged it as the Commissioner of Public Lands, and administrator of the Department of Natural Resources of the State of Washington to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

Dated: 9-18-09

(Seal or stamp)

RONI J. PETTIT
COMMISSION EXPIRES
NOTARY
PUBLIC
6-28-10
STATE OF WASHINGTON

Roni J. Pettit
(Signature)

Roni J. Pettit
(Print Name)

Notary Public in and for the State of Washington, residing at Olympia WA.

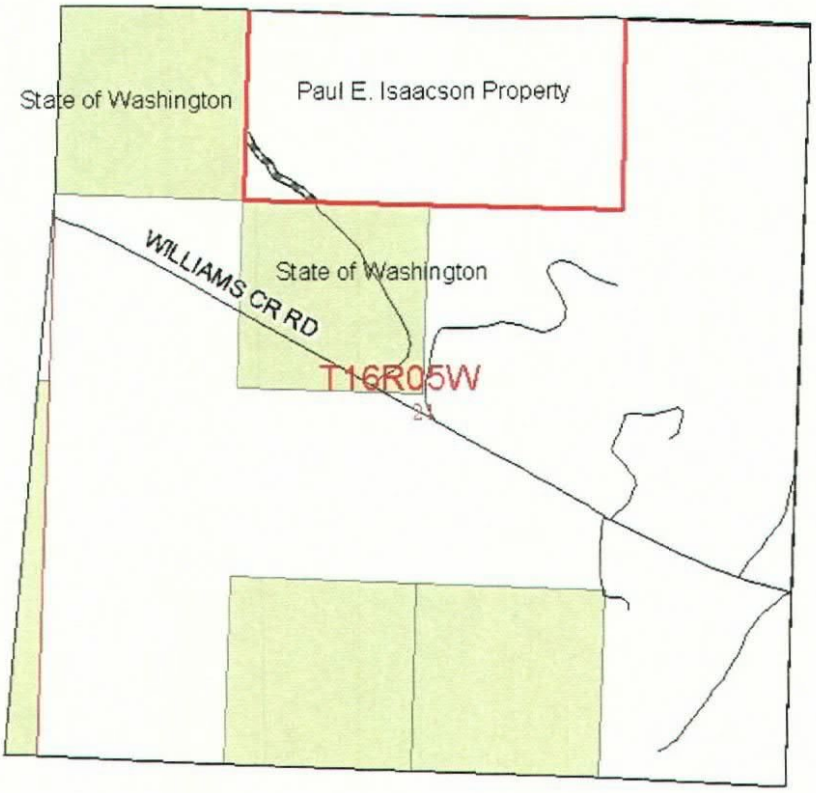
My appointment expires 6-28-10.

EXHIBIT A
Burdened Parcels

State: The Northwest Quarter of the Northwest Quarter of Section 21, Township 16 North, Range 5 West, W.M. located in Grays Harbor County, Washington.

Exchanger: The Northeast Quarter of the Northwest Quarter of Section 21, Township 16 North, Range 5 West, W.M. located in Grays Harbor County, Washington.

EXHIBIT B-1
EASEMENT AREA
GRANTOR: PAUL E. ISAACSON
NE1/4NW1/4, S21, T16N, R5W, W.M.
GRAYS HARBOR COUNTY, WA



Legend

Isaacson Easement Area - New Road Construction 825 FT.

Existing Road

State of Washington

ROW Width = 60 FT.
ROW Acres = 1.14 +/-

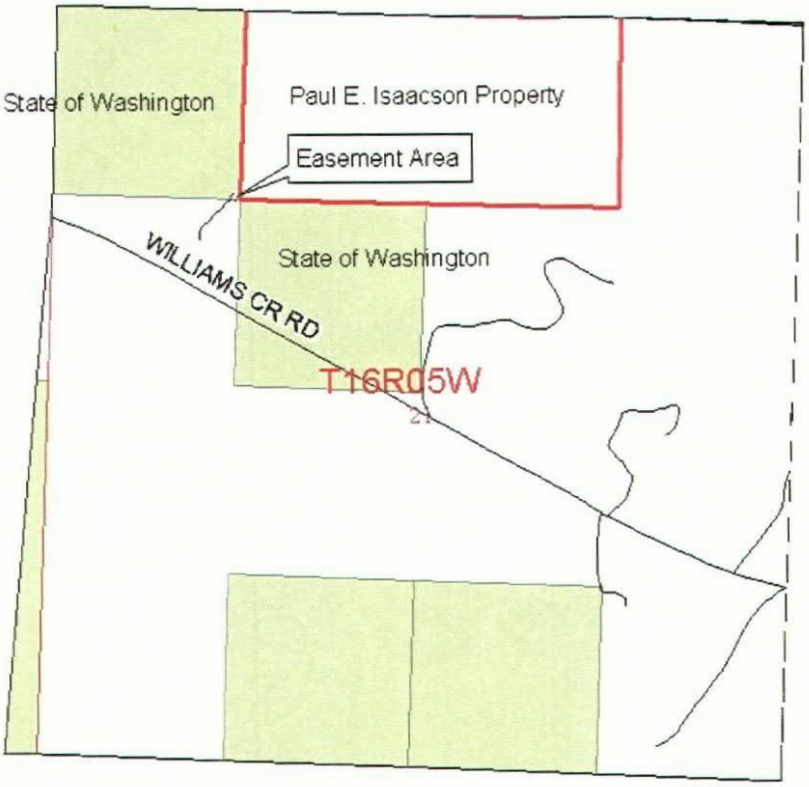
N W E S

0 425 850 1,700 2,550 3,400 Feet

Prepared By: Michelle Metcalf 02/06/09

"The right of way shown is intended to be over and across all property as shown on the map."

EXHIBIT B-2
EASEMENT AREA
GRANTOR: STATE OF WASHINGTON
NW1/4NW1/4, S21, T16N, R5W, W.M.
GRAYS HARBOR COUNTY, WA



Legend

:::::: Easement Area New Road Construction - 51 Ft.

—— Existing Roads

State of Washington

ROW Width = 60 FT.
ROW Acres = 0.07 +/-

N W E S

0 425 850 1,700 2,550 3,400 Feet

Prepared By: Michelle Metcalf 02/06/09

"The right of way shown is intended to be over and across all property as shown on the map."

EXHIBIT C
Benefited Parcels

Exchanger: The Northeast Quarter of the Northwest Quarter and the Southwest Quarter of the Northwest Quarter of Section 21, Township 16 North, Range 5 West, W.M., located in Grays Harbor County, Washington.

State: The Southwest Quarter of the Northeast Quarter, South Half of the Northwest Quarter, South Half of Section 7, South Half of the Southwest Quarter, Southwest Quarter of the Southeast Quarter of Section 8, East Half and the Southwest Quarter of the Southwest Quarter of Section 16, West Half of the Northeast Quarter, Southeast Quarter of the Northeast Quarter, Northwest Quarter, Southwest Quarter, and the Southeast Quarter of Section 17, All of Section 18, and Northwest Quarter of the Northwest Quarter of Section 21 of Township 16 North, Range 5 West, W.M., located in Grays Harbor County, Washington.

All of Section 12, All of Section 13, East Half of Section 14, and the Northeast Quarter of Section 24 of Township 16 North, Range 6 West, W.M., located in Grays Harbor County, Washington.

EXHIBIT D
HCP Requirements

1. The Exchanger shall immediately notify the State of new locations of permit species covered in the Incidental Take permit (ITP) that are discovered within the easement area covered by the 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; and Oregon silverspot butterflies. In all circumstances notification must occur within a 24 hour time period.

2. Upon locating any live, dead, injured, or sick specimens of any listed species covered by the ITP within the easement area the Exchanger shall immediately notify the State. In all circumstances notification must occur within a 24 hour time period.. Exchangers may be required to take certain actions to help the State safeguard the well-being of any live, injured or sick specimens of any listed species discovered, until the proper disposition of such specimens can be determined by the State.

3. Any Forest Practices Permit submitted for activities on the Premises must identify that the Premises are covered by the State of Washington, Department of Natural Resources Habitat Conservation Plan and part of the Incidental Take Permit No. PRT-812521, as supplemented by Permit #1168.

EXHIBIT E
OPERATIONAL REQUIREMENTS

- Roads may not be used when continued use will result in excessive damage due to weather or other conditions.
- No snow removal without permission from the landowner.
- State will purchase and install two gates.
- All methods of chemical weed control on State Land shall be approved in writing by State prior to beginning such activities. No aerial spraying is permitted on State land without prior approval by State.