

TIMBER NOTICE OF SALE

SALE NAME: RIDGE LIFT

AGREEMENT NO: 30-092623

AUCTION: May 25, 2016 starting at 10:00 a.m., **COUNTY:** Whatcom
Northwest Region Office, Sedro Woolley, WA

SALE LOCATION: Sale located approximately 5 miles northeast of Deming, WA.

**PRODUCTS SOLD
AND SALE AREA:**

All timber bounded by white timber sale boundary tags and adjacent young stands, except 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, adjacent young stands, property lines and CK-ML and CK-38 roads, except 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 #3.

The above described products on part(s) of Sections 14 all in Township 39 North, Range 5 East, W.M., containing 66 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
Hemlock	13	8	1,635						477	782	284	92
Douglas fir	27	8	239						149	52	8	30
Maple	13		152						45	7	68	32
Red alder	13		112						14	29	57	12
Red cedar	18		68							58	10	
Cottonwood	39		43						43			
Silver fir	13		12							8	4	
Sale Total			2,261									

MINIMUM BID: \$376,000.00 **BID METHOD:** Sealed Bids

PERFORMANCE SECURITY: \$75,200.00 **SALE TYPE:** Lump Sum

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

BID DEPOSIT: \$37,600.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: Cable; cable or shovel on sustained slopes 35% 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: 57.00 stations of required reconstruction. 13.46 stations of optional construction. 13.46 stations of road to be abandoned if built.

TIMBER NOTICE OF SALE

Rock may be obtained from the following source on State land at no charge to the Purchaser: S-1100 Pit at station 184+50 of the NF-ML Road.

Development of existing rock source will involve processing rock to generate riprap, gravel ballast, and 1½-inch-minus crushed gravel surfacing rock.

An estimated total quantity of rock needed for this proposal: 20 cubic yards of riprap, 1,355 cubic yards of ballast rock and 1,125 cubic yards of 1½-inch-minus surfacing rock. 2000 additional cubic yards of 1 1/2-inch-minus surfacing rock to be processed and stockpiled in the S-1100 Pit.

Additional restrictions apply, see Remarks section below.

Road construction, road reconstruction, road abandonment, 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. 72.3 acres gross. 3.0 acres deducted for green tree retention clumps and 3.2 acres deducted for existing road. 66.1 acres net. Cruised using variable plot method. Expansion factor used is 40.00 and 62.5. Sighting height is 4.5 feet. A total of 52 plots were taken.

Shapefiles of units are available upon request.

FEES: \$40,132.75 is due on day of sale. \$9.00 per MBF is due upon removal. These are in addition to the bid price.

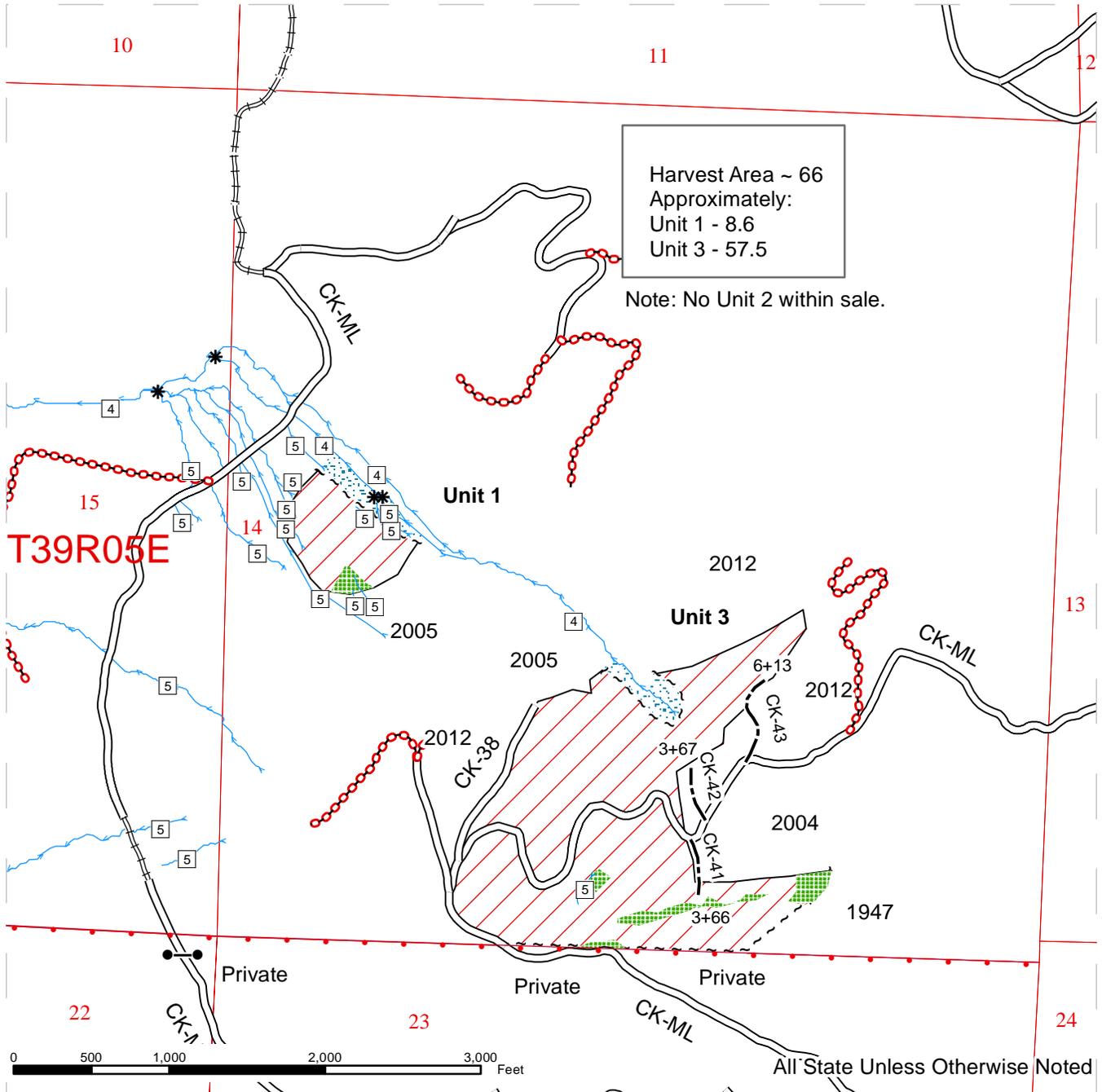
SPECIAL REMARKS:

1. The use of explosives at the S-1100 rock pit and within the sale area shall not be permitted from November 15 to March 15.
2. There may be potential for dislodging large rocks that could roll downslope on to an occupied landing during downhill yarding operations in the areas below the rock cliffs in Unit #3. Though failure of these rock slopes due to removal of trees is not judged to be a hazard, yarding of logs downslope could be a hazard to equipment and personnel working down slope of these rock cliffs. See Geologic Memo dated 12/30/2015 for further information.
3. Construction of the CK-42 is on an abandoned grade.
4. There is no Unit 2 associated with this sale.
5. Wildlife timing restrictions are: Operation of heavy machinery associated with rock pit activities within the S-1100 rock pit shall be prohibited from one hour before official sunrise to two hours after official sunrise and one hour before official sunset to one hour after official sunset from April 1 to August 31.

TIMBER SALE MAP

SALE NAME: Ridge Lift
AGREEMENT#: 092623
TOWNSHIP(S): T39NR05E
TRUST(S): State Forest Transfer(1), Scientific School(10)

REGION: Northwest Region
COUNTY(S): WHATCOM
ELEVATION RGE: 1115-2603

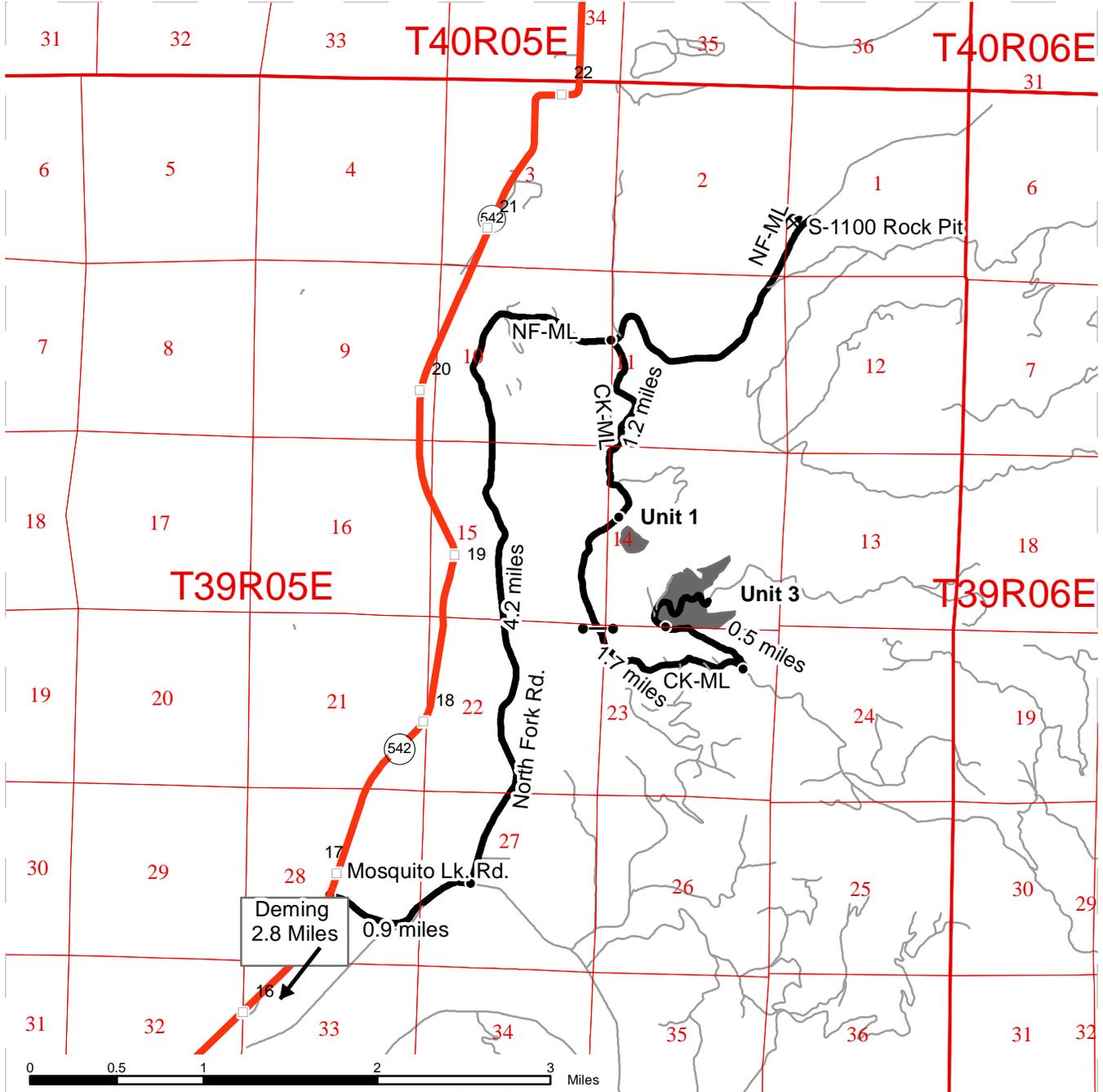


	Variable Retention Harvest		Sale Boundary Tags		Streams
	Leave Tree Area		Sale Boundary - No Tags		Stream Type
	Riparian Management Zone		Existing Roads		Stream Type Break
			Required Reconstruction		Open Water
			Optional Construction		Gate
			Abandoned Roads		

DRIVING MAP

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- Timber Sale Unit
- Highways
- Other Route
- Haul Route
- Milepost Markers
- Existing Rock Pit
- Gate
- Distance Indicator

Driving Directions:

Unit 1: From the Junction of HWY 9 and HWY 542, travel East on HWY 542 for 2.3 miles to Mosquito Lake Rd. and turn right. Travel 0.9 miles to the North Fork Rd. and turn left. Travel 4.2 miles to the fork, turn right on to the CK-ML. Continue on the CK-ML for 1.2 miles to the U1 landing.

Unit 3: Travel on the CK-ML for 0.7 miles to a gate accessible with an F1-3 key. Continue through the gate on the CK-ML for 1.0 miles and turn left to stay on the CK-ML. Continue on the CK-ML for 0.5 miles to the start of U3.

S-1100 Rock Pit: From the junction of the NF-ML and CK-ML travel on the NF-ML 1.8 miles to the rock pit.

**STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES**

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

Export Restricted Lump Sum AGREEMENT NO. 30-092623

SALE NAME: RIDGE LIFT

**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 May 25, 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 adjacent young stands, except 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, adjacent young stands, property lines and CK-ML and CK-38 roads, except 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 #3.

The above described products, located on approximately 66 acres on part(s) of Section 14 in Township 39 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 (Rev11/05/14)

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 \$833.00 per acre per annum for the acres on which an operating release has not been issued in the sale area.
- f. In no event will the extension charge be less than \$200.00.
- g. Extension payments are non-refundable.

G-053 Surveys - Sensitive, Threatened, Endangered Species

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

G-060 Exclusion of Warranties

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

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

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

G-062 Habitat Conservation Plan

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

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

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

G-063 Incidental Take Permit Notification Requirements

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

G-064 Permits

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

G-065 Regulatory Disclaimer

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

G-066 Governmental Regulatory Actions

a. Risk

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

b. Sale Area

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

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

c. Adjustment of Price

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

G-070 Limitation on Damage

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

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

G-080 Scope of State Advice

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

G-091 Sale Area Adjustment

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

G-101 Forest Products Not Designated

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

Contract Item	Appraised Price	Overbid Factor	Price	Fees	Contract Payment Rate
Cottonwood	\$76.43	0	\$0.00	\$9.00	\$9.00
Douglas fir	\$191.95	0	\$0.00	\$9.00	\$9.00
Hemlock	\$149.43	0	\$0.00	\$9.00	\$9.00
Maple	\$141.55	0	\$0.00	\$9.00	\$9.00
Red alder	\$209.23	0	\$0.00	\$9.00	\$9.00
Red cedar	\$526.61	0	\$0.00	\$9.00	\$9.00
Silver fir	\$146.63	0	\$0.00	\$9.00	\$9.00
Other	\$196.82	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; NF-ML, CK-ML, CK-38, CK-41, CK-42, and CK-43. The State may authorize in writing the use of other roads subject to fees, restrictions, and prior rights.

G-330 Pre-work Conference

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

G-340 Preservation of Markers

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

G-360 Road Use Reservation

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

G-370 Blocking Roads

Purchaser shall not block the CK-ML Road, unless authority is granted in writing by the Contract Administrator.

G-380 Road Easement and Road Use Permit Requirements

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

Easements with:

Puget Sound Pulp & Timber Co.; #55-000008; dated January 17, 1962

Scott Paper Company; #55-000045; dated April 10, 1967

Trillium Corporation; #55-002458; dated June 24, 1993.

G-430 Open Fires

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

G-450 Encumbrances

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

Easement, including the terms and provisions thereof,

For: Road

In Favor of: Scott Paper Company

Disclosed by Application No.: 50-034305

Granted: 2/7/1973

Expires: Indefinite

Easement, including the terms and provisions thereof,

For: Road Use Permit

In Favor of: Sierra Pacific Industries

Disclosed by Application No.: 50-087663

Granted: 8/31/2011

Expires: 7/31/2016

Easement, including the terms and provisions thereof,

For: Road

In Favor of: Sierra Pacific Industries

Disclosed by Application No.: 50-088416

Granted: 2/23/2012

Expires: 12/31/2016

Assessment, including the terms and provisions thereof,

For: Flood

In Favor of: Whatcom County, County-Wide Flood Control Zone

Disclosed by Application No.: 79-000275

Granted: 4/14/1992

Expires: Indefinite

Section P: Payments and Securities

P-011 Initial Deposit

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

P-020 Payment for Forest Products

Purchaser agrees to pay the total, lump sum contract price of \$60,481.75. The total contract price consists of a \$0.00 contract bid price plus \$60,481.75 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 \$75,200.00. The Security provided shall

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

P-100 Performance Security Reduction

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

Section H: Harvesting Operations

H-010 Cutting and Yarding Schedule

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

H-013 Reserve Tree Damage Definition

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

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

- a. A reserve tree has one or more scars on its trunk exposing the cambium layer, which in total exceeds 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-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 35% 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 on any road 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. Falling and yarding shall occur away from all typed waters where possible. Avoid parallel cable yarding in, across, or adjacent to stream channels where possible. All type 5 streams shall have a 30-foot equipment exclusion zone measured from each bank. The limited crossings shall be as close to perpendicular as possible.
- D. Down woody debris shall be left where they lie, where operationally feasible.
- E. No blasting operations shall occur without notifying the Contract Administrator at least 48 hours beforehand. Blasting operations are not permitted before 10:00 am on weekdays. No blasting shall take place on weekends or federal holidays.
- F. Marked leave trees may be traded for leave trees of the same size and species with prior approval from the Contract Administrator.
- G. Unit 1 shall only use one yarding setting to avoid impact to streams. Timber may need to be pre-bunched to facilitate. Machinery may enter unit through the yarding corridor. Corridor must be approved in writing by the Contract Administrator prior to falling.
- H. Fell timber into timber sale along private boundary with Sierra Pacific Industries per Clause H-035.
- I. All black cottonwood within a tree length and a half of private property must be felled and yarded. All other black cottonwood within the harvest units must be felled or girdled and left standing. Method of girdling, if utilized, must be approved in writing by the Contract Administrator.

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

H-141 Additional Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

- A. The use of explosives at the S-1100 rock pit and within the sale area shall not be permitted from November 15 to March 15.
- B. Purchaser must develop a safety plan for operations, for the downhill yarding operations in the areas below the rock cliffs in Unit #3, and subsequently

provide written documentation of such to the Contract Administrator, prior to commencement of any activities on site.

- C. All trees marked with double blue rings shall not be traded.
- D. Yarding through the leave tree area located south of the end of the CK-41 Road in Unit #3, shown on the timber sale map, is allowed with prior written approval from the Contract Administrator. Trees removed for yarding shall be paid for as additional volume as set forth in Clause G-101.
- E. Wildlife timing restrictions are: Operation of heavy machinery associated with rock pit activities within the S-1100 rock pit shall be prohibited from one hour before official sunrise to two hours after official sunrise and one hour before official sunset to one hour after official sunset from April 1 to August 31.

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

H-190 Completion of Settings

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

H-220 Protection of Residual or Adjacent Trees

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

Section C: Construction and Maintenance

C-040 Road Plan

Road construction and associated work provisions of the Road Plan for this sale, dated 5/27/2015 are hereby made a part of this contract.

C-050 Purchaser Road Maintenance and Repair

Purchaser shall perform work at their own expense on CK-ML, CK-38, CK-41, CK-42, and CK-43 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 the NF-ML Road. 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 NF-ML Road for the first 300 feet from July 1 to October 30 while hauling.

Section S: Site Preparation and Protection

S-001 Emergency Response Plan

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

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

S-010 Fire Hazardous Conditions

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

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

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

S-030 Landing Debris Clean Up

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

S-050 Cessation of Operations for Low Humidity

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

S-060 Pump Truck or Pump Trailer

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

S-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-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 sale area.

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 (Rev11/05/14)

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 a HPA or 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.



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: Ridge Lift	Region: Northwest
Agreement #: 30-092623	District: Deming
Contact Forester: Samuel Petska Phone / Location: (608)332-9131	County(s): Whatcom
Alternate Contact: Kyle Galloway Phone / Location: (360)319-6720	Other information: Click here to enter text.

Type of Sale: Lump Sum	
Harvest System: Ground based Click here to enter text.	28%
Harvest System: Downhill Cable Click here to enter text.	40%
Harvest System: Uphill Cable Click here to enter text.	32%

UNIT ACREAGES AND METHOD OF DETERMINATION:

Unit # Harvest RW or RMZ WMZ	Legal Description (Enter only one legal for each unit) Sec/Twp/Rng	Grant or Trust	Gross Propo sal Acres	Deductions from Gross Acres (No harvest acres)				Net Harvest Acres	Acreage Determination (List method and error of closure if applicable)
				RMZ/ WMZ Acres	Leave Tree Acres	Existing Road Acres	Other Acres (describe)		
1 VRH	Section 14 T39R05E	01=16% 10=84%	9.2	-	0.6	-	-	8.6	GPS (Garmin)
3 VRH	Section 14 T39R05E	10	63.1	-	2.4	3.2	-	57.5	GPS (Garmin)
TOTAL ACRES			72.3	-	3.0	3.2	-	66.1	

HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription: (Leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
1 VRH	Remove all timber bounded by white timber sale boundary tags and plantation edges, except for forest products bounded by yellow leave tree tags or trees marked with blue paint on the bole and root collar.	None	60 trees have been retained in 1 leave tree area. An additional 14 trees have been scattered across the unit. The total number of leave trees is 74.
3 VRH	Remove all timber bounded by white timber sale boundary tags, the CK-ML and CK-38 roads and plantation edges, except for forest products bounded by yellow leave tree tags or	None	449 trees have been retained in 4 leave tree areas. An additional 68 trees have been scattered

	trees marked with blue paint on the bole and root collar.		across the unit. The total number of leave trees is 517.
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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 VRH	DF, WH/WRC 267 mbf	From the intersection of Highways 542 and 9, continue east on Highway 542 for 2.3 miles. Turn east onto Mosquito Lake Rd and continue for 0.9 miles. Turn north onto the North Fork Rd. and continue for 4.2 miles. Turn southeast onto the CK-ML and continue for 1.2 miles to the landing for Unit 1.	See attached driving map and traverse maps.
3 VRH	WH, BLM/DF 1.9 mmbf	From the start of unit 2, continue on the CK-ML for 0.5 miles to a gate accessible with a F1-3 key. From the gate continue on the CK-ML for 1.0 miles. Follow the CK-ML to the Northwest and continue for 0.5 miles to unit 3.	See attached driving map and traverse maps.
TOTAL MBF	2167 mbf		

REMARKS:

Unit 1 is mainly comprised of Douglas fir and western hemlock with some western red cedar and big leaf maple mixed in. The stand age is roughly 70 years with some scattered older trees. The northwest portion of the unit has some root rot pockets.

Unit 3 is variable and has some portions of 90 year old western hemlock and Douglas fir and some younger, ~70 year old, red alder and big leaf maple in the southern and northeastern portions of the unit with some scattered older trees throughout.

GPS traverse points are marked with Blue and Pink ribbon. Point numbers are indicated on ribbons and metal tags trees. Boundaries, where not evident from plantation edges and roads are marked with white timber sale tags. In addition along plantation edges pink ribbon is used to indicate boundary.

Prepared By: Samuel Petska Date: 5/27/2015	Title: Forester 1	CC:
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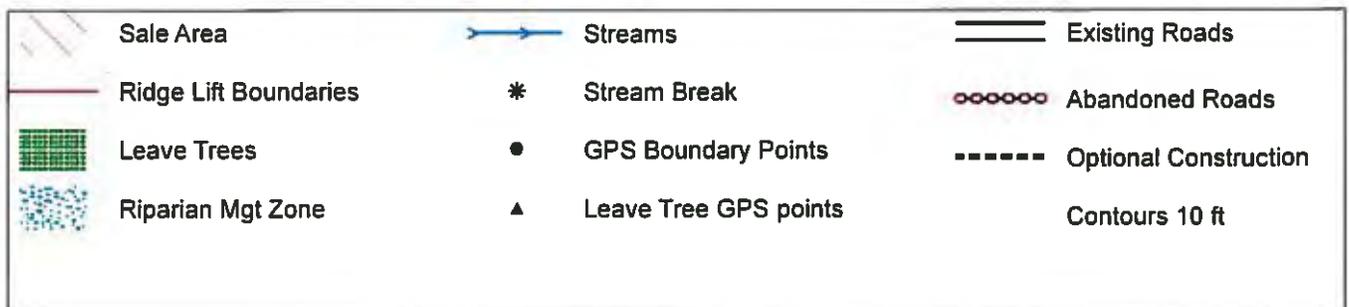
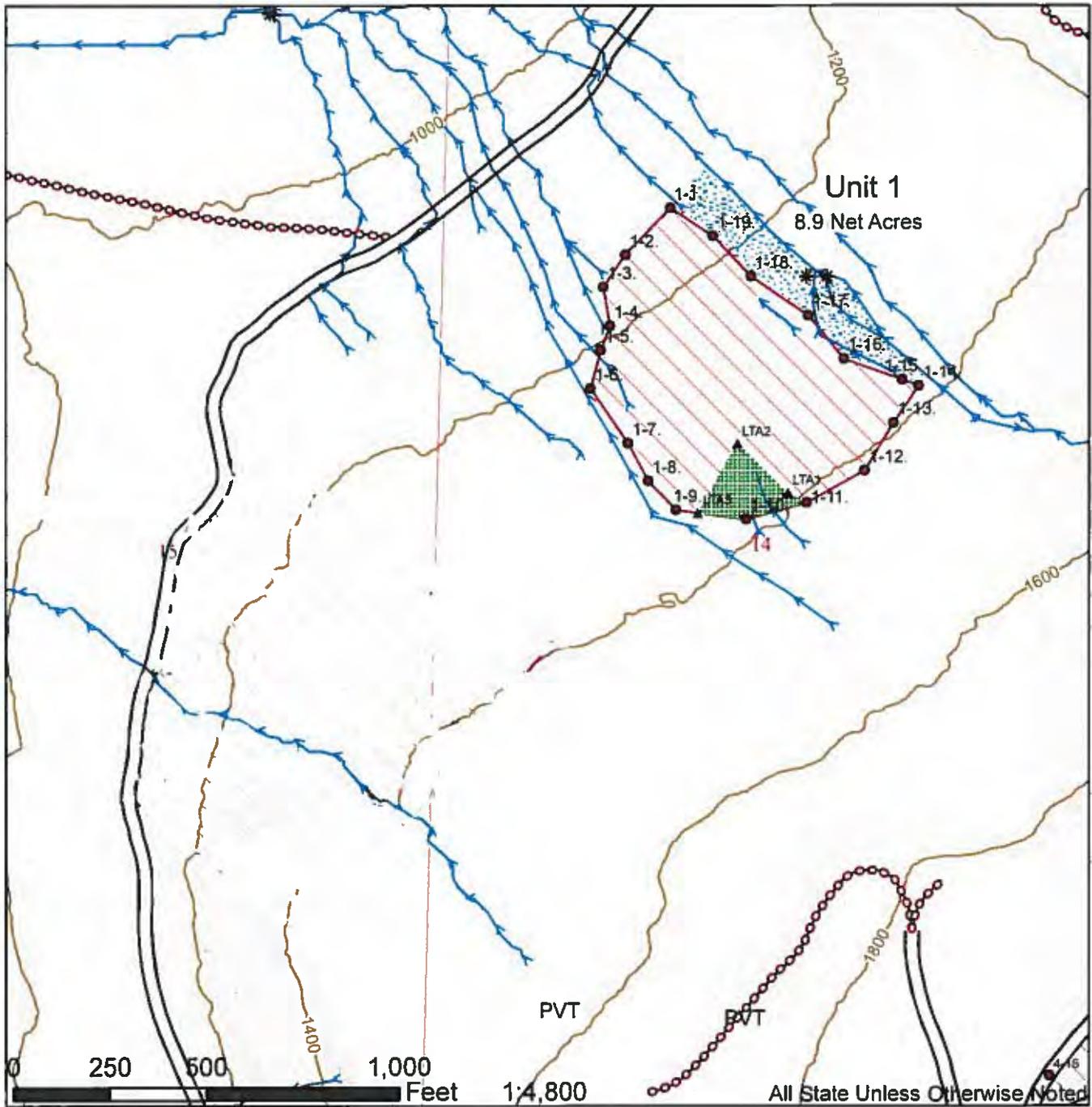
Acreage Calculation Sheet - Ridge Lift

Unit # Harvest R/W or RMZ WMZ	Legal Description	Grant	Gross Proposal Acres	Deductions from Gross Acres (No harvest acres)				Net Harvest Acres	Acreage Determination (List method & error of closure)
				RMZ/ WMZ Acres	Leave Tree Acres	Existing Road Acres	Other Acres		
1	T 39N R 05E Sec. 14	01/10	9.2	-	0.6	-	-	8.6	GPS
3	T 39N R 05E Sec. 14	10	63.1	-	2.4	3.2	-	57.5	GPS
TOTAL			72.3	0.0	3.0	3.2	0.0	66.1	

Traverse Map 1/2

SALE NAME Ridge Lift
 AGREEMENT# 30-092623
 TOWNSHIPS(S) T39R06E
 TRUST(S) Scientific School(10)

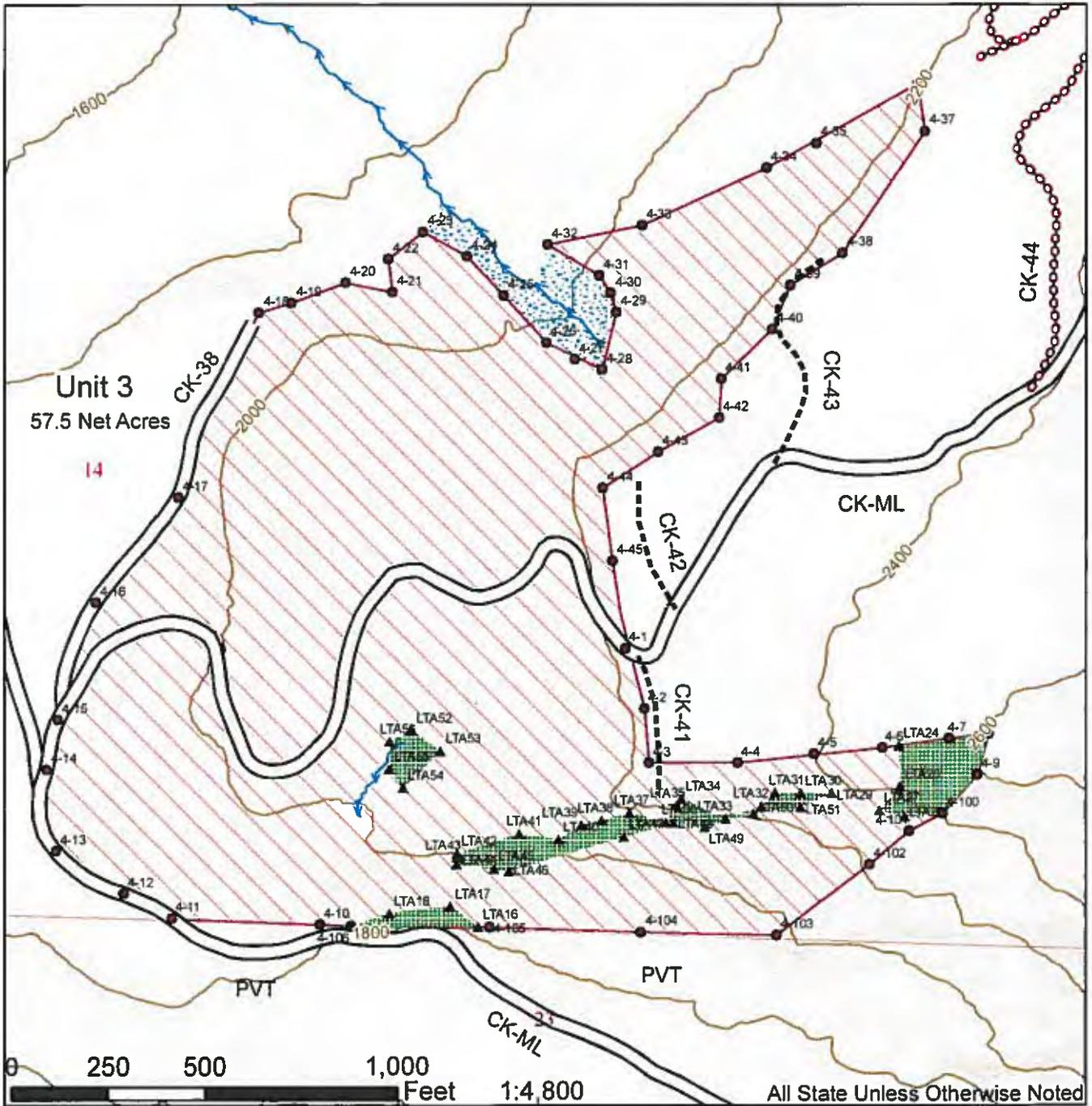
REGION Northwest
 COUNTY(S) Whatcom
 ELEVATION RGE 1115-2603



Traverse Map 2/2

SALE NAME Ridge Lift
 AGREEMENT# 30-092623
 TOWNSHIPS(S) T39R05E
 TRUST(S) Scientific School(10)

REGION Northwest
 COUNTY(S) Whatcom
 ELEVATION RGE 1115-2603



	Sale Area		Streams		Existing Roads
	Ridge Lift Boundaries		Stream Break		Abandoned Roads
	Leave Trees		GPS Boundary Points		Optional Construction
	Riparian Mgt Zone		Leave Tree GPS points		Contours 10 ft



Cruise Narrative

Sale Name: Ridge Lift	Region: Northwest
Agree. #: 30-092623	District: Baker
Lead cruiser: Matt Llobet	Completion date: 7-30-15
Other cruisers on sale: PK	

Unit acreage specifications:

Unit #	Cruised acres	Cruised acres agree with sale acres? Yes/No	If acres do not agree explain why.
1	8.6	Yes	
3	57.5	Yes	
Total	66.1	Yes	

Unit cruise specifications:

Unit #	Sample type (VP, FP, ITS,100%)	Expansion factor (BAF, full/half)	Sighting height (4.5 ft, 16 ft.)	Grid size (Plot spacing or % of area)	Plot ratio (cruise:count)	Total number of plots
1	V.P.	62.5 BAF 40.0 BAF	4.5'	225' x 225'	Cruise All	8
3	V.P.	62.5 BAF 40.0 BAF	4.5'	225' x 225'	1:1	44

Sale/Cruise Description:

Minor species cruise intensity:	Used a 40 prism to capture minors species in units 1,3						
Minimum cruise spec:	Minimum DBH 8 inches, 10 Net Board feet, Minimum Top Diameter 5 inches or 40% of 16-foot form point						
Avg ring count by sp:	<table style="width: 100%; border: none;"> <tr> <td style="border: none;">DF =</td> <td style="border: none; text-align: center;">8</td> <td style="border: none;">WH =</td> <td style="border: none; text-align: center;">8</td> <td style="border: none;">SS =</td> <td style="border: none;"></td> </tr> </table>	DF =	8	WH =	8	SS =	
DF =	8	WH =	8	SS =			
Leave/take tree description:	Unit 1-3 Variable Retention Harvest – Harvest all timber bound by white timber sale boundary tags, roads, and young stands, except trees marked with blue paint or bound out with yellow leave tree tags.						
Other conditions							

Field observations:

<p>All timber was graded in variable log lengths with the Scaling Bureaus Westside/ Northwest log rules. The utility wood was given a board ft. volume. Ridge Lift timber sale was cruised using the variable plot sample method. Ridge Lift timber sale is 66.1 acres, with good road access.</p> <p>General Location – Up North Fork Rd (off Mosquito Lake Rd)</p>

Harvest Method

- Cable/Ground Base

Field observations

- Observed steep/rocky broken up ground in the SE portion of unit 3

Timber quality

- Good, observed frost crack in the WH in unit 3

Stand Health

- Overall good health
- Observed root rot pockets in unit 1, primarily affecting the WH

Plots dropped

- Sample points were dropped due to leave tree clumps and unit boundary

Elevation

- 1115'-2603'

Prepared by: Matt Llobet

**Title: Northwest
Region Timber
Cruiser**

TC PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																				
T39N R05E S14 Ty00U1 8.60 T39N R05E S14 Ty00U3 57.50		Project: RIDGELIF Acres 66.10										Page 1 Date 1/21/2016 Time 1:51:55PM										
Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre	
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf		
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99						
RA	D	2S		12	15.4	251	212	14			100			32	68			25	13	129	1.47	1.6
RA	D	3S		25	12.6	495	432	29			100			3	97			25	9	80	0.88	5.4
RA	D	4S		51	5.0	914	868	57	30	70			15	36	7	41		30	6	45	0.48	19.1
RA	D	UT		12		188	188	12	63	37			11	41	15	33		22	5	28	0.48	6.6
RA Totals				5	7.9	1,848	1,701	112	22	65	12		14	56	5	25		28	7	52	0.58	32.8
RC	D	3S		85	13.1	1,005	874	58			54	28	18	1		5	94	35	10	121	1.16	7.2
RC	D	4S		15	29.5	211	149	10	97	2		0	8	36		55		28	5	28	0.48	5.3
RC Totals				3	15.9	1,216	1,022	68	14	46	24	16	2	5	4	89		32	8	81	0.91	12.6
BM	D	2S		29	12.0	780	686	45				92	8	23	69		8	26	13	158	1.61	4.3
BM	D	3S		5	16.9	119	98	7			100				100			30	10	98	1.07	1.0
BM	D	4S		44	2.1	1,043	1,021	68	6	94			39	61				25	7	43	0.50	24.0
BM	D	UT		22	6.9	537	500	33	71	29			15	61	9	15		24	5	27	0.36	18.4
BM Totals				7	7.0	2,478	2,306	152	18	52	28	2	27	65	2	6		25	7	48	0.57	47.7
DF	D	2S		62	18.4	2,765	2,257	149				34	66			8	92	39	17	398	3.23	5.7
DF	D	3S		22	7.2	844	783	52			100				3	97		38	10	137	1.01	5.7
DF	D	4S		3	9.9	133	119	8	78	22				22	78			34	5	33	0.39	3.6
DF	D	UT		13		451	451	30			8	92		8	92			14	13	265	3.63	1.7
DF Totals				11	13.9	4,193	3,611	239	3	23	22	53	1	13	5	81		35	12	216	1.82	16.7
WH	D	2S		29	6.3	7,706	7,223	477				93	7			100		40	13	242	1.54	29.8
WH	D	3S		48	4.8	12,430	11,837	782	0	100				1	1	31	68	37	8	86	0.65	138.2
WH	D	4S		17	2.1	4,386	4,293	284	88	12				13	17	39	31	29	5	31	0.31	138.3
WH	D	UT		6		1,387	1,387	92	63	5	16	15		17	68	15		23	6	33	0.36	42.3
WH Totals				72	4.5	25,909	24,740	1,635	19	50	28	3	4	7	22	68		32	7	71	0.60	348.5
CW	D	2S		100	2.4	669	653	43				20	80			100		40	22	872	4.41	.7
CW Totals				2	2.4	669	653	43				20	80			100		40	22	872	4.41	.7
SF	D	3S		69		121	121	8			100					100		40	8	90	0.64	1.3
SF	D	4S		31		54	54	4	100						100			33	5	40	0.24	1.3
SF Totals				1		174	174	12	31	69					31	69		37	7	65	0.46	2.7
Totals					6.2	36,487	34,208	2,261	17	47	26	10	5	14	17	64		31	7	74	0.66	461.7

TC PSTATS		PROJECT STATISTICS							PAGE	1	
		PROJECT RIDGELIF							DATE	1/21/2016	
TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
39N	05E	14	RIDGELIF	00U1	66.10	52	263	S	W		
39N	05E	14	RIDGELIF	00U3							
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL			52	263	5.1						
CRUISE			31	148	4.8	17,629	.8				
DBH COUNT											
REFOREST											
COUNT			21	111	5.3						
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	86	199.7	13.4	66	53.3	195.2	25,909	24,740	6,685	6,685	
BL MAPLE	22	32.2	12.7	51	7.9	28.2	2,478	2,306	672	672	
DOUG FIR	8	6.6	27.2	94	5.1	26.7	4,193	3,611	1,076	1,075	
WR CEDAR	10	6.5	17.5	68	2.6	10.9	1,216	1,022	367	367	
R ALDER	18	20.0	13.3	55	5.3	19.2	1,848	1,701	525	526	
COTWOOD	3	.4	38.6	89	0.5	3.0	669	653	132	132	
PS FIR	1	1.3	13.0	80	0.3	1.2	174	174	45	45	
TOTAL	<i>148</i>	<i>266.7</i>	<i>14.0</i>	<i>64</i>	<i>76.1</i>	<i>284.5</i>	<i>36,487</i>	<i>34,208</i>	<i>9,502</i>	<i>9,503</i>	
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		97.1	10.5	176	197	217					
BL MAPLE		101.3	22.1	89	115	140					
DOUG FIR		113.8	42.9	539	945	1,351					
WR CEDAR		91.5	30.4	271	389	507					
R ALDER		61.3	14.9	92	108	124					
COTWOOD				2,615	2,615	2,615					
PS FIR											
TOTAL		<i>157.4</i>	<i>13.0</i>	<i>226</i>	<i>260</i>	<i>293</i>	<i>989</i>	<i>505</i>	<i>247</i>		
CL	68.1	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.			
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK		81.5	11.3	177	200	222					
BL MAPLE		185.8	25.7	24	32	40					
DOUG FIR		214.3	29.7	5	7	9					
WR CEDAR		208.6	28.9	5	7	8					
R ALDER		199.4	27.6	14	20	25					
COTWOOD		541.1	75.0	0	0	1					
PS FIR		721.1	99.9	0	1	3					
TOTAL		<i>48.8</i>	<i>6.8</i>	<i>249</i>	<i>267</i>	<i>285</i>	<i>95</i>	<i>49</i>	<i>24</i>		
CL	68.1	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.			
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK		78.3	10.9	174	195	216					
BL MAPLE		170.0	23.6	22	28	35					
DOUG FIR		208.3	28.9	19	27	34					
WR CEDAR		192.0	26.6	8	11	14					
R ALDER		193.6	26.8	14	19	24					
COTWOOD		533.3	73.9	1	3	5					
PS FIR		721.1	99.9	0	1	2					
TOTAL		<i>39.9</i>	<i>5.5</i>	<i>269</i>	<i>284</i>	<i>300</i>	<i>64</i>	<i>32</i>	<i>16</i>		

PROJECT STATISTICS
PROJECT RIDGELIF

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
39N	05E	14	RIDGELIF	00U1	66.10	52	263	S	W
39N	05E	14	RIDGELIF	00U3					

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		85.3	11.8	21,817	24,740	27,663			
BL MAPLE		177.1	24.5	1,740	2,306	2,872			
DOUG FIR		202.3	28.0	2,599	3,611	4,623			
WR CEDAR		188.2	26.1	756	1,022	1,289			
R ALDER		203.2	28.2	1,222	1,701	2,180			
COTWOOD		540.7	74.9	164	653	1,142			
PS FIR		721.1	99.9	0	174	348			
TOTAL		<i>50.1</i>	<i>6.9</i>	<i>31,834</i>	<i>34,208</i>	<i>36,582</i>	<i>100</i>	<i>51</i>	<i>25</i>

CL	68.1	COEFF	V BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
WHEMLOCK		11.0	1.5	112	127	142			
BL MAPLE		77.3	10.7	62	82	102			
DOUG FIR		44.0	6.1	97	135	173			
WR CEDAR		132.7	18.4	69	94	118			
R ALDER		170.5	23.6	64	89	114			
COTWOOD		540.7	74.9	54	214	375			
PS FIR		721.1	99.9	0	141	282			
TOTAL		<i>43.4</i>	<i>6.0</i>	<i>112</i>	<i>120</i>	<i>129</i>	<i>75</i>	<i>38</i>	<i>19</i>

T TSPCSTGR	Species, Sort Grade - Board Foot Volumes (Type)										Page 1											
	Project: RIDGELIF										Date 1/21/2016											
											Time 1:51:55PM											
T39N R05E S14 T00U1										T39N R05E S14 T00U1												
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt													
39N	05E	14	RIDGELIF	00U1	8.60	8	35	S	W													
Spp	S	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log			Logs Per /Acre		
					Net BdFt	Def%	Gross		Net	Log Scale Dia.				Log Length				Ln	Dia		Bd	CF/Lf
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf		
BM	DM	2S		30	21.4	1,751	1,376	12			71	29	18	52		29	28	13	152	1.75		9.0
BM	DM	3S		17	16.9	911	757	7		100				100			30	10	98	1.07		7.7
BM	DM	4S		26	12.1	1,362	1,197	10	42	58			19	81			26	6	32	0.46		37.0
BM	DM	UT		27		1,196	1,196	10	75	25			4	85	11		23	5	25	0.36		47.6
BM	Totals			20	13.3	5,220	4,526	39	31	39	22	9	12	77	12		25	7	45	0.60		101.3
WH	DM	3S		67	5.8	3,998	3,765	32		100					100		39	9	111	0.80		33.9
WH	DM	4S		24	8.3	1,429	1,310	11	100				15		37	47	31	5	29	0.30		45.8
WH	DM	UT		9		474	474	4		100				100			24	8	40	0.50		11.8
WH	Totals			24	6.0	5,900	5,548	48	24	76			4	9	9	79	33	7	61	0.54		91.5
RC	DM	3S		88	27.5	3,290	2,384	21		20	28	52	2		98		34	13	212	2.39		11.2
RC	DM	4S		12	60.0	795	318	3	91	8		1	31		69		29	6	32	1.06		10.0
RC	Totals			12	33.9	4,085	2,702	23	11	19	25	46	5		95		32	10	127	1.82		21.2
CW	DM	2S		100	2.4	5,141	5,019	43		20	80				100		40	22	872	4.41		5.8
CW	Totals			22	2.4	5,141	5,019	43		20	80				100		40	22	872	4.41		5.8
RA	DM	2S		26		398	398	3		100				100			30	14	210	1.98		1.9
RA	DM	4S		66	8.4	1,087	996	9	28	72				55	45		33	6	40	0.43		24.7
RA	DM	UT		8		120	120	1	53	47			53	47			17	5	15	0.36		8.3
RA	Totals			7	5.7	1,606	1,514	13	22	51	26		4	66	29		29	6	43	0.51		34.9
DF	DM	2S		94	1.8	3,224	3,165	27		30	70				100		40	17	458	2.42		6.9
DF	DM	3S		6	16.7	207	173	1		100				100			27	8	50	0.73		3.5
DF	Totals			15	2.7	3,432	3,338	29		5	28	67		5	95		36	14	322	1.99		10.4
Type Totals					10.8	25,384	22,646	195	15	33	18	35	4	23	2	71	30	8	85	0.84		265.0

T39N R05E S14 T00U3 T39N R05E S14 T00U3
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt
 39N 05E 14 RIDGELIF 00U3 57.50 44 113 S W

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre		
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft		CF/ Lf	
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99						
WH		DM	2S	30	6.3	8,858	8,303	477			93	7				100	40	13	242	1.54	34.3	
WH		DM	3S	47	4.7	13,691	13,045	750	0	100				1	1	32	66	37	8	85	0.64	153.7
WH		DM	4S	17	1.9	4,828	4,739	272	88	12				13	17	39	30	29	5	31	0.31	152.1
WH		DM	UT	6		1,524	1,524	88	66	1	17	16		17	66		16	23	6	33	0.35	46.8
WH	Totals			77	4.5	28,901	27,610	1,588	19	49	29	3		4	7	22	67	32	7	71	0.60	387.0
DF		DM	2S	58	21.3	2,696	2,122	122			36	64				10	90	39	17	387	3.39	5.5
DF		DM	3S	24	6.9	940	875	50		100						100		39	10	144	1.03	6.1
DF		DM	4S	3	9.9	152	137	8	78	22					22	78		34	5	33	0.39	4.2
DF		DM	UT	15		519	519	30		8		92		8	92			14	13	265	3.63	2.0
DF	Totals			10	15.2	4,307	3,652	210	3	26	21	51		1	14	6	79	35	12	206	1.81	17.7
BM		DM	2S	29	8.1	635	583	34			100			24	76			26	14	160	1.55	3.6
BM		DM	4S	50		995	995	57		100				42	58			25	8	45	0.51	22.1
BM		DM	UT	21	9.8	438	395	23	69	31				19	50	13	18	25	5	28	0.36	14.0
BM	Totals			5	4.6	2,068	1,974	113	14	57	30			32	61	3	4	25	7	50	0.55	39.7
RA		DM	2S	10	19.5	229	184	11			100			42	58			24	13	115	1.36	1.6
RA		DM	3S	29	12.6	569	497	29		100				3	97			25	9	80	0.88	6.2
RA		DM	4S	49	4.4	888	849	49	31	69				18	33	9	41	30	7	47	0.49	18.3
RA		DM	UT	12		199	199	11	64	36				7	40	17	36	23	5	31	0.49	6.4
RA	Totals			5	8.2	1,884	1,729	99	22	67	11			15	55	6	24	27	7	53	0.59	32.5
RC		DM	3S	84	2.3	663	648	37		72	28					8	92	35	9	98	0.86	6.6
RC		DM	4S	16		123	123	7	100						50		50	27	5	27	0.29	4.6
RC	Totals			2	2.0	786	771	44	16	60	24				8	7	85	32	7	68	0.66	11.3
SF		DM	3S	69		139	139	8		100						100		40	8	90	0.64	1.5
SF		DM	4S	31		62	62	4	100						100			33	5	40	0.24	1.5
SF	Totals			1		200	200	12	31	69					31	69		37	7	65	0.46	3.1
Type Totals					5.8	38,147	35,937	2,066	17	48	27	7		5	13	18	63	31	7	73	0.64	491.2

TC TSTATS		STATISTICS							PAGE	1
		PROJECT RIDGELIF							DATE	1/21/2016
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
39N	05E	14	RIDGELIF	00U1	8.60	8	35	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
		PLOTS	TREES	PER PLOT	TREES	TREES				
TOTAL		8	35	4.4						
CRUISE		8	35	4.4	1,434		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
BL MAPLE	13	75.4	12.6	42	18.3	65.0	5,220	4,526	1,520	1,519
WHEMLOCK	6	45.8	13.7	76	12.7	46.9	5,900	5,548	1,633	1,633
WR CEDAR	7	12.6	22.5	58	7.4	35.0	4,085	2,702	1,225	1,225
COTWOOD	3	2.9	38.6	89	3.8	23.4	5,141	5,019	1,015	1,015
R ALDER	4	26.6	11.7	52	5.8	20.0	1,606	1,514	509	509
DOUG FIR	2	3.5	28.8	112	2.9	15.6	3,432	3,338	739	739
TOTAL	35	166.7	15.1	56	53.1	205.9	25,384	22,646	6,641	6,641
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	
BL MAPLE		114.0	32.9	80	119	158				
WHEMLOCK		46.7	20.8	112	142	171				
WR CEDAR		80.7	32.8	325	484	643				
COTWOOD				2,615	2,615	2,615				
R ALDER		104.7	59.8	38	95	152				
DOUG FIR		4.4	4.1	930	970	1,010				
TOTAL		132.7	22.7	303	392	482	703	359	176	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
BL MAPLE		112.5	42.4	43	75	107				
WHEMLOCK		103.8	39.1	28	46	64				
WR CEDAR		159.4	60.1	5	13	20				
COTWOOD		202.0	76.2	1	3	5				
R ALDER		176.3	66.5	9	27	44				
DOUG FIR		187.5	70.7	1	3	6				
TOTAL		44.3	16.7	139	167	195	89	46	22	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
BL MAPLE		73.1	27.6	47	65	83				
WHEMLOCK		94.3	35.5	30	47	64				
WR CEDAR		113.3	42.7	20	35	50				
COTWOOD		198.4	74.8	6	23	41				
R ALDER		151.2	57.0	9	20	31				
DOUG FIR		185.2	69.8	5	16	27				
TOTAL		48.0	18.1	169	206	243	105	53	26	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
BL MAPLE		70.9	26.7	3,317	4,526	5,735				
WHEMLOCK		89.9	33.9	3,668	5,548	7,429				
WR CEDAR		115.5	43.5	1,525	2,702	3,878				

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

T39N R05E S14 Ty00U1	8.6
T39N R05E S14 Ty00U3	57.5

Project RIDGELIF
Acres 66.10

Page No 1
Date: 1/21/2016
Time 1:51:55PM

Species	Total	Total	Total	Net Cubic Ft/		CF/ LF	Total CCF		Total MBF	
	Trees	Logs	Tons	Tree	Log		Gross	Net	Gross	Net
WHEMLOCK	13,198	23,037	14,141	33.48	19.18	0.62	4,419	4,419	1,713	1,635
DOUG FIR	439	1,106	2,027	162.08	64.26	1.83	711	711	277	239
BL MAPLE	2,126	3,155	1,176	20.91	14.09	0.56	444	444	164	152
R ALDER	1,320	2,166	954	26.33	16.05	0.57	347	348	122	112
WR CEDAR	432	830	571	56.16	29.25	0.92	243	243	80	68
COTWOOD	25	50	214	352.46	176.23	4.41	87	87	44	43
PS FIR	89	177	85	33.43	16.71	0.45	30	30	12	12
Totals	17,629	30,522	19,168	35.63	20.58	0.68	6,281	6,282	2,412	2,261

Wood Type Species	Total	Total	Total	Net Cubic Ft/		CF/ LF	Total CCF		Total MBF	
	Trees	Logs	Tons	Tree	Log		Gross	Net	Gross	Net
C	14,157	25,151	16,823	38.16	21.48	0.69	5,403	5,402	2,082	1,953
H	3,471	5,370	2,345	25.33	16.38	0.62	878	879	330	308
Totals	17,629	30,522	19,168	35.63	20.58	0.68	6,281	6,282	2,412	2,261



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

FPA/N No: 2814981
 Effective Date: 2/19/2016
 Expiration Date: 2/19/2019
 Shut Down Zone: 656, 658
 EARR Tax Credit: Eligible Non-eligible
 Reference: Ridge Lift

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

DECISION:

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

FPA/N CLASSIFICATION

Number of Years Granted on Multi-Year Request

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

Conditions on Approval / Reasons for Disapproval

Issued By: Megan Penney *MP*

Region: Northwest

Title: Nooksack Forest Practice Forester

Date: 2/19/2016

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 #_2814_____

Braelyn Hamilton
(Printed name)

(Signature)



WASHINGTON STATE
DEPT. OF NATURAL RESOURCES
NORTHWEST REGION

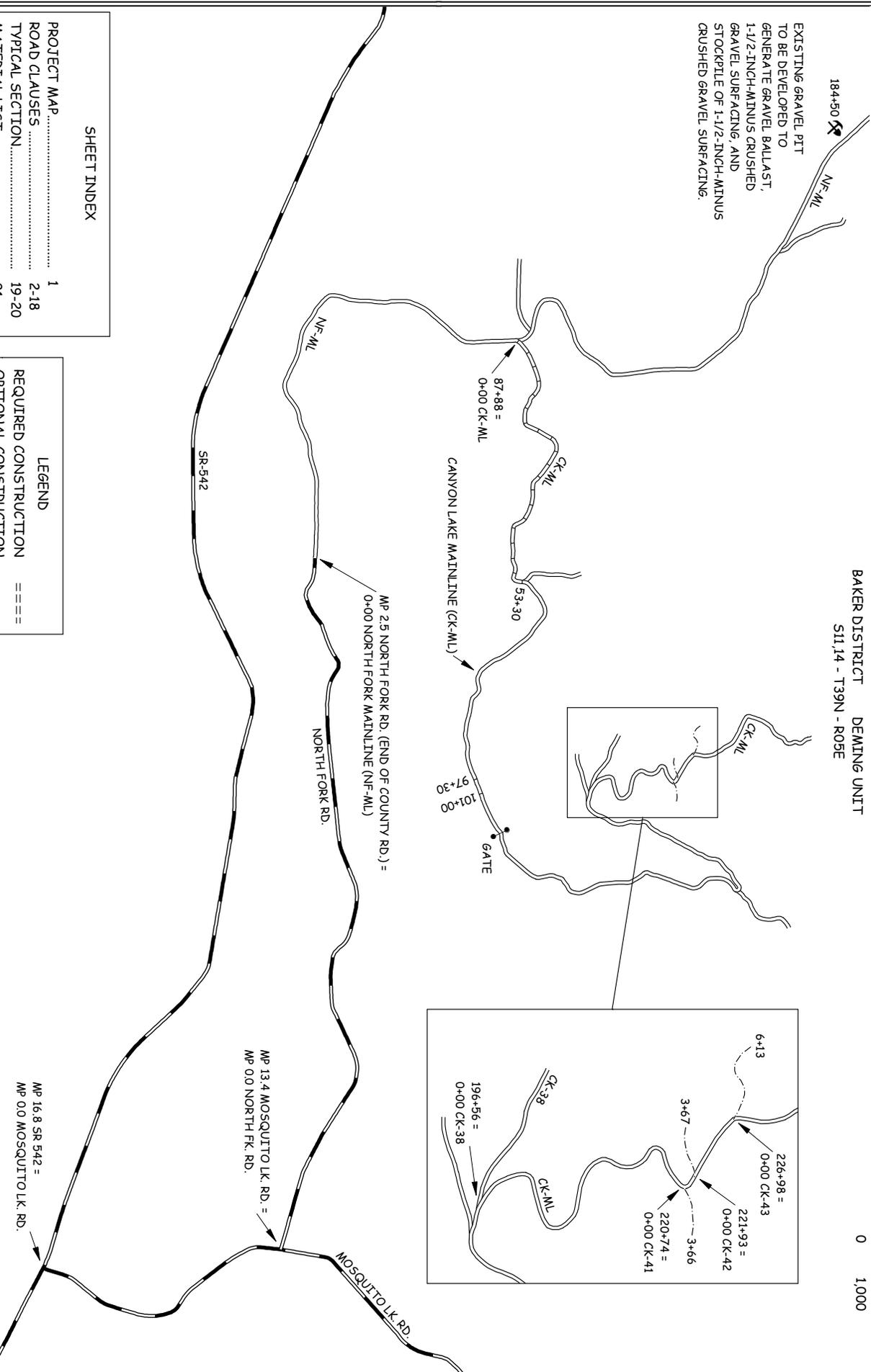
ROAD PLAN AND SPECIFICATIONS

#92623 RIDGE LIFT

BAKER DISTRICT DEMING UNIT
S11.14 - T39N - R05E

SCALE
0 1,000

EXISTING GRAVEL PIT
TO BE DEVELOPED TO
GENERATE GRAVEL BALLAST,
1-1/2-INCH-MINUS CRUSHED
GRAVEL SURFACING, AND
STOCKPILE OF 1-1/2-INCH-MINUS
CRUSHED GRAVEL SURFACING.



SHEET INDEX

PROJECT MAP.....	1
ROAD CLAUSES.....	2-18
TYPICAL SECTION.....	19-20
MATERIAL LIST.....	21
FARMS.....	22-23
STANDARD DETAILS.....	24

LEGEND

REQUIRED CONSTRUCTION	=====
OPTIONAL CONSTRUCTION	-----
REQUIRED RECONSTRUCTION	-----
OPTIONAL RECONSTRUCTION	-----

DESIGNED BY CARLSON	REVIEWED BY ZYLSTRA 7/7/15	APPROVED BY	PLAN DATE 5/27/2015	SHEET 1 OF 24
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STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

RIDGE LIFT TIMBER SALE ROAD PLAN
WHATCOM COUNTY
DEMING UNIT BAKER DISTRICT

AGREEMENT NO.: 92623

STAFF ENGINEER: CARLSON

DATE: MAY 27, 2015

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>
CK-ML	0+00 to 53+30	RECONSTRUCTION
CK-ML	97+30 to 101+00	RECONSTRUCTION

0-3 OPTIONAL ROADS

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

<u>Road</u>	<u>Stations</u>	<u>Type</u>
CK-41	0+00 to 3+66	CONSTRUCTION
CK-42*	0+00 to 3+67	CONSTRUCTION
CK-43	0+00 to 6+13	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, application of gravel ballast rock, and application of 1-1/2-inch-minus crushed rock surfacing.

0-5 RECONSTRUCTION

Reconstruction includes, but is not limited to blading, shaping, and ditching the road surface, culvert installation, and application of 1-1/2-inch-minus crushed rock surfacing.

0-10 ABANDONMENT

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

0-12 DEVELOP ROCK SOURCE

Purchaser shall develop an existing rock source. Rock source development will involve processing rock to generate gravel ballast and 1-1/4-inch-minus crushed rock surfacing. 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, unless controlled by construction stakes.

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

1-5 DESIGN DATA

Design data is available upon request at the Department of Natural Resources Northwest Region Office in Sedro Woolley, WA.

1-6 ORDER OF PRECEDENCE

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

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

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 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>Road</u>	<u>Activity</u>	<u>Closure Period</u>
All roads	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.

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.

2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS

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.

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.

3-10 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 30 feet of a cross drain culvert.
- Within 30 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.

4-8 CURVE WIDENING

The minimum widening placed on the inside of curves is:

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

4-9 EMBANKMENT WIDENING

The minimum embankment widening is:

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

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

4-21 TURNOUTS

Purchaser shall construct turnouts intervisible with a maximum distance of 1,000 feet between turnouts 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.

4-35 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 30 feet of a cross drain culvert.
- Within 30 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.

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. Purchaser shall obtain approval from the Contract Administrator for the quality of used culverts before installation.

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 National Corrugated Metal Pipe Association's "Installation Manual for Corrugated Steel Drainage Structures" and the Corrugated Polyethylene Pipe Association's "Recommended Installation Practices for Corrugated Polyethylene Pipe and Fittings".

5-16 APPROVAL FOR LARGER CULVERT INSTALLATION

Purchaser shall obtain written approval from the Contract Administrator for the installation of culverts 36 inches in diameter and over before backfilling.

5-17 CROSS DRAIN SKEW AND SLOPE

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

5-25 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 source, a joint operating plan must be developed. All parties shall follow this plan.

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
S-1100 Pit	Sta. 184+50 of the NF-ML road.	gravel ballast, 1-1/2-inch-minus crushed rock surfacing

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>
S-1100 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.

6-20 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.

6-29 1 ½-INCH MINUS CRUSHED ROCK

% Passing 1 ½" square sieve	100%
% Passing 1" square sieve	70 - 90%
% Passing 5/8" square sieve	50 - 80%
% Passing U.S. #4 sieve	30 - 50%
% Passing U.S. #40 sieve	3 - 18%
% Passing U.S. #200 sieve	7.5% maximum

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

6-55 ROCK APPLICATION MEASURED BY COMPACTED DEPTH

Measurement of specified rock depths, are defined as the compacted depth(s) using the compaction methods required in this road plan. Estimated quantities specified in the 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.

6-65 ROCK STOCKPILE LOCATION

Purchaser shall stockpile rock as listed below.

<u>Rock Source</u>	<u>Rock Type</u>	<u>Quantity (c.y.)</u>	<u>Stockpile Location</u>
S-1100 Pit	1-1/2-inch-minus crushed gravel surfacing	2000	S-1100 Pit

6-67 ROCK STOCKPILE SPECIFICATIONS

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

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

When completed, the stockpile must be neat and regular in shape. The stockpile height is limited to a maximum of 24 feet. Stockpiles in excess of 200 cubic yards must be built up in layers of not more than 4 feet deep. Stockpile layers must be constructed by trucks, clamshells, or other methods approved in writing by the Contract Administrator. Each layer must be completed over the entire area of the pile before depositing aggregates in the next layer. The aggregates may not be dumped so that they run down and over the lower layers in the stockpile. The method of dropping from a bucket or spout in one location to form a cone shaped pile is not allowed.

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

6-70 APPROVAL BEFORE ROCK APPLICATION

Purchaser shall obtain written approval from the Contract Administrator for culvert installation, ditch construction, ditch reconstruction, headwall construction, and headwall reconstruction 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 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.

8-17 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

9-3 CULVERT MATERIAL REMOVED FROM STATE LAND

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

9-10 LANDING DRAINAGE

Purchaser shall provide for drainage of the landing surface.

9-12 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.

9-21 ROAD ABANDONMENT

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

<u>Road</u>	<u>Stations</u>
CK-41	0+00 to 3+66
CK-42	0+00 to 3+67
CK-43	0+00 to 6+13

9-22 ABANDONMENT

- Remove all ditch relief culverts. The resulting slopes must be 1:1 or flatter. Place and compact the removed fill material in a location that will not erode into any Type 1 through 5 waters or wetlands.
- Remove all culverts in natural drainages. The resulting slopes must be 1:1 or flatter. Strive to match the existing native stream bank gradient. The natural streambed width must be re-established. Place and compact the removed fill material in a location that will not erode into any Type 1 through 5 waters or wetlands.
- Transport all removed culverts off site. All removed culverts are the property of the Purchaser.
- Construct non-drivable waterbars at natural drainage points and at a spacing that will produce a vertical drop of no more than 20 feet between waterbars and with a maximum horizontal spacing of 400 feet.
- Skew waterbars at least 30 degrees from perpendicular to the road centerline on roads in excess of 3 percent grade.
- Key waterbars into the cut-slope to intercept the ditch. Waterbars must be outsloped to provide positive drainage. Outlets must be on stable locations.
- Inslope or outslope the road as appropriate.
- Remove bridges and other structures.
- Pull back unstable fill that has potential of failing and entering any Type 1 through 5 waters or wetlands. Place and compact removed material in a stable location.
- Remove berms except as designed.
- Block the road by constructing an aggressive barrier of dense interlocked large woody debris (logs, stumps, root wads, etc.) so that four wheel highway vehicles cannot pass the point of abandonment. Typical barrier dimensions are 10 feet high by 20 feet deep, spanning the entire road prism from top of cutslope to toe of fillslope. Long term effectiveness is the primary objective. If necessary construct a vehicular turn-around near the point of abandonment.
- Apply grass seed to all exposed soils resulting from the abandonment work and in accordance with Section 8 EROSION CONTROL

SECTION 10 MATERIALS

10-15 CORRUGATED STEEL CULVERT

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

10-16 CORRUGATED ALUMINUM CULVERT

Aluminum culverts must meet AASHTO M-196 (ASTM A-745) specifications.

10-17 CORRUGATED PLASTIC CULVERT

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

10-21 METAL BAND

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

10-22 PLASTIC BAND

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

10-24 GAGE AND CORRUGATION

Unless otherwise stated in the engineer's design, metal culverts must conform to the following specifications for gage and corrugation as a function of diameter.

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

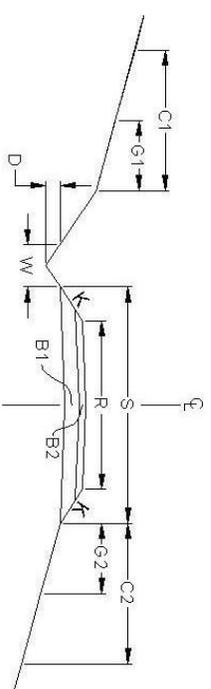
SECTION 11 SPECIAL NOTES

11-1 LIGHT RIPRAP

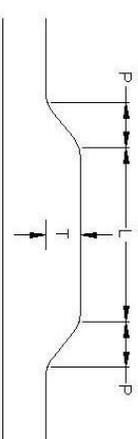
Purchaser may use competent on-site rock or boulders as riprap for culvert installations. This material is subject to approval by the Contract Administrator.

ROAD #	CK-ML	CK-ML	CK-41	CK-42*
REQUIRED / OPTIONAL	REQUIRED	REQUIRED	OPTIONAL	OPTIONAL
CONSTRUCT / RECONSTRUCT	RECONSTRUCT	RECONSTRUCT	CONSTRUCT	CONSTRUCT
TOLERANCE CLASS (A/B/C)	C	C	C	C
STATION / MP TO	0+00	97+30	0+00	0+00
STATION / MP	53+30	101+00	3+66	3+67
ROAD WIDTH	R 12	12	12	12
CROWN (INCHES @ C/L)	3	3	3	3
DITCH WIDTH	W 3	3	2	2
DITCH DEPTH	D 1	1	1	1
TURNOUT LENGTH	L 50	--	25	--
TURNOUT WIDTH	T 10	--	10	--
TURNOUT TAPER	P 25	--	25	--
GRUBBING	G1 --	--	5	--
	G2 --	--	5	--
CLEARING	C1 --	--	10	--
	C2 --	--	10	--
ROCK FILLSLOPE	K:1 1½	--	1½	--
❖ BALLAST DEPTH	B1	--	18	--
CUBIC YARDS / STATION		--	124	--
➤ TOTAL CY BALLAST		--	455	100
❖ SURFACING DEPTH	B2 4	--	--	--
CUBIC YARDS / STATION	22	--	--	--
➤ TOTAL CY SURFACING	1175	40	--	--
➤ TOTAL CUBIC YARDS	1175	40**	455	100
SUBGRADE WIDTH	S 13.0	--	16.5	--
BRUSHCUT (Y/N)	N	N	N	N
BLADE, SHAPE, & DITCH (Y/N)	Y	N	N	N

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. Ballast quantity is for spot patching over triple tank trap and other locations as needed.

** Ballast quantity for fill over culvert installations.

ROAD #		CK-43							
REQUIRED / OPTIONAL		OPTIONAL							
CONSTRUCT / RECONSTRUCT		CONSTRUCT							
TOLERANCE CLASS (A/B/C)		C							
STATION / MP TO		0+00							
STATION / MP		6+13							
ROAD WIDTH	R	12							
CROWN (INCHES @ C/L)		3							
DITCH WIDTH	W	2							
DITCH DEPTH	D	1							
TURNOUT LENGTH	L	25							
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	18							
CUBIC YARDS / STATION		124							
➤ TOTAL CY BALLAST		760							
❖ SURFACING DEPTH	B2	--							
CUBIC YARDS / STATION		--							
➤ TOTAL CY SURFACING		--							
➤ TOTAL CUBIC YARDS		760							
SUBGRADE WIDTH	S	16.5							
BRUSH CUT (Y/N)		N							
BLADE, SHAPE, & DITCH (Y/N)		N							

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

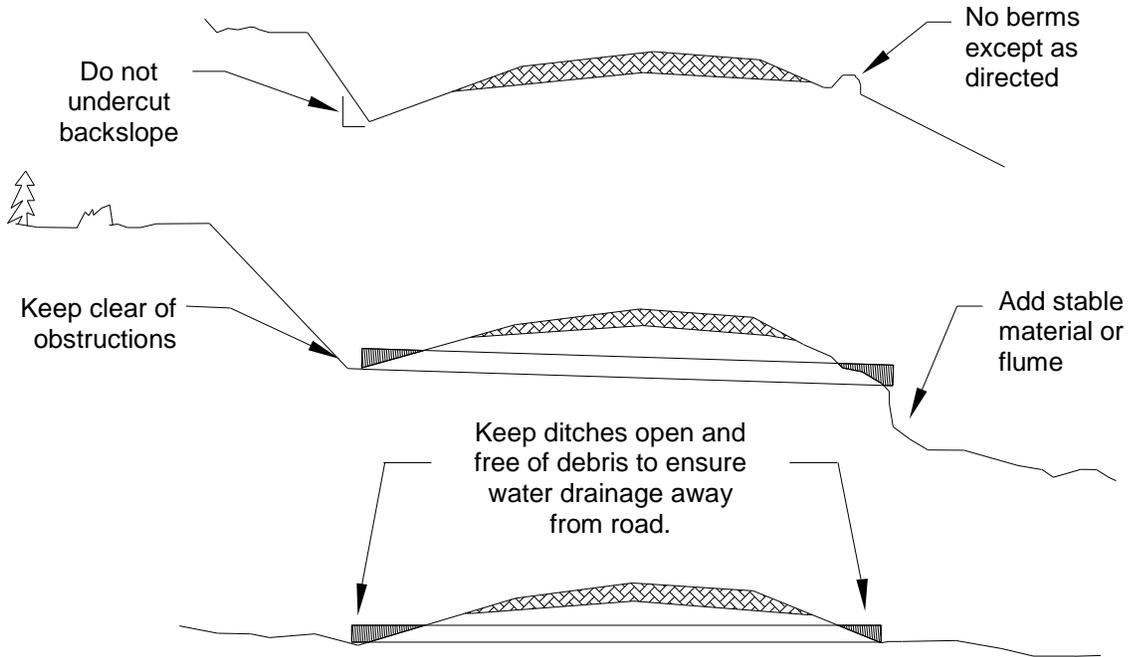
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

Termination of Use or End of Season

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

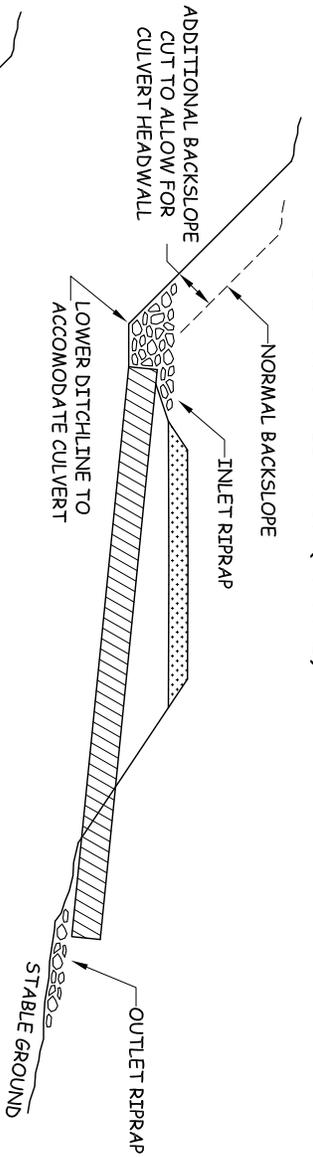
Debris

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

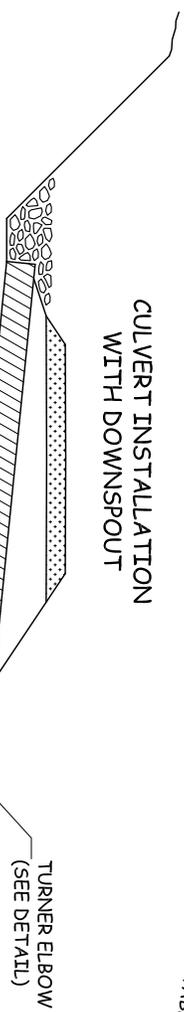


CULVERT AND DRAINAGE SPECIFICATIONS

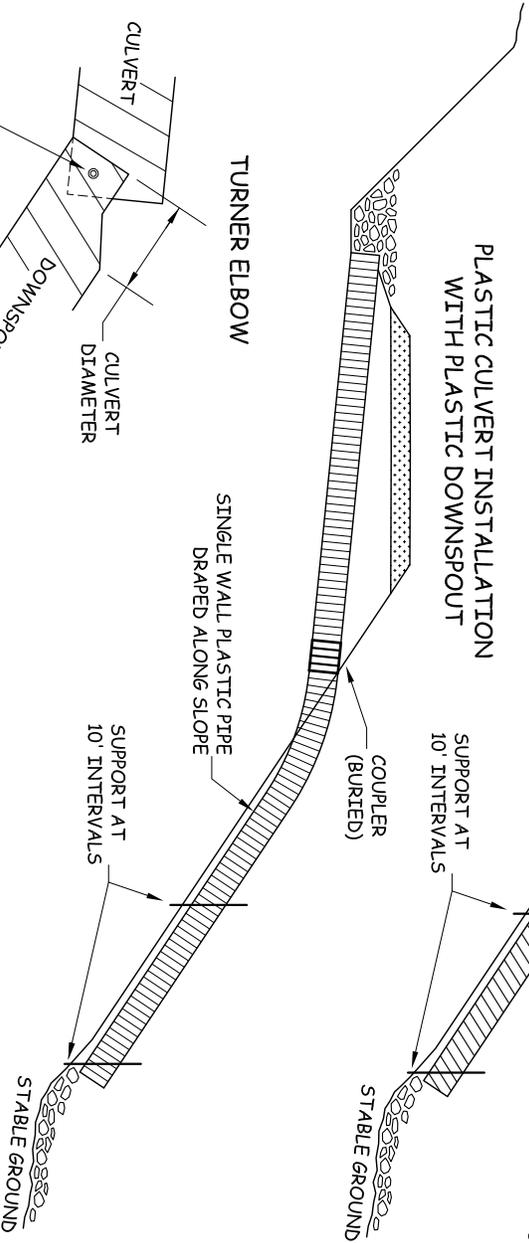
CULVERT INSTALLATION (TYPICAL)



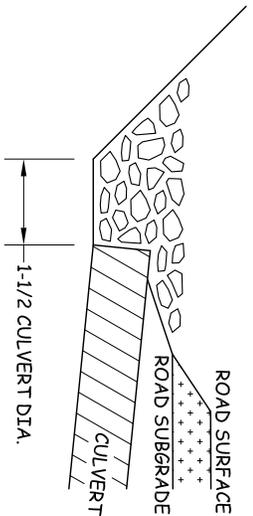
CULVERT INSTALLATION WITH DOWNSPOUT



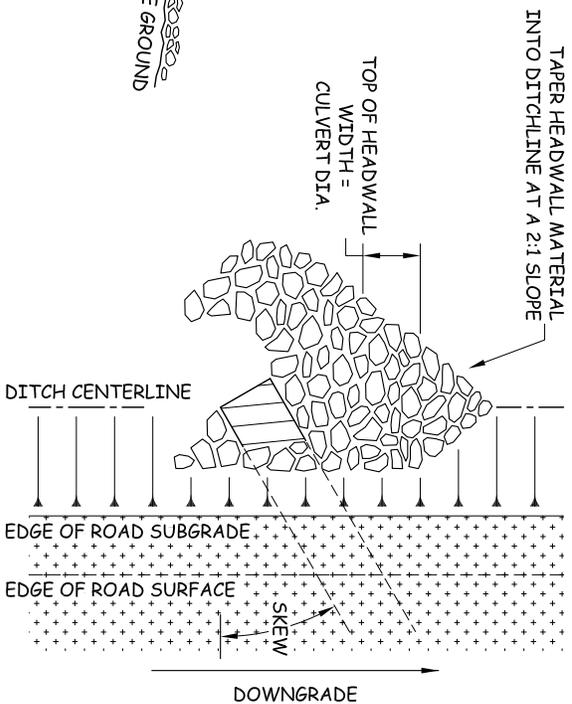
PLASTIC CULVERT INSTALLATION WITH PLASTIC DOWNSPOUT



CULVERT HEADWALL - SECTION VIEW

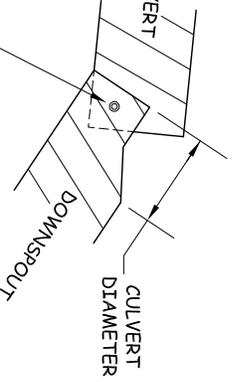


CULVERT HEADWALL - PLAN VIEW



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)



TURNER ELBOW

SINGLE WALL PLASTIC PIPE DRAPED ALONG SLOPE

SUPPORT AT 10' INTERVALS

STABLE GROUND

CONTRACT #
92623

PROJECT
RIDGE LIFT

SHEET
24 OF 24

SUMMARY - Road Development Costs

REGION: NW
DISTRICT: Baker

SALE/PROJECT NAME: Ridge Lift

CONTRACT #: 92623

ROAD NUMBERS:	CK-41, CK-42, CK-43	CK-ML	-
ROAD STANDARD:	Construction	Reconstruction	Other
NUMBER OF STATIONS:	13.46	57.00	
CLEARING & GRUBBING:	-	-	
EXCAVATION AND FILL:	\$5,603	\$2,047	All other costs
MISC. MAINTENANCE:			
ROAD ROCK:	\$15,259	\$17,294	
ROCK STOCKPILE PROD:	-	-	\$14,000
CULVERTS AND FLUMES:	\$699	\$739	
STRUCTURES:	-	-	
MOBILIZATION:	-	-	Amortized into other costs
TOTAL COSTS:	\$21,560	\$20,080	\$14,000
COST PER STATION:	\$1,602	\$352	
ROAD DEACTIVATION & ABANDONMENT COSTS:		\$920	

TOTAL (All Roads) = \$56,561
SALE VOLUME MBF = 2368
TOTAL \$/MBF = \$24

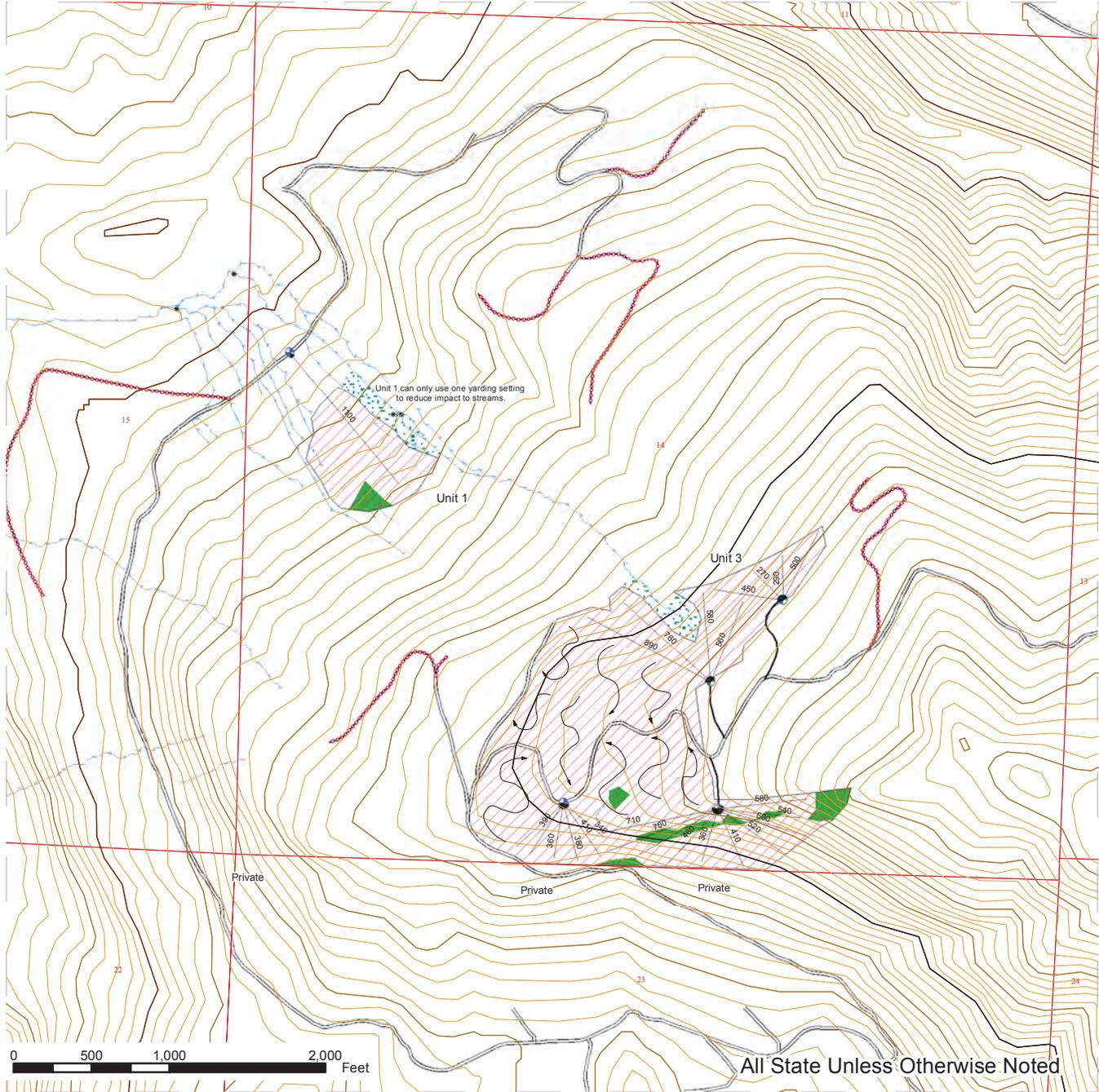
Compiled by: Carlson

Date: 6/23/15

LOGGING PLAN MAP

SALE NAME: Ridge Lift
AGREEMENT#: 092623
TOWNSHIP(S): T39R05E
TRUST(S): State Forest Transfer(1), Scientific School(10)

REGION: Northwest Region
COUNTY(S): WHATCOM
ELEVATION RGE: 1115-2603



Timber Sale Units	Existing Road	Streams
Leave Tree	Optional Road	Surveyed Corners
Riparian Management Zone	Abandoned Road	Contours 40-foot
Landings		
Cable		
Gound		





TO: William Galloway, Unit Forester
Deming Unit, Baker District
Northwest Region

FROM: John McKenzie
Licensed Engineering Geologist
Forest Resources Division
Northwest Region

SUBJECT: MEMORANDUM
Discussion Landslides, Slope Stability, and Geologic Hazards
Ridge Lift Timber Sale

DATE: December 30, 2015

This memorandum briefly discusses several geologic issues and geologic hazards associated with the Ridge Lift Timber Sale (Sale). These issues include earlier published landslide mapping involving slopes in or around the Sale, earlier published landslide hazard zonation mapping of slopes in the units of the Sale, and a safety issue related to up-hill yarding.

The Ridge Lift Timber Sale is located in Sections 14 and 15, T39N, R5E, about two miles north-northeast of Welcome in Whatcom County. It is composed of two units that straddle the east-west-trending ridge between Racehorse Creek and Kenny Creek (Figure 1). The following discussions are based on review of various GIS layers (including the Forest Practices Landslide Inventory layer) in the DNR database; review of pertinent maps and publications in my office files, review of pertinent stereoscopic aerial photographs on file at Northwest Region office, field reconnaissance, and discussions with you and Mr. Dave Carlson (Baker District Engineer). Field reconnaissance was conducted in April and May 2015. This memorandum supersedes an earlier memorandum dated October 2, 2015. The timber sale addressed in the earlier memorandum has been modified and Unit 2 has been removed. The numbering of the other units remains the same. This memorandum address the Ridge Lift Timber Sale in the currently proposed configuration (Figure 1).

The bedrock geology underlying the Ridge Lift Timber Sale is predominately interbedded sandstone and shale of the Chuckanut Formation (Lapen, T.J.; 2000; Geologic map of the Bellingham 1:100,000 quadrangle, Washington; Washington Division of Geology and Earth Resources Open File Report 2000-5; scale 1:100,000). These rocks exhibit a general northeast strike and a moderate northwesterly dip.

As noted above, there are three issues this memorandum addresses. These issues include:

- 1) Verification of specific landslides depicted in the Forest Practices Landslide Inventory layer that are mapped to underlie the several units.
- 2) The landslide hazard zonation (LHZ) characterization of slopes in the several units.
- 3) Rock fall and topple processes in the northeast area of Unit 3

These issues are discussed below in the order just listed above.

Verification of the landslides depicted in the Forest Practices Landslide Inventory layer.

The Forest Practices Landslide Inventory (FPLI) layer shows several deep-seated landslides mapped to underlie, or in close proximity to, the two units of the Ridge Lift Timber Sale (Figure 2). The landslides in question are as follows:

FPLI #33971, FPLI #33950/#33955, and FPLI #33975, and labeled as such on Figure 2.

During field reconnaissance the pertinent areas encompassed by each of these landslides were traversed and topographic and geomorphic evidence for each of these landslides was evaluated in the field (Save for FPLI #33971, which is up slope of Unit 3). This effort, along with information revealed during review of vertical, stereoscopic aerial photographs, was utilized to verify each of the landslides in question and the aerial extent of each. The results of this work are as follows:

FPLI #33971 – Evidence for this landslide is very poor and the topography of this landslide can be better explained as related to the ground-in-question being part of the down-dropped block that has developed in response to the to the ridge-top spreading process that is occurring from the area of this “landslide-looking” topography southeastward along the ridge top for several thousand feet.

FPLI #33950/#33955 – As mapped in the FPLI, these landslides underlie a large swath of ground from the area of the Ridge Lift Timber Sale to the valley floor. The FPLI map shows FPLI #33955 landslide as part of the larger FPLI #33950 landslide. In my opinion the size of these landslides are greatly exaggerated. The actual landslide masses, that part that moved, is situated down slope of the Sale. The area in and about the Sale that is mapped as part of these landslides in the FPLI is the evacuated area from which, and through which, the landslide mass moved in as it traveled down slope to its current position. The ground surface left behind is not a landslide but the exposed failure plane upon which the landslide mass (now at the bottom of the hill) moved. Figure 3 shows my interpretation of the location of the landslide deposit, the general area of the exposed slide plane, and the location of the crown of the scarp. Beneath this planar surface of the slide plane is intact bedrock, not landslide debris.

FPLI #33975 – As mapped in the FPLI this landslide appears to be part of a very large landslide that failed into Kenny Creek/Canyon Creek area. In this case, portions of the head scarp or lateral margin scarp of the landslide have been erroneously mapped as part of the landslide mass

(Figure 2). With respect to the Ridge Lift Timber Sale, the steep slopes immediately adjacent to the south side of the Sale that are mapped as landslide are actually part of the scarp of the landslide (Figure 3). These areas are, in-fact, not underlain by landslide debris but in-place bedrock.

Landslide hazard zonation (LHZ) characterization of slopes in the several units.

In 2006 Landslides Zonation Hazards (LHZ) mapping for the Racehorse Creek area was published by Cashman and Brunengo (Racehorse Creek Landslide Hazard Zonation Project, Whatcom County, Washington; Forest Practices Division, Adaptive Management Program and the Washington Division of Geology and Earth Resources; Priority 3 Mass Wasting Assessment; August 2006). The hillsides that now underlie the Ridge Lift Timber Sale were included in the project area. The zonation project included two maps: a landslide map and an interpretative landslide hazard/potential sediment delivery map based on the landslide map. These maps were created largely using remote sensing methods (interpretation of aerial photographs and slopes maps) with limited field verification. Portions of both of these maps that are germane to the area of the Ridge Lift Timber Sale are presented in Figure 2 and Figure 4. It should be noted that it appears the FPLI landslides discussed above in this memorandum were likely "taken from" this 2006 Cashman and Brunengo study.

The landslide map (Figure 2) shows Unit 1 and areas of Unit 3 are underlain by portions of very large deep-seated landslides (FPLI # 33950/33955 and #33975, as noted and discussed above in the previous section). Field reconnaissance for this sale revealed that Unit 1 and the northeastern portions of Unit 3 are not underlain by a deep-seated landslide (FPLI #33950/#33955, as discussed above). Based on my office review, field reconnaissance, and interpretation of the landslide geology and geomorphology, it is my opinion that ground surface that underlies Unit 1 and the surrounding area is the slide plane of the mapped deep-seated landslide; the surface upon which the deep-seated landslide moved. This surface is underlain by in-place undisturbed bedrock, not active or inactive landslide debris. The landslide debris generated by the movement of the deep-seated landslide accumulated far down slope and in part on the ancestral valley floor of the North Fork Nooksack River, and that landslide debris is now essentially stable and not active (moving or recently moving). Portions of the scarp and portions of the lateral margins of the deep-seated landslide are located in the northeastern area of Unit 3. Based on the interpretations presented above, Unit 1 is not located on an active landslide or any type of a landslide, nor are the northern portions of Unit 3. When overlain on the FPLI map, the southern portions of Unit 3 are also underlain by a deep-seated landslide that is mapped to underlie large areas south of the Ridge Lift Timber Sale (FPLI #33975, as noted and discussed above in the previous section). The landslide mapping published by Cashman and Brunengo did not differentiate between scarps and associated lateral margins, and the landslide mass (the material that actually moved). The portions of the deep-seated landslide as mapped by Cashman and Brunengo that underlie Unit 3 are actually in-place bedrock slopes associated with the scarp and lateral margins of the deep-seated landslide and not landslide debris (material that actually has

been involved in movement). Thus, the southern portion of Unit 3 is also not located on a deep-seated landslide.

Figure 4 shows a portion of the Landslide Hazard Zonation map with the sale boundaries of the two units show by a black dashed-line. The Landslide Hazard Zonation map subdivided the landscape in to Mass Wasting Map Units (MWMU) based on landforms, slope inclination, past landslide processes and rates of activity, and potential for sediment delivery to a stream. As can be seen, based on the Landslide Hazard Zonation map the hillsides that underlie the three units are characterized by several different MWMUs. This characterization is discussed by unit below. However, first a brief description of the several MWMUs is presented keyed to the colors on the LHZ map (Please refer to Figure 4 when reading this section):

RED – MWMU 3 Over all very high hazard – Very high landslide hazard and high sediment delivery potential. Characterized by convergent slopes greater than 75%.

YELLOW – MWMU 5 Over all high hazard – High landslide hazard and high sediment delivery potential. Characterized by active deep-seated landslides.

GREENISH YELLOW – MWMU 7 Over all moderate hazard – High landslide hazard but low sediment delivery potential. Characterized by shallow landslides and slopes greater than 55%.

PINK – MWMU 8 Over all low hazard – High landslide hazard but low sediment delivery potential. Characterized by shallow landslides and slopes between 40 and 55%.

GREEN – MWMU 9 Over all low hazard – Low landslide hazard and low sediment delivery potential. Characterized by low slope gradients and rare landslide activity.

UNIT 1 – As noted above, Unit 1 is located on a slope that is essentially parallel to the bedding of the bedrock in the area of the Ridge Lift Timber Sale, not on an active landslide (or any landslide for that matter). This slope is essentially an in-place (not having moved) rock slope mantled by isolated accumulations of rock debris left behind as the very large deep-seated landslides (FPLI # 33950/33955 and #33975) passed through the area of Unit 1 and a very thin and patchy veneer of soil that has developed and accumulated on the exposed rock slope since the landslide moved. The slope of the ground surface through Unit 1 is about 30% to 33%. Because no landslide is present, the characterization of Unit 1 as being on an active landslide (MWMU 5) is incorrect. This, along with the low slope inclination, suggests a more appropriate characterization of the hillside areas underlying Unit 1 would be that of MWMU 9: low landslide hazard and low sediment delivery potential.

UNIT 3 – Unit 3 is characterized by five MWMUs: MWMU 3 – a strip of rock slopes through the southern half of the unit characterized by very steep to vertical rock-slopes that delineate portions of the scarp of the deep-seated landslide south of the unit. MWMU 5 – active deep-seated landslide in the northern area of the unit. MWMU 7 – areas of steep slopes and

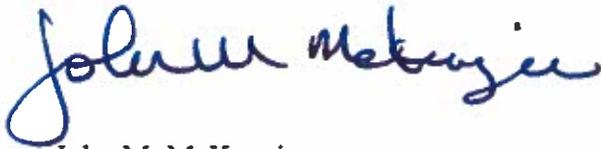
accumulations of rock debris from rock fall and topple processes from the rock cliffs and also an area of steep divergent topography in the south-central portion of the unit, and an area in the northwestern portion of the unit. Also included in this MWMU is the scarp of the deep-seated landslide, whose slide plain underlies the area of Unit 1 and the northern portion of Unit 2. MWMU 8 – includes slivers of hillside areas of divergent topography in the southwestern and northwestern areas of the unit, and MWMU 9 – an areas of relatively gentle slopes throughout the remainder of the unit.

Based on field reconnaissance it is my opinion that the areas characterized as MWMU 3 in Unit 3, should be reclassified as MWMU 7, a lower hazard classification for the following reasons: the lack of convergent topography along the bedrock cliffs and the lack of delivery potential. Slope failure processes on these slopes appear to be rare and likely characterized by rock fall and rock topple processes, and there are no streams below these slopes to which sediment could be delivered. As noted in the Unit 1 discussion, the area mapped as MWMU 5 is not an active deep-seated landslide, but is characterized by in-place bedrock. It would be more appropriately classified as MWMU 9: low landslide hazard and low sediment delivery potential. Areas delineated as MWMU 7 are characterized by slopes between 35% and 65%, though locally slopes inclinations can reach 70%. During field reconnaissance one relatively recent debris-slide scar was observed in MWMU 7 near the southeast corner of Unit 3 adjacent to the sale boundary. The track of this debris slide became fainter as it was traced down slope to the road. It appears that this debris slide did not deliver to a typed stream. Aside from this debris slide no other historic, recent, or on-going landslide activity was noted on the slopes of MWMU 7 in the unit, and due to the lack of streams in this MWMU, delivery to any typed waters is not likely. These slopes are judged in the LHZ mapping to have a moderate hazard. In my opinion a lower hazard rating would better characterize these slopes; however, the LHZ matrix does not have an appropriate category. As noted above, MWMU 8 slopes are mapped in the southwestern and northwestern areas of the unit. On the ground slopes in this MWMU are characterized by either divergent topography or planar slopes, and in both cases low sediment delivery potential. MWMU 9 slopes are, as noted above, characterized as low hazard. Field reconnaissance confirmed such a classification.

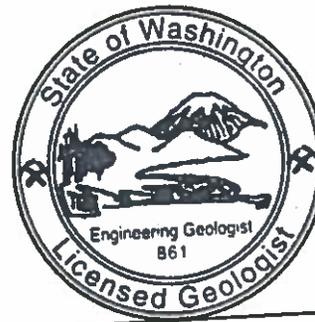
Up-hill yarding in the northeastern area of Unit 3

Yarding in Unit 3 will require yarding of logs uphill across and over the scarp of landslides FPLI #33950/#33955. The scarp is a very steep and tall rock-face composed of well-jointed sandstone bedrock. During yarding operations logs being hauled up to the landing could dislodge blocks of rock that would fall into the area of existing rock-block debris that has accumulated at the base of the scarp. During yarding operations, when logs are being moved up to the landing, workers in areas directly below the landing and active cable roads should be situated well away from the cable roads, preferably up slope of the road, where the roads traverses the cliffs of the scarp, during movement of the logs up slope. This hazard shall be brought to the attention of the logging crews prior to initiation of yarding in the area just discussed.

Respectfully submitted,



John M. McKenzie
Northwest Region Engineering Geologist
LEG 816

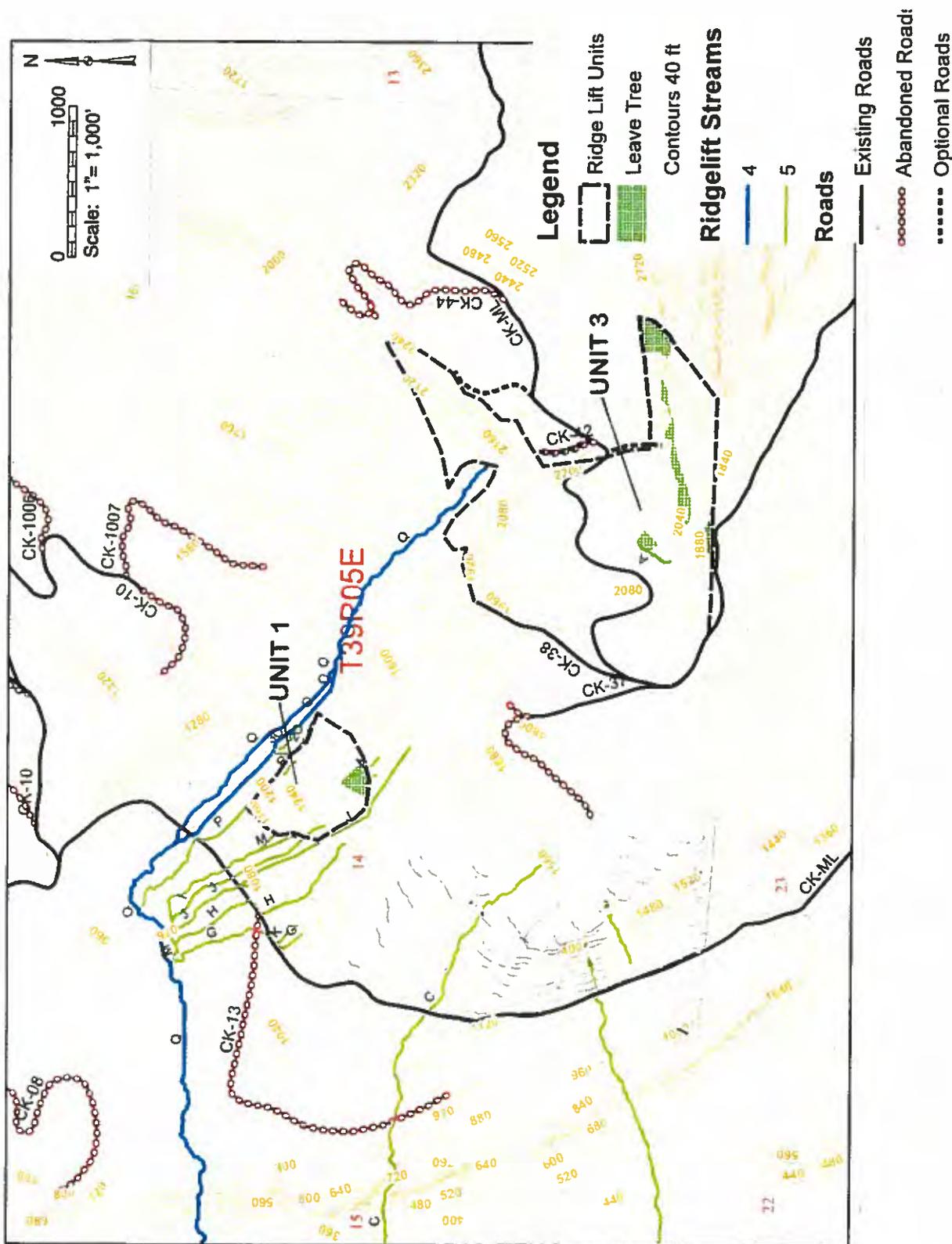


John M. McKenzie

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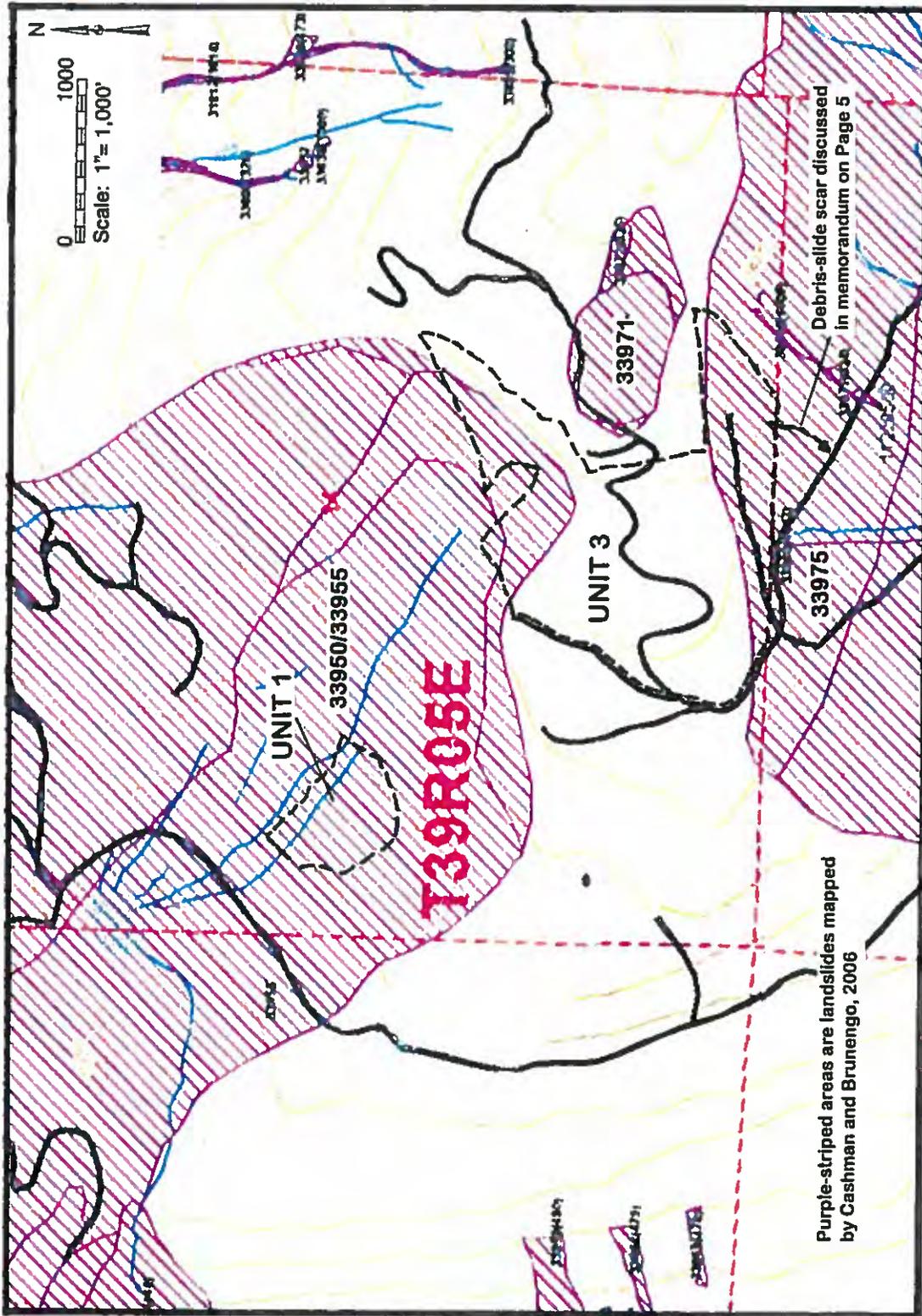
Attachments:

- Figure 1 Annotated Map of Ridge Lift Timber Sale
- Figure 2 Annotated Portion of Landslide Map from Racehorse Creek LHZ Project
- Figure 3 Annotated Map Showing Crown of Scarp, Slide Plane, and Landslide 33950 & 33955 and the Location of the Ridge Lift Timber Sale
- Figure 4 Annotated Portion of LHZ Map from Racehorse Creek LHZ Project



Modified from map provided by S. Petska

FIGURE 1 ANNOTATED MAP OF RIDGE LIFT TIMBER SALE
Ridge Lift Timber Sale



Modified from Cashman and Brunengo, 2006

**FIGURE 2 ANNOTATED PORTION OF LANDSLIDE
MAP RACEHORSE CREEK LHZ PROJECT
Ridge Lift Timber Sale**

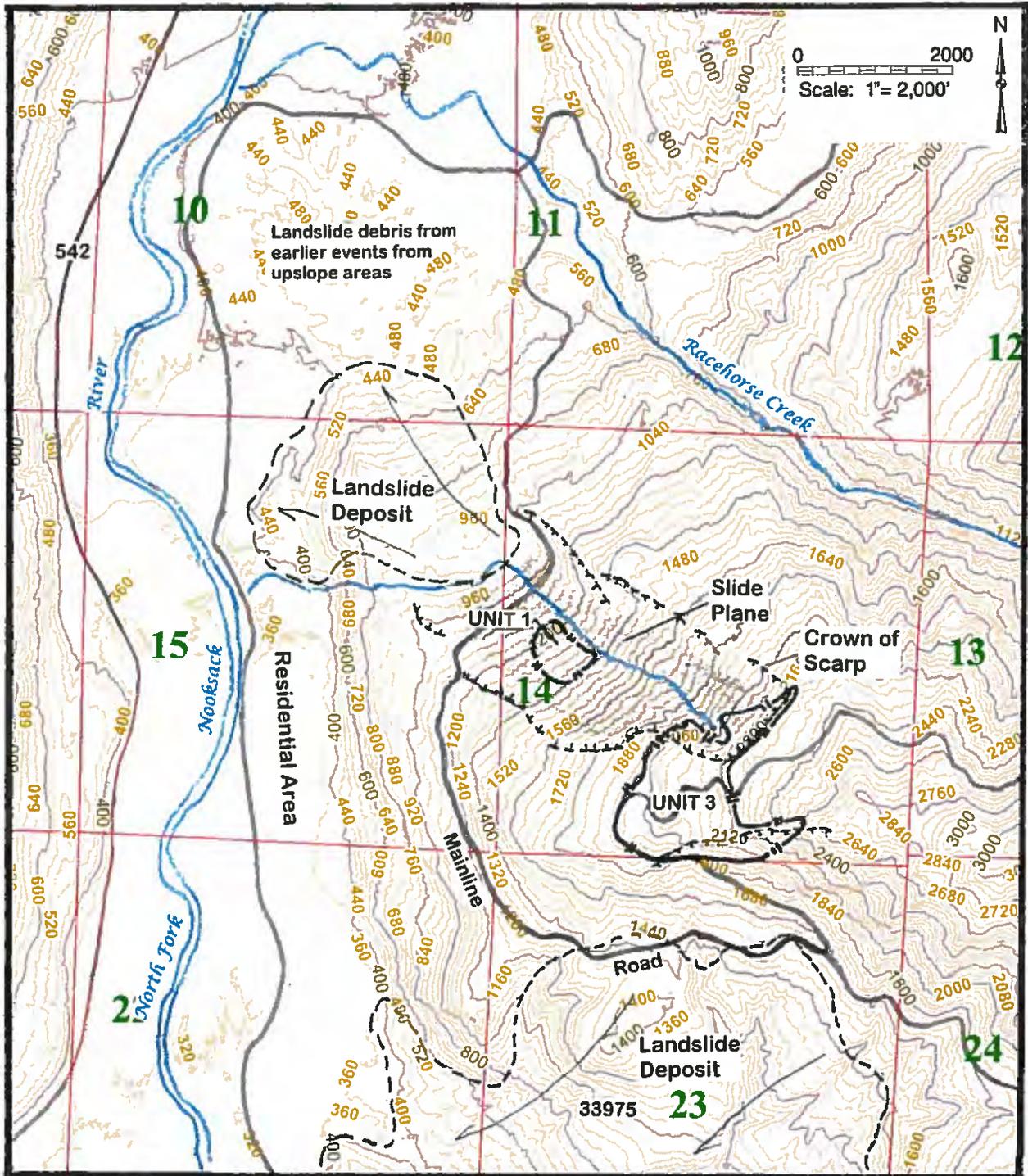
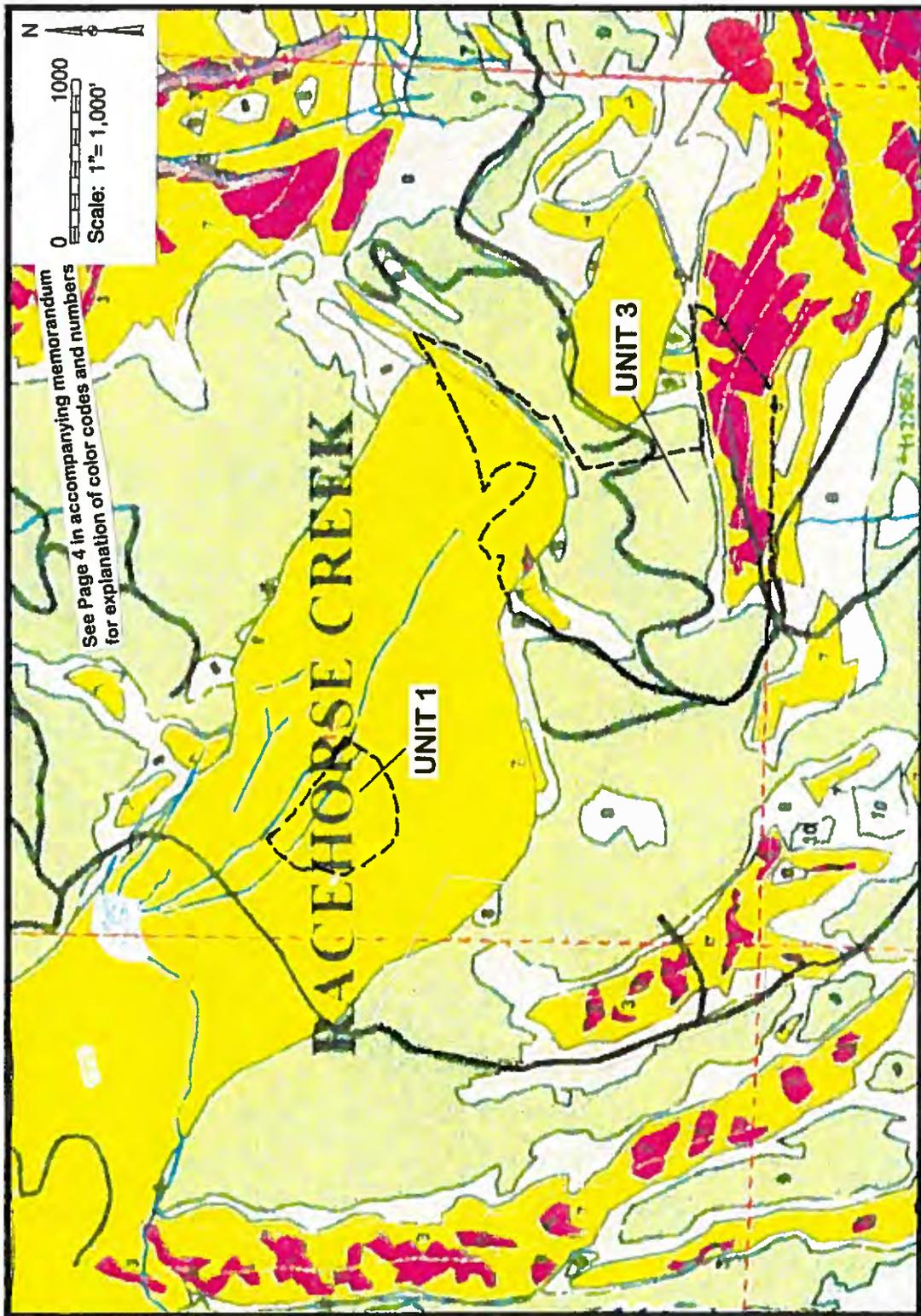


FIGURE 3 ANNOTATED MAP SHOWING CROWN OF SCARP, SLIDE PLANE, AND LANDSLIDE DEPOSIT OF LANDSLIDE 33950 & 33955 AND THE LOCATION OF THE RIDGE LIFT TIMBER SALE
 Ridge Lift Timber Sale



Modified from Cashman and Brunengo, 2006

**FIGURE 4 ANNOTATED PORTION OF LHZ
MAP RACEHORSE CREEK LHZ PROJECT**
Ridge Lift Timber Sale