



TIMBER NOTICE OF SALE

SALE NAME: UPPER DOAKS

AGREEMENT NO: 30-093613

AUCTION: October 26, 2016 starting at 10:00 a.m., **COUNTY:** Whatcom
Northwest Region Office, Sedro Woolley, WA

SALE LOCATION: Sale located approximately 4 miles northeast of Kendall, WA

**PRODUCTS SOLD
AND SALE AREA:**

All timber bounded by white timber sale boundary tags and the RM-ML and RM-20 roads, except forest products tagged out by blue special management tags, trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags, and cedar snags, preexisting dead and down cedar trees and cedar logs in Unit #1.

All timber bounded by white timber sale boundary tags and adjacent young stands, except forest products tagged out by blue special management tags, trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags, and cedar snags, preexisting dead and down cedar trees and cedar logs in Unit #2.

All trees as described for removal in Schedule B located in the RMZ thinning areas (beyond the blue special management tags up to the white timber sale boundary tags and RM-20) within Units #1 and #2.

Trees marked with orange paint along the RM-20 road.

The above described products on part(s) of Sections 23 and 24 all in Township 40 North, Range 5 East, W.M., containing 56 acres, more or less.

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

ESTIMATED SALE VOLUMES AND QUALITY:

Species	Avg DBH	Ring Count	Total MBF	MBF by Grade								
				1P	2P	3P	SM	1S	2S	3S	4S	UT
Douglas fir	17	8	750						320	346	81	3
Hemlock	14		508						132	268	107	1
Red cedar	18		117							93	24	
Red alder	13		105						27	39	22	17
Maple	16		43						13	9		21
Cottonwood	22		32						27		5	
Birch	13		20						5	7	3	5
Spruce	28		12						10	2		
Sale Total			1,587									

MINIMUM BID: \$400,000.00 **BID METHOD:** Sealed Bids

PERFORMANCE SECURITY: \$80,000.00 **SALE TYPE:** Lump Sum

EXPIRATION DATE: March 31, 2018 **ALLOCATION:** Export Restricted



TIMBER NOTICE OF SALE

BID DEPOSIT: \$40,000.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: Cable; cable or shovel on sustained slopes 40% or less. Falling and Yarding will not be permitted from November 1 to March 31 unless authorized in writing by the Contract Administrator (THIS PERTAINS TO GROUND-BASED EQUIPMENT ONLY) to reduce soil damage and erosion.

ROADS: 10.52 stations of required construction. 28.58 stations of required reconstruction. 137.84 stations of required prehaul maintenance. Installation of a gate; gate furnished by the State, available at NW Region Office.

Rock may be obtained from the following source(s) on State land at no charge to the Purchaser: Red Mt. Pit at station 20+53 of the RM-23 Road. Existing Stockpiles of rock (both 2-inch minus crushed and 3-inch minus ballast rock) available (see road plan for details).

Development of an existing rock source will involve drilling, shooting, and processing rock to generate riprap and 3-inch-minus ballast.

An estimated total quantity of rock needed for this proposal: 88 cubic yards of riprap and 6,775 cubic yards of 3-inch minus ballast rock and 155 cubic yards of 2-inch minus crushed rock.

Road work and the hauling of rock will not be permitted from November 1 to March 31 unless authorized in writing by the Contract Administrator to reduce soil damage and siltation. The hauling of forest products will not be permitted from November 1 to March 31 unless authorized in writing by the Contract Administrator to reduce soil damage and siltation.

ACREAGE DETERMINATION

CRUISE METHOD: Acres determined by GPS traverse. 67.1 acres gross. 2.1 acres deducted for green tree retention clumps and 7.3 acres deducted for no-harvest RMZ area and 2.1 acres deducted for existing road area. 55.6 acres net. Cruised using variable plot method. Expansion factors used are 54 in VRH areas and 40.00 in VDT areas in RMZs. Sighting height is 4.5 feet. A total of 65 plots were taken.

FEES: \$28,169.25 is due on day of sale. \$9.00 per MBF is due upon removal. These are in addition to the bid price.

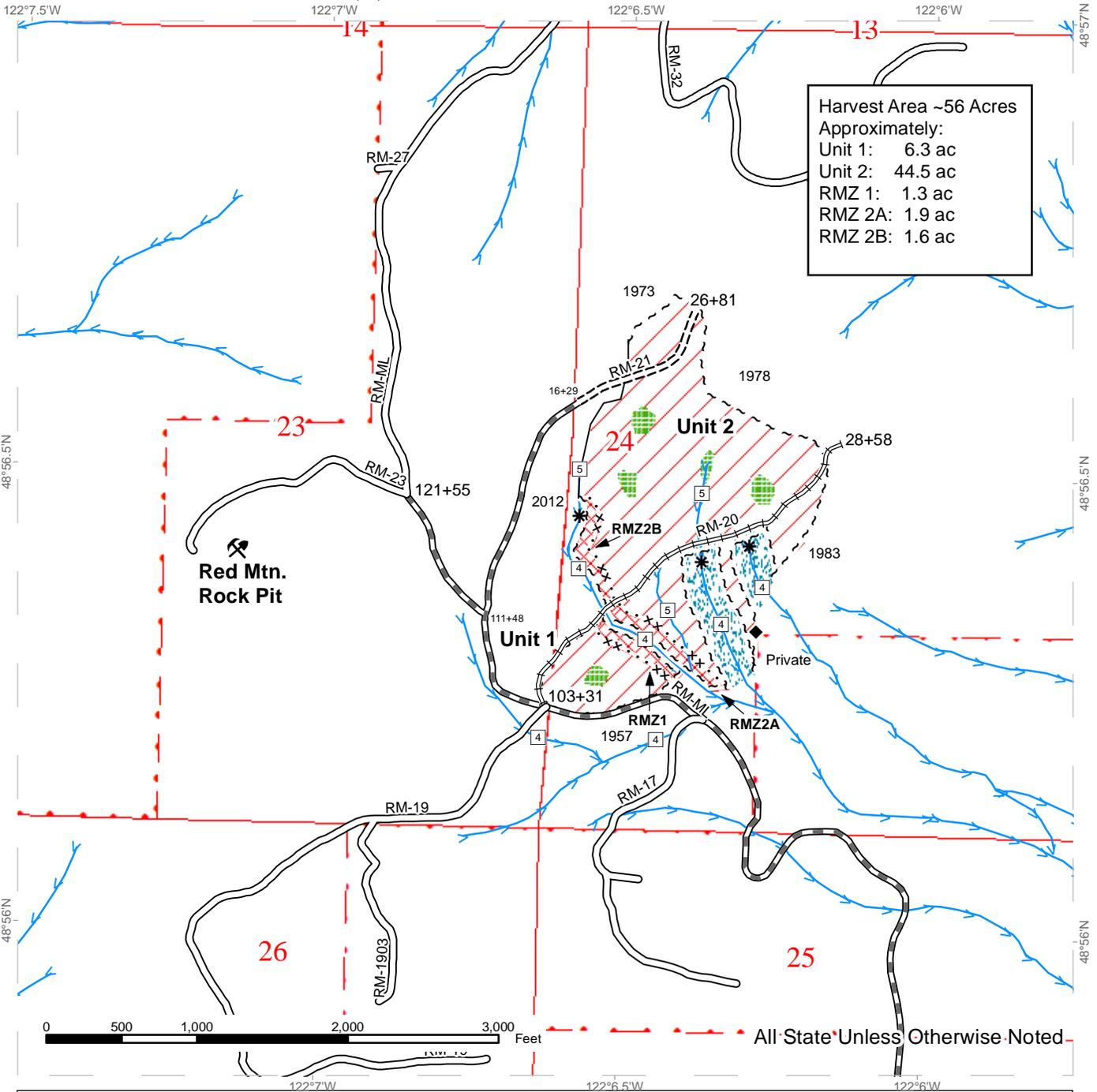
SPECIAL REMARKS:

1. A portion of the RM-21 is on an abandoned grade..
2. Outer boundary of harvest area in RMZ thinning areas is demarcated with blue special management tags within the sale area.
3. HQ DF noted within the sale area. See cruise for further details (approximately 16 mbf of the above listed DF 2S is deemed high quality by the Department).
4. Shapefiles of units available upon request.
5. Harvest area intended for 100% ground-based yarding.

TIMBER SALE MAP

SALE NAME: UPPER DOAKS
AGREEMENT #: 30-093613
TOWNSHIP(S): T40R05E
TRUST(S): State Forest Transfer (01)

REGION: Northwest Region
COUNTY(S): WHATCOM
ELEVATION RGE: 1631-2260



Harvest Area ~56 Acres
 Approximately:
 Unit 1: 6.3 ac
 Unit 2: 44.5 ac
 RMZ 1: 1.3 ac
 RMZ 2A: 1.9 ac
 RMZ 2B: 1.6 ac

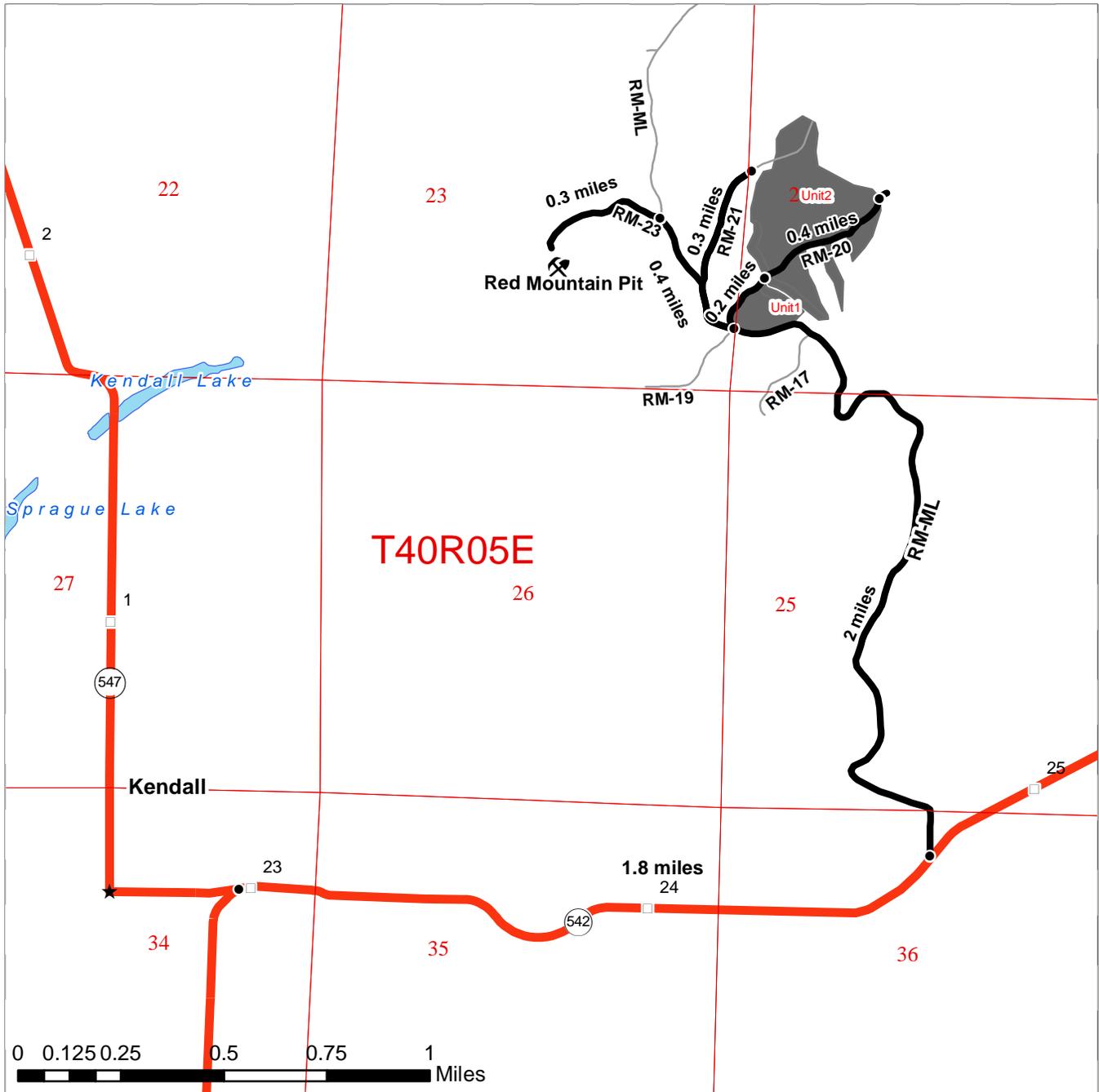
	Variable Retention Harvest		Streams
	RMZ Thinning		Stream Type
	Leave Tree Area		Stream Type Break
	No-Cut RMZ		Required Reconstruction
	Sale Boundary Tags		Required Pre-Haul Maintenance
	Special Mgmt Area		Existing Roads
	Timber Type Break (No Tags)		Required Construction



DRIVING MAP

SALE NAME: UPPER DOAKS
AGREEMENT#: 30-093613
TOWNSHIP(S): T40R05E
TRUST(S): State Forest Transfer (01)

REGION: Northwest Region
COUNTY(S): WHATCOM
ELEVATION RGE: 1775-2279



<ul style="list-style-type: none"> Timber Sale Unit Highways Haul Route Other Route Milepost Markers Distance Indicator Town 	<p>To Units:</p> <ul style="list-style-type: none"> -From the intersection of HWY 542 and 547 travel east on 542 for 1.8 miles. -Turn left onto the Red Mtn Mainline (RM-ML). -Travel the RM-ML for 2.0 miles. -Turn right onto the RM-20. Unit 1 is on your right. -Continue on the RM-20 for 0.2 miles to Unit 2. <p>To Rock Pit:</p> <ul style="list-style-type: none"> -From the intersection RM-20 and RM-ML continue on the RM-ML for 0.4 miles. -Turn left on the RM-23. -Proceed for 0.3 miles to the Red Mountain Rock Pit.
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**STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES**

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

Export Restricted Lump Sum AGREEMENT NO. 30-093613

SALE NAME: UPPER DOAKS

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

Section G: General Terms

G-001 Definitions

The following definitions apply throughout this contract;

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

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

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

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

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

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

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

G-011 Right to Remove Forest Products and Contract Area

Purchaser was the successful bidder on October 26, 2016 and the sale was confirmed on _____. The State, as owner, agrees to sell to Purchaser, and Purchaser agrees to purchase as much of the following forest products as can be cut and removed during the term of this contract: All timber bounded by white timber sale boundary tags and the RM-ML and RM-20 roads, except forest products tagged out by blue special management tags, trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags, and cedar snags, preexisting dead and down cedar trees and cedar logs in Unit #1.

All timber bounded by white timber sale boundary tags and adjacent young stands, except forest products tagged out by blue special management tags, trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags, and cedar snags, preexisting dead and down cedar trees and cedar logs in Unit #2.

All trees as described for removal in Schedule B located in the RMZ thinning areas (beyond the blue special management tags up to the white timber sale boundary tags and RM-20) within Units #1 and #2.

Trees marked with orange paint along the RM-20 road.

The above described products, located on approximately 56 acres on part(s) of Sections 23, and 24 all in Township 40 North, Range 5 East W.M. in Whatcom County(s) as designated on the sale area and as shown on the attached timber sale map.

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

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

G-020 Inspection By Purchaser

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

G-025 Schedules

The following attached schedules are hereby incorporated by reference:

Schedule	Title
A	NW Ground-Based Equip Specifications (Rev 2/11/16)
B	Thinning Prescription

G-031 Contract Term

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

G-040 Contract Term Adjustment - No Payment

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

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

G-051 Contract Term Extension - Payment

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

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

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

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

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

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

- e. Payment of \$95.00 per acre per annum for the acres on which an operating release has not been issued in Variable Density Thinning (VDT) areas in the RMZs in Units 1 and 2. Payment of \$668.00 per acre per annum for the acres on which an operating release has not been issued in Variable Retention Harvest (VRH) areas in Units 1 and 2
- f. In no event will the extension charge be less than \$200.00.
- g. Extension payments are non-refundable.

G-053 Surveys - Sensitive, Threatened, Endangered Species

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

G-060 Exclusion of Warranties

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

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

- b. The **CONDITION** of the forest products. The forest products will be conveyed "AS IS."
- c. The **ACREAGE** contained within any sale area. Any acreage descriptions appearing in the timber notice of sale, timber sale contract, or other documents are estimates only, provided solely for administrative and identification purposes.
- d. The **VOLUME, QUALITY, OR GRADE** of the forest products. The State neither warrants nor limits the amount of timber to be harvested. The descriptions of the forest products to be conveyed are estimates only, made solely for administrative and identification purposes.
- e. The **CORRECTNESS OF ANY SOIL OR SURFACE CONDITIONS, PRE-SALE CONSTRUCTION APPRAISALS, INVESTIGATIONS, AND ALL OTHER PRE-BID DOCUMENTS PREPARED BY OR FOR THE STATE**. These documents have been prepared for the State's appraisal purposes only.
- f. **THAT THE SALE AREA IS FREE FROM THREATENED OR ENDANGERED SPECIES** or their habitat. The State is not responsible for any interference with forestry operations that result from the presence of any threatened or endangered species, or the presence of their habitat, within the sale area.
- g. **THAT THE FORESTRY OPERATIONS** to be performed under this contract **WILL BE FREE FROM REGULATORY ACTIONS** by governmental agencies. The State is not responsible for actions to enforce regulatory laws, such as the Washington Forest Practices Act (chapter 76.09 RCW), taken by the Department of Natural Resources or any other agency that may affect the operability of this timber sale.
- h. Items contained in any other documents prepared for or by the State.

G-062 Habitat Conservation Plan

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

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

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

G-063 Incidental Take Permit Notification Requirements

- a. Purchaser shall immediately notify the Contract Administrator of new locations of permit species covered by the Incidental Take Permits (ITP) that are discovered within the area covered by the State's Habitat Conservation Plan (HCP), including, but not limited to: locations of occupied murrelet habitat; spotted owl nest sites; wolves; grizzly bears; nests, communal roosts, or feeding concentrations of bald eagles; peregrine falcon nests; Columbian white-tailed deer; Aleutian Canada geese; Oregon silverspot butterflies; and additional stream reaches found to contain bull trout. Purchaser is required to notify the Contract Administrator upon discovery of any fish species found in streams or bodies of water classified as non-fish bearing. In all circumstances, notification must occur within a 24 hour time period.
- b. Upon locating any live, dead, injured, or sick specimens of any permit species covered by the ITP, Purchaser shall immediately notify the Contract Administrator. Purchaser shall notify the Contract Administrator if there is any doubt as to the identification of a discovered permit species. Purchaser may be required to take certain actions to help the Contract Administrator safeguard the well-being of any live, injured or sick specimens of any permit species discovered, until the proper disposition of such specimens can be determined by the Contract Administrator. Any such requirements will be explained to Purchaser by the Contract Administrator during the Pre-Work Conference. In all circumstances, notification must occur within a 24 hour time period.
- c. Purchaser shall refer to a specific ITP number, PRT-812521 or ITP 1168 (copies which are located in the region office) in all correspondence and reports concerning permit activities.
- d. Provisions and requirements of the ITP shall be clearly presented and explained to Purchaser by Contract Administrator during the Pre-Work Conference as per contract clause G-330. All applicable provisions of the ITP and this schedule must be presented and clearly explained by Purchaser to all

authorized officers, employees, contractors, or agents of Purchaser conducting authorized activities in the timber sale area. Any questions Purchaser may have about the ITP should be directed to the Contract Administrator.

G-064 Permits

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

G-065 Regulatory Disclaimer

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

G-066 Governmental Regulatory Actions

a. Risk

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

b. Sale Area

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

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

c. Adjustment of Price

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

removing timber. A reduction in total contract price terminates all of the Purchaser's rights to purchase and remove the timber and all other interest in the affected sale area.

G-070 Limitation on Damage

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

G-080 Scope of State Advice

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

G-091 Sale Area Adjustment

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

G-101 Forest Products Not Designated

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

Contract Item	Appraised Price	Overbid Factor	Price	Fees	Contract Payment Rate
Birch	\$175.24	0	\$0.00	\$9.00	\$9.00
Cottonwood	\$78.99	0	\$0.00	\$9.00	\$9.00
Douglas fir	\$257.74	0	\$0.00	\$9.00	\$9.00
Hemlock	\$210.87	0	\$0.00	\$9.00	\$9.00
Maple	\$161.14	0	\$0.00	\$9.00	\$9.00
Red alder	\$263.79	0	\$0.00	\$9.00	\$9.00

Red cedar	\$479.67	0	\$0.00	\$9.00	\$9.00
Spruce	\$232.97	0	\$0.00	\$9.00	\$9.00
Other	\$258.13	0	\$0.00	\$9.00	\$9.00

G-106 Adding Naturally Damaged Forest Products

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

G-111 Title and Risk of Loss

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

G-116 Sustainable Forestry Initiative® (SFI) Certification

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

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

G-120 Responsibility for Work

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

G-121 Exceptions

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

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

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

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

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

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

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

G-140 Indemnity

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

G-150 Insurance

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

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

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

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

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

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

The State of Washington, Department of Natural Resources, its elected and appointed officials, agents and employees shall be named as an additional insured 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 Sedro Woolley, Washington. The Region Manager will notify Purchaser in writing who is responsible for administering the contract. The Region Manager has sole authority to waive, modify, or amend the terms of this contract in the manner prescribed in clause G-180. No agent, employee, or representative of the State has any authority to bind the State to any affirmation, representation, or warranty concerning the forest products conveyed beyond the terms of this contract.

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

G-170 Assignment and Delegation

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

G-180 Modifications

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

G-190 Contract Complete

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

G-200 Notice

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

G-210 Violation of Contract

G-220 State Suspends Operations

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

G-210 Violation of Contract

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

G-220 State Suspends Operation

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

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

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

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

G-230 Unauthorized Activity

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

G-240 Dispute Resolution

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

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

G-250 Compliance with All Laws

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

G-260 Venue

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

G-270 Equipment Left on State Land

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

G-280 Operating Release

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

G-310 Road Use Authorization

Purchaser is authorized to use the following State roads and roads for which the State has acquired easements and road use permits; RM-ML, RM-20, RM-21, and RM-23. 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-380 Road Easement and Road Use Permit Requirements

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

Easements with:

Pope and Talbot, Incorporated; #55-000250; dated August 23, 1962.

Pope and Talbot, Incorporated; #55-000250; dated October 26, 1962.

Griffith S. and Laura Williams; #55-000250; dated January 24, 1963.

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:

DATA MISSING

Section P: Payments and Securities

P-011 Initial Deposit

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

P-020 Payment for Forest Products

Purchaser agrees to pay the total, lump sum contract price of \$42,452.25. The total contract price consists of a \$0.00 contract bid price plus \$42,452.25 in fees. Fees collected shall be retained by the state unless the contract is adjusted via the G-066 clause. Purchaser shall be liable for the entire purchase price, and will not be entitled to any refunds or offsets unless expressly stated in this contract.

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

P-045 Guarantee of Payment

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

P-050 Billing Procedure

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

P-080 Payment Account Refund

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

P-090 Performance Security

Purchaser agrees to furnish, within 30 days of the confirmation date, security acceptable to the State in the amount of \$80,000.00. The Security provided shall guarantee performance of all provisions of this contract and payment of any damages caused by operations under this contract or resulting from Purchaser's noncompliance with any rule or law. Acceptable performance security may be in the form of a performance bond, irrevocable letter of credit, cash, savings or certificate of deposit account assignments, and must name the State as the obligee or beneficiary. A letter of credit must comply with Title 62A RCW, Article 5. Performance security must remain in full force over the duration of the contract length. Surety bonds issued shall conform to the issuance and rating requirements in clause G-150. The State shall retain the performance security pursuant to RCW 79.15.100. Purchaser shall not operate unless the performance security has been accepted by the State. If at any time the State decides that the security document or amount has become unsatisfactory, Purchaser agrees to suspend operations and, within 30 days of notification, to replace the security with one acceptable to the State or to supplement the amount of the existing security.

P-100 Performance Security Reduction

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

Section H: Harvesting Operations

H-001 Operations Outside the Sale Boundaries

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

H-010 Cutting and Yarding Schedule

Falling and Yarding will not be permitted from November 1 to March 31 BY GROUND-BASED EQUIPMENT unless authorized in writing by the Contract Administrator.

H-012 Leave Tree Damage Definition

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

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

- a. A leave tree has one or more scars on its trunk exposing the cambium layer, which in total exceeds 50 square inches.
- b. A leave tree top is broken or the live crown ratio is reduced below 30 percent.
- c. A leave tree has more than 1/3 of the circumference of its root system injured such that the cambium layer is exposed.

If the Contract Administrator determines that a leave tree has been cut or damaged, the Purchaser may be required to pay liquidated damages for Excessive Leave Tree Damage as detailed in clause D-040.

H-013 Reserve Tree Damage Definition

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

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

- a. A reserve tree has one or more scars on its trunk exposing the cambium layer, which in total exceeds 200 square inches.
- b. A reserve tree top is broken or the live crown ratio is reduced below 30 percent.
- c. A reserve tree has more than 1/3 of the circumference of its root system injured such that the cambium layer is exposed.

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

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

H-017 Preventing Excessive Soil Disturbance

Operations may be suspended when soil rutting exceeds 4 inches as measured from the natural ground line. To reduce soil damage, the Contract Administrator may require water bars to be constructed, grass seed to be placed on exposed soils, or other mitigation measures. Suspended operations shall not resume unless approval to do so has been given, in writing, by the Contract Administrator.

H-035 Fall Trees Into Sale Area

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

H-051 Branding and Painting

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

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

H-080 Snags Not to be Felled

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

H-090 Designated Trees Felled

All black cottonwood in the harvest area shall be felled concurrently with the falling operation and must be yarded to a landing.

H-120 Harvesting Equipment

Forest products sold under this contract shall be felled by chainsaw and yarded by cable; felled by chainsaw or feller-buncher and yarded by cable or shovel on sustained slopes 40% or less, unless authority to use other equipment is granted in writing by the State.

H-125 Log Suspension Requirements

Lead-end suspension is required for all yarding activities.

H-130 Hauling Schedule

The hauling of forest products will not be permitted from November 1 to March 31 unless authorized in writing by the Contract Administrator .

H-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

- A. An on-site pre-work meeting shall be scheduled with the Contract Administrator, which shall include the operator and fallers, prior to commencement of any activities on site.
- B. A copy of the timber sale map and contract shall be present on site during active operations.
- C. Trees must be felled away from typed streams where possible.
- D. Exposed mineral soils created by falling or yarding operations with the potential to deliver sediment to any watercourse must be mulched, water-barred and/or grass seeded prior to October 1 or concurrent with operations between October 1 and March 31.
- E. Temporary log crossings that protect stream bank integrity are required for typed water crossings during yarding or road construction operations and must be approved in writing by the Contract Administrator. Structures shall be limited to crossing points approved in writing by the Contract Administrator. Streambeds and banks shall be protected by the use of log puncheon or other approved structures at these crossing points and removed upon the completion of yarding activities.

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

H-190 Completion of Settings

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

H-220 Protection of Residual or Adjacent Trees

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

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

Road construction and associated work provisions of the Road Plan for this sale, dated 3/1/2016 are hereby made a part of this contract.

C-050 Purchaser Road Maintenance and Repair

Purchaser shall perform work at their own expense on RM-20 and RM-21 roads. 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 RM-ML and RM-23 roads. Purchaser shall furnish a statement in a form satisfactory to the State showing the costs incurred while performing this work. Costs shall be based on the rates set forth in the State current Equipment Rate Schedule on file at the region and Olympia offices. The State shall reimburse Purchaser for said costs within 30 days of receipt and approval of the statement.

C-130 Dust Abatement

Purchaser shall abate dust on the 0+00 to 13+00 of the RM-ML Road from July 1 to September 30 during active operations..

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-130 Hazardous Materials

a. Hazardous Materials and Waste - Regulatory Compliance

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

b. Hazardous Materials Spill Prevention

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

c. Hazardous Materials Spill Containment, Control and Cleanup

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

d. Hazardous Material Release Reporting

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

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

DNR Contract Administrator

ECY - Northwest Region:

1-425-649-7000

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

ECY - Southwest Region:

1-360-407-6300

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

ECY - Central Region:

1-509-575-2490

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

ECY - Eastern Region:

1-509-329-3400

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

S-131 Refuse Disposal

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

Section D: Damages

D-013 Liquidated Damages or Failure to Perform

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

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

D-040 Leave Tree Excessive Damage

When Purchaser's operations exceed the damage limits set forth in clause H-012, Leave Tree Damage Definition, the trees damaged result in substantial injury to the State. The value of the damaged leave trees at the time of the breach is not readily ascertainable. Therefore, Purchaser agrees to pay the State as liquidated damages at the rate of \$50.00 per tree for all damaged trees in the Variable Density Thinning areas in the RMZs.

D-041 Reserve Tree Excessive Damage

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

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

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

Purchaser

Jean Fike
Northwest Region Manager

Date: _____

Date: _____

Address:

CORPORATE ACKNOWLEDGEMENT

STATE OF _____)

COUNTY OF _____)

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

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

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

Notary Public in and for the State of

My appointment expires _____

Schedule A
NW Ground-Based Equip Specifications (Rev 2/11/16)

The following types of equipment are considered ground-based equipment: feller-buncher, processor, forwarder, skidder and shovel.

SHOVEL is defined as a low ground pressure track-mounted machine with hydraulic boom and grapple capable of picking up one end of the largest log 25 feet from the center of the machine.

LOG PROCESSOR/DE-LIMBER is defined as a mobile machine with a hydraulic boom capable of simultaneously bucking, delimiting and/or debarking and chipping whole trees while sitting stationary at the landing.

FELLER-BUNCHER/HARVESTER is defined as a track mounted machine with hydraulic boom and cutter head capable of felling, bucking, limbing, and decking logs in one operation.

FORWARDER is defined as a track or rubber tire machine used for transporting logs to a landing by use of a bunk with self loading boom in which logs are carried free of the ground.

RUBBER-TIRED SKIDDER is defined as a skidder mounted on rubber tires used to drag logs to a landing. Logs are generally pulled in groups of six or less, with one end on the ground.

TRACKED SKIDDER is defined as any tracked tractor or skidder, fixed or articulated, used to drag logs to landings. Logs are generally pulled in groups of six or less, with one end on the ground.

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

FOR ALL YARDING:

Equipment will remain at least 30 feet from all water courses or areas of wet/soft soils, except as necessary to cross at approved locations. Water course crossing structures must be approved by the Contract Administrator.

Logging debris created by the operation will be removed from water courses concurrently with yarding.

WHEN SHOVEL YARDING IS AUTHORIZED:

S1. When yarding and loading operations are occurring simultaneously, an additional shovel will be required for loading to avoid extra trips to the landing.

S2. Shovel yarding will not be allowed to create ruts or soil puddling. Shovel routes should be dispersed to prevent creation of definable trails.

S3. Within shovel logged areas, to facilitate proper reforestation, logging debris will be dispersed as necessary to create clear, plantable spots at approximately a 11 foot x 11 foot spacing. Planting spots will be created concurrently with yarding.

LOG PROCESSORS will be allowed within the sale area only under one of the following conditions:

1. No tops or limbs will be allowed to accumulate on any landings, and all tops and limbs will be re-distributed into the unit, to the satisfaction of the Contract Administrator, and will provide for plantable spots every 11 feet by 11 feet.
2. Harvester must provide a written slash treatment plan, acceptable to the Contract Administrator, to address the additional slash accumulation. The Slash Treatment Plan will be a part of the Plan of Operations.

Schedule B
Thinning Prescription

RMZ 1 AND RMZ 2A (CONIFER RELEASE PRESCRIPTION):

These special management areas are beyond the blue special management boundary tags with pink ribbon, up to the white timber sale boundary tags with pink ribbon, and the RM-20 to the north. Within these areas, red alder, birch, black cottonwood and bigleaf maple are eligible for harvest. Of these listed eligible “take” species, only stems that can be felled and yarded without inflicting damage (as defined in the H-012 clause) to non-take trees may be harvested.

- No conifer may be felled unless approved in writing by the Contract Administrator.
- Any conifer felled may not be removed from the RMZ.
- Any part of a take tree inadvertently felled beyond the timber sale boundary tags must be bucked off at the tag line and that portion of the tree extending beyond the tag line must be left.
- Any tree designated for take as described above with a blue special management boundary tag on it may be harvested.

RMZ 2B (THIN FROM BELOW PRESCRIPTION):

This special management area is beyond the blue special management boundary tags with pink ribbon up to the white timber sale boundary tags with pink ribbon, and the RM-20 to the south. Within this area, western hemlock stems 16 inches dbh or less and all red-alder stems are designated for harvest (take trees).

- Any part of a take tree inadvertently felled beyond the timber sale boundary tags must be bucked off at the tag line and that portion of the tree extending beyond the tag line must be left.
- Any tree designated for take as described above with a blue special management boundary tag on it may be harvested.
- In this area, 8 of the eligible designated take trees from the largest diameter class must be felled towards the creek to serve as in-stream downed wood recruitment. These trees shall be selected in the area within 25 feet of the white “timber sale boundary” tags (25 to 50 feet from the stream channel).



WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOREST EXCISE TAX ROAD SUMMARY SHEET

Region:

Timber Sale Name:

Application Number:

EXCISE TAX APPLICABLE ACTIVITIES

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

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

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

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

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

EXCISE TAX EXEMPT ACTIVITIES

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

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

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

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

(Revised 6/13)

PRE-CRUISE NARRATIVE

Sale Name: Upper Doaks	Region: Northwest
Agreement #: 30-093613	District: Baker
Contact Forester: Ian McLelland Phone / Location: 570-404-8758	County(s): Whatcom, Choose a county
Alternate Contact: Kyle Galloway Phone / Location: 360-853-5100	Other information: Click here to enter text.

Type of Sale: Lump Sum	
Harvest System: Ground based Click here to enter text.	100%

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)		
U1	23, 24 / 40N / 05E	01	6.7		0.4			6.3	GPS (Garmin)
U2	24 / 40N / 05E	01	55.6	7.3	1.7	2.1		44.5	GPS (Garmin)
RMZ 1	24 / 40N / 05E	01	1.3					1.3	GPS (Garmin)
RMZ 2A	24 / 40N / 05E	01	1.9					1.9	GPS (Garmin)
RMZ 2B	24 / 40N / 05E	01	1.6					1.6	GPS (Garmin)
TOTAL ACRES			67.1	7.3	2.1	2.1		55.6	

HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription: (Leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
1	Harvest all timber bounded by blue special management tags, the RM-ML, and the RM-20; except for forest products bounded by yellow leave tree tags or trees marked with blue paint on the bole and root collar.	See "RMZ 1" below	65 trees have been marked for retention in 1 leave tree clump. 5 additional trees have been marked for retention throughout the unit. The total number of leave trees is 70
2	Harvest all timber bounded by blue special management tags, white timber sale tags, and plantation edge; except for forest products bounded by yellow leave tree tags or trees marked with blue paint on the bole and root collar.	See "RMZ 2A and 2B" below	381 trees have been marked for retention in 4 leave tree clumps. 36 additional trees have been marked for retention throughout the unit. The total number of leave trees is 417.
RMZ1	Harvest all timber described by the take prescription on and beyond the blue special management tag line bounded by white timber sale boundary tags. The northern border of this RMZ is the RM-20.	Take prescription: Harvest all hardwoods that can be removed without causing damage to residual conifers or timber beyond the white timber sale boundary tags.	N/A
RMZ2A	Harvest all timber described by the take prescription on and beyond the blue special management tag line bounded by white timber sale boundary tags. The northern border of this RMZ is the RM-20	Take prescription: Harvest all hardwoods that can be removed without causing damage to residual conifers or timber beyond the white timber sale boundary tags.	N/A
RMZ2B	Harvest all timber described by the take prescription on and beyond the blue special management tag line bounded by white timber sale boundary tags. The southern border of this RMZ is the RM-20	Take prescription: Harvest western hemlock stems under 16" dbh and all red alder stems.	N/A

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OTHER PRE-CRUISE INFORMATION:

Unit #	Primary,secondary Species / Estimated Volume (MBF)	Access information (Gates, locks, etc.)	Photos, traverse maps required
1	WH,DF,RC,RA,BM,BR (232 MBF)		See attached driving map and traverse maps.
2	DF,WH,RC,RA,BM,BR (1305 MBF)		See attached driving map and traverse maps.
RMZ1	RA,BM,BR (11 MBF)	Located on the Northeast edge of Unit 1	See attached driving map and traverse maps.
RMZ2A	RA,BM,BR (13 MBF)	Located on the west edge of Unit 2 south of the RM-20	See attached driving map and traverse maps.
RMZ2B	WH,RA,SF (26 MBF)	Located on the west edge of Unit 2 north of the RM-20	See attached driving map and traverse maps.
TOTAL MBF	1587 MMBF		

REMARKS:

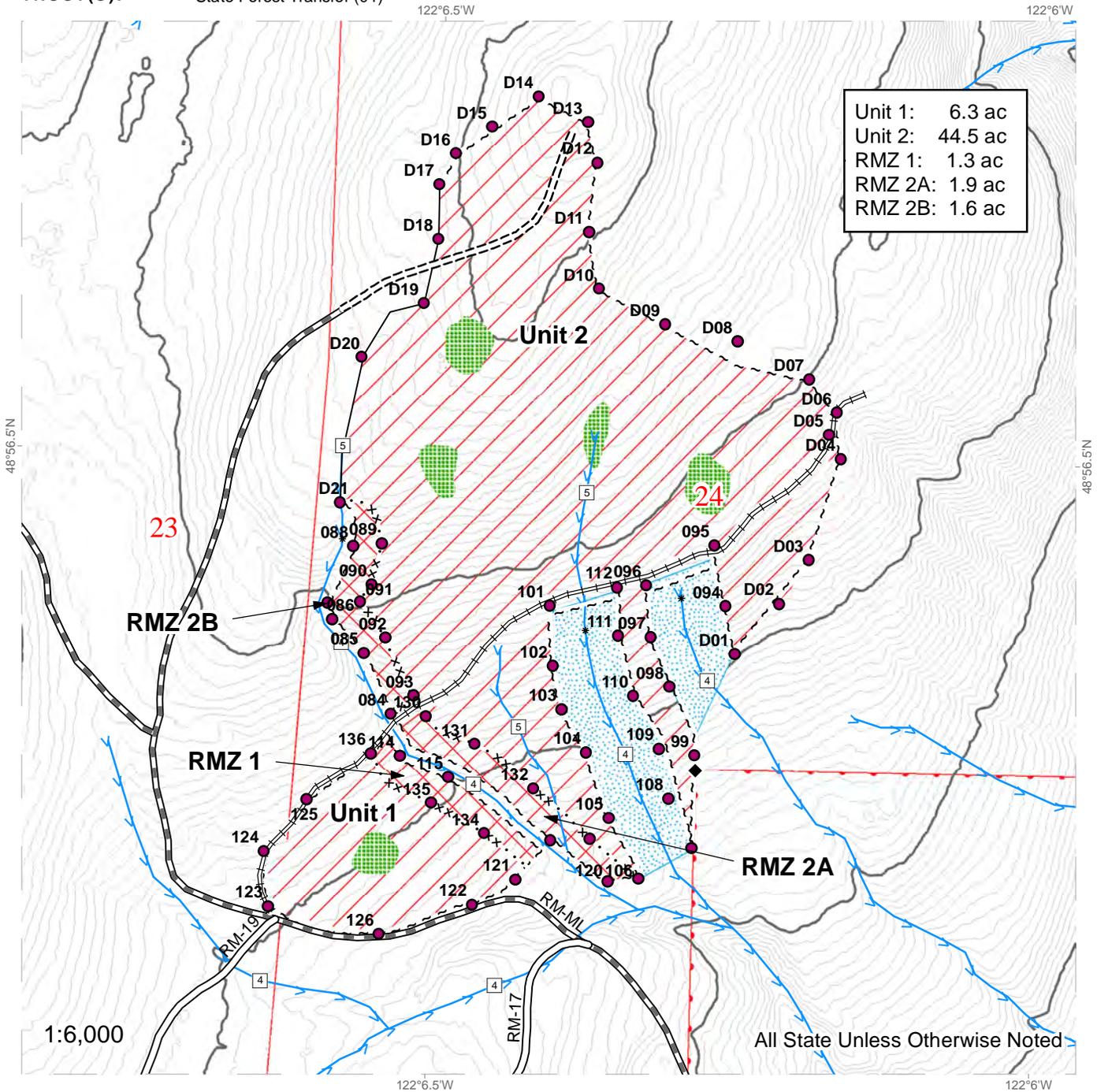
Traverse Points are marked with metal tags and blue and red flagging. Trees along the RM-20 that lie within the RMZ's and clearing limits of reconstruction have been marked for removal with yellow paint.

Prepared By: Ian McLelland Date: 3/4/2016	Title: Presale Forester	CC: Kyle Galloway
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TRAVERSE MAP

SALE NAME: UPPER DOAKS
AGREEMENT #: 30-093613
TOWNSHIP(S): T40R05E
TRUST(S): State Forest Transfer (01)

REGION: Northwest Region
COUNTY(S): WHATCOM
ELEVATION RGE: 1775-2279



~ ~ ~ Sale Boundary Tags	—> Streams
... x Special Mgmt Area	≡≡≡ Required Reconstruction
— Reprod	≡≡≡ Required Pre-Haul Maintenance
/// Variable Retention Harvest	— Existing Roads
■ Leave Tree Area	==== Required Construction
⊠ Riparian Mgt Zone	
⊞ No-Cut RMZ	



Cruise Narrative

Sale Name: Upper Doaks	Region: Northwest
Agree. #: 30-093613	District: Baker
Lead cruiser: Ian McLelland	Completion date: 3/18/16
Other cruisers on sale: Matt Llobet	

Unit acreage specifications:

Unit #	Cruised acres	Cruised acres agree with sale acres? Yes/No	If acres do not agree explain why.
1	6.3	Yes	
2	44.5	Yes	
RMZ1	1.3	Yes	
RMZ2A	1.9	Yes	
RMZ2B	1.6	Yes	
Total	55.6		

Unit cruise specifications:

Unit #	Sample type (VP, FP, ITS,100%)	Expansion factor (BAF, full/half)	Sighting height (4.5 ft, 16 ft.)	Grid size (Plot spacing or % of area)	Plot ratio (cruise:count)	Total number of plots
1	VP	54 BAF	4.5	200 x 200	Cruise All	5
2	VP	54 BAF	4.5	200 x 200	Cruise All	48
RMZ1	VP	40 BAF	4.5	Random	Cruise All	4
RMZ2A	VP	40 BAF	4.5	Random	Cruise All	4
RMZ2B	VP	40 BAF	4.5	Random	Cruise All	4

Sale/Cruise Description:

Minor species cruise intensity:	Minor species were cruised the same as major species						
Minimum cruise spec:	8 inch D.B.H. holding 5 inches at 16 feet, 10 board feet.						
Avg ring count by sp:	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">DF =</td> <td style="width: 25%; text-align: center;">8</td> <td style="width: 25%;">WH =</td> <td style="width: 25%; text-align: center;">8</td> <td style="width: 25%;">SS =</td> <td></td> </tr> </table>	DF =	8	WH =	8	SS =	
DF =	8	WH =	8	SS =			
Leave/take tree description:	Leave Tree Clumps are bound with yellow leave tree tags. Individual leave trees are bound with blue paint. RMZ units are bound with blue special management tags on the outer edge and white timber sale boundary tags on the inner edge. Refer to the Schedule B for thinning prescription within the RMZ units.						

Other conditions	
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Field observations:

The Upper Doaks T.S. is located along a spur road (RM-20) off of the Red Mountain Mainline. Access to this sale is favorable and a rock source is located < 1 mile from the sale area. Harvest methods are 100% ground based. Cutting prescriptions include 50.8 acres of variable retention harvest, 3.2 acres of conifer release thinning, and 1.6 acres of thin from below. Aspect of the sale area is predominantly southern with a max sustained slope of 35 %.

Unit 2: A stand dominated by Douglas fir and Western hemlock. Western red cedar exists in smaller pockets or as scattered large diameter individuals. South of the RM-20 larger trees are present. Average heights for fir and hemlock are 1.5 – 2 merchantable logs. Root rot is present in isolated areas. Mistletoe is present in the western portion of the stand.

Unit 1: Similar timber type to Unit 2. Trees are 10-20 feet taller. Root rot and mistletoe are less prevalent.

Grants: 01 _____

Prepared by: Ian McLelland

Title: Presales Forester / Timber Cruiser

CC:

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																			
T40N R05E S24 TyRMZ1 THRU T40N R05E S24 TyU2				Project: UPPERDOA											Page 1								
				Acres 55.60											Date 4/7/2016								
S Spp	So T	Gr rt	Ad ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre		
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf			
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99							
RA	T	D	2S	25	14.3	560	480	27						100	4	96	30	13	149	1.48	3.2		
RA	T	D	3S	37	14.4	809	693	39						100	14	86	28	10	78	0.85	8.8		
RA	T	D	4S	21	8.4	436	399	22	100					3	97	28	6	31	0.36	12.9			
RA	T	D	UT	17		307	307	17	100					54	28	18	16	5	16	0.34	18.7		
RA Totals				6	11.0	2,111	1,878	104	38	37	26			16	81	3	23	7	43	0.58	43.6		
BM	T	D	2S	30	33.8	351	233	13						67	33	16	84	27	14	146	1.91	1.6	
BM	T	D	3S	20	17.9	186	153	9						100			30	9	70	0.93	2.2		
BM	T	D	UT	50		385	385	21	52	10	19	19		15	62	11	12	26	6	47	0.69	8.2	
BM Totals				3	16.5	923	771	43	26	25	29	20		12	76	5	6	27	8	64	0.90	12.0	
CW	T	D	2S	83		482	482	27									40	14	289	1.80	1.7		
CW	T	D	4S	17		96	96	5	92	8						30	8	62	35	7	58	0.67	1.7
CW Totals				2		579	579	32	15	1	49	34			5	1	94	38	10	173	1.27	3.3	
WH	T	D	2S	26	9.1	2,622	2,383	132									39	14	290	1.87	8.2		
WH	T	D	3S	52	5.3	5,098	4,828	268	30	70						0	15	85	38	8	91	0.67	52.8
WH	T	D	4S	21	1.8	1,969	1,933	107	99	1				16	30	16	38	27	5	28	0.29	67.9	
WH	T	D	UT	1		18	18	1	100					100			1	5	1	0.20	15.6		
WH Totals				31	5.6	9,706	9,162	509	37	37	17	9		4	6	14	76	29	7	63	0.59	144.5	
WH	L	D	2S	79		279	279	16									40	14	275	1.65	1.0		
WH	L	D	3S	16		56	56	3	51	49						24	76	37	7	80	0.73	.7	
WH	L	D	4S	5		16	16	1	89	11				19		81	28	6	29	0.44	.5		
WH Totals				1	.0	351	351	19	12	8	67	13		1		4	95	36	10	156	1.13	2.3	
RC	T	D	3S	79	15.1	1,968	1,671	93	11	25	16	49			3	4	93	35	10	150	1.92	11.2	
RC	T	D	4S	21	14.7	496	423	24	97	3				13	51	11	25	25	5	25	0.51	17.0	
RC	T	D	UT		100.0	4											11	5		0.27	.4		
RC Totals				7	15.2	2,468	2,094	116	28	20	13	39		3	13	5	79	29	7	73	1.18	28.6	
RC	L	D	3S	90	6.7	160	150	8	5	8	3	84			2	6	92	34	14	308	2.98	.5	
RC	L	D	4S	10		16	16	1	100						100		21	5	20	0.24	.8		
RC Totals				1	6.1	176	165	9	14	7	3	76			12	5	83	26	8	130	1.62	1.3	
DF	T	D	2S	40	1.8	5,560	5,459	304									40	14	275	1.77	19.9		
DF	T	D	3S	46	.9	6,276	6,219	346	22	78						1	5	94	39	8	104	0.76	59.9
DF	T	D	4S	11		1,450	1,450	81	99	1				9	30	20	40	29	5	31	0.31	47.0	
DF	T	D	UT			61	61	3	100					19	81			11	5	13	0.30	4.9	
DF	T	H	2S	3		295	295	16									40	12	212	1.39	1.4		
DF Totals				46	1.2	13,642	13,485	750	21	36	35	8		1	4	5	90	35	8	101	0.80	133.1	
DF	L	D	2S	73		254	254	14									40	17	485	2.53	.5		
DF	L	D	3S	22		73	73	4								12	88	38	10	133	0.87	.6	
DF	L	D	4S	5		17	17	1	83	17				30	70		24	6	31	0.36	.5		
DF Totals				1		344	344	19	4	22	15	59		1	6	93	34	11	214	1.38	1.6		

T40N R05E S24 TRMZ1										T40N R05E S24 TRMZ1			
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt				
40N	05E	24	UPPERDOA	RMZ1	1.30	4	9	S	W				

S Spp	So T	Gr rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
									Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf	
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99					
RA	T	DM	2S	13		858	858	1	100				100				30	12	150	1.28	5.7
RA	T	DM	3S	45	6.4	3,167	2,964	4	100				100				30	9	78	0.73	38.1
RA	T	DM	4S	25	15.1	1,853	1,574	2	100				100				30	6	36	0.36	44.3
RA	T	DM	UT	17		1,098	1,098	1	100				84	16			14	5	15	0.29	71.9
RA	T	Totals		79	6.9	6,977	6,494	8	41	46	13		14	86			23	7	41	0.50	160.0
BM	T	DM	2S	84	40.0	807	484	1	100				100				30	17	210	2.93	2.3
BM	T	DM	UT	16		92	92	0	100				100				16	9	40	1.01	2.3
BM	T	Totals		7	35.9	899	576	1	16		84		16	84			23	13	125	2.26	4.6
CW	T	DM	2S	85		970	970	1	100				100				40	13	240	1.66	4.0
CW	T	DM	4S	15		162	162	0	100				100				30	6	40	0.56	4.0
CW	T	Totals		14		1,132	1,132	1	14	86			14		86		35	10	140	1.19	8.1
Type	Totals				8.9	9,007	8,202	11	35	37	22	6	12	76	12	23	7	48	0.60	172.7	

T40N R05E S24 TRMZ2										T40N R05E S24 TRMZ2				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
40N	05E	24	UPPERDOA	RMZ2	1.90	4	8	S	W					

S Spp	So T	Gr rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
									Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf	
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99					
RA	T	DM	3S	67	12.2	3,124	2,744	5	100				100				30	10	86	0.86	32.0
RA	T	DM	4S	15		585	585	1	100				100				30	5	30	0.29	19.5
RA	T	DM	UT	18		717	717	1	100				29	71			13	5	14	0.33	51.5
RA T Totals				58	8.6	4,426	4,045	8	32	68			5	95			22	6	39	0.54	103.0
BM	T	DM	2S	41	20.0	795	636	1	100				100				30	12	120	1.27	5.3
BM	T	DM	3S	41	7.7	689	636	1	100				100				30	11	120	1.20	5.3
BM	T	DM	UT	18	.0	265	265	1	100				40	60			19	6	25	0.46	10.6
BM T Totals				22	12.1	1,749	1,537	3	17	41	41		7	93			24	9	72	0.94	21.2
CW	T	DM	2S	85		1,229	1,229	2	100				100				40	17	460	2.63	2.7
CW	T	DM	4S	15		214	214	0	100				100				35	8	80	0.96	2.7
CW T Totals				21		1,442	1,442	3	15				85				38	13	270	1.85	5.3
Type Totals					7.8	7,617	7,025	13	22	51	9	17	4	75	3	17	23	7	54	0.70	129.6

T40N R05E S24 TRMZ3										T40N R05E S24 TRMZ3				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
40N	05E	24	UPPERDOA	RMZ3	1.60	4	37	S	W					

S Spp	So T	Gr rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre	
									Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft		CF/ Lf
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99					
WH	L	DM	2S	79	9,699	9,699	16		84	16				100	40	14	275	1.65	35.3		
WH	L	DM	3S	16	1,929	1,929	3	51	49				24	76	37	7	80	0.73	24.0		
WH	L	DM	4S	5	559	559	1	89	11			19		81	28	6	29	0.44	19.0		
WH	L	Totals		26	.0	12,186	12,186	19	12	8	67	13	1	4	95	36	10	156	1.13	78.3	
WH	T	DM	3S	55	5,594	5,594	9	60	40					100	40	7	79	0.54	71.1		
WH	T	DM	4S	45	4,480	4,480	7	100				14	8	61	17	28	5	32	0.27	138.9	
WH	T	DM	UT												6			0.00	13.6		
WH	T	Totals		22	10,074	10,074	16	78	22			6	3	27	63	30	6	45	0.38	223.6	
RA	T	DM	2S	50	6.3	3,270	3,065	5		100		23	77		27	13	145	1.37	21.2		
RA	T	DM	3S	32	15.0	2,309	1,961	3		100			100		30	10	93	0.97	21.0		
RA	T	DM	UT	18		1,063	1,063	2	100			20	65	16	23	5	25	0.44	42.2		
RA	T	Totals		13	8.3	6,641	6,089	10	17	32	50	15	82	3	26	8	72	0.84	84.4		
RC	L	DM	3S	90	6.7	5,570	5,199	8	5	8	3	84		2	6	92	34	14	308	2.98	16.9
RC	L	DM	4S	10		545	545	1	100					100			21	5	20	0.24	27.3
RC	L	Totals		12	6.1	6,116	5,744	9	14	7	3	76		12	5	83	26	8	130	1.62	44.1
DF	L	DM	2S	73		8,840	8,840	14		21	79			100	40	17	485	2.53	18.2		
DF	L	DM	3S	22		2,543	2,543	4		100				12	88	38	10	133	0.87	19.1	
DF	L	DM	4S	5		576	576	1	83	17		30	70		24	6	31	0.36	18.5		
DF	L	Totals		26		11,959	11,959	19	4	22	15	59	1	6	93	34	11	214	1.38	55.8	
Type	Totals				2.0	46,975	46,052	74	25	18	29	28	4	15	8	73	31	8	95	0.82	486.2

T40N R05E S24 TU1 **T40N R05E S24 TU1**
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt
 40N 05E 24 UPPERDOA U1 6.30 5 27 S W

S Spp	So T	Gr rt	%	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre		
				Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft		CF/ Lf	
								5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99						
WH	T	DM	2S	62	9.3	13,079	11,865	75		45	55					100	40	16	365	2.11	32.5
WH	T	DM	3S	33		6,137	6,137	39	44	56						100	40	8	98	0.71	62.7
WH	T	DM	4S	5		849	849	5	89	11			63		37	18	6	20	0.32	42.8	
WH	T	Totals		51	6.0	20,065	18,851	119	18	19	28	35	3		97	33	9	137	1.05	138.0	
RC	T	DM	3S	64	20.6	2,224	1,767	11	8	25	34	33		8	92	35	11	138	1.99	12.8	
RC	T	DM	4S	36		989	989	6	94	6			11	41	48	29	5	34	0.58	29.3	
RC	T	Totals		7	14.2	3,214	2,757	17	39	18	22	21	4	5	15	76	31	7	65	1.06	42.2
CW	T	DM	2S	83		3,686	3,686	23		62	38				100	40	14	281	1.76	13.1	
CW	T	DM	4S	17		752	752	5	100				29		71	35	7	57	0.66	13.1	
CW	T	Totals		12		4,438	4,438	28	17	52	31		5		95	38	10	169	1.24	26.2	
RA	T	DM	2S	87	3.2	1,752	1,697	11		100				100		30	12	145	1.32	11.7	
RA	T	DM	4S	7		123	123	1	100				100			20	6	20	0.50	6.2	
RA	T	DM	UT	6		111	111	1	100				100			20	6	20	0.49	5.5	
RA	T	Totals		5	2.8	1,986	1,931	12	12	88			12	88		25	9	83	0.99	23.4	
BR	T	DM	2S	42	20.0	924	739	5		100				100		30	12	120	1.27	6.2	
BR	T	DM	3S	31	25.0	709	532	3		100			100			20	11	60	0.95	8.9	
BR	T	DM	UT	27		451	451	3	100				100			27	5	30	0.43	15.0	
BR	T	Totals		5	17.4	2,083	1,721	11	26	31	43		31	69		25	8	57	0.75	30.0	
DF	T	DM	2S	94		4,346	4,346	27		12	88			100		40	18	579	3.03	7.5	
DF	T	DM	3S	4		154	154	1		100			100			23	11	100	1.12	1.5	
DF	T	DM	4S	2		89	89	1		100			100			18	9	40	0.68	2.2	
DF	T	Totals		12		4,589	4,589	29	5	12	83		2	3	95	33	15	407	2.60	11.3	
SS	T	DM	2S	85		1,527	1,527	10		100				100		40	19	600	3.28	2.5	
SS	T	DM	3S	15	16.7	305	254	2		100				100		40	9	100	1.20	2.5	
SS	T	Totals		5	2.8	1,832	1,781	11	14	86				100		40	14	350	2.24	5.1	
BM	T	DM	3S	75	14.3	621	532	3		100				100		30	9	60	0.83	8.9	
BM	T	DM	UT	25		177	177	1	100				100			19	5	20	0.29	8.9	
BM	T	Totals		2	11.1	798	709	4	25	75			25	75		25	7	40	0.62	17.7	
Type Totals					5.7	39,005	36,777	232	17	15	30	38	5	11	1	84	31	9	125	1.11	293.9

T40N R05E S24 TU2 **T40N R05E S24 TU2**
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt
 40N 05E 24 UPPERDOA U2 44.50 48 239 S W

Spp	S	So	Gr	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre		
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft		CF/ Lf	
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99						
DF	T	DM	2S	38	2.0	6,331	6,206	276			87	13			1	99	40	13	261	1.71	23.8	
DF	T	DM	3S	48	.9	7,820	7,749	345	22	78				1	5	94	39	8	104	0.76	74.6	
DF	T	DM	4S	11		1,800	1,800	80	100	0				9	31	20	41	29	5	31	0.31	58.4
DF	T	DM	UT			77	77	3	100					19	81			11	5	13	0.30	6.1
DF	T	H	2S	3		368	368	16			100					100	40	12	212	1.39	1.7	
DF	T	Totals		55	1.2	16,396	16,199	721	22	37	35	5	1	4	5	90	35	8	98	0.79	164.7	
WH	T	DM	2S	15	8.9	1,424	1,297	58			89	11			22	78	37	13	230	1.67	5.7	
WH	T	DM	3S	59	6.4	5,299	4,962	221	26	74				0	18	81	38	8	91	0.67	54.5	
WH	T	DM	4S	25	2.0	2,178	2,134	95	100					14	33	13	40	28	5	29	0.29	73.8
WH	T	DM	UT	1		23	23	1	100					100			1	5	1	0.20	19.0	
WH	T	Totals		29	5.7	8,924	8,416	375	41	44	14	2	4	9	18	70	28	6	55	0.54	153.0	
RC	T	DM	3S	82	14.3	2,144	1,837	82	11	25	13	51		3	4	93	35	10	151	1.90	12.1	
RC	T	DM	4S	18	19.0	480	389	17	98	2				14	70	17	24	5	23	0.49	17.1	
RC	T	DM	UT		100.0	5											11	5		0.27	.5	
RC	T	Totals		8	15.3	2,629	2,226	99	26	21	11	42	2	14	4	80	28	7	75	1.21	29.7	
RA	T	DM	2S	15	27.4	309	224	10			100				100		30	14	157	1.73	1.4	
RA	T	DM	3S	39	15.7	701	591	26		100				21	79		27	10	76	0.86	7.8	
RA	T	DM	4S	28	8.4	448	411	18	100						100		29	5	31	0.36	13.1	
RA	T	DM	UT	18		266	266	12	100					56	21	23	15	5	16	0.32	16.8	
RA	T	Totals		5	13.5	1,725	1,492	66	45	40	15		18	78	4		23	6	38	0.53	39.1	
BM	T	DM	2S	32	34.6	382	250	11			67	33		19	81		27	15	147	1.96	1.7	
BM	T	DM	3S	11	23.2	115	89	4		100					100		30	10	72	0.97	1.2	
BM	T	DM	UT	57		442	442	20	49	10	20	21		9	66	12	14	27	6	52	0.74	8.5
BM	T	Totals		3	16.9	939	780	35	28	17	33	22	11	75	7	8	27	8	68	0.94	11.4	
BR	T	DM	3S	41		86	86	4	100						100		30	7	50	0.47	1.7	
BR	T	DM	4S	30		62	62	3	100						100		30	5	30	0.30	2.1	
BR	T	DM	UT	29		60	60	3	100					29		71	21	5	21	0.46	2.8	
BR	T	Totals		1		208	208	9	100				8	71	20		26	6	32	0.40	6.6	
Type Totals					4.9	30,820	29,322	1,305	30	37	26	7	3	12	9	76	30	7	72	0.71	404.5	

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

T40N R05E S24 TyRMZ	1.3
T40N R05E S24 TyRMZ	1.9
T40N R05E S24 TyU2	44.5

Project UPPERDOA
Acres 55.60

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Species	s T	Total	Total	Total	Net Cubic Ft/		CF/	Total CCF		Total MBF	
		Trees	Logs	Tons	Tree	Log	LF	Gross	Net	Gross	Net
DOUG FIR	T	3,724	7,399	5,875	55.36	27.86	0.80	2,062	2,061	759	750
WHEMLOCK	T	4,233	8,035	4,429	32.72	17.24	0.62	1,384	1,385	540	509
WR CEDAR	T	1,177	1,589	1,263	45.67	33.80	1.22	537	537	137	116
R ALDER	T	1,352	2,426	888	24.01	13.38	0.59	323	324	117	104
BL MAPLE	T	460	665	424	34.78	24.03	0.91	160	160	51	43
COTWOOD	T	93	186	218	95.58	47.79	1.26	89	89	32	32
BIRCH	T	311	482	183	21.54	13.89	0.54	67	67	22	20
WHEMLOCK	L	57	125	164	90.78	40.96	1.11	51	51	19	19
DOUG FIR	L	35	89	120	122.33	47.33	1.39	42	42	19	19
S SPRUCE	T	16	32	75	179.12	89.56	2.24	29	29	12	11
WR CEDAR	L	57	71	70	52.46	42.44	1.63	30	30	10	9
Totals		11,512	21,100	13,709	41.49	22.64	0.76	4,773	4,776	1,719	1,634

Wood Type Species	Total	Total	Total	Net Cubic Ft/		CF/	Total CCF		Total MBF	
	Trees	Logs	Tons	Tree	Log	LF	Gross	Net	Gross	Net
C	9,297	17,341	11,997	44.48	23.85	0.77	4,135	4,136	1,495	1,435
H	2,215	3,759	1,712	28.90	17.03	0.70	638	640	223	200
Totals	11,512	21,100	13,709	41.49	22.64	0.76	4,773	4,776	1,719	1,634

TC PSTATS		PROJECT STATISTICS							PAGE	1	
		PROJECT UPPERDOA							DATE	4/7/2016	
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt	
40N	05E	24	UPPERDOA	RMZ1	THR	55.60	65	320	S	W	
40N	05E	24	UPPERDOA	U2							
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL			65	320	4.9						
CRUISE			65	320	4.9	11,512	2.8				
DBH COUNT											
REFOREST											
COUNT											
BLANKS											
100 %											
STAND SUMMARY											
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC	
WHEMLOCK-L	8	1.0	20.4	82	0.5	2.3	351	351	92	92	
WHEMLOCK-T	87	76.1	13.6	64	20.7	76.3	9,706	9,162	2,489	2,491	
R ALDER-T	38	24.3	13.2	49	6.4	23.2	2,111	1,878	581	584	
DOUG FIR-L	6	.6	22.6	93	0.4	1.7	344	344	76	76	
DOUG FIR-T	112	67.0	16.7	76	25.0	102.2	13,642	13,485	3,708	3,707	
WR CEDAR-L	6	1.0	17.6	44	0.4	1.7	176	165	54	54	
WR CEDAR-T	37	21.2	17.5	45	8.4	35.2	2,468	2,094	966	966	
BL MAPLE-T	15	8.3	16.4	44	3.0	12.1	923	771	287	288	
COTWOOD-T	5	1.7	21.7	76	0.9	4.3	579	579	160	160	
BIRCH-T	5	5.6	13.0	46	1.4	5.2	402	361	120	120	
S SPRUCE-T	1	.3	28.0	82	0.2	1.2	208	202	52	52	
TOTAL	320	207.1	15.3	63	67.8	265.6	30,910	29,392	8,585	8,590	
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL	68.1	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK-L		42.4	16.0	310	369	428					
WHEMLOCK-T		108.9	11.7	157	177	198					
R ALDER-T		52.2	8.5	100	109	118					
DOUG FIR-L		64.7	28.8	601	845	1,089					
DOUG FIR-T		75.3	7.1	259	278	298					
WR CEDAR-L		66.7	29.7	421	598	776					
WR CEDAR-T		113.9	18.7	214	263	313					
BL MAPLE-T		71.5	19.1	127	157	187					
COTWOOD-T		33.4	16.6	315	378	441					
BIRCH-T		65.2	32.4	50	74	98					
S SPRUCE-T											
TOTAL		100.8	5.6	228	242	256	406	207	101		
CL	68.1	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK-L		465.8	57.7	0	1	2					
WHEMLOCK-T		164.5	20.4	61	76	92					
R ALDER-T		156.7	19.4	20	24	29					
DOUG FIR-L		550.7	68.2	0	1	1					
DOUG FIR-T		148.9	18.5	55	67	79					
WR CEDAR-L		630.0	78.1	0	1	2					
WR CEDAR-T		225.1	27.9	15	21	27					
BL MAPLE-T		271.2	33.6	5	8	11					
COTWOOD-T		539.1	66.8	1	2	3					
BIRCH-T		367.5	45.5	3	6	8					
S SPRUCE-T		806.2	99.9	0	0	1					
TOTAL		60.5	7.5	192	207	223	146	75	37		

PROJECT STATISTICS
PROJECT UPPERDOA

TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
40N	05E	24	UPPERDOA	RMZ1	THR	55.60	65	320	S	W
40N	05E	24	UPPERDOA	U2						

CL	68.1	COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
WHEMLOCK-L		465.6	57.7	1	2	4			
WHEMLOCK-T		145.2	18.0	63	76	90			
R ALDER-T		147.8	18.3	19	23	28			
DOUG FIR-L		496.6	61.5	1	2	3			
DOUG FIR-T		128.5	15.9	86	102	119			
WR CEDAR-L		565.6	70.1	1	2	3			
WR CEDAR-T		211.3	26.2	26	35	44			
BL MAPLE-T		196.4	24.3	9	12	15			
COTWOOD-T		520.3	64.5	2	4	7			
BIRCH-T		353.6	43.8	3	5	7			
S SPRUCE-T		806.2	99.9	0	1	2			
TOTAL		<i>50.0</i>	<i>6.2</i>	<i>249</i>	<i>266</i>	<i>282</i>	<i>100</i>	<i>51</i>	<i>25</i>

CL	68.1	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
WHEMLOCK-L		444.6	55.1	157	351	544			
WHEMLOCK-T		152.7	18.9	7,428	9,162	10,896			
R ALDER-T		158.0	19.6	1,511	1,878	2,246			
DOUG FIR-L		484.9	60.1	137	344	551			
DOUG FIR-T		129.4	16.0	11,322	13,485	15,649			
WR CEDAR-L		625.6	77.5	37	165	293			
WR CEDAR-T		210.0	26.0	1,549	2,094	2,639			
BL MAPLE-T		207.1	25.7	573	771	969			
COTWOOD-T		522.2	64.7	204	579	953			
BIRCH-T		373.3	46.3	194	361	529			
S SPRUCE-T		806.2	99.9	0	202	403			
TOTAL		<i>57.1</i>	<i>7.1</i>	<i>27,311</i>	<i>29,392</i>	<i>31,473</i>	<i>130</i>	<i>67</i>	<i>33</i>

TC TSTATS		STATISTICS							PAGE	1
		PROJECT UPPERDOA					DATE	4/7/2016		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
40N	05E	24	UPPERDOA	RMZ1	1.30	4	9	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		4	9	2.3						
CRUISE		4	9	2.3	112	8.0				
DBH COUNT										
REFOREST COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
R ALDER-T	7	80.0	12.7	53	19.7	70.0	6,977	6,494	1,800	1,804
BL MAPLE-T	1	2.3	28.2	48	1.9	10.0	899	576	240	240
COTWOOD-T	1	4.0	21.3	70	2.2	10.0	1,132	1,132	337	337
TOTAL	9	86.3	13.8	54	24.2	90.0	9,007	8,202	2,377	2,381
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF					# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
R ALDER-T	49.8	20.3	79	99	119					
BL MAPLE-T										
COTWOOD-T										
TOTAL	62.8	22.2	105	136	166	177	90	44		
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
R ALDER-T	55.7	31.8	55	80	105					
BL MAPLE-T	200.0	114.3		2	5					
COTWOOD-T	200.0	114.3		4	9					
TOTAL	54.6	31.2	59	86	113	156	79	39		
CL: 68.1 %	COEFF	BASAL AREA/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
R ALDER-T	28.6	16.3	59	70	81					
BL MAPLE-T	200.0	114.3		10	21					
COTWOOD-T	200.0	114.3		10	21					
TOTAL	22.2	12.7	79	90	101	26	13	6		
CL: 68.1 %	COEFF	NET BF/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
R ALDER-T	29.8	17.0	5,389	6,494	7,599					
BL MAPLE-T	200.0	114.3		576	1,235					
COTWOOD-T	200.0	114.3		1,132	2,425					
TOTAL	20.5	11.7	7,243	8,202	9,161	22	11	5		

TC TSTATS		STATISTICS						PAGE	1	
		PROJECT UPPERDOA						DATE	4/7/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
40N	05E	24	UPPERDOA	RMZ2	1.90	4	8	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		4	8	2.0						
CRUISE		4	8	2.0	123	6.5				
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
R ALDER-T	5	51.5	13.3	50	13.7	50.0	4,426	4,045	1,207	1,214
BL MAPLE-T	2	10.6	18.6	51	4.6	20.0	1,749	1,537	487	483
COTWOOD-T	1	2.7	26.2	77	2.0	10.0	1,442	1,442	371	371
TOTAL	8	64.8	15.0	51	20.6	80.0	7,617	7,025	2,065	2,068
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
R ALDER-T		46.4	23.0	74	96	118				
BL MAPLE-T		4.9	4.6	138	145	152				
COTWOOD-T										
TOTAL		96.1	36.2	104	164	223	420	214	105	
CL:	68.1 %	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
R ALDER-T		86.7	49.5	26	52	77				
BL MAPLE-T		115.5	66.0	4	11	18				
COTWOOD-T		200.0	114.3		3	6				
TOTAL		54.4	31.1	45	65	85	155	79	39	
CL:	68.1 %	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
R ALDER-T		76.6	43.8	28	50	72				
BL MAPLE-T		115.5	66.0	7	20	33				
COTWOOD-T		200.0	114.3		10	21				
TOTAL		40.8	23.3	61	80	99	87	44	22	
CL:	68.1 %	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
R ALDER-T		73.3	41.9	2,352	4,045	5,739				
BL MAPLE-T		115.6	66.1	522	1,537	2,552				
COTWOOD-T		200.0	114.3		1,442	3,090				
TOTAL		57.4	32.8	4,720	7,025	9,330	172	88	43	

TC TSTATS		STATISTICS						PAGE	1	
		PROJECT UPPERDOA						DATE	4/7/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
40N	05E	24	UPPERDOA	RMZ3	1.60	4	37	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		4	37	9.3						
CRUISE		4	37	9.3	460	8.0				
DBH COUNT										
REFOREST COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
WHEMLOCK-L	8	35.3	20.4	82	17.7	80.0	12,186	12,186	3,206	3,206
WHEMLOCK-T	10	152.5	11.0	54	30.2	100.0	10,074	10,074	2,575	2,575
R ALDER-T	7	42.2	17.4	53	16.8	70.0	6,641	6,089	1,835	1,831
WR CEDAR-L	6	35.7	17.6	44	14.3	60.0	6,116	5,744	1,874	1,873
DOUG FIR-L	6	21.6	22.6	93	12.6	60.0	11,959	11,959	2,642	2,642
TOTAL	37	287.3	15.4	59	94.4	370.0	46,975	46,052	12,132	12,127
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK-L	42.4	16.0		310	369	428				
WHEMLOCK-T	59.1	19.7		62	77	92				
R ALDER-T	23.8	9.7		134	149	163				
WR CEDAR-L	66.7	29.7		421	598	776				
DOUG FIR-L	64.7	28.8		601	845	1,089				
TOTAL	106.3	17.5		299	363	426	452	230	113	
CL:	68.1 %	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK-L	70.8	40.5		21	35	50				
WHEMLOCK-T	69.9	39.9		92	152	213				
R ALDER-T	35.8	20.5		34	42	51				
WR CEDAR-L	139.8	79.9		7	36	64				
DOUG FIR-L	109.5	62.5		8	22	35				
TOTAL	45.8	26.2		212	287	362	110	56	27	
CL:	68.1 %	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK-L	70.7	40.4		48	80	112				
WHEMLOCK-T	69.3	39.6		60	100	140				
R ALDER-T	28.6	16.3		59	70	81				
WR CEDAR-L	115.5	66.0		20	60	100				
DOUG FIR-L	86.1	49.2		30	60	90				
TOTAL	16.2	9.3		336	370	404	14	7	3	
CL:	68.1 %	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK-L	58.8	33.6		8,093	12,186	16,279				
WHEMLOCK-T	72.6	41.5		5,895	10,074	14,253				
R ALDER-T	30.8	17.6		5,017	6,089	7,161				
WR CEDAR-L	138.2	79.0		1,208	5,744	10,281				
DOUG FIR-L	80.5	46.0		6,456	11,959	17,461				
TOTAL	18.6	10.6		41,160	46,052	50,945	18	9	5	

TC TSTATS				STATISTICS				PAGE 1		
PROJECT UPPERDOA				DATE 4/7/2016						
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
40N	05E	24	UPPERDOA	U1	6.30	5	27	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		5	27	5.4						
CRUISE		5	27	5.4	954		2.8			
DBH COUNT										
REFOREST COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
WHEMLOCK-T	11	64.4	18.5	76	27.9	119.7	20,065	18,851	4,771	4,771
WR CEDAR-T	5	32.1	17.6	45	13.0	54.4	3,214	2,757	1,389	1,388
COTWOOD-T	3	13.1	21.4	77	7.1	32.6	4,438	4,438	1,228	1,228
R ALDER-T	2	11.7	18.5	54	5.1	21.8	1,986	1,931	579	580
BIRCH-T	2	15.0	16.3	53	5.4	21.8	2,083	1,721	574	573
DOUG FIR-T	2	3.8	32.6	103	3.8	21.8	4,589	4,589	978	978
S SPRUCE-T	1	2.5	28.0	82	2.1	10.9	1,832	1,781	456	456
BL MAPLE-T	1	8.9	15.0	52	2.8	10.9	798	709	271	270
TOTAL	27	151.4	18.9	65	67.6	293.8	39,005	36,777	10,246	10,244
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK-T		74.8	23.6	340	445	551				
WR CEDAR-T		90.6	45.0	87	158	229				
COTWOOD-T		32.3	22.3	277	357	436				
R ALDER-T		4.3	4.0	158	165	172				
BIRCH-T		35.4	33.1	80	120	160				
DOUG FIR-T		32.7	30.6	884	1,275	1,666				
S SPRUCE-T										
BL MAPLE-T										
TOTAL		95.6	18.7	321	395	469	380	194	95	
CL:	68.1 %	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK-T		100.1	49.7	32	64	96				
WR CEDAR-T		77.5	38.5	20	32	44				
COTWOOD-T		151.8	75.5	3	13	23				
R ALDER-T		223.6	111.1		12	25				
BIRCH-T		140.6	69.9	5	15	26				
DOUG FIR-T		223.6	111.1		4	8				
S SPRUCE-T		223.6	111.1		3	5				
BL MAPLE-T		223.6	111.1		9	19				
TOTAL		28.0	13.9	130	151	173	39	20	10	
CL:	68.1 %	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK-T		98.5	49.0	61	120	178				
WR CEDAR-T		70.7	35.1	35	54	74				
COTWOOD-T		149.1	74.1	8	33	57				
R ALDER-T		223.6	111.1		22	46				
BIRCH-T		136.9	68.0	7	22	37				
DOUG FIR-T		223.6	111.1		22	46				
S SPRUCE-T		223.6	111.1		11	23				
BL MAPLE-T		223.6	111.1		11	23				
TOTAL		16.6	8.2	270	294	318	14	7	3	

TC TSTATS				STATISTICS			PAGE	2		
				PROJECT	UPPERDOA		DATE	4/7/2016		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
40N	05E	24	UPPERDOA	U1	6.30	5	27	S	W	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK-T		94.9	47.2	9,963	18,851	27,740				
WR CEDAR-T		76.5	38.0	1,709	2,757	3,804				
COTWOOD-T		148.9	74.0	1,153	4,438	7,722				
R ALDER-T		223.6	111.1		1,931	4,076				
BIRCH-T		137.5	68.3	545	1,721	2,898				
DOUG FIR-T		223.6	111.1		4,589	9,687				
S SPRUCE-T		223.6	111.1		1,781	3,760				
BL MAPLE-T		223.6	111.1		709	1,497				
TOTAL		<i>19.6</i>	<i>9.7</i>	<i>33,195</i>	<i>36,777</i>	<i>40,359</i>	<i>19</i>	<i>10</i>	<i>5</i>	

TC TSTATS		STATISTICS							PAGE	1	
		PROJECT UPPERDOA							DATE	4/7/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
40N	05E	24	UPPERDOA	U2	44.50	48	239	S	W		
				TREES	ESTIMATED	PERCENT					
				PER PLOT	TOTAL	SAMPLE					
		PLOTS	TREES	PER PLOT	TREES	TREES					
TOTAL		48	239	5.0							
CRUISE		48	239	5.0	9,863	2.4					
DBH COUNT											
REFOREST											
COUNT											
BLANKS											
100 %											
STAND SUMMARY											
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET	
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC	
DOUG FIR-T	110	83.1	16.6	76	30.6	124.7	16,396	16,199	4,494	4,494	
WHEMLOCK-T	66	80.5	13.1	64	20.7	74.8	8,924	8,416	2,342	2,344	
WR CEDAR-T	32	21.9	17.4	45	8.7	36.3	2,629	2,226	1,011	1,011	
R ALDER-T	17	22.7	12.5	48	5.5	19.3	1,725	1,492	474	477	
BL MAPLE-T	11	8.6	16.3	42	3.1	12.5	939	780	293	293	
BIRCH-T	3	4.9	11.3	43	1.0	3.4	208	208	68	69	
TOTAL	239	221.7	15.0	64	70.0	270.9	30,820	29,322	8,682	8,688	
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR-T	60.3	5.7		245	260	275					
WHEMLOCK-T	89.2	11.0		132	148	164					
WR CEDAR-T	112.9	19.9		224	280	335					
R ALDER-T	68.7	17.2		78	95	111					
BL MAPLE-T	80.6	25.5		117	157	197					
BIRCH-T	35.3	24.4		33	43	54					
TOTAL	87.1	5.6		201	213	225	303	155	76		
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR-T	118.7	17.1		69	83	97					
WHEMLOCK-T	159.1	23.0		62	81	99					
WR CEDAR-T	222.3	32.1		15	22	29					
R ALDER-T	171.6	24.7		17	23	28					
BL MAPLE-T	263.0	37.9		5	9	12					
BIRCH-T	405.3	58.4		2	5	8					
TOTAL	49.4	7.1		206	222	237	98	50	24		
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR-T	101.4	14.6		106	125	143					
WHEMLOCK-T	134.7	19.4		60	75	89					
WR CEDAR-T	208.3	30.0		25	36	47					
R ALDER-T	159.4	23.0		15	19	24					
BL MAPLE-T	185.3	26.7		9	12	16					
BIRCH-T	391.4	56.4		1	3	5					
TOTAL	34.5	5.0		257	271	284	48	24	12		
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR-T	103.0	14.9		13,792	16,199	18,607					
WHEMLOCK-T	136.0	19.6		6,766	8,416	10,067					
WR CEDAR-T	202.5	29.2		1,576	2,226	2,876					
R ALDER-T	175.0	25.2		1,116	1,492	1,869					
BL MAPLE-T	199.3	28.7		556	780	1,005					

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT		UPPERDOA		DATE	4/7/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
40N	05E	24	UPPERDOA	U2	44.50	48	239	S	W	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E. %	LOW	AVG	HIGH	5	7	10	
BIRCH-T		418.2	60.3	82	208	333				
TOTAL		42.5	6.1	27,524	29,322	31,120	72	37	18	



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

FPA/N No: 2815208

Effective Date: 7/21/2016

Expiration Date: 7/21/2019

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

Shut Down Zone: 656

EARR Tax Credit: Eligible Non-eligible

Reference: **Upper Doaks**

DECISION:

- NOTIFICATION Operations shall not begin before the effective date.
- APPROVED This Forest Practices Application is subject to the conditions listed below.
- DISAPPROVED This Forest Practices Application is disapproved for the reasons listed below.
- CLOSED Applicant has withdrawn FPA/N.

FPA/N CLASSIFICATION

Class II Class III Class IVG Class IVS

Number of Years Granted on Multi-Year Request

4yrs 5 yrs

Conditions on Approval / Reasons for Disapproval

Issued By: Megan Penney *MP*

Region: Northwest

Title: Nooksack Forest Practice Forester

Date: 7/21/2016

Copies to: Landowner, Timber Owner and Operator

Issued in Person: Landowner, Timber Owner Operator

By: *[Signature]*

Appeal Information

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

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

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

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

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

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

And

Department Of Natural Resources
Northwest Region
919 N Township Street
Sedro-Woolley, WA 98284

Other Applicable Laws

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

Hydraulic Project Approval (HPA) (Chapter 77.55RCW and WAC 222-50-020(2))

The Department of Fish and Wildlife (WDFW), as the jurisdictional agency issuing HPAs, has final authority for approving water crossing structures in Type S and F waters. WDFW continues to have authority on Type N waters and may exercise that authority on some Type N waters.

Notice: The HPA water crossing requirements supersede what is indicated on the FPA. Landowners are required by law to follow the provisions as directed on the HPA.

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

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

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

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

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

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

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

DNR affidavit of mailing:

On this day _____, I placed in the United States mail at Sedro-Woolley, WA, postage paid, a true and accurate copy of the attached document. Notice of Decision FPA #_2815_____	
_____ Braelyn Hamilton (Printed name)	_____ (Signature)



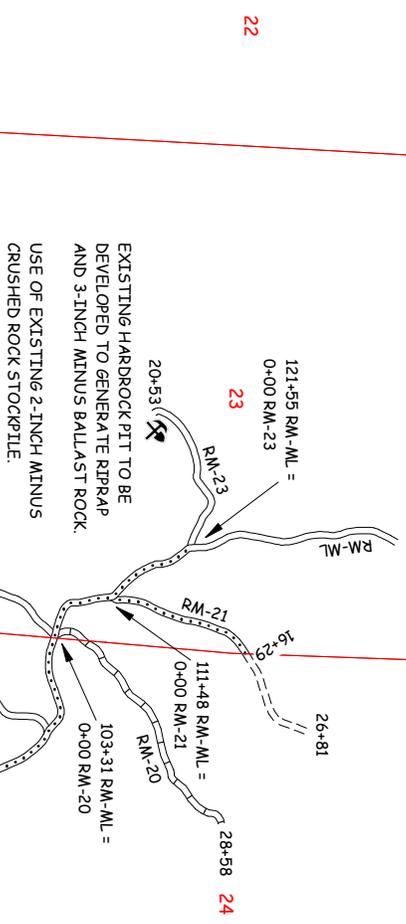
14

ROAD PLAN AND SPECIFICATIONS
#30-093613 UPPER DOAKS VRH & VDT

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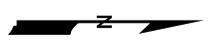


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T40R05E

T40R06E



LEGEND

PRE-HAUL MAINTENANCE REQUIRED CONSTRUCTION	=====
OPTIONAL CONSTRUCTION	-----
REQUIRED RECONSTRUCTION	=====
OPTIONAL RECONSTRUCTION	-----

SHEET INDEX

PROJECT MAP	1
ROAD CLAUSES	2-19
TYPICAL SECTION	20-21
MATERIAL LIST	22
FARMS	23-24
STANDARD DETAILS	25

DESIGNED BY CARLSON	REVIEWED BY ZYLSTRA 4/13/2016	APPROVED BY FIKE 4/14/2016	PLAN DATE 3/1/2016	SHEET 1 OF 25
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STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

UPPER DOAKS VRH & VDT TIMBER SALE ROAD PLAN
WHATCOM COUNTY
DEMING UNIT BAKER DISTRICT

AGREEMENT NO.: 30-093613

STAFF ENGINEER: CARLSON

DATE: MARCH 1, 2016

SECTION 0 – SCOPE OF PROJECT

0-1 ROAD PLAN SCOPE

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

0-2 REQUIRED ROADS

The specified work on the following roads is required.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
RM-ML	0+00 to 121+55	Pre-Haul Maintenance
RM-20	0+00 to 28+58	Reconstruction
RM-21	0+00 to 16+29	Pre-Haul Maintenance
RM-21*	16+29 to 26+81	Construction

* Construction is on an abandoned grade.

0-4 CONSTRUCTION

Construction includes, but is not limited to clearing, grubbing, excavation and embankment to sub-grade, landing and turnout construction, culvert installation, and application of 3-inch-minus ballast rock.

0-5 RECONSTRUCTION

Reconstruction includes, but is not limited to blading, shaping, and ditching the road surface, clearing, grubbing, excavation and embankment, culvert installation, existing culvert clean out, and application of 3-inch-minus ballast rock.

0-6 PRE-HAUL MAINTENANCE

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
RM-ML	0+00 to 121+55	Grading, culvert installation, sediment trap construction, gate installation, application of 3-inch minus ballast rock, and application of 2-inch minus crushed rock.
RM-21	0+00 to 16+29	Grading

0-7 POST-HAUL MAINTENANCE

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

0-12 DEVELOP ROCK SOURCE

Purchaser shall develop an existing rock source. Rock source development will involve drilling, shooting, and processing rock to generate riprap and 3-inch-minus ballast rock. Work for developing rock sources is listed in Section 6 ROCK AND SURFACING.

SECTION 1 – GENERAL

1-1 ROAD PLAN CHANGES

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

1-2 UNFORESEEN CONDITIONS

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

1-3 ROAD DIMENSIONS

Purchaser shall perform road work in accordance with the dimensions shown on the TYPICAL SECTION SHEET and the specifications within this road plan.

1-4 ROAD TOLERANCES

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

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

1-6 ORDER OF PRECEDENCE

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

1. Addenda.
2. Road Plan Clauses.
3. Typical Section Sheet.
4. Standard Lists.
5. Standard Details.

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

1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS

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

1-9 DAMAGED METALLIC COATING

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

1-18 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.

1-25 ACTIVITY TIMING RESTRICTION

The specified activities are not allowed during the listed closure periods unless authorized in writing by the Contract Administrator.

<u>Activity</u>	<u>Closure Period</u>
All Activities	November 1 to March 31

1-26 OPERATING DURING CLOSURE PERIOD

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

1-29 SEDIMENT RESTRICTION

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

1-30 CLOSURE TO PREVENT DAMAGE

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

- 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.

1-33 SNOW PLOWING RESTRICTION

Snowplowing will be allowed after the execution of a SNOW PLOWING AGREEMENT, which is available from the Contact Administrator upon request. 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.

SECTION 2 – MAINTENANCE

2-1 GENERAL ROAD MAINTENANCE

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

2-2 ROAD MAINTENANCE – PURCHASER MAINTENANCE

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

2-3 ROAD MAINTENANCE – DESIGNATED MAINTAINER

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

2-5 MAINTENANCE GRADING – EXISTING ROAD

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

<u>Road</u>	<u>Stations</u>
RM-ML	0+00 to 121+55
RM-21	0+00 to 16+29

2-6 CLEANING CULVERTS

On the following roads, Purchaser shall clean the inlets and outlets of all culverts and shall obtain written approval from the Contract Administrator before rock or timber haul.

<u>Road</u>	<u>Stations</u>
RM-ML	0+00 to 121+55
RM-20	0+00 to 28+58
RM-21	0+00 to 16+29

2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS

On the following roads, Purchaser shall clean ditches, headwalls, and catchbasins. Work must be completed before application of rock and must be done in accordance with the TYPICAL SECTION. Pulling ditch material across the road or mixing in with the road surface is not allowed.

<u>Road</u>	<u>Stations</u>
RM-ML	0+00 to 121+55
RM-20	0+00 to 28+58
RM-21	0+00 to 16+29

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

3-5 CLEARING

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

3-8 PROHIBITED DECKING AREAS

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

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

3-10 GRUBBING

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

3-20 ORGANIC DEBRIS DEFINITION

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

3-21 DISPOSAL COMPLETION

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

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 embankments.
- On road subgrades, or excavation and embankment slopes.
- On slopes greater than 40%.
- Within the operational area for cable landings where debris may shift or roll.
- On locations where brush can fall into the ditch or onto the road surface.
- Against standing timber.

3-24 BURYING ORGANIC DEBRIS RESTRICTED

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

3-25 SCATTERING ORGANIC DEBRIS

Purchaser shall scatter organic debris outside of the clearing limits in natural openings unless otherwise detailed in this road plan.

SECTION 4 – EXCAVATION

4-2 PIONEERING

Pioneering may not extend past construction that will be completed during the current construction season. Pioneering may not extend more than 500 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 50 feet at centerline.
- Maximum grade change for sag vertical curves is 5% in 100 feet.
- Maximum grade change for crest vertical curves is 4% in 100 feet.

4-5 CUT SLOPE RATIO

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

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

4-6 EMBANKMENT SLOPE RATIO

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

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

4-7 SHAPING CUT AND FILL SLOPE

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

4-21 TURNOUTS

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

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

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

4-28 DITCH DRAINAGE

Ditches must drain to cross-drain culverts or ditchouts.

4-29 DITCHOUTS

On the following road, Purchaser shall reconstruct existing ditchouts. 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.

<u>Road</u>	<u>Stations</u>
RM-ML	0+00 to 121+55

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 50% if the waste material is compacted and free of organic debris. On side slopes greater than 50%, 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.

4-38 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.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Against standing timber.
- Outside the clearing limits.

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.

4-60 FILL COMPACTION

Purchaser shall compact all embankment and waste material by routing equipment over the entire width of each lift.

4-61 SUBGRADE COMPACTION

Purchaser shall compact constructed and reconstructed subgrades 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 MATERIALS 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 10-15 through 10-23.

5-11 UNUSED MATERIALS STATE PROPERTY

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

5-15 CULVERT INSTALLATION

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

5-17 CROSS DRAIN SKEW AND SLOPE

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

5-18 CULVERT DEPTH OF COVER

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

5-25 CATCH BASINS

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

5-26 HEADWALLS FOR CROSS DRAIN CULVERTS

Purchaser shall construct headwalls in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all cross drain culverts. Rock used for headwalls must weigh at least 50 pounds. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets. Rock may not restrict the flow of water into culvert inlets or catch basins. No placement by end dumping or dropping of rock is allowed.

SECTION 6 – ROCK AND SURFACING

6-2 ROCK SOURCE ON STATE LAND

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

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
Red Mt. Pit	Sta. 20+53 of the RM-23 road	3-inch minus ballast rock, riprap

6-3 ROCK SOURCE STATE LAND, EXISTING STOCKPILE

Rock used in accordance with the quantities on the TYPICAL SECTION and MATERIALS LIST may be obtained from the following existing stockpiles on state land at no charge to the Purchaser. Purchaser shall not remove more than 155 cubic yards of 2-inch minus crushed rock. Purchaser shall not remove additional yardage without prior written approval from the Contract Administrator.

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>	<u>Quantity</u>
Red Mt. Pit	Sta. 20+53 of the RM-23 road	2-inch minus crushed rock	155 cubic yards
Red Mt. Pit	Sta. 20+53 of the RM-23 road	3-inch minus ballast rock	All available

6-5 ROCK FROM COMMERCIAL SOURCE

Rock used in accordance with the quantities on the TYPICAL SECTION and MATERIALS 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.

6-11 ROCK SOURCE DEVELOPMENT PLAN BY PURCHASER

Purchaser shall conduct rock source development and use at the following sources, in accordance with a written ROCK SOURCE DEVELOPMENT PLAN to be prepared by the Purchaser. The plan is subject to written approval by the Contract Administrator before any rock source operations. Upon completion of operations, the rock source must be left in the condition specified in the ROCK SOURCE DEVELOPMENT PLAN, and approved in writing by the Contract Administrator.

<u>Source</u>
Red Mt. Pit

Rock source development plans prepared by the Purchaser must show the following information:

- Rock source location.
- Rock source overview showing access roads, development areas, stockpile locations, waste areas, and floor drainage.
- Rock source profiles showing development areas, bench locations including widths, and wall faces including heights.

6-12 ROCK SOURCE SPECIFICATIONS

Rock sources must be in accordance with the following:

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

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

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

6-20 ROCK GRADATION TYPES

Purchaser shall provide rock in accordance with the types and amounts listed in the TYPICAL SECTION and MATERIALS LIST. Rock must meet the following specifications for gradation and uniform quality when placed in hauling vehicles or during manufacture and placement into a stockpile. The exact point of evaluation for conformance to specifications will be determined by the Contract Administrator.

6-34 3-INCH MINUS BALLAST ROCK

Ballast rock must be 100% equal to, or smaller than, 3 inches in at least one dimension.

Rock may contain no more than 5 percent organic debris, dirt, and trash. All percentages are by weight.

6-50 LIGHT LOOSE RIP RAP

Rip rap must consist of angular, hard, sound, and durable stone. It must be free from segregation, seams, cracks, and other defects. Light loose rip rap must be free of rock fines, soil, organic debris or other extraneous material, and must meet the following requirements:

<u>At Least/Not More Than</u>	<u>Weight Range</u>
20% / 90%	300 lbs. to 1 ton
80% / --	50 lbs. to ½ ton
10% / 20%	50 lbs. max

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 TYPICAL SECTION 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.

6-70 APPROVAL BEFORE ROCK APPLICATION

Purchaser shall obtain written approval from the Contract Administrator for culvert installation, ditch construction, ditch reconstruction, headwall construction, headwall reconstruction, subgrade shape, and compaction before rock application.

6-71 ROCK APPLICATION

Purchaser shall apply rock in accordance with the specifications and quantities shown on the TYPICAL SECTION. Rock must be spread, shaped, and compacted full width concurrent with rock hauling operations. Road surfaces must be compacted in accordance with the TYPICAL SECTION by routing equipment over the entire width.

6-73 ROCK FOR WIDENED PORTIONS

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

SECTION 7 – STRUCTURES

7-76 GATE INSTALLATION

On the following road, Purchaser shall install the designated gate. Gate installations shall be installed within 14 days of completion of road construction operations.

<u>Road</u>	<u>Station</u>	<u>Furnished by</u>
RM-ML	8+00	State

The gate and lock box shall be installed plumb and aligned to ensure all mating components match with precision. Each post shall be filled with concrete, capped, and set in a minimum of 4 cubic yards of poured-in-place concrete. The gate shall be installed with a post and locking device to allow the gate to be locked in an open position. The Contract Administrator will supply the Purchaser with a padlock. If the Purchaser wishes to install an alternate design, detailed plans for the construction of the gate shall be submitted to the Contract Administrator, or their designee, for approval, in writing, before gate installation.

Purchaser shall supply and place 20 cubic yards of rip rap at the installation location to prevent vehicles from driving around the gate.

7-77 GATE SUPPLIED BY STATE

A gate with lock box is located at the DNR Northwest Region Office in Sedro-Woolley. After making arrangements through the Contract Administrator, Purchaser shall transport the gate, and lock box to the installation site.

Purchaser shall supply and install a tie-back post and set in a minimum of 2 cubic yards of poured-in-place concrete.

SECTION 8 – EROSION CONTROL

8-15 REVEGETATION

Purchaser shall spread seed and fertilizer on all exposed soils within the grubbing limits resulting from road work activities. Cover all exposed soils using manual dispersal of grass seed and fertilizer. Other methods of covering must be approved in writing by the Contract Administrator.

8-16 REVEGETATION SUPPLY

The Purchaser shall provide the required grass seed and fertilizer.

8-17 REVEGETATION TIMING

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

8-18 PROTECTION FOR SEED

Purchaser shall provide a protective cover for seed if revegetation occurs between July 1 and March 31. The protective cover may consist of dispersed straw, jute matting, or clear plastic sheets. The protective cover requirement may be waived in writing by the Contract Administrator if Purchaser is able to demonstrate a revegetation plan that will result in the establishment of a uniform dense crop (at least 50% coverage) of 3-inch tall grass by October 31.

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 and fertilizer in areas that have failed to germinate or have been damaged through any cause. Restore eroded or disturbed areas, clean up and properly dispose of eroded materials, and reapply the seed and fertilizer at no addition cost to the state.

8-25 GRASS SEED

Purchaser shall evenly spread the seed mixture listed below on all exposed soil inside the grubbing limits at a rate of 50 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.

<u>Kind and Variety of Seed in Mixture</u>	<u>% by Weight</u>
Creeping Red Fescue	50
Elf Perennial Rye Grass	25
Highland Colonial Bentgrass	15
White Clover	10
Inert and Other Crop	0.5

8-27 FERTILIZER

Purchaser shall evenly spread the fertilizer listed below on all exposed soil inside the grubbing limits at a rate of 200 pounds per acre of exposed soil. Fertilizer must meet the following specifications:

<u>Chemical Component</u>	<u>% by Weight</u>
Nitrogen	16
Phosphorous	16
Potassium	16
Sulphur	3
Inerts	49

SECTION 9 – POST-HAUL ROAD WORK

9-5 POST-HAUL MAINTENANCE

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

<u>Road</u>	<u>Stations</u>	<u>Additional Requirements</u>
RM-23	0+00 to 20+53	Post-haul grading

9-10 LANDING DRAINAGE

Purchaser shall provide for drainage of the landing surface.

9-12 LANDING EMBANKMENT REMOVAL

Purchaser shall reduce or relocate the landing embankment. Place excavated material in a waste area approved in writing by the Contract Administrator.

SECTION 10 MATERIALS

10-17 CORRUGATED PLASTIC CULVERT

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

10-22 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.

SECTION 11 SPECIAL NOTES

11-1 SEDIMENT TRAP CONSTRUCTION

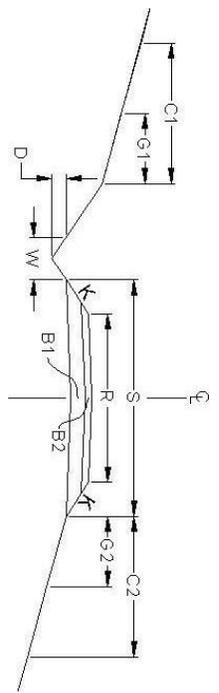
Sediment traps shall be dug two feet deep, three feet wide, and four feet long. One cubic yard of light/loose riprap shall be used for the berm and one cubic yard of light/loose riprap shall be sprinkled in the sediment trap outlet ditch leading into the stream channel.

11-2 RM-20 RECONSTRUCTION

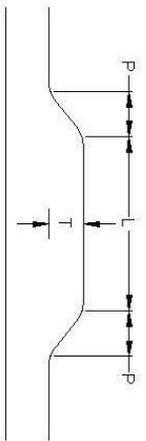
Purchaser shall clear and grub all stumps (including old growth stumps), excavate cutslopes, and construct ditches to the specifications in Section 4 and in accordance with the TYPICAL SECTION.

ROAD #	RM-ML	RM-ML	RM-20	RM-21
REQUIRED / OPTIONAL	REQUIRED	REQUIRED	REQUIRED	REQUIRED
CONSTRUCT / RECONSTRUCT	PRE-HAUL	PRE-HAUL	RECONSTRUCT	PRE-HAUL
TOLERANCE CLASS (A/B/C)	C	C	C	C
STATION / MP TO	0+00	6+00	0+00	0+00
STATION / MP	6+00	121+55	28+58	16+29
ROAD WIDTH	R	14	12	12
CROWN (INCHES @ C/L)	3	3	3	3
DITCH WIDTH	W	3	3	3
DITCH DEPTH	D	1	1	1
TURNOUT LENGTH	L	50	50	50
TURNOUT WIDTH	T	10	10	10
TURNOUT TAPER	P	25	25	25
GRUBBING	G1	--	5	--
	G2	--	5	--
CLEARING	C1	--	10	--
	C2	--	10	--
ROCK FILLSLOPE	K:1	1½	1½	--
❖ BALLAST DEPTH	B1	6	9	--
❖ CUBIC YARDS / STATION		39	53	--
➤ TOTAL CY BALLAST		4505	1515	--
❖ SURFACING DEPTH	B2	4	--	--
❖ CUBIC YARDS / STATION		26	--	--
➤ TOTAL CY SURFACING		155	--	--
➤ TOTAL CUBIC YARDS		155	4505	1515
SUBGRADE WIDTH	S	15.0	15.5	14.25
BRUSHCUT (Y/N)		N	N	--
BLADE, SHAPE, & DITCH (Y/N)		Y	Y	Y

TYPICAL SECTION



TURNOUT DETAIL (PLAN VIEW)



SYMBOL NOTES

- ❖ Specified Rock Depth is FINISHED COMPACTED DEPTH in inches.
- Specified Rock Quantity is LOOSE MEASURE (Truck Cubic Yards) needed to accomplish specified FINISHED COMPACTED DEPTH. Rock quantities include volume for turnouts, curve widening and landings.

* Construction is on an abandoned grade.
TOTAL 3-INCH MINUS BALLAST ROCK = 6775 cy
TOTAL 2-INCH MINUS CRUSHED ROCK = 155 cy
TOTAL RIPRAP = 88 cy

ROAD #		RM-21*							
REQUIRED / OPTIONAL		REQUIRED							
CONSTRUCT / RECONSTRUCT		CONSTRUCT							
TOLERANCE CLASS (A/B/C)		C							
STATION / MP TO		16+29							
STATION / MP		26+81							
ROAD WIDTH	R	12							
CROWN (INCHES @ C/L)		3							
DITCH WIDTH	W	3							
DITCH DEPTH	D	1							
TURNOUT LENGTH	L	50							
TURNOUT WIDTH	T	10							
TURNOUT TAPER	P	25							
GRUBBING	G1	5							
	G2	5							
CLEARING	C1	10							
	C2	10							
ROCK FILL SLOPE	K:1	1½							
❖ BALLAST DEPTH	B1	12							
CUBIC YARDS / STATION		72							
➤ TOTAL CY BALLAST		755							
❖ SURFACING DEPTH	B2	--							
CUBIC YARDS / STATION		--							
➤ TOTAL CY SURFACING		--							
➤ TOTAL CUBIC YARDS		755							
SUBGRADE WIDTH	S	15.0							
BRUSH CUT (Y/N)		N							
BLADE, SHAPE, & DITCH (Y/N)		N							

MATERIALS LIST

LOCATION	STATION	CULVERT			DWNSPT		RIPRAP			FILL TYPE	TOLERANCE	REMARKS												
		DIAMETER	LENGTH	TYPE	LENGTH	TYPE	INLET	OUTLET	TYPE															
RM-ML	13+19	18	36	PD			2	3	L	NT	C	<p style="text-align: center;">Note: Galvanized metal culverts shall conform to the following specifications for gage and corrugation as a function of the diameter:</p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">Diameter</td> <td style="text-align: center;">Gage</td> <td style="text-align: center;">Corrugation</td> </tr> <tr> <td style="text-align: center;">18"</td> <td style="text-align: center;">16</td> <td style="text-align: center;">2 2/3" x 1/2"</td> </tr> <tr> <td style="text-align: center;">24" - 48"</td> <td style="text-align: center;">14</td> <td style="text-align: center;">2 2/3" x 1/2"</td> </tr> <tr> <td style="text-align: center;">54" - 96"</td> <td style="text-align: center;">14</td> <td style="text-align: center;">3" x 1"</td> </tr> </table>	Diameter	Gage	Corrugation	18"	16	2 2/3" x 1/2"	24" - 48"	14	2 2/3" x 1/2"	54" - 96"	14	3" x 1"
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24" - 48"	14	2 2/3" x 1/2"																						
54" - 96"	14	3" x 1"																						
RM-ML	20+23	18	30	PD			2	3	L	NT	C													
RM-ML	24+35	18	30	PD			2	3	L	NT	C													
RM-ML	50+52	18	30	PD			2	3	L	NT	C													
RM-ML	55+09	18	36	PD			2	3	L	NT	C													
RM-ML	62+06	18	36	PD			2	3	L	NT	C													
RM-ML	89+55	18	36	PD			2	3	L	NT	C													
RM-ML	100+33	18	30	PD			2	3	L	NT	C													
RM-ML	114+00						8		L				Construct two sediment traps in far downstream ditch and one each in near downstream ditch and far upstream ditch. See Clause 11-1 SEDIMENT TRAP CONSTRUCTION.											
RM-20	2+97	18	30	PD			2	3	L	NT	C													
RM-20	10+17	18	30	PD			2	3	L	NT	C													
RM-20	13+29	18	30	PD			2	3	L	NT	C													
RM-20	19+04	18	30	PD			2	3	L	NT	C													
RM-20	20+20	18	30	PD			2	3	L	NT	C	Ensure road ditch from 21+70 drains back to culvert installation.												
RM-21	18+67	18	30	PD			2	3	L	NT	C	Dig outlet channel												
RM-21	21+81	18	30	PD			2	3	L	NT	C													
RM-21	23+55	18	30	PD			2	3	L	NT	C													

GM – Galvanized Metal PS – Polyethylene Pipe Single Wall PD – Polyethylene Pipe Dual Wall AM – Aluminized Metal C – Concrete XX – PD or GM
 H – Heavy Loose Riprap L – Light Loose Riprap SR – Shot Rock NT – Native (Bank Run) QS – Quarry Spalls

FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

Cuts and Fills

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

Surface

- Grade and shape the road surface, turnouts, and shoulders to the original shape on the TYPICAL SECTION SHEET. Inslope or outslope as directed 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

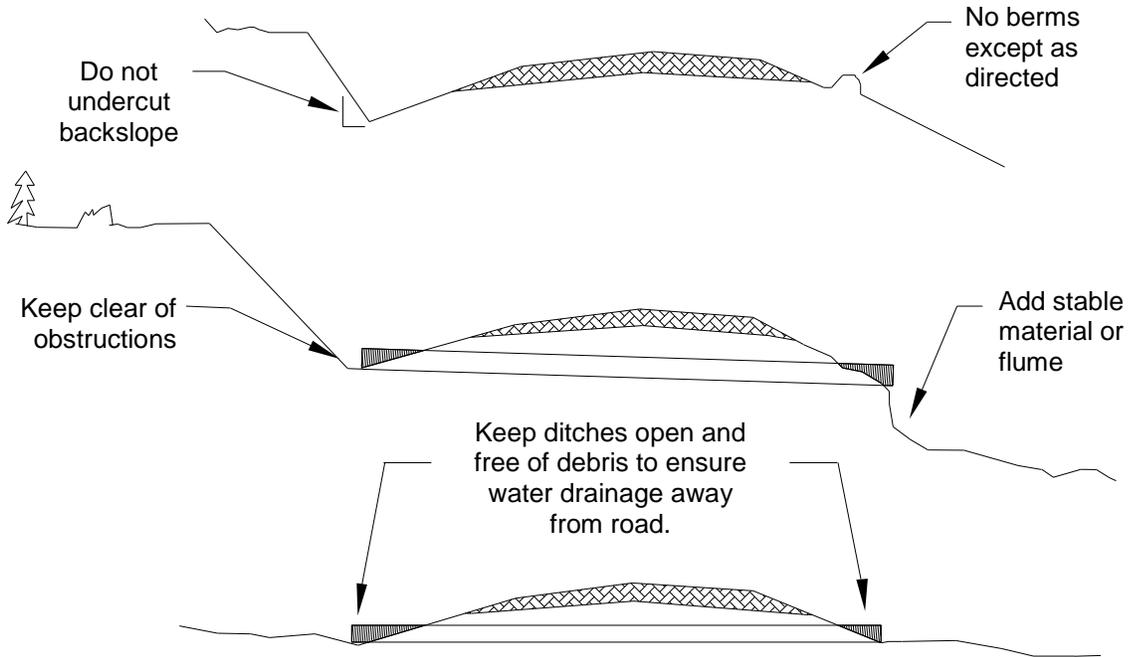
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

Termination of Use or End of Season

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

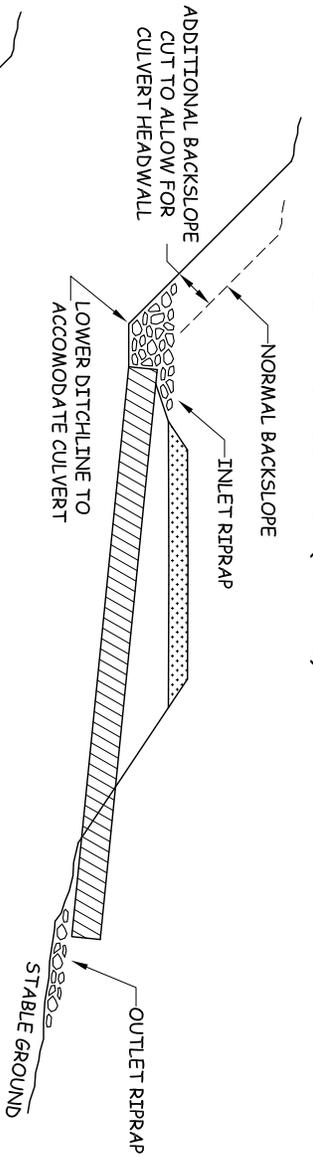
Debris

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

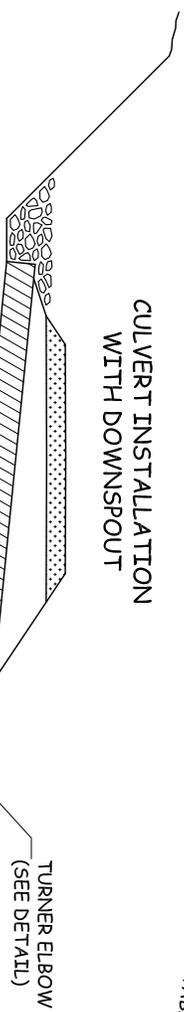


CULVERT AND DRAINAGE SPECIFICATIONS

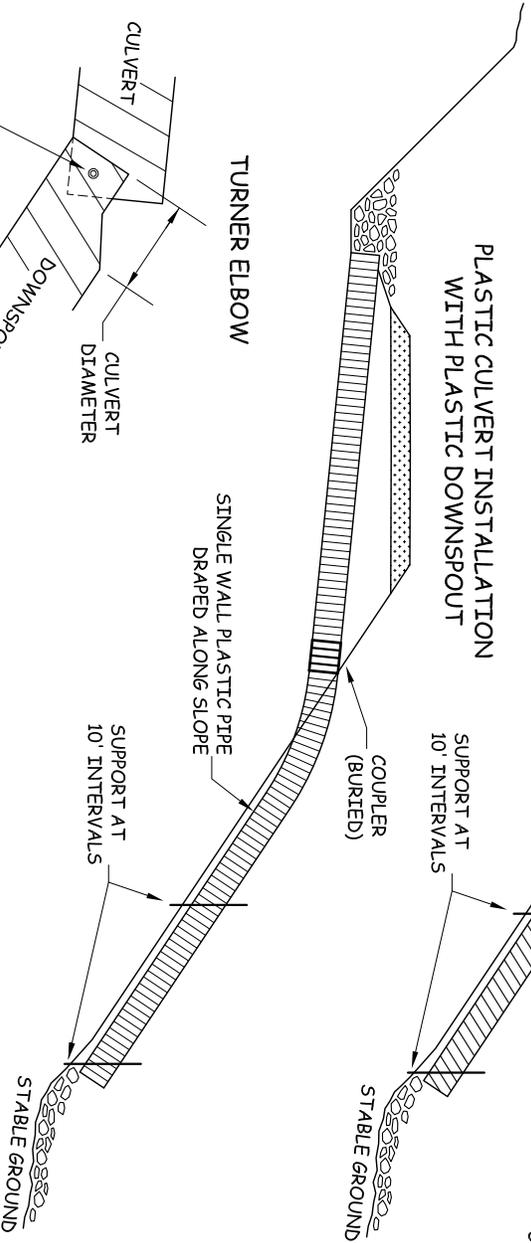
CULVERT INSTALLATION (TYPICAL)



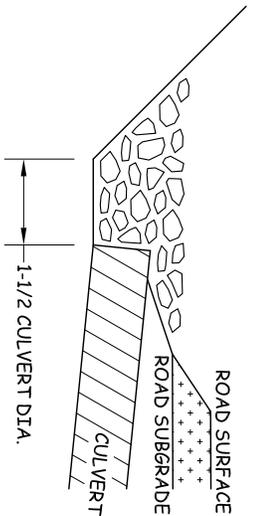
CULVERT INSTALLATION WITH DOWNSPOUT



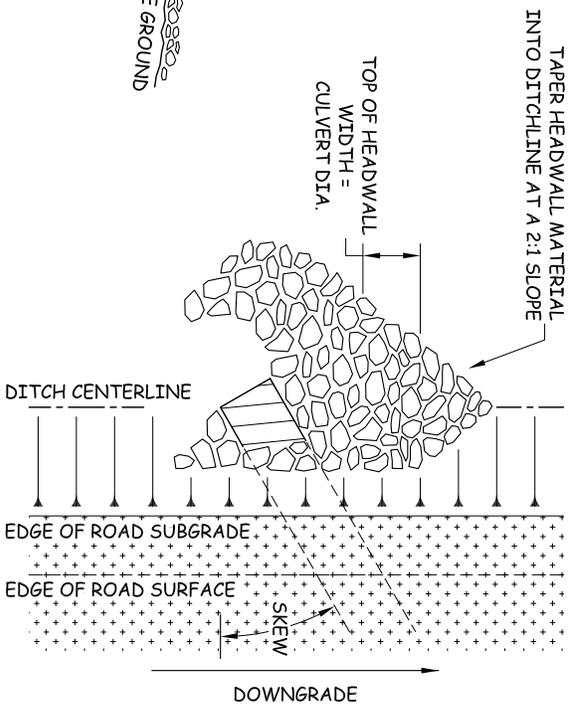
PLASTIC CULVERT INSTALLATION WITH PLASTIC DOWNSPOUT



CULVERT HEADWALL - SECTION VIEW

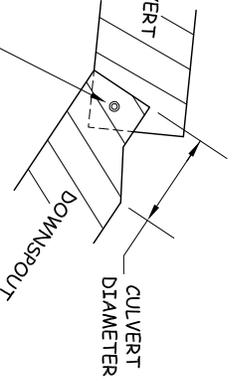


CULVERT HEADWALL - PLAN VIEW



HEADWALL NOTE:
 HEADWALL TO BE CONSTRUCTED OF IMPERVIOUS MATERIAL THAT WILL RESIST EROSION AND ARMORED WITH RIPRAP QUANTITY SPECIFIED IN ROAD PLAN.

BOLTED WITH 5/8" BOLTS AND WASHERS (BOTH SIDES)



CONTRACT #
30-093613

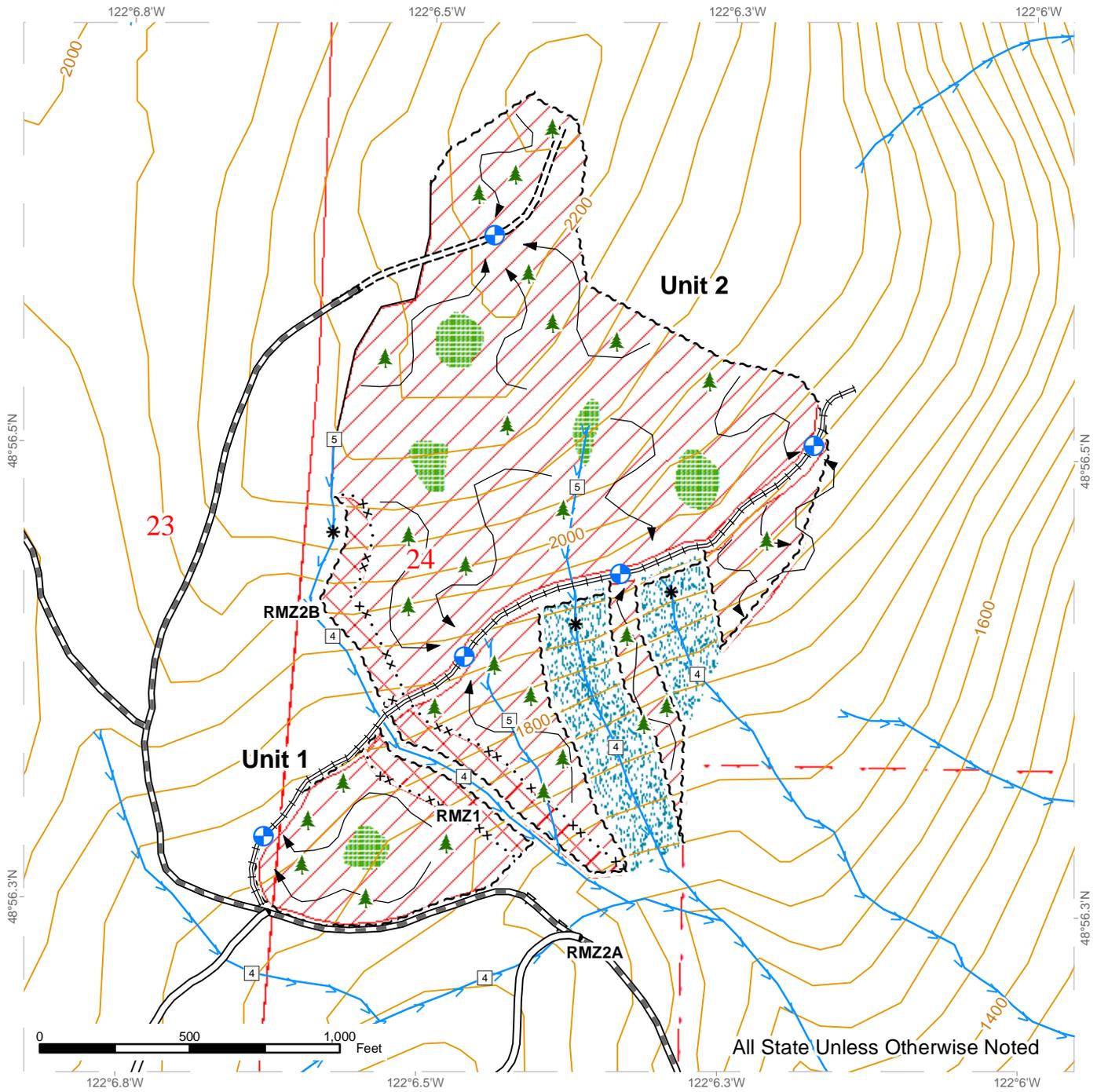
PROJECT
UPPER DOAKS VRH & VDT

SHEET
25 OF 25

LOGGING PLAN MAP

SALE NAME: UPPER DOAKS
AGREEMENT#: 30-093613
TOWNSHIP(S): T40R05E
TRUST(S): State Forest Transfer (01)

REGION: Northwest Region
COUNTY(S): WHATCOM
ELEVATION RGE: 1775-2279



All State Unless Otherwise Noted

Streams	Sale Boundary Tags	Existing Roads	No-cut RMZ
Stream Type	Special Mgmt Area	Required Pre-Haul Maintenance	Leave Tree Area
Stream Type Break	Reprod	Required Construction	Riparian Mgt Zone
Leave Trees		Required Reconstruction	Ground Harvest
Landing - Proposed		Optional Pre-Haul Maintenance	Ground