TIMBER NOTICE OF SALE

***SALE NAME**: EL DORADO VRH & VDT* ***AGREEMENT NO**: 30-093091*

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

SALE LOCATION: Sale located approximately 5 miles southeast of Sumas, WA.

PRODUCTS SOLD AND SALE AREA: All timber bounded by white timber sale boundary tags, adjacent young stands, the SU-41 Road and the SU-4115 abandoned road grade, except trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags, forest products tagged out by blue special management tags and cedar snags, preexisting dead and down cedar trees and cedar logs in the Unit.

All timber as described for removal in Schedule B, beyond blue special management tags and up to the white timber sale boundary tags, in the RMZ thinning areas.

All timber bounded by orange right of way tags.

The above described products on part(s) of Sections 20 and 29 all in Township 40 North, Range 5 East, W.M., containing 94 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	Total $/MBF	MBF by Grade 1P	2P	3P	SM	1S	2S	3S	4S	UT
Red alder	13		546	$199.00						44	134	236	132
Red cedar	17		436	$804.00							359	77	
Douglas fir	17	8	384	$229.00						208	136	38	2
Hemlock	12	8	377	$90.00						86	130	94	67
Birch	11		130	$54.00						9	9	48	64
Cottonwood	25		54	$20.00						47		5	2
Maple	20		30	$54.00						15		3	12
Sale Total			1,957										

MINIMUM BID: $804/MBF (est. value $590,000.00) **BID METHOD:** Sealed Bids

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

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

BIDDABLE SPECIES: **Red cedar**

BID DEPOSIT: $59,000.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: Cable; cable or shovel on sustained slopes 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.

Additional restrictions apply, see Remarks section below.

ROADS: 19.02 stations of required construction. 10.19 stations of optional construction. 10.19 stations of road to be abandoned if built. 256.19 stations of required pre-haul maintenance.

Rock may be obtained from the following source on State land at no charge to the Purchaser: Paradise Pit at station 5+28 of the SU-4124 Road.

There is an existing stockpile of 2-inch-minus rock available for use in the Paradise Pit.

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

An estimated total quantity of rock needed for this proposal: 82 cubic yards of riprap and 5,992 cubic yards of ballast rock.

Road construction, pre-haul maintenance, 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. 99.8 acres gross. 3.1 acres deducted for green tree retention clumps and 2.6 acres deducted for existing roads. 93.8 acres net. Cruised using variable plot method. Expansion factor used is 20.00, 40.00 and 54.4. Sighting height is 4.5 feet. A total of 51 plots were taken.

Shapefiles of units are available upon request.

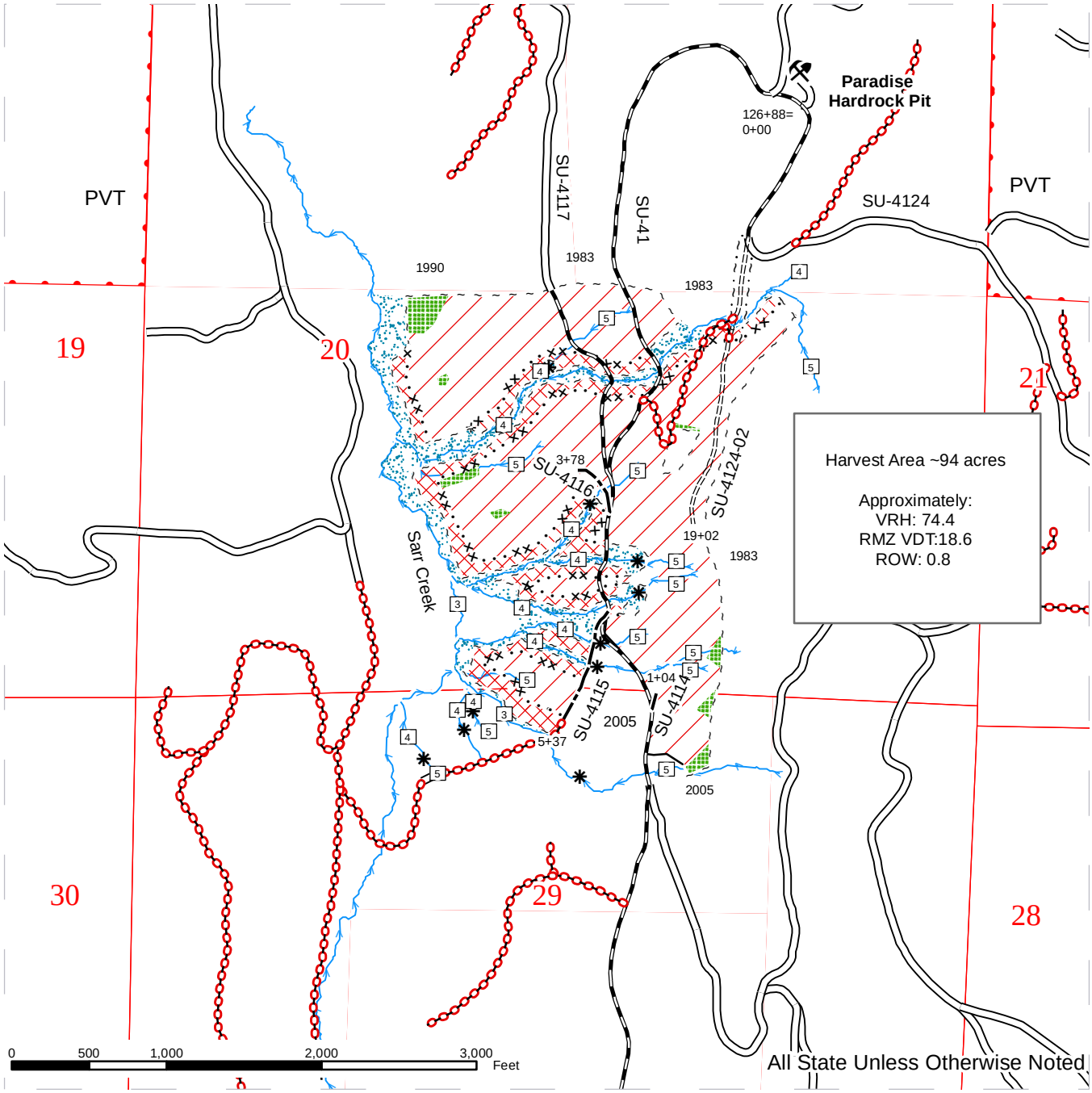
FEES: $34,736.75 is due on day of sale. $9.00 per MBF is due upon removal. These are in addition to the bid price.

SPECIAL REMARKS: 1. Cutting and yarding in RMZ thinning areas shall not be permitted during the bark slippage season unless authorized in writing by the Contract Administrator. This season is estimated to run from April 1 to July 15 but may vary depending on weather conditions. If permission is granted to operate during the bark slippage season the purchaser shall be required to provide a plan outlining mitigation measures.

TIMBER SALE MAP

SALE NAME: EL DORADO VRH & VDT
AGREEMENT#: 93091
TOWNSHIP(S): T40R05E
TRUST(S): State Forest Transfer(1), Common School and Indemnity(3)

REGION: Northwest Region
COUNTY(S): WHATCOM
ELEVATION RGE: 1296-2126



Variable Retention Harvest
RMZ Variable Density Thinning
No Cut Riparian Managment Zones
Streams
Leave Tree Area
Rock Pit
Sale Boundary - No Tags
ROW Tags
Sale Boundary Tags
Special Managment Tags
Stream Type
Stream Type Break
Pre- Haul Maintenance
Existing Road
Required Construction
Optional Construction
Abandoned Road

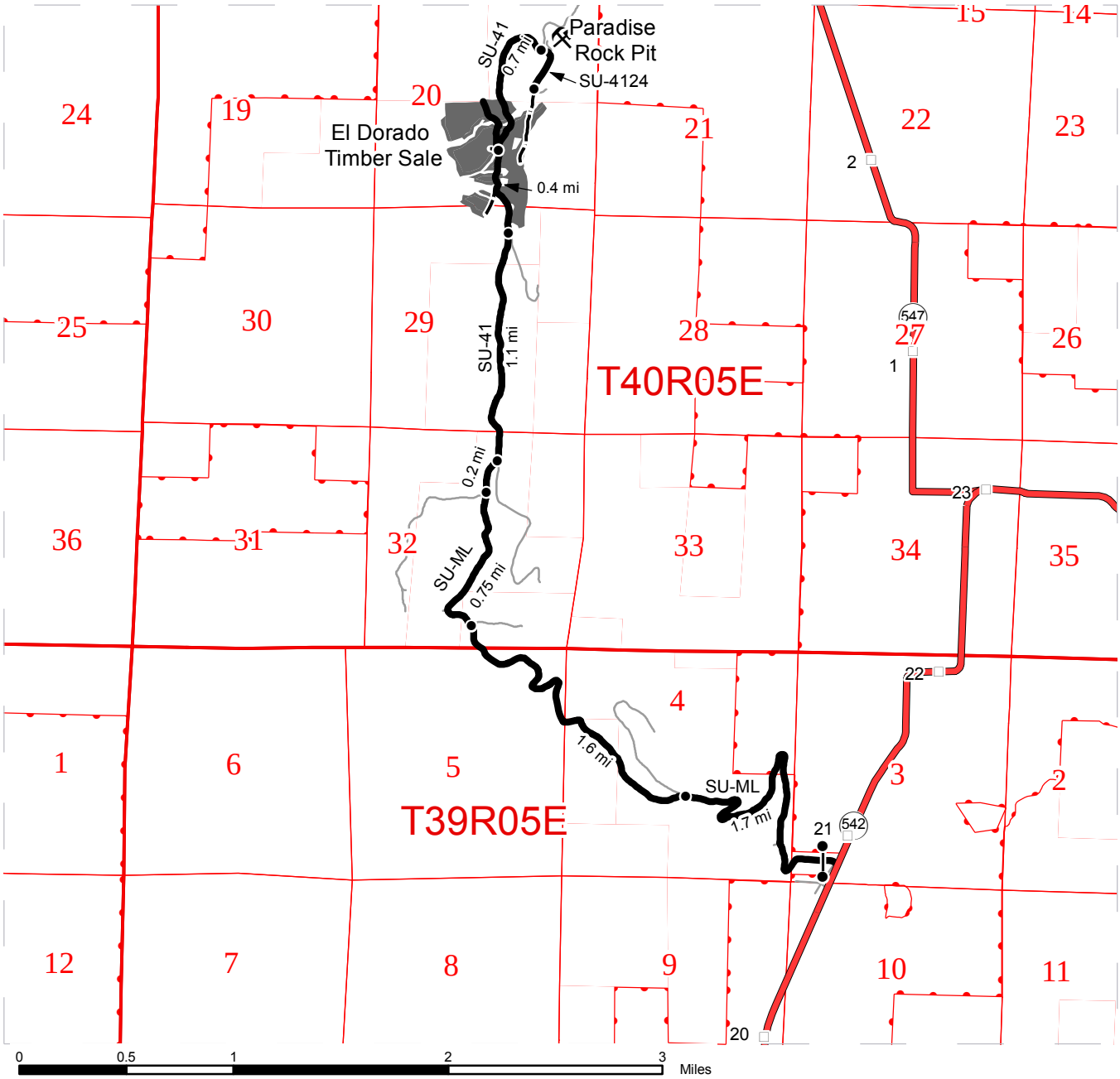
N

Prepared By: spet490
Creation Date: 12/9/2015
Modification Date: 03/08/2016
tkle490

DRIVING MAP

SALE NAME: EL DORADO VRH & VDT
APPLICATION #: 30-093091
TOWNSHIP(S): T40 R05E

REGION: NORTHWEST
COUNTY(S): WHATCOM
ELEVATION RGE: 1296-2126



- Harvest Unit
- Haul Route
- New Construction
- Other Roads
- State Route
- Distance Indicator
- Mile Post
- Rockpit
- Gate

From milepost 20 on State Route 542, continue eastbound for 0.9 miles before reaching the beginning of the SU-ML on the left. Continue through the gate (accessible with an F1-3 key) and continue on the SU-ML for 1.7 miles. Veer left at the intersection to continue on the SU-ML and proceed for 1.6 miles. Keep straight at the three way intersection and continue for 0.75 miles. Continue straight at the three way intersection to begin traveling on the SU-41 and continue for 0.2 miles. Keep straight at the three way intersection and continue for 1.1 miles. Again, stay straight at the intersection and proceed for 250' before reaching Unit 1 on the right.

Rock pit: From the point above, continue 0.4 miles and veer right to continue on the SU-41. Continue for 0.7 miles and stay straight to begin travel on the SU-4124. The Paradise Rock Pit will be on your left.

Prepared By: spet490

Creation Date: 12/10/20015

Modification Date/By: 03/08/2016
tkle490

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

BILL OF SALE AND CONTRACT FOR FOREST PRODUCTS

Export Restricted MBF Scale AGREEMENT NO. 30-093091

SALE NAME: EL DORADO VRH & VDT

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-010 Products Sold and Sale 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, cut, and remove the following forest products: All timber bounded by white timber sale boundary tags, adjacent young stands, the SU-41 Road and the SU-4115 abandoned road grade, except trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags, forest products tagged out by blue special management tags and cedar snags, preexisting dead and down cedar trees and cedar logs in the Unit.

All timber as described for removal in Schedule B, beyond blue special management tags and up to the white timber sale boundary tags, in the RMZ thinning areas.

All timber bounded by orange right of way tags.

The above described products, located on approximately 94 acres on part(s) of Sections 20, and 29 all in Township 40 North, Range 5 East W.M. in Whatcom County(s) as shown on the attached timber sale map and as designated on the sale area.

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

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

G-020 Inspection By Purchaser

Purchaser hereby warrants to the State that they have had an opportunity to fully inspect the sale area and the forest products being sold. Purchaser further warrants to

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

G-025 Schedules

The following attached schedules are hereby incorporated by reference:

Schedule	Title
A	NW Ground-Based Equip Specifications (Rev11/05/14)
B	Thinning Prescription

G-030 Contract Term

Purchaser shall remove the forest products conveyed and 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-050 Contract Term Extension - Payment

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

a. A written request for extension of the contract term must be received prior to the expiration date of the contract.

b. Completion of all required roads and compliance with all contract and regulatory requirements.

c. For the first extension, not to exceed 1 year, payment of at least 25 percent of the contract value based on the contract payment rate and advertised volume.

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

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

d. Payment of an amount based on 12 percent interest per annum on the unpaid portion of the timber value of the contract.

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

e. Payment of $16.00 per acre per annum for the acres on which an operating release has not been issued in the Variable Retention Harvest area. Payment of $3.00 per acre per annum for the acres on which an operating release has not been issued in RMZ Thinning 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-090 Sale Area Adjustment

The Parties may agree to adjustments in the sale area boundary. The cumulative changes to the sale area during the term of the contract shall not exceed more than four percent of the original sale area. If the sale area is increased, added forest products become a part of this contract and shall be paid for at the same rate and manner as other forest products under this contract.

G-100 Forest Products Not Designated

Any forest products not designated for removal, which must be removed in the course of operations authorized by the State, shall be approved and designated by the Contract Administrator. Added forest products become a part of this contract and shall be paid for at the same rate and manner as other forest products under this contract.

G-105 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 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 same rate and manner as other forest products under this contract.

G-110 Title and Risk of Loss

Title to the forest products conveyed passes at confirmation of the sale. Purchaser bears the risk of loss of or damage to and has an insurable interest in the forest products in this contract from the time of confirmation of the sale of forest products. In the event of loss of or damage to the forest products after passage of title, whether the cause is foreseeable or unforeseeable, the forest products shall be paid for by Purchaser. Breach of this contract shall have no effect on this provision. Title to the forest

products not removed from the sale area within the period specified in this contract shall revert to the State as provided in RCW 79.15.100.

G-116 Sustainable Forestry Initiative® (SFI) Certification

Forest products purchased under this contract are certified as being in conformance with the Sustainable Forestry Initiative program Standard under certificate number: 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; SU-ML, SU-41, SU-4114, SU-4115, SU-4116, SU-4117, SU-4124 and SU-4124-02. 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 SU-41 and SU-4117 roads, unless authority is granted in writing by the Contract Administrator.

G-380 Road Easement and Road Use Permit Requirements

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

Easements with:
Eino M. and Marie E. Usitalo and Frank C. and Nancy Brooks; #55-001555; dated July 1, 1977.

G-430 Open Fires

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

G-450 Encumbrances

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

DATA MISSING

Section P: Payments and Securities

P-010 Initial Deposit

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

P-021 Payment for Forest Products

Purchaser agrees to pay the following rates per MBF Scribner net log scale for forest products conveyed and cut or removed from the sale area plus $34,736.75 on day of sale and $9.00 per MBF upon removal in fees. Fees collected shall be retained by the state unless the contract is adjusted via the G-066 clause.

DATA MISSING

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

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

P-027 Payment for Removal of Optional Forest Products

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

P-040 Weighing and Scaling Costs

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

P-045 Guarantee of Payment

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

P-050 Billing Procedure

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

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

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

P-080 Payment Account Refund

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

P-090 Performance Security

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

P-100 Performance Security Reduction

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

Section L: Log Definitions and Accountability

L-010 Forest Products Conveyed

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

L-020 Short Logs - Peeler Blocks

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

L-060 Load Tickets

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

Purchaser shall account for all load tickets issued by the Contract Administrator. The State may treat load tickets not accounted for as lost forest products. All costs associated with computing the billings for lost loads shall be borne by Purchaser.

L-071 Log and Load Reporting Service

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

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

L-080 Scaling Rules

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

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

L-110 State Approval of Log Scaling and Weighing Locations

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

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

L-120 Long Log Taper Distribution

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

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

L-130 Conversion Factors

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

Section H: Harvesting Operations

H-010 Cutting and Yarding Schedule

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

H-012 Leave Tree Damage Definition

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

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

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

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

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

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

H-013 Reserve Tree Damage Definition

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

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

a. A reserve tree has one or more scars on its trunk exposing the cambium layer, which in total exceeds 200 square inches.

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

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

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

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

H-017 Preventing Excessive Soil Disturbance

Operations may be suspended when soil rutting exceeds 4 inches as measured from the natural ground line. To reduce soil damage, the Contract Administrator may require water bars to be constructed, grass seed to be placed on exposed soils, or other

mitigation measures. Suspended operations shall not resume unless approval to do so has been given, in writing, by the Contract Administrator.

H-030 Timber Falling

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

H-035 Fall Trees Into Sale Area

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

H-040 Purchaser Harvest Plan

Purchaser shall, as part of the plan of operations, prepare an acceptable harvest plan for the sale area. The plan shall address the falling, yarding and hauling of forest products, which are part(s) of this contract. The harvest plan shall be approved by the Contract Administrator prior to beginning the harvest operation. Purchaser shall not deviate from the harvest plan without prior written approval by the Contract Administrator.

H-052 Branding and Painting

Forest products shall be branded with a brand furnished by the State prior to removal from the landing. All purchased timber shall be branded in a manner that meets the requirements of WAC 240-15-030(2)(a)(i). All timber purchased under a contract designated as export restricted shall also be painted in a manner that meets the requirements of WAC 240-15-030(2)(a)(ii).

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

H-080 Snags Not to be Felled

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

H-090 Designated Trees Felled

All cottonwood, in Variable Retention Harvest areas, must be yarded to a landing and shall be felled concurrently with the falling operation.

H-110 Stump Height

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

H-120 Harvesting Equipment

Forest products sold under this contract shall be 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-126 Tailholds on State Land

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

H-130 Hauling Schedule

The hauling of forest products will not be permitted 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. Trees must be felled away from typed streams when possible.

D. Exposed mineral soils created by falling or yarding operations with the potential to deliver sediment to any watercourse must be mulched, water-barred and/or grass seeded prior to October 1 or concurrent with operations between October 1 and March 31.

E. Lift trees and intermediate support trees must be marked in each unit prior to the commencement of felling operations.

F. Cutting and yarding in the RMZ thinning areas shall not be permitted during the bark slippage season unless authorized in writing by the Contract Administrator. This season is estimated to run from April 1 to July 15 but may vary depending on weather conditions. If permission is granted to operate during the bark slippage season the purchaser shall be required to provide a plan outlining mitigation measures.

G. Location of the yarding corridors for RMZ thinning must be marked by Purchaser and approved in writing by the Contract Administrator prior to use.

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

H-150 Required Removal of Forest Products

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

Species	Net bd ft	Log length (ft)	Log dib
All species	10	12	5

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

H-157 Optional Removal of Forest Products Not Designated

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

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

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

H-160 Mismanufacture

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

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

H-180 Removal of Specialized Forest Products or Firewood

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

H-190 Completion of Settings

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

H-220 Protection of Residual or Adjacent Trees

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

Section C: Construction and Maintenance

C-040 Road Plan

Road construction and associated work provisions of the Road Plan for this sale, dated 11/30/2015 are hereby made a part of this contract.

C-050 Purchaser Road Maintenance and Repair

Purchaser shall perform work at their own expense on the SU-ML, SU-41, SU-4114, SU-4115, SU-4116, SU-4117, SU-4124, SU-4124-02 roads. All work shall be completed to the specifications detailed in the Road Plan.

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-010 Liquidated Damages

The clauses in the DAMAGES section of this contract provide for payments by Purchaser to the State for certain breaches of the terms of this contract. These payments are agreed to as liquidated damages and not as penalties. They are reasonable estimates of anticipated harm to the State caused by Purchaser's breach. These liquidated damages provisions are agreed to by the State and Purchaser with the understanding of the difficulty of proving loss and the inconvenience or infeasibility of obtaining an adequate remedy. These liquidated damages provisions provide greater

certainty for the Purchaser by allowing the Purchaser to better assess its responsibilities under the contract.

D-020 Failure to Remove Forest Products

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

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

Where:

LD	=	Liquidated Damage value.
V	=	The unremoved value at the date of breach of contract. The value is determined by subtracting the removal volume to date from the State's cruise volume multiplied by the contract bid rates.
ID	=	Initial Deposit paid at date of contract that has not been applied to timber payments.
P	=	Advance payments received but not yet applied to specific contract requirements.
C	=	Charges assessed for contract requirements completed prior to breach of contract but not paid for.
A	=	Administrative Fee = $2,500.00.

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

Where:

r	=	daily equivalent of an annual interest at current interest rate as established by WAC 332-100-030.
LD	=	Liquidated damage value.
N	=	Number of days from date of breach to date payment is received.

D-030 Inadequate Log Accountability

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

Enforcement actions for unauthorized removal of forest products for each improperly branded load, improperly ticketed load, lost or unaccounted for tickets, or use of a facility not authorized for this sale or improper submission of scaling data are impractical, expensive, time consuming and are not an adequate remedy. Therefore, Purchaser agrees to pay the State, as liquidated damages, a sum of $100 each time a load of logs does not have branding as required in the contract, $250 each time a load of logs does not have a load ticket as required by the contract, $250 each time a load ticket has not been filled out as required by the plan of operations, $250 each time a load is weighed or scaled at a location not approved as required under this contract, $250 each time a log ticket summary report is not submitted properly, and if a third party Log and Load Reporting Service is required, $250 each time scaling or weight data is not properly submitted to the Log and Load Reporting Service within 24 hours of log removal, and $250 each time a ticket is either lost or otherwise unaccounted for.

D-040 Leave Tree Excessive Damage

When Purchaser's operations exceed the damage limits set forth in clause H-012, Leave Tree Damage Definition, the trees damaged result in substantial injury to the State. The value of the damaged leave trees at the time of the breach is not readily ascertainable. Therefore, Purchaser agrees to pay the State as liquidated damages at the rate of $100.00 per tree for all damaged trees in the RMZ Thinning area.

D-041 Reserve Tree Excessive Damage

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

Schedule B
Thinning Prescription

These special management units are bounded by blue-special management unit boundary tags and white timber sale boundary tags with pink ribbon. Within these areas, red alder, black cottonwood and birch are eligible for harvest. Only those red alder, black cottonwood and birch stems that can be felled and yarded without inflicting damage (as defined in the D-040 clause) to non-take trees may be harvested. Any additional timber outside the take prescription may not be felled unless approved in writing the Contract Administrator. Any part of a take tree inadvertently felled beyond the timber sale boundary tags must be bucked off at the tag line and that portion of the tree extending beyond the tag line must be left. Trees designated for take as described above with blue-special management boundary tags may be harvested.

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

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOREST EXCISE TAX ROAD SUMMARY SHEET

Region: Northwest

Timber Sale Name: EL DORADO

Application Number: 30- 30-093091

EXCISE TAX APPLICABLE ACTIVITIES

Construction: 1,902 **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: 25619 **linear feet**
Existing road to receive maintenance work (specifically required by the contract) prior to haul

EXCISE TAX EXEMPT ACTIVITIES

Temporary Optional Construction: 1019 **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: 1019 **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 contact. The Department of Revenue bears responsibility for determining forest road excise taxes. The Department of Natural Resources developed this form to help estimate the impact of forest excise taxes. However, the information provided may not precisely calculate the actual amount of taxes due. The Department of Revenue is available for consultation by calling 1.800.548.8829.
(Revised 6/13)

PRE-CRUISE NARRATIVE

Sale Name: El Dorado VRH & VDT	Region: **Northwest**
Agreement #: 30-93091	District: Baker
Contact Forester:Samuel Petska Phone / Location: (608)332-9131	County(s): Whatcom,Choose a county
Alternate Contact:Kyle Galloway Phone / Location: (360)319-6720	Other information: Click here to enter text.

Type of Sale: Weight Scale	
Harvest System: Ground based Click here to enter text.	30%
Harvest System: Downhill Cable Click here to enter text.	20%
Harvest System: Uphill Cable Click here to enter text.	50%

UNIT ACREAGES AND METHOD OF DETERMINATION:

Unit # **Harvest R/W or RMZ WMZ**	**Legal Description** (Enter only one legal for each unit) **Sec/Twp/Rng**	**Grant or Trust**	**Gross Proposal Acres**	**Deductions from Gross Acres (No harvest acres)**				**Net Harvest Acres**	**Acreage Determination** (List method and error of closure if applicable)
				RMZ/ WMZ Acres	**Leave Tree Acres**	**Existing Road Acres**	**Other Acres (describe)**		
1A VRH	Section 20, 29 T40 R05E	03	54.2		1.5	1.7		51.0	GPS (Garmin)
1B VRH	Section 20, 29 T40 R05E	03	3.0		0	0		3.0	GPS (Garmin)
1C VRH	Section 20 T40 R05E	01-2.2% 03-97.8%	22.9		1.6	0.9		20.4	GPS (Garmin)
RMZ VDT	Section 20, 29 T40 R05E	03	18.9			0.3		18.6	GPS (Garmin)
ROW	Section 20 T40 R05E	01-55% 03-45%	0.8					0.8	600' X 60'
TOTAL ACRES			99.8		3.1	2.6		93.8	

HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription: (Leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)

Revised 03/15/2010 (FRCD)

1A VRH	Remove all timber bounded by blue special management boundary tags white timber sale boundary tags, orange right-of-way tags, plantation edge, the SU-41 road, except for forest products bounded by yellow leave tree tags or trees marked with blue paint on the bole and root collar.		402 trees have been retained in 6 leave trees areas. An additional 8 trees have been scattered across the unit. The total number of leave trees is 410.
1B VRH	Remove all timber bounded by blue special management boundary tags, and the SU-4115, except for forest products bounded by yellow leave tree tags or trees marked with blue paint on the bole and root collar.		24 trees have been scattered across the unit.
1C VRH	Remove all timber bounded by blue special management boundary tags and white timber sale boundary tags except for forest products bounded by yellow leave tree tags or trees marked with blue paint on the bole and root collar.		170 trees have been retained in 2 leave tree areas. An additional 6 trees have been scattered across the unit. The total number of leave trees is 176.
RMZ VDT	Harvest all timber described by the take prescription on and beyond the blue special management tag line and bounded by white timber sale boundary tags.	Take prescription: Harvest all red alder, white birch and black cottonwood that can be removed without causing damage to the residual conifers, big leave maple or the inner zone of the stream.	No leave/take trees are marked.
ROW	Harvest all timber bounded by orange right-of-way tags.	None.	None.

OTHER PRE-CRUISE INFORMATION:

Unit #	Primary,secondary Species / Estimated Volume (MBF)	Access information (Gates, locks, etc.)	Photos, traverse maps required
1A VRH	RA, WRC, WH, DF, WB, BC, BLM 1.5 mmbf		See attached driving map and traverse maps.
1B VRH	RA, WRC, WH, DF, WB, BC, BLM 90 mbf		See attached driving map and traverse maps.

1C VRH	RA, WRC, WH, DF, WB, BC, BLM 681 mbf		See attached driving map and traverse maps.
RMZ VDT	RA, WB, BC 150 mbf		See attached driving map and traverse maps.
ROW	RA, WH, WRC, DF 10 mbf		See attached driving map and traverse maps.
TOTAL MBF	2.4 mmbf		

REMARKS:

Unit 1A: The unit is mainly made up of 1 age class with an origin date of between 1960 and 1975. It has a high amount of Red Alder, Western Red Cedar and Western Hemlock. There are portion of Douglas fir, White Birch, Black cottonwood and Big Leaf maple throughout. There are DF, WRC and WH remnants ~ 105 years old.

Unit 1B: Unit 2 is similar to unit 1.

Unit 1C: Unit 2 is similar to unit 1 but has a higher amount of Western Red Cedar and Douglas Fir.

RMZ VDT: RMZ thinning units are similar to VRH units above.

ROW: Composed of younger Red Alder and Western hemlock.

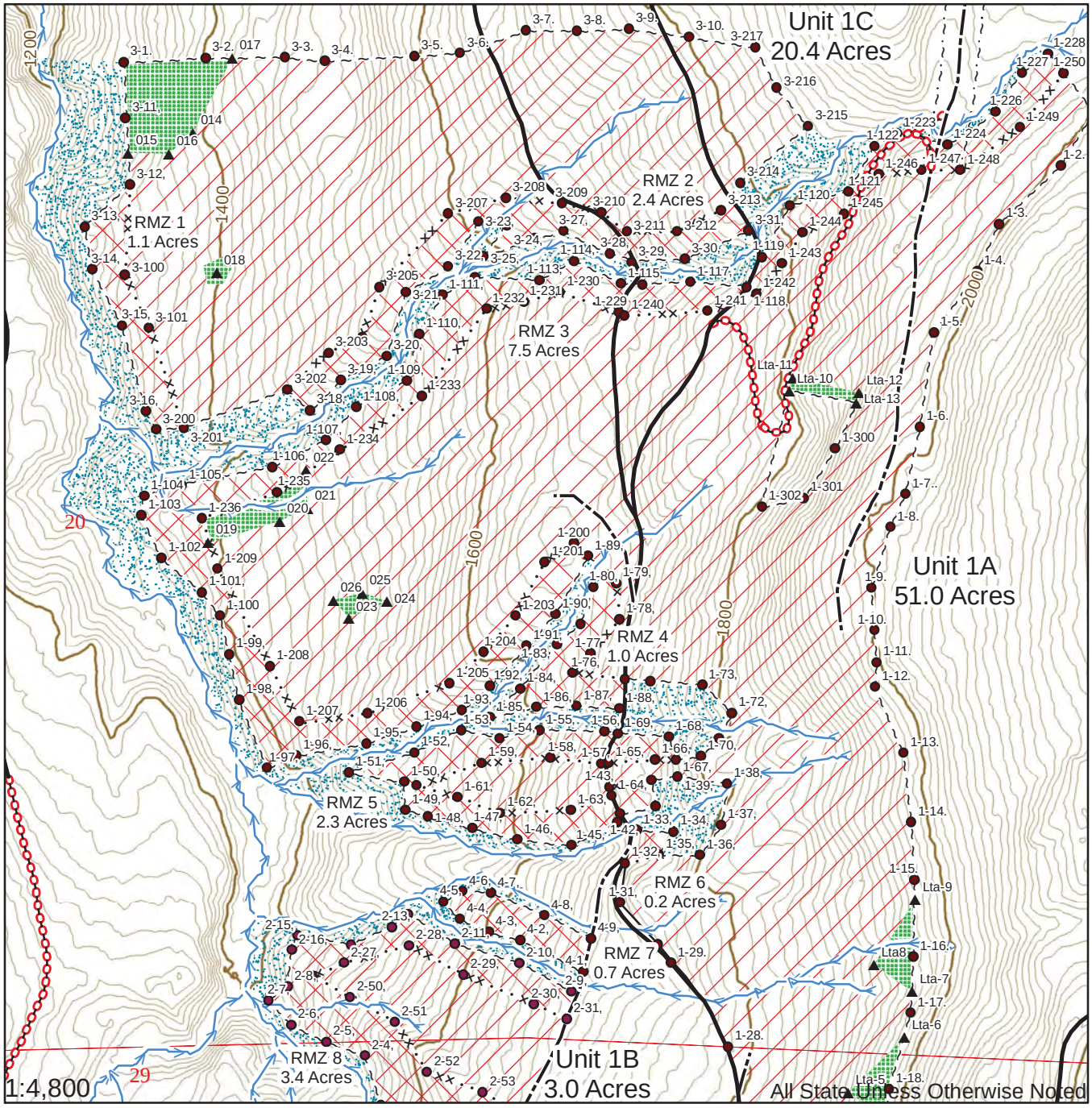
GPS traverse points are marked with Blue and Pink ribbon. Point numbers are indicated on ribbons and metal tags on trees. Boundaries, where not evident from plantation edges and roads are marked with white timber sale tags. In addition along plantation edges pink ribbon is used to indicate boundary.

Prepared By: Samuel Petska Date: 12/09/2015	Title:	CC:

Traverse Map 1/2

SALE NAME: El Dorado VRH & VDT
AGREEMENT#: 30-093091
TOWNSHIPS(S): T40R05E
TRUST(S): State Forest Transfer(1), Common School (03)

REGION: Northwest
COUNTY(S): Whatcom
ELEVATION RGE: 1200'-2000'



VRH Sale Area	GPS Boundary Points	Existing Road
RMZ VDT Sale Area	Leave Tree GPS Points	Abandoned Road
Leave Tree Area	Sale Boundary No Tags	New Construction
Riparian Managment Zones	ROW Tags	Streams
State Land	Sale Boundary Tags	Contours 10 ft
	Special Managment Tags	

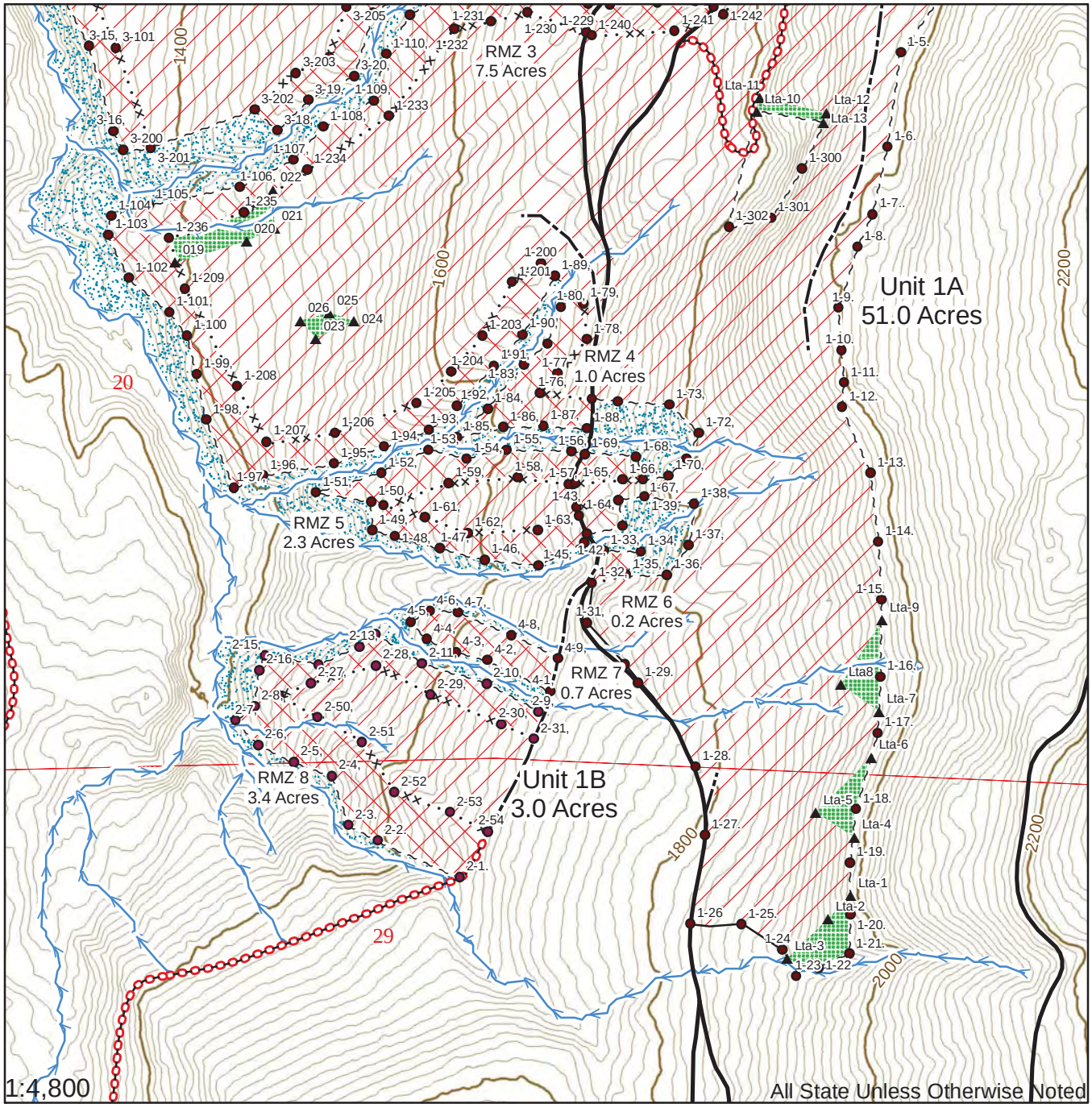
N

Prepared By: spet490 Creaton Date: 11-16-15 Modification Date:12-15-15

Traverse Map 2/2

SALE NAME: El Dorado VRH & VDT
AGREEMENT#: 30-093091
TOWNSHIPS(S): T40R05E
TRUST(S): State Forest Transfer(1), Common School (03)

REGION: Northwest
COUNTY(S): Whatcom
ELEVATION RGE: 1200'-2000'



VRH Sale Area	GPS Boundary Points	Existing Road
RMZ VDT Sale Area	Leave Tree GPS Points	Abandoned Road
Leave Tree Area	Sale Boundary No Tags	New Construction
Riparian Managment Zones	ROW Tags	Streams
State Land	Sale Boundary Tags	Contours 10 ft
	Special Managment Tags	

N

Prepared By: spet490 Creaton Date: 11-16-15 Modification Date:12-15-15

Cruise Narrative

Sale Name: **El Dorado** **VRH & VDT**	**Region: Northwest**
Agree. #: **30-93091**	**District: Baker**
Lead cruiser: **Matt Llobet**	**Completion date:** **1-5-16**
Other cruisers on sale: IM	

Unit acreage specifications:

Unit #	Cruised acres	Cruised acres agree with sale acres? Yes/No	If acres do not agree explain why.
1	71.4	No	**Combined units 1A and 1C**
2	3.0	Yes	
RMZ	18.6	Yes	
ROW	0.8	Yes	
Total	93.8	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.	54.4 BAF	4.5’	200’ x 200’	2:1	65
2	V.P.	40.0 BAF	4.5’	200’ x 200’	Cruise All	5
RMZ	V.P.	20.0 BAF	4.5’	Plot/ac	Cruise All	18
ROW	V.P.	40.0 BAF	4.5’	2plot/0.8ac	Cruise All	2

Sale/Cruise Description:

Minor species cruise intensity:	Cruised all units using a full prism					
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:	**DF** =	8	**WH** =	8	**SS** =	
Leave/take tree description:	**Variable Retention Harvest** – Remove all timber bounded by: blue special management boundary tags, white timber sale boundary tags, orange right-of-way tags, plantation edge, and the SU-41 road. Forest products bounded by yellow leave tree tags or trees marked with blue paint on the bole and root collar will be left.					

	RMZ VDT- Harvest all timber described by the take prescription on and beyond the blue special management tag line and bounded by white timber sale boundary tags. **See Schedule B** **ROW-** Harvest all timber bounded by orange right-of-way tags
Other conditions	

Field observations:

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. El Dorado timber sale was cruised using the variable plot sample method. El Dorado timber sale is 94 acres, with good road access.

General Location

- Off Sumas main line

Harvest Method

- Cable-70%/Ground Base- 30%

Timber quality

- El Dorado timber sale consists of a variable timber type, with consistent defect in the second log in both the RC and WH throughout the sale.

Plots dropped

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

Prepared by: Matt Llobet

Title: Northwest Region Timber Cruiser

TC PSPCSTGR

Species, Sort Grade - Board Foot Volumes (Project)

T40N R05E S20 Ty00U2
THRU
T40N R05E S29 Ty0ROW

Project: **ELDORADO**

Acres **93.80**

Page **1**
Date **1/22/2016**
Time **1:02:17PM**

Spp	St	So Grt	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent of Net Board Foot Volume: Log Scale Dia. 4-5	6-11	12-16	17+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
RC	D	3S	82	13.6	4,435	3,830	359		27	27	45	1	2	1	95	35	11	190	1.95	20.1
RC	D	4S	18	29.9	1,162	815	76	89	11		0	32	22	25	21	24	5	24	0.51	34.2
RC	**Totals**		22	17.0	5,597	4,645	436	16	25	22	37	7	5	6	82	28	8	85	1.17	54.3
RA	D	2S	8	10.8	528	471	44		4	96		11	89			28	13	139	1.35	3.4
RA	D	3S	24	12.8	1,638	1,428	134		99	1		7	93			29	10	95	0.93	15.1
RA	D	4S	43	8.8	2,761	2,517	236	16	84			4	93	2		29	7	44	0.52	56.7
RA	D	UT	25	.1	1,411	1,409	132	80	20			31	47	10	12	22	5	27	0.33	53.1
RA	**Totals**		28	8.1	6,338	5,825	546	26	66	8		12	82	3	3	26	7	45	0.53	128.3
BR	D	2S	6	3.1	97	94	9		39	61		61	39			24	13	132	1.21	.7
BR	D	3S	8	12.1	115	101	9		100				100			30	10	91	1.05	1.1
BR	D	4S	37	9.7	566	511	48	13	87			12	88			28	7	38	0.48	13.3
BR	D	UT	49	.8	683	678	64	84	16			26	65	8	1	20	5	22	0.31	31.0
BR	**Totals**		7	5.3	1,461	1,384	130	46	49	4		21	74	4	1	23	6	30	0.41	46.2
WH	D	2S	22	9.4	1,006	912	86			61	39			33	67	36	15	324	2.17	2.8
WH	D	3S	35	6.3	1,475	1,382	130		100					73	27	34	8	83	0.75	16.6
WH	D	4S	25	10.5	1,120	1,002	94	89	11			9	45	34	12	26	5	26	0.30	38.9
WH	D	UT	18	14.0	835	718	67	53	2	8	37	35	27	17	21	21	6	34	0.45	21.1
WH	**Totals**		19	9.5	4,436	4,014	377	32	38	15	16	9	16	44	31	27	6	51	0.54	79.4
DF	D	2S	54	4.8	2,328	2,216	208			74	26			11	89	39	14	268	1.77	8.3
DF	D	3S	35	2.0	1,481	1,452	136		100					24	76	37	8	95	0.75	15.3
DF	D	4S	10	8.4	439	402	38	83	17			18	19	46	16	27	5	28	0.34	14.4
DF	D	UT	1	50.3	36	18	2	100							100	37	6	25	0.57	.7
DF	**Totals**		20	4.6	4,284	4,088	383	9	37	40	14	2	2	19	78	34	8	105	0.87	38.7
CW	D	2S	85	3.7	521	502	47			52	48		1		99	40	15	357	2.33	1.4
CW	D	4S	10	13.6	66	57	5		100				68	5	27	33	9	81	1.00	.7
CW	D	UT	5		26	26	2		100			6	94			24	7	39	0.60	.7
CW	**Totals**		3	4.6	612	584	55		14	44	42	0	12	0	87	34	12	211	1.72	2.8
BM	D	2S	49	18.4	196	160	15			76	24	24	76			27	17	237	2.63	.7
BM	D	4S	10	20.0	41	33	3		100				100			30	7	40	0.59	.8
BM	D	UT	41	6.3	141	132	12		24	76			76		24	32	10	118	1.21	1.1
BM	**Totals**		2	14.1	379	325	31		20	68	12	12	79		10	30	11	124	1.34	2.6
Totals				9.7	23,107	20,865	1,957	22	42	21	15	8	34	15	43	27	7	59	0.69	352.3

TC PSTATS

PROJECT STATISTICS

PROJECT ELDORADO

DATE 1/22/2016

TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
40N	05E	20	ELDORADO	00U2	THR	93.80	90	442	S	W
40N	05E	29	ELDORADO	0ROW						

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	90	442	4.9		
CRUISE	68	342	5.0	21,845	1.6
DBH COUNT					
REFOREST COUNT	20	100	5.0		
BLANKS	2				
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
R ALDER	121	72.8	13.0	55	18.7	67.5	6,338	5,825	1,773	1,773
WHEMLOCK	52	61.3	11.5	46	13.0	44.1	4,436	4,014	1,144	1,144
WR CEDAR	79	40.0	16.9	46	15.2	62.3	5,597	4,645	1,799	1,800
DOUG FIR	38	20.7	17.0	72	7.9	32.7	4,284	4,088	1,141	1,141
BIRCH	39	35.0	10.6	43	6.6	21.6	1,461	1,384	428	428
COTWOOD	8	1.4	24.7	73	0.9	4.5	612	584	162	162
BL MAPLE	5	1.7	20.1	54	0.9	3.8	379	325	105	105
TOTAL	*342*	*232.9*	*13.6*	*51*	*64.1*	*236.6*	*23,107*	*20,865*	*6,553*	*6,553*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL 68.1 SD: 1.0

	COEFF VAR.%	S.E.%	SAMPLE TREES - BF LOW	AVG	HIGH	# OF TREES REQ. 5	7	INF. POP. 10
R ALDER	50.0	4.6	89	93	98			
WHEMLOCK	149.9	21.0	129	163	197			
WR CEDAR	124.3	14.1	326	379	432			
DOUG FIR	76.8	12.4	265	302	340			
BIRCH	60.3	9.9	58	64	70			
COTWOOD	45.6	17.2	390	471	552			
BL MAPLE	48.0	23.8	204	268	332			
TOTAL	*144.0*	*7.8*	*186*	*202*	*218*	*828*	*422*	*207*

CL 68.1 SD: 1.0

	COEFF VAR.%	S.E.%	TREES/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	7	INF. POP. 10
R ALDER	113.2	11.9	64	73	81			
WHEMLOCK	148.8	15.7	52	61	71			
WR CEDAR	167.5	17.6	33	40	47			
DOUG FIR	208.8	22.0	16	21	25			
BIRCH	257.7	27.1	25	35	44			
COTWOOD	386.0	40.7	1	1	2			
BL MAPLE	472.5	49.8	1	2	3			
TOTAL	*77.3*	*8.1*	*214*	*233*	*252*	*239*	*122*	*60*

CL 68.1 SD: 1.0

	COEFF VAR.%	S.E.%	BASAL AREA/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	7	INF. POP. 10
R ALDER	106.5	11.2	60	68	75			
WHEMLOCK	140.2	14.8	38	44	51			
WR CEDAR	132.0	13.9	54	62	71			
DOUG FIR	198.0	20.9	26	33	40			
BIRCH	218.9	23.1	17	22	27			
COTWOOD	384.2	40.5	3	5	6			
BL MAPLE	438.3	46.2	2	4	6			
TOTAL	*58.5*	*6.2*	*222*	*237*	*251*	*137*	*70*	*34*

PROJECT STATISTICS

PROJECT ELDORADO

TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
40N	05E	20	ELDORADO	00U2	THR	93.80	90	442	S	W
40N	05E	29	ELDORADO	0ROW						

CL 68.1	COEFF		**NET BF/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
R ALDER	108.3	11.4	5,161	5,825	6,490			
WHEMLOCK	168.8	17.8	3,301	4,014	4,728			
WR CEDAR	149.7	15.8	3,913	4,645	5,378			
DOUG FIR	208.6	22.0	3,189	4,088	4,986			
BIRCH	215.9	22.7	1,069	1,384	1,698			
COTWOOD	379.2	39.9	351	584	818			
BL MAPLE	458.6	48.3	168	325	483			
TOTAL	*66.3*	*7.0*	*19,409*	*20,865*	*22,322*	*175*	*90*	*44*

CL 68.1	COEFF		**V BAR/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
R ALDER	84.2	8.9	76	86	96			
WHEMLOCK	129.3	13.6	75	91	107			
WR CEDAR	125.8	13.3	63	75	86			
DOUG FIR	169.9	17.9	97	125	152			
BIRCH	196.3	20.7	49	64	79			
COTWOOD	331.9	35.0	78	130	181			
BL MAPLE	430.2	45.3	44	85	126			
TOTAL	*54.6*	*5.8*	*82*	*88*	*94*	*119*	*61*	*30*

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: ELDORADO

Date 1/22/2016

Time 1:02:17PM

T40N R05E S20 T00U2

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
40N	05E	20	ELDORADO	00U2	3.00	5	22	S	W

T40N R05E S20 T00U2

Spp	ST	Sort	Grade	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-5	6-11	12-16	17+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
RA		DM	3S	35	12.8	2,595	2,261	7		73	27			100			30	10	98	1.03	23.2
RA		DM	4S	44	13.5	3,220	2,784	8	12	88				95	5		30	7	46	0.64	60.3
RA		DM	UT	21		1,333	1,333	4	100				29	30	15	27	22	5	27	0.31	50.1
RA	**Totals**			51	10.8	7,147	6,378	19	26	64	10		6	83	5	6	27	7	48	0.61	133.7
RC		DM	3S	45	13.4	1,366	1,183	4		66	34					100	36	8	81	1.08	14.6
RC		DM	4S	55	17.9	1,694	1,390	4	95	5			49	5	16	29	22	5	21	0.37	65.9
RC	**Totals**			21	15.9	3,060	2,573	8	51	33	16		27	3	9	62	25	6	32	0.56	80.4
WH		DM	3S	40		898	898	3		100						100	40	9	120	0.76	7.5
WH		DM	4S	60		1,311	1,311	4	100					83	17		28	5	30	0.29	43.7
WH	**Totals**			18		2,209	2,209	7	59	41				49	10	41	30	6	43	0.38	51.2
BR		DM	4S	100	25.0	485	364	1		100				100			30	6	30	0.43	12.1
BR		DM	UT		100.0	121											12	5		0.17	12.1
BR	**Totals**			3	40.0	606	364	1		100				100			21	6	15	0.35	24.2
DF		DM	2S	75	8.3	727	667	2			100					100	40	13	220	1.78	3.0
DF		DM	3S	25		212	212	1		100						100	40	7	70	0.59	3.0
DF	**Totals**			7	6.5	939	879	3		24	76					100	40	10	145	1.19	6.1
Type Totals					11.2	13,962	12,403	37	35	52	14		9	55	6	30	27	6	42	0.56	295.6

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: ELDORADO

Date 1/22/2016

Time 1:02:17PM

T40N R05E S29 T00U1

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
40N	05E	29	ELDORADO	00U1	71.40	65	233	S	W

T40N R05E S29 T00U1

Spp	ST	Sort	Grade	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-5	6-11	12-16	17+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
RC		DM	3S	83	13.6	5,768	4,982	356		27	27	46	1	2	1	95	35	11	193	1.97	25.8
RC		DM	4S	17	30.5	1,456	1,012	72	89	11		0	31	23	26	20	25	5	24	0.52	42.2
RC	**Totals**			24	17.0	7,224	5,994	428	15	24	23	38	6	6	5	83	28	8	88	1.20	68.0
RA		DM	2S	8	11.7	570	503	36			100		14	86			28	13	137	1.35	3.7
RA		DM	3S	22	14.1	1,570	1,349	96		100			8	92			29	10	96	0.95	14.1
RA		DM	4S	43	9.7	2,815	2,543	182	13	87			5	93	1		29	7	45	0.53	56.9
RA		DM	UT	27		1,590	1,590	113	77	23			29	47	11	13	23	5	28	0.33	57.0
RA	**Totals**			24	8.6	6,545	5,985	427	26	66	8		13	80	3	3	26	7	45	0.53	131.6
WH		DM	2S	23	9.4	1,322	1,198	86			61	39			33	67	36	15	324	2.17	3.7
WH		DM	3S	34	6.4	1,878	1,758	126		100					74	26	34	8	83	0.75	21.3
WH		DM	4S	25	11.0	1,411	1,256	90	88	12			10	43	35	13	26	5	26	0.30	49.1
WH		DM	UT	18	14.5	1,059	905	65	52	2	9	38	36	25	16	22	21	6	35	0.47	26.0
WH	**Totals**			21	9.7	5,670	5,117	365	31	38	16	16	9	15	45	32	27	6	51	0.55	100.0
DF		DM	2S	54	4.8	3,028	2,883	206			74	26			11	89	39	14	268	1.77	10.8
DF		DM	3S	35	2.0	1,937	1,898	136		100					24	76	37	8	95	0.75	20.0
DF		DM	4S	10	8.4	577	528	38	83	17			18	19	46	16	27	5	28	0.34	19.0
DF		DM	UT	1	50.3	47	23	2	100							100	37	6	25	0.57	.9
DF	**Totals**			21	4.6	5,589	5,333	381	9	37	40	14	2	2	19	77	34	8	105	0.87	50.6
BR		DM	2S	5		76	76	5			100		100				20	14	140	1.42	.5
BR		DM	3S	3	18.2	66	54	4		100				100			30	10	90	1.26	.6
BR		DM	4S	36	7.9	562	518	37	14	86			15	85			28	7	37	0.47	13.9
BR		DM	UT	56		817	817	58	83	17			25	69	6		20	5	22	0.31	36.9
BR	**Totals**			6	3.7	1,521	1,464	105	51	44	5		24	72	3		22	6	28	0.39	51.9
BM		DM	2S	49	18.4	257	210	15			76	24	24	76			27	17	237	2.63	.9
BM		DM	4S	10	20.0	54	44	3		100				100			30	7	40	0.59	1.1
BM		DM	UT	41	6.3	186	174	12		24	76			76		24	32	10	118	1.21	1.5
BM	**Totals**			2	14.1	497	428	31		20	68	12	12	79		10	30	11	124	1.34	3.5
CW		DM	2S	85	5.1	470	446	32			37	63				100	40	15	374	2.49	1.2
CW		DM	4S	8	15.4	52	44	3		100				100			30	11	110	1.42	.4
CW		DM	UT	7	.0	32	32	2		100				100			25	7	40	0.59	.8
CW	**Totals**			2	5.7	553	521	37		14	32	54		14		86	33	12	219	1.85	2.4
Type Totals					10.0	27,599	24,842	1,774	21	41	21	17	9	30	16	46	27	7	61	0.71	408.0

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: ELDORADO

Date 1/22/2016

Time 1:02:17PM

T40N R05E S29 T0RMZ

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
40N	05E	29	ELDORADO	0RMZ	18.60	18	81	S	W

T40N R05E S29 T0RMZ

Spp	ST	Sort	Grade	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-5	6-11	12-16	17+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
RA		DM	2S	8	6.7	476	444	8		23	77			100			30	12	148	1.34	3.0
RA		DM	3S	31	8.5	1,812	1,659	31		100			4	96			29	10	91	0.86	18.3
RA		DM	4S	47	4.6	2,545	2,427	45	29	71			1	94	5		30	6	43	0.46	56.8
RA		DM	UT	14	1.1	740	732	14	99	1			46	50	4		18	5	19	0.30	39.1
RA	**Totals**			70	5.6	5,574	5,263	98	27	66	6		8	89	3		26	7	45	0.52	117.2
BR		DM	2S	14	7.6	199	184	3		100				100			30	11	120	1.03	1.5
BR		DM	3S	23	7.4	323	300	6		100				100			30	10	92	0.91	3.3
BR		DM	4S	41	13.7	616	531	10	13	87				100			29	7	44	0.52	12.1
BR		DM	UT	22	2.6	292	284	5	100				42	15	27	16	21	5	22	0.35	13.0
BR	**Totals**			17	9.2	1,430	1,299	24	27	73			9	81	6	4	26	7	44	0.54	29.8
CW		DM	2S	86	.6	824	819	15			81	19		4		96	39	15	325	2.04	2.5
CW		DM	4S	13	10.9	133	118	2		100				21	12	67	35	7	59	0.73	2.0
CW		DM	UT	1		8	8	0		100			100				12	9	30	0.61	.3
CW	**Totals**			13	2.0	964	944	18		13	71	16	1	6	2	92	36	11	197	1.48	4.8
Type Totals					5.8	7,968	7,506	140	24	61	13	2	7	77	3	12	26	7	49	0.56	151.8

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: ELDORADO

Date 1/22/2016

Time 1:02:17PM

T40N R05E S29 T0ROW

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
40N	05E	29	ELDORADO	0ROW	.80	2	6	S	W

T40N R05E S29 T0ROW

Spp	ST	Sort	Grade	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-5	6-11	12-16	17+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
WH		DM	3S	31	8.3	1,956	1,793	1		100					100		32	10	110	0.89	16.3
WH		DM	4S	9		489	489	0	100					100			30	5	30	0.34	16.3
WH		DM	UT	60		3,392	3,392	3	100					68	32		24	5	22	0.27	151.3
WH		**Totals**		68	2.8	5,837	5,674	5	68	32				49	51		26	5	31	0.35	183.9
RA		DM	4S	48		1,273	1,273	1		100				100			30	7	50	0.53	25.5
RA		DM	UT	52		1,358	1,358	1	100					100			25	5	30	0.29	45.3
RA		**Totals**		32		2,631	2,631	2	52	48				100			27	6	37	0.38	70.7
Type Totals					1.9	8,468	8,305	7	63	37				65	35		26	6	33	0.36	254.6

TC TSTATS

STATISTICS

PROJECT **ELDORADO**

DATE 1/22/2016

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
40N	05E	20	ELDORADO	00U2	3.00	5	22	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	5	22	4.4		
CRUISE	5	22	4.4	627	3.5
DBH COUNT					
REFOREST					
COUNT					
BLANKS					
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
R ALDER	10	71.9	14.3	59	21.2	80.0	7,147	6,378	2,228	2,228
WR CEDAR	7	78.1	11.5	34	16.5	56.0	3,060	2,573	1,110	1,110
WHEMLOCK	3	43.7	10.0	49	7.6	24.0	2,209	2,209	583	583
BIRCH	1	12.1	11.0	55	2.4	8.0	606	364	180	180
DOUG FIR	1	3.0	22.0	87	1.7	8.0	939	879	288	288
TOTAL	*22*	*208.9*	*12.4*	*47*	*49.9*	*176.0*	*13,962*	*12,403*	*4,389*	*4,389*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL: 68.1 %	COEFF		**SAMPLE TREES - BF**			# OF TREES REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
R ALDER	47.8	15.9	84	100	116			
WR CEDAR	106.1	43.2	35	61	88			
WHEMLOCK	99.0	68.5	22	70	118			
BIRCH								
DOUG FIR								
TOTAL	*80.2*	*17.5*	*74*	*89*	*105*	*269*	*137*	*67*

CL: 68.1 %	COEFF		**TREES/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
R ALDER	36.7	18.2	59	72	85			
WR CEDAR	133.7	66.4	26	78	130			
WHEMLOCK	140.2	69.7	13	44	74			
BIRCH	223.6	111.1		12	26			
DOUG FIR	223.6	111.1		3	6			
TOTAL	*40.4*	*20.1*	*167*	*209*	*251*	*80*	*41*	*20*

CL: 68.1 %	COEFF		**BASAL AREA/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
R ALDER	35.4	17.6	66	80	94			
WR CEDAR	81.4	40.5	33	56	79			
WHEMLOCK	149.1	74.1	6	24	42			
BIRCH	223.6	111.1		8	17			
DOUG FIR	223.6	111.1		8	17			
TOTAL	*38.0*	*18.9*	*143*	*176*	*209*	*71*	*36*	*18*

CL: 68.1 %	COEFF		**NET BF/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
R ALDER	42.3	21.0	5,036	6,378	7,720			
WR CEDAR	80.0	39.8	1,550	2,573	3,596			
WHEMLOCK	163.8	81.4	411	2,209	4,007			
BIRCH	223.6	111.1		364	768			
DOUG FIR	223.6	111.1		879	1,855			
TOTAL	*62.2*	*30.9*	*8,571*	*12,403*	*16,234*	*191*	*97*	*48*

TC TSTATS

STATISTICS

PROJECT ELDORADO

DATE 1/22/2016

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
40N	05E	20	ELDORADO	00U2	3.00	5	22	S	W

CL: 68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10

CL: 68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
R ALDER	42.3	21.0	63	80	96			
WR CEDAR	80.0	39.8	28	46	64			
WHEMLOCK	163.8	81.4	17	92	167			
BIRCH	223.6	111.1		45	96			
DOUG FIR	223.6	111.1		110	232			
TOTAL	*62.2*	*30.9*	*49*	*70*	*92*	*191*	*97*	*48*

TC TSTATS

STATISTICS

PROJECT ELDORADO

DATE 1/22/2016

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
40N	05E	29	ELDORADO	00U1	71.40	65	333	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	65	333	5.1		
CRUISE	45	233	5.2	19,252	1.2
DBH COUNT					
REFOREST COUNT	20	100	5.0		
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
WR CEDAR	72	49.3	17.2	47	19.2	79.5	7,224	5,994	2,317	2,318
R ALDER	50	72.5	13.1	57	18.7	67.8	6,545	5,985	1,818	1,818
WHEMLOCK	45	76.9	11.6	46	16.5	56.1	5,670	5,117	1,461	1,460
DOUG FIR	37	27.1	17.0	72	10.4	42.7	5,589	5,333	1,487	1,486
BIRCH	22	40.4	10.3	42	7.3	23.4	1,521	1,464	447	447
BL MAPLE	5	2.3	20.1	54	1.1	5.0	497	428	139	139
COTWOOD	2	1.2	25.4	70	0.8	4.2	553	521	147	147
TOTAL	*233*	*269.6*	*13.8*	*51*	*75.1*	*278.7*	*27,599*	*24,842*	*7,815*	*7,814*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL: 68.1 % SD: 1.0

	COEFF VAR.%	S.E.%	SAMPLE TREES - BF LOW	AVG	HIGH	# OF TREES REQ. 5	7	INF. POP. 10
WR CEDAR	117.6	13.9	353	410	468			
R ALDER	44.1	6.3	94	100	106			
WHEMLOCK	146.6	21.8	137	176	214			
DOUG FIR	77.7	12.8	264	302	341			
BIRCH	65.7	15.1	45	53	60			
BL MAPLE	48.0	23.8	204	268	332			
COTWOOD	74.7	70.0	159	530	901			
TOTAL	*136.1*	*9.0*	*225*	*247*	*269*	*739*	*377*	*185*

CL: 68.1 % SD: 1.0

	COEFF VAR.%	S.E.%	TREES/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	7	INF. POP. 10
WR CEDAR	141.1	17.5	41	49	58			
R ALDER	121.0	15.0	62	73	83			
WHEMLOCK	122.3	15.2	65	77	89			
DOUG FIR	170.8	21.2	21	27	33			
BIRCH	243.6	30.2	28	40	53			
BL MAPLE	398.9	49.4	1	2	3			
COTWOOD	424.8	52.6	1	1	2			
TOTAL	*65.3*	*8.1*	*248*	*270*	*291*	*171*	*87*	*43*

CL: 68.1 % SD: 1.0

	COEFF VAR.%	S.E.%	BASAL AREA/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	7	INF. POP. 10
WR CEDAR	104.1	12.9	69	80	90			
R ALDER	113.5	14.1	58	68	77			
WHEMLOCK	112.4	13.9	48	56	64			
DOUG FIR	161.7	20.0	34	43	51			
BIRCH	217.0	26.9	17	23	30			
BL MAPLE	369.5	45.8	3	5	7			
COTWOOD	418.0	51.8	2	4	6			
TOTAL	*40.3*	*5.0*	*265*	*279*	*293*	*65*	*33*	*16*

CL: 68.1 % SD: 1.0

	COEFF VAR.%	S.E.%	NET BF/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	7	INF. POP. 10
WR CEDAR	119.3	14.8	5,108	5,994	6,880			

TC TSTATS

STATISTICS

PROJECT ELDORADO

DATE 1/22/2016

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
40N	05E	29	ELDORADO	00U1	71.40	65	333	S	W

CL: 68.1 %	COEFF		**NET BF/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10
R ALDER	112.5	13.9	5,151	5,985	6,819			
WHEMLOCK	139.0	17.2	4,235	5,117	5,999			
DOUG FIR	171.1	21.2	4,202	5,333	6,464			
BIRCH	217.3	26.9	1,070	1,464	1,858			
BL MAPLE	387.0	48.0	223	428	633			
COTWOOD	421.6	52.2	249	521	794			
TOTAL	*47.7*	*5.9*	*23,373*	*24,842*	*26,311*	*91*	*46*	*23*

CL: 68.1 %	COEFF		**V-BAR/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
WR CEDAR	97.4	12.1	64	75	87			
R ALDER	65.5	8.1	76	88	101			
WHEMLOCK	102.5	12.7	76	91	107			
DOUG FIR	136.4	16.9	98	125	151			
BIRCH	201.2	24.9	46	62	79			
BL MAPLE	362.5	44.9	44	85	126			
COTWOOD	213.8	26.5	60	125	190			
TOTAL	*124.9*	*15.5*	*84*	*89*	*94*	*623*	*318*	*156*

TC TSTATS

STATISTICS

PROJECT ELDORADO

DATE 1/22/2016

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
40N	05E	29	ELDORADO	0RMZ	18.60	18	81	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	18	81	4.5		
CRUISE	16	81	5.1	1,775	4.6
DBH COUNT					
REFOREST COUNT					
BLANKS	2				
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
R ALDER	59	74.0	12.7	48	18.4	65.6	5,574	5,263	1,573	1,573
BIRCH	16	19.1	13.1	47	4.9	17.8	1,430	1,299	413	413
COTWOOD	6	2.3	23.2	80	1.4	6.7	964	944	253	253
TOTAL	*81*	*95.4*	*13.2*	*49*	*24.8*	*90.0*	*7,968*	*7,506*	*2,239*	*2,239*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL: 68.1 %	COEFF		**SAMPLE TREES - BF**			# OF TREES REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
R ALDER	54.6	7.1	82	89	95			
BIRCH	48.5	12.5	71	81	91			
COTWOOD	39.3	17.5	373	452	531			
TOTAL	*100.8*	*11.2*	*101*	*114*	*127*	*406*	*207*	*101*

CL: 68.1 %	COEFF		**TREES/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
R ALDER	69.3	16.8	62	74	86			
BIRCH	165.6	40.1	11	19	27			
COTWOOD	262.4	63.6	1	2	4			
TOTAL	*56.5*	*13.7*	*82*	*95*	*108*	*135*	*69*	*34*

CL: 68.1 %	COEFF		**BASAL AREA/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
R ALDER	62.6	15.2	56	66	76			
BIRCH	148.9	36.1	11	18	24			
COTWOOD	252.1	61.1	3	7	11			
TOTAL	*52.4*	*12.7*	*79*	*90*	*101*	*116*	*59*	*29*

CL: 68.1 %	COEFF		**NET BF/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
R ALDER	68.9	16.7	4,385	5,263	6,141			
BIRCH	148.0	35.9	833	1,299	1,765			
COTWOOD	243.7	59.0	387	944	1,502			
TOTAL	*57.6*	*13.9*	*6,459*	*7,506*	*8,553*	*140*	*71*	*35*

CL: 68.1 %	COEFF		**V-BAR/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
R ALDER	68.9	16.7	67	80	94			
BIRCH	148.0	35.9	47	73	99			
COTWOOD	243.7	59.0	58	142	225			
TOTAL	*57.6*	*13.9*	*72*	*83*	*95*	*140*	*71*	*35*

TC TSTATS

STATISTICS

PROJECT ELDORADO

DATE 1/22/2016

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
40N	05E	29	ELDORADO	0RO	0.80	2	6	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	2	6	3.0		
CRUISE	2	6	3.0	191	3.1
DBH COUNT					
REFOREST					
COUNT					
BLANKS					
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
WHEMLOCK	4	167.6	9.4	44	26.2	80.0	5,837	5,674	1,641	1,641
R ALDER	2	70.7	10.2	41	12.5	40.0	2,631	2,631	729	729
TOTAL	*6*	*238.3*	*9.6*	*43*	*38.7*	*120.0*	*8,468*	*8,305*	*2,370*	*2,370*

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	82.1	56.8	30	70	110			
R ALDER	35.4	33.1	27	40	53			
TOTAL	*76.5*	*38.0*	*36*	*58*	*80*	*289*	*148*	*72*

CL: 68.1 %	COEFF		**TREES/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
WHEMLOCK	141.4	132.4		168	389			
R ALDER	141.4	132.4		71	164			
TOTAL	*57.5*	*53.8*	*110*	*238*	*367*	*232*	*118*	*58*

CL: 68.1 %	COEFF		**BASAL AREA/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
WHEMLOCK	141.4	132.4		80	186			
R ALDER	141.4	132.4		40	93			
TOTAL	*47.1*	*44.1*	*67*	*120*	*173*	*156*	*80*	*39*

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	141.4	132.4		5,674	13,187			
R ALDER	141.4	132.4		2,631	6,116			
TOTAL	*51.8*	*48.5*	*4,276*	*8,305*	*12,334*	*188*	*96*	*47*

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	141.4	132.4		71	165			
R ALDER	141.4	132.4		66	153			
TOTAL	*51.8*	*48.5*	*36*	*69*	*103*	*188*	*96*	*47*

TC PSPCTLTCM

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

T40N R05E S20 Ty00U2	3.0
T40N R05E S29 Ty00U1	71.4
T40N R05E S29 Ty0RO	.8

Project ELDORADO
Acres 93.80

Page No 1
Date: 1/22/2016
Time 1:02:18PM

Species	S T	Total Trees	Total Logs	Total Tons	Net Cubic Ft/ Tree	Net Cubic Ft/ Log	CF/ LF	Total CCF Gross	Total CCF Net	Total MBF Gross	Total MBF Net
R ALDER		6,828	12,034	4,574	24.36	13.82	0.53	1,663	1,663	595	546
WR CEDAR		3,752	5,096	3,966	45.00	33.12	1.19	1,688	1,688	525	436
DOUG FIR		1,944	3,634	3,050	55.04	29.44	0.87	1,070	1,070	402	383
WHEMLOCK		5,753	7,443	3,435	18.65	14.41	0.57	1,073	1,073	416	377
BIRCH		3,278	4,330	1,063	12.23	9.26	0.41	401	401	137	130
COTWOOD		127	259	373	119.67	58.75	1.73	152	152	57	55
BL MAPLE		162	246	262	61.01	40.13	1.34	99	99	36	31
Totals		21,845	33,044	16,723	28.14	18.60	0.70	6,147	6,147	2,167	1,957

Wood Type Species	Total Trees	Total Logs	Total Tons	Net Cubic Ft/ Tree	Net Cubic Ft/ Log	CF/ LF	Total CCF Gross	Total CCF Net	Total MBF Gross	Total MBF Net
C	11,449	16,174	10,451	33.46	23.69	0.85	3,831	3,831	1,343	1,196
H	10,396	16,870	6,272	22.27	13.73	0.54	2,316	2,316	824	762
Totals	21,845	33,044	16,723	28.14	18.60	0.70	6,147	6,147	2,167	1,957

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

FPA/N No: 2814976
Effective Date: 2/12/2016
Expiration Date: 2/12/2019

Forest Practices Application/Notification
Notice of Decision

Shut Down Zone: 656
EARR Tax Credit: [x] Eligible [] Non-eligible
Reference: El Dorado

DECISION:

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

FPA/N CLASSIFICATION

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

Number of Years Granted on Multi-Year Request

[ ] 4yrs [ ] 5 yrs

Conditions on Approval / Reasons for Disapproval

Issued By: Megan Penney MA

Region: Northwest

Title: Nooksack Forest Practice Forester

Date: 2/12/2016

Copies to: [X] Landowner, Timber Owner and Operator
Issued in Person: [x] Landowner, [ ]Timber Owner [ ] Operator By: BR

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.

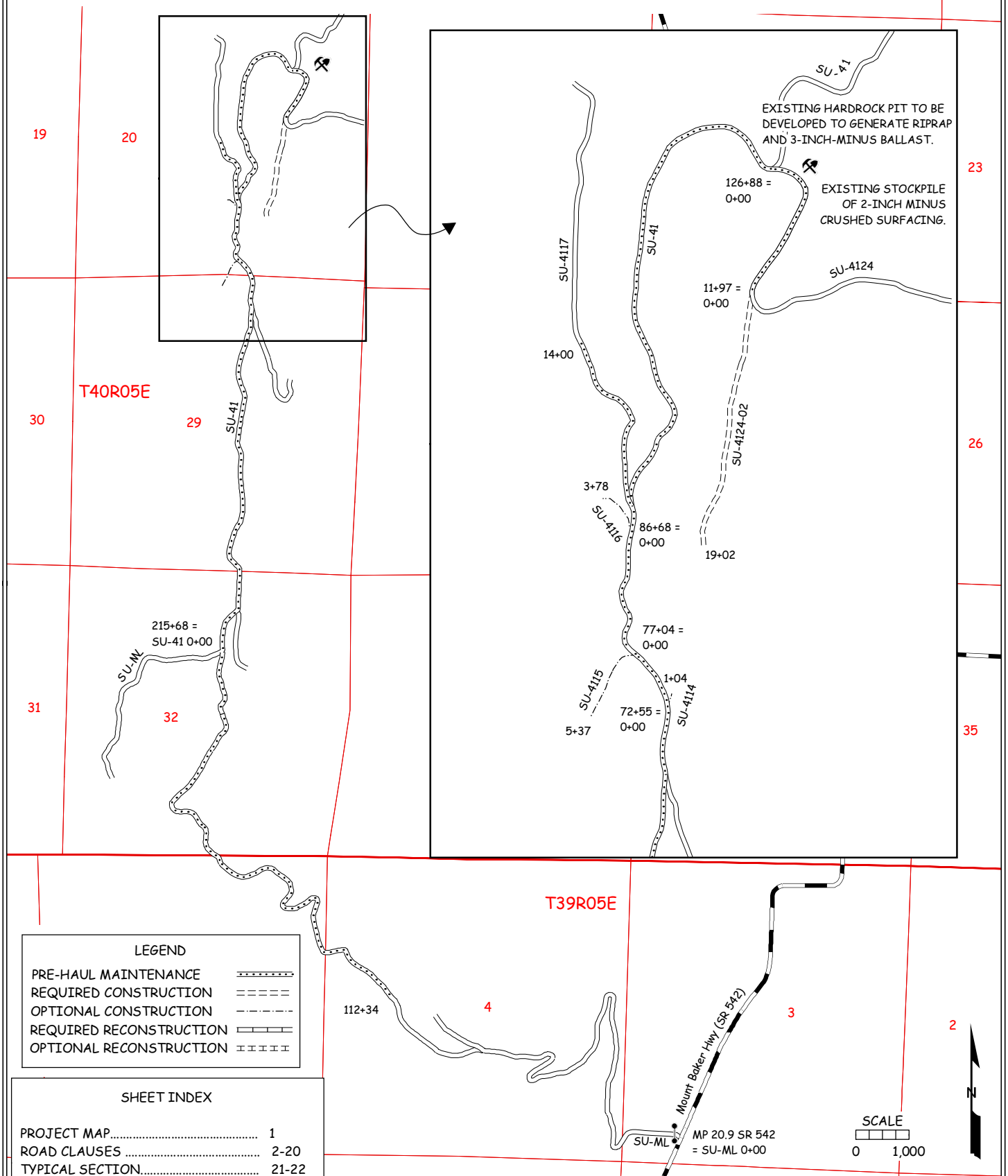
DNR affidavit of mailing:

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
#30-093091 EL DORADO TIMBER SALE



LEGEND

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

SHEET INDEX

PROJECT MAP..... 1
ROAD CLAUSES 2-20
TYPICAL SECTION..... 21-22
MATERIAL LIST..... 23
FARMS..... 24-25
STANDARD DETAILS..... 26-27

DESIGNED BY	REVIEWED BY	APPROVED BY	PLAN DATE	SHEET
J. WESTRA	ZYLSTRA 12/16/15	ZYLSTRA 12/16/15	11/30/2015	1 OF 27

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

EL DORADO TIMBER SALE ROAD PLAN
WHATCOM COUNTY
BAKER DISTRICT

AGREEMENT NO.: 30-093091 STAFF ENGINEER: J. WESTRA

DATE: 11/30/2015

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.

Road	Stations	Type
SU-ML	112+34 to 215+68	PRE-HAUL MAINTENANCE
SU-41	0+00 to 126+88	PRE-HAUL MAINTENANCE
SU-4117	0+00 to 14+00	PRE-HAUL MAINTENANCE
SU-4124	0+00 to 11+97	PRE-HAUL MAINTENANCE
SU-4124-02*	0+00 to 19+02	CONSTRUCTION

*Construction from 0+00 to 4+92 and 6+81 to 15+16 is on an abandoned grade

0-3 OPTIONAL ROADS

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

Road	Stations	Type
SU-4114	0+00 to 1+04	CONSTRUCTION
SU-4115*	0+00 to 5+37	CONSTRUCTION
SU-4116	0+00 to 3+78	CONSTRUCTION

*Construction is on an abandoned grade

0-4 CONSTRUCTION

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

This project includes, but is not limited to the following reconstruction requirements:

0-6 PRE-HAUL MAINTENANCE

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

Road	Stations	Requirements
SU-ML	112+34 to 215+68	BRUSHING, CULVERT INSTALLATION
SU-41	0+00 to 126+88	BRUSHING, GRADING, ROCK APPLICATION, CULVERT INSTALLATION
SU-4117	0+00 to 14+00	BRUSHING, GRADING, ROCK APPLICATION
SU-4124	0+00 to 11+97	GRADING, ROCK APPLICATION

0-7 POST-HAUL MAINTENANCE

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

0-10 ABANDONMENT

This project includes abandonment listed in Clause 9-21 ROAD ABANDONMENT and 11-1 SPECIAL ABANDONMENT POINTS.

0-12 DEVELOP ROCK SOURCE

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

SECTION 1 – GENERAL

1-1 ROAD PLAN CHANGES

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

1-2 UNFORESEEN CONDITIONS

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

1-3 ROAD DIMENSIONS

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

1-4 ROAD TOLERANCES

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

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

1-6 ORDER OF PRECEDENCE

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

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

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

1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS

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

1-9 DAMAGED METALLIC COATING

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

1-18 REFERENCE POINT DAMAGE

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

1-21 HAUL APPROVAL

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

1-25 ACTIVITY TIMING RESTRICTION

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

Road	Closure Period
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.

2-5 MAINTENANCE GRADING – EXISTING ROAD

Purchaser shall use a grader to shape the existing surface before any haul. Purchaser shall accomplish all grading using a motor grader with a minimum of 175 horsepower.

2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS

Purchaser shall clean ditches, headwalls, and catchbasins. Work must be done in accordance with the TYPICAL SECTION.

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

3-1 BRUSHING

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

Road	Stations
SU-ML	112+34 to 215+68
SU-41	0+00 to 126+88
SU-4117	0+00 to 14+00

3-5 CLEARING

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

3-8 PROHIBITED DECKING AREAS

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

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

3-10 GRUBBING

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

3-20 ORGANIC DEBRIS DEFINITION

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

3-21 DISPOSAL COMPLETION

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

3-23 PROHIBITED DISPOSAL AREAS

Purchaser shall not place organic debris in the following areas:

- Within 50 feet of a cross drain culvert.
- Within 100 feet of a live stream, or wetland**.**
- On 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**.** Where natural openings are unavailable or restrictive, alternate debris disposal methods are subject to the written approval of the Contract Administrator.

SECTION 4 – EXCAVATION

4-2 PIONEERING

Pioneering may not extend past construction that will be completed during the current construction season. 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 12 percent adverse.
- Minimum curve radius is 60 feet at centerline.
- Maximum grade change for sag vertical curves is 5% in 100 feet.
- Maximum grade change for crest vertical curves is 4% in 100 feet.

4-4 SWITCHBACK STANDARDS

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

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

4-5 CUT SLOPE RATIO

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

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

4-6 EMBANKMENT SLOPE RATIO

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

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

4-7 SHAPING CUT AND FILL SLOPE

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

4-8 CURVE WIDENING

The minimum widening placed on the inside of curves is:

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

4-9 EMBANKMENT WIDENING

The minimum embankment widening is:

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

4-21 TURNOUTS

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

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

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

4-28 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 45% if the waste material is compacted and free of organic debris.

4-38 PROHIBITED WASTE DISPOSAL AREAS

Purchaser shall not deposit waste material in the following areas:

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

4-55 ROAD SHAPING

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

4-60 FILL COMPACTION

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

4-61 SUBGRADE COMPACTION

Purchaser shall compact constructed 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 the MATERIALS LIST. Culvert, downspout, and flume lengths may be adjusted to fit as-built conditions and may not terminate directly on unprotected soil. Culverts may be new or used 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, 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". Corrugated Polyethylene pipe must be installed in a manner consistent with the manufacturer's recommendations.

5-16 APPROVAL FOR LARGER CULVERT INSTALLATION

Purchaser shall obtain written approval from the Contract Administrator for the installation of culverts 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%.

5-18 CULVERT DEPTH OF COVER

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

5-25 CATCH BASINS

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

5-26 HEADWALLS FOR CROSS DRAIN CULVERTS

Purchaser shall construct headwalls in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all cross drain culverts. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets. Minimum specifications require that rock be placed at a width of one culvert diameter on each side of the culvert opening, and to a height of one culvert diameter above the top of the culvert. Rock may not restrict the flow of water into culvert inlets or catch basins. No placement by end dumping or dropping of rock is allowed.

5-27 ARMORING FOR STREAM CROSSING CULVERTS

At the following culverts, Purchaser shall place light and heavy riprap in conjunction with construction of the embankment. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets as designated on the MATERIALS LIST. Rock may not restrict the flow of water into culvert inlets or catch basins. Rock must be set in place by machine. No placement by end dumping or dropping of rock is allowed.

Road	Stations	Rock Type
SU-4115	2+47	Light/Heavy Riprap
SU-4116	1+51	Light/Heavy Riprap
SU-4124-02	5+72	Light/Heavy Riprap

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.

Source	Location	Rock Type
Paradise Pit	STA 5+28 of the SU-4124 road	3-inch minus, Riprap

6-3 ROCK SOURCE STATE LAND, EXISTING STOCKPILE

Rock used in accordance with the quantities on the TYPICAL SECTION and MATERIALS LIST may be obtained from the following existing stockpile on state land at no charge to the Purchaser. Other stockpiles may not be used without prior written approval from the Contract Administrator.

Source	Location	Rock Type	Quantity
Paradise Pit	STA 5+28 of the SU-4124 road	2-inch minus	3,370 CY

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 source, 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.

Source
Paradise Pit

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

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

6-12 ROCK SOURCE SPECIFICATIONS

Rock sources must be in accordance with the following specifications:

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

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

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

6-20 ROCK GRADATION TYPES

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

6-34 3-INCH MINUS BALLAST ROCK

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

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

6-50 LIGHT LOOSE RIP RAP

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

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

6-51 HEAVY LOOSE RIP RAP

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

At Least/Not More Than	Weight Range
30% / 90%	1 ton to 3 ton
70% / 90%	500 lbs. to 1 ½ ton
10% / 30%	50 lbs. max

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.

6-70 APPROVAL BEFORE ROCK APPLICATION

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

6-71 ROCK APPLICATION

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

6-73 ROCK FOR WIDENED PORTIONS

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

SECTION 8 – EROSION CONTROL

8-15 REVEGETATION

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

8-16 REVEGETATION SUPPLY

The Purchaser shall provide the seed and fertilizer.

8-17 REVEGETATION TIMING

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

8-18 PROTECTION FOR SEED

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

8-19 ASSURANCE FOR SEEDED AREA

Purchaser shall ensure the growth of a uniform and dense crop (at least 50% coverage) of 3-inch tall grass. Purchaser shall reapply the 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 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
5. Seed must conform to the following mixture:

Kind and Variety of Seed in Mixture	% by Weight
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 at a rate of 200 pounds per acre of exposed soil. Fertilizer must meet the following specifications:

Chemical Component	% by Weight
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.

9-5 POST-HAUL MAINTENANCE

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

9-10 LANDING DRAINAGE

Purchaser shall provide for drainage of landing surfaces.

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 roads before the termination of this contract**.**

Road	Stations
SU-4114	0+00 to 1+04
SU-4115	0+00 to 5+37
SU-4116	0+00 to 3+78

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.
- 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

Metal culverts must conform to the following specifications for gage and corrugation as a function of diameter.

Diameter	Gage	Corrugation
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

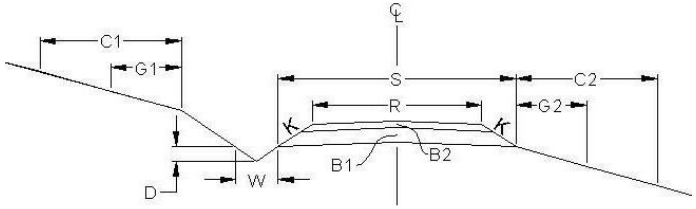
11-1 SPECIAL ABANDONMENT POINTS

At the following station points road construction is either entering or leaving old abandoned road grades. To maintain previous abandonment work and discourage prohibited off road vehicle use, Purchaser shall block the intersecting old road grade, by constructing an aggressive barrier of dense interlocked large woody debris (logs, rocks, 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.

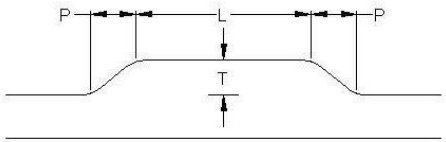
Road	Station	Comments
SU-4124-02	4+92	Block access on old grade to stream
SU-4124-02	6+81	Prior to special abandonment and concurrent with installation of 48” pipe at 5+72 Purchaser shall re-establish water bar drainage for 350 feet on the old grade below the SU-4118. Water bars must be installed or improved to stop delivery of water and sediment to live stream(s).
SU-4124-02	15+16	Block access to old grade

ROAD #		SU-ML	SU-41 [A]	SU-4114	SU-4115
REQUIRED / OPTIONAL		REQUIRED	REQUIRED	OPTIONAL	OPTIONAL
CONSTRUCT / RECONSTRUCT		PRE-HAUL	PRE-HAUL	CONSTRUCT	CONSTRUCT
TOLERANCE CLASS (A/B/C)		--	--	C	C
STATION / MP TO		112+34	0+00	0+00	0+00
STATION / MP		215+68	126+88	1+04	5+37
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	--	--	--	--
TURNOUT WIDTH	T	--	--	--	--
TURNOUT TAPER	P	--	--	--	--
GRUBBING	G1	5	--	5	5
	G2	5	--	5	5
CLEARING	C1	10	--	10	10
	C2	10	--	10	10
ROCK FILLSLOPE	K:1	1 ½	--	1 ½	1 ½
❖ BALLAST DEPTH	B1	12	--	18	12
CUBIC YARDS / STATION		72	--	114	72
➢ TOTAL CY BALLAST		72	--	120	390
❖ SURFACING DEPTH	B2	--	4	--	--
CUBIC YARDS / STATION		--	22	--	--
➢ TOTAL CY SURFACING		--	2,795	--	--
➢ TOTAL CUBIC YARDS		72	2,795	120	390
SUBGRADE WIDTH	S	15	13.0	16.5	15
BRUSHCUT (Y/N)		Y	Y	N	N
BLADE, SHAPE, & DITCH (Y/N)		N	Y	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.

Total 2-inch minus: 3,370 CY (existing stockpile)
Total 3-inch minus: 2,622 CY
Total Riprap: 82 CY

A. Use existing stockpile of 2-inch minus in Paradise Pit

ROAD #		SU-4116	SU-4117[A]	SU-4124[A]	SU-4124-02	SU-4124-02	SU-4124-02	SU-4124-02
REQUIRED / OPTIONAL		OPTIONAL	REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED
CONSTRUCT / RECONSTRUCT		CONSTRUCT	PRE-HAUL	PRE-HAUL	CONSTRUCT	CONSTRUCT	CONSTRUCT	CONSTRUCT
TOLERANCE CLASS (A/B/C)		C	C	C	C	C	C	C
STATION / MP TO		0+00	0+00	0+00	0+00	4+92	6+81	15+16
STATION / MP		3+78	14+00	11+97	4+92	6+81	15+16	19+02
ROAD WIDTH	R	12	12	12	12	12	12	12
CROWN (INCHES @ C/L)		3	3	3	3	3	3	3
DITCH WIDTH	W	2	3	3	3	3	3	3
DITCH DEPTH	D	1	1	1	1	1	1	1
TURNOUT LENGTH	L	--	--	--	--	--	--	--
TURNOUT WIDTH	T	--	--	--	--	--	--	--
TURNOUT TAPER	P	--	--	--	--	--	--	--
GRUBBING	G1	5	--	--	5	5	5	5
	G2	5	--	--	5	5	5	5
CLEARING	C1	10	--	--	10	10	10	10
	C2	10	--	--	10	10	10	10
ROCK FILLSLOPE	K:1	1 ½	--	--	1 ½	1 ½	1 ½	1 ½
❖ BALLAST DEPTH	B1	18	--	--	12	18	12	18
CUBIC YARDS / STATION		114	--	--	72	114	72	114
➢ TOTAL CY BALLAST		430	--	--	355	215	600	440
❖ SURFACING DEPTH	B2	--	4	4	--	--	--	--
CUBIC YARDS / STATION		--	22	22	--	--	--	--
➢ TOTAL CY SURFACING		--	310	265	--	--	--	--
➢ TOTAL CUBIC YARDS		430	310	265	355	215	600	440
SUBGRADE WIDTH	S	16.5	13.0	13.0	15	16.5	15	16.5
BRUSHCUT (Y/N)		N	Y	N	N	N	N	N
BLADE, SHAPE, & DITCH (Y/N)		N	Y	Y	N	N	N	N

MATERIALS LIST

LOCATION		CULVERT			DWNSPT		RIPRAP			FILL TYPE	TOLERANCE	REMARKS
ROAD #	STATION	DIAMETER	LENGTH	TYPE	LENGTH	TYPE	INLET	OUTLET	TYPE			**Note:** Galvanized metal culverts shall conform to the following specifications for gage and corrugation as a function of the diameter: **Diameter / Gage / Corrugation** **18" / 16 / 2 2/3" x 1/2"** **24" – 48" / 14 / 2 2/3" x 1/2"** **54" – 96" / 14 / 3" x 1"**
SU-ML	203+50	18	30	XX	--	--	2	3	L	NT	C	
SU-41	100+06	18	32	XX	--	--	2	3	L	NT	C	
SU-4114	0+51	24	40	XX	--	--	2	3	L	NT	C	DITCH OF SU-ML
SU-4115	2+47	30	32	XX	--	--	3	5	L/H	NT	C	TYPE 4 STREAM
SU-4116	1+25	18	32	XX	--	--	2	3	L	NT	C	
SU-4116	1+51	30	34	XX	--	--	5	7	L/H	NT	C	TYPE 5 STREAM
SU-4116	2+80	18	30	XX	--	--	2	3	L	NT	C	
SU-4124-02	4+92	18	30	XX	--	--	2	3	L	NT	C	
SU-4124-02	5+72	48	36	GM	--	--	5	12	L/H	NT	C	TYPE 4 STREAM
SU-4124-02	6+81	18	34	XX	--	--	2	3	L	NT	C	
SU-4124-02	9+07	18	30	XX	--	--	2	3	L	NT	C	
SU-4124-02	15+16	18	30	XX	--	--	2	3	L	NT	C	

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

FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

Cuts and Fills

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

Surface

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

Drainage

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

Preventative Maintenance

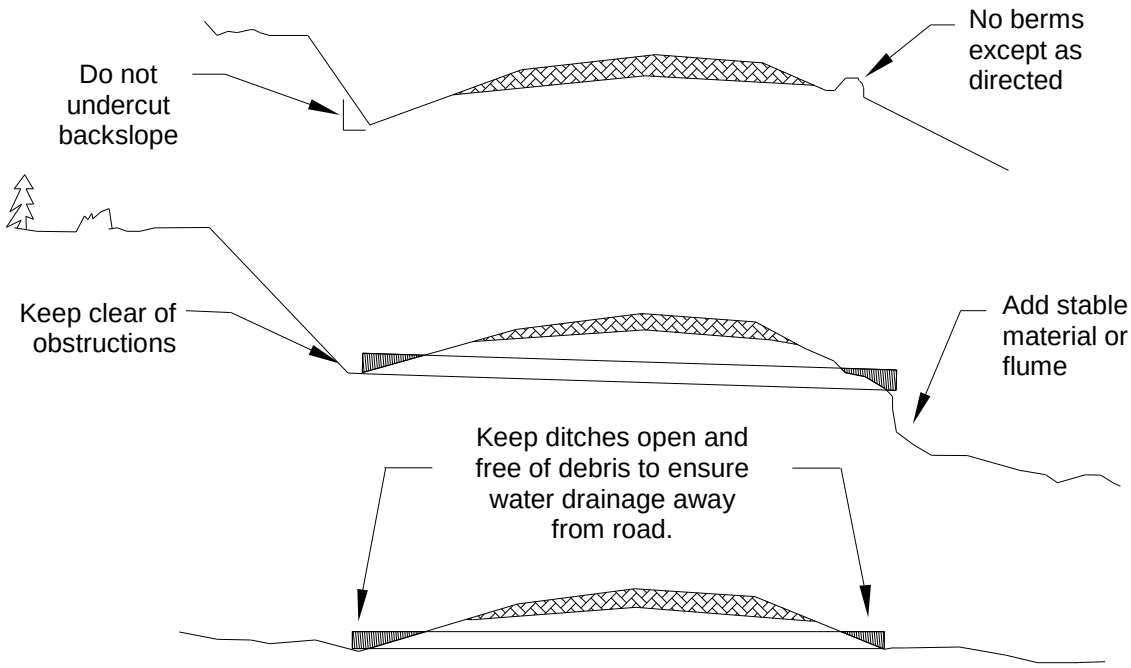
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

Termination of Use or End of Season

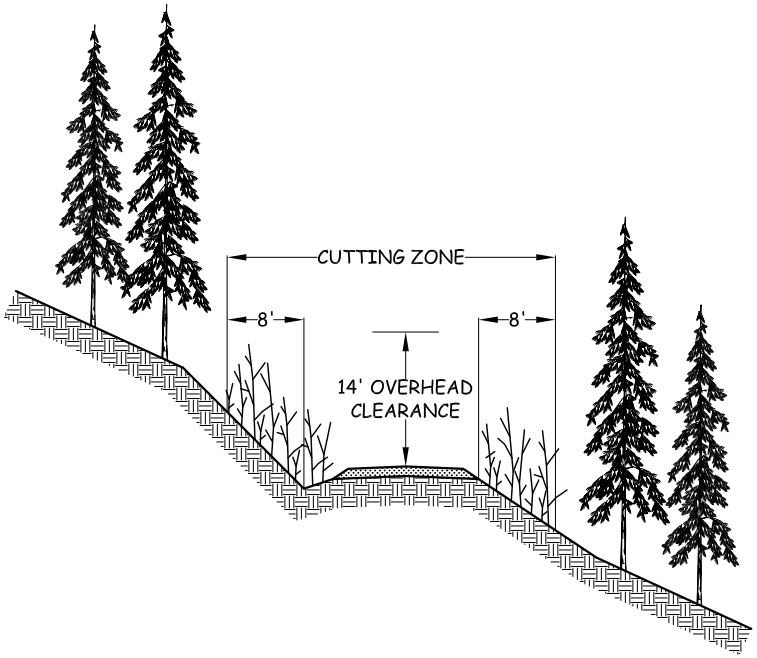
- At the conclusion of logging operations, ensure all conditions of these specifications have been met.

Debris

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



ROAD BRUSHING DETAILS



SPECIFICATIONS

BRUSH SHALL BE CUT ON THE ROAD SURFACE AND 8 ft. BACK FROM ROAD DITCH AND OUTSIDE EDGE OF RUNNING SURFACE.

ON THE INSIDE OF SWITCHBACKS AND TIGHT CURVES, BRUSH SHALL BE CUT BACK 16 ft. FOR VISIBILITY.

ON TRUCK TURNOUTS, BRUSH SHALL BE CUT 8 ft. BACK FROM OUTSIDE EDGE.

BRUSH SHALL BE CUT TO PROVIDE AN OVERHEAD CLEARANCE OF 14 ft. ABOVE THE ROAD RUNNING SURFACE.

BRUSH SHALL BE CUT TO WITHIN 6 in. OF THE GROUND.

SLASH SHALL BE REMOVED FROM CUT SLOPES ABOVE THE ROAD AND SCATTERED ON EMBANKMENT SLOPES.

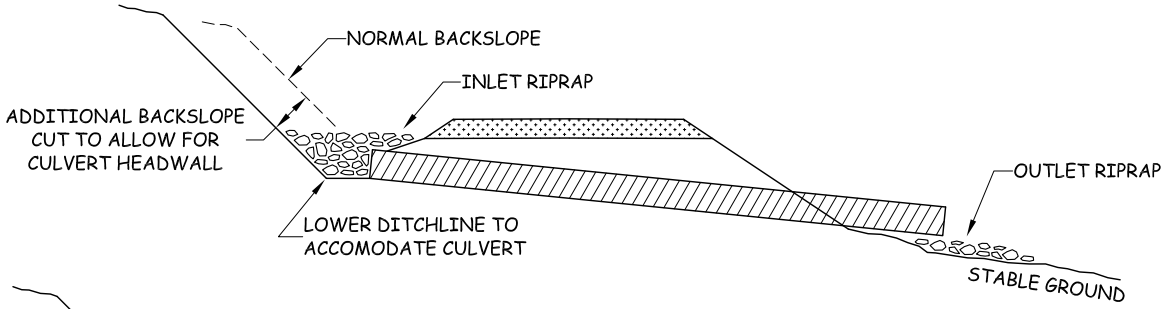
DITCHES SHALL BE CLEARED OF WOODY DEBRIS.

CULVERT INLETS AND OUTLETS SHALL BE CLEANED A MINIMUM DISTANCE OF TWO PIPE DIAMETERS AWAY.

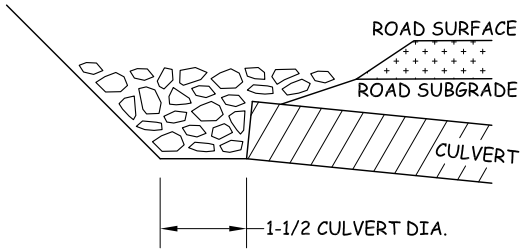
CONTRACT #	PROJECT	SHEET
30-093091	EL DORADO	26 OF 27

CULVERT AND DRAINAGE SPECIFICATIONS

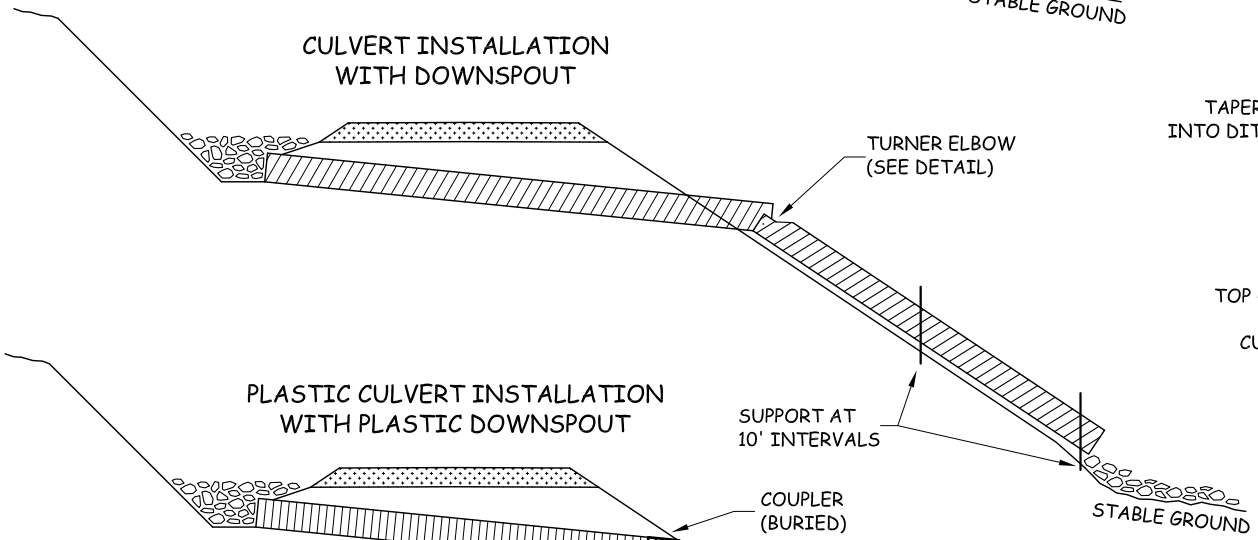
CULVERT INSTALLATION (TYPICAL)



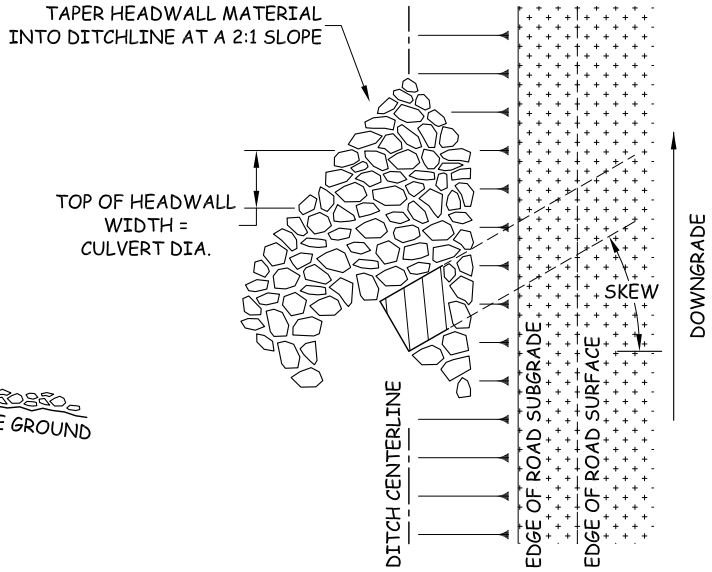
CULVERT HEADWALL - SECTION VIEW



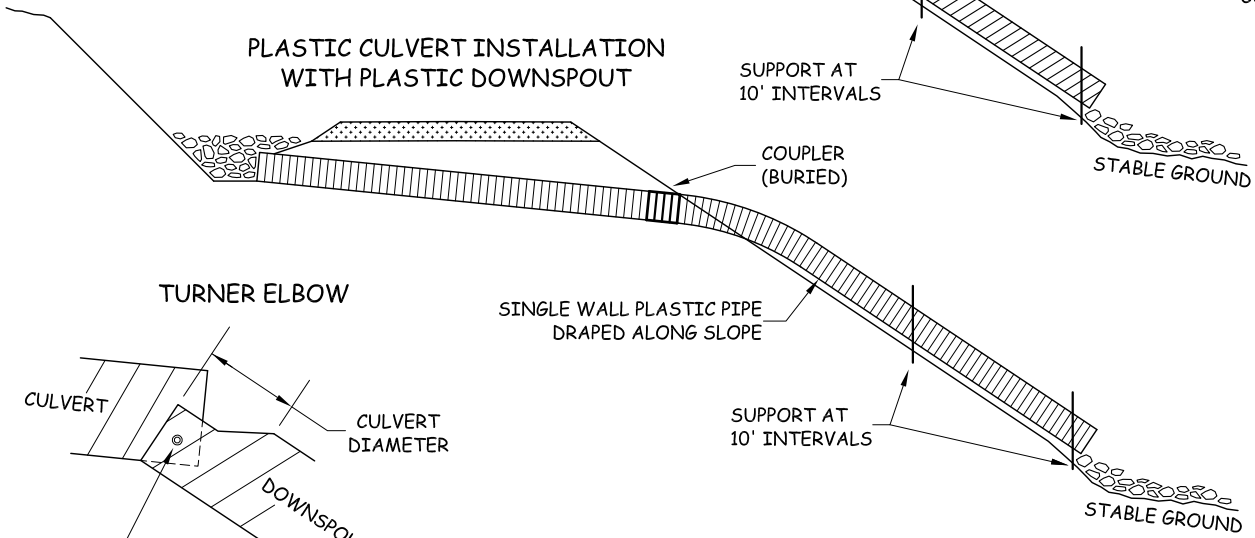
CULVERT INSTALLATION WITH DOWNSPOUT



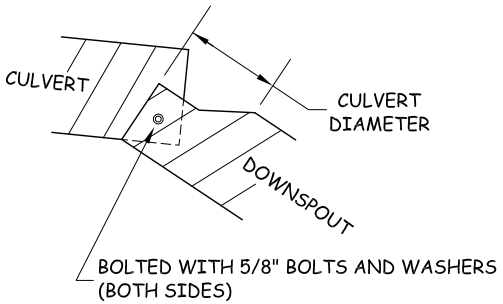
CULVERT HEADWALL - PLAN VIEW



PLASTIC CULVERT INSTALLATION WITH PLASTIC DOWNSPOUT



TURNER ELBOW



HEADWALL NOTE:

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

CONTRACT #	PROJECT	SHEET
30-093091	EL DORADO	27 OF 27

SUMMARY - Road Development Costs

REGION: NW
DISTRICT: Baker

SALE/PROJECT NAME: El Dorado CONTRACT #: 93091

ROAD NUMBERS:	SU-ML, SU-4114, SU-4115, SU-4116, SU-4124-02	SU-ML, SU-41, SU-4117
ROAD STANDARD:	Construction	Pre-Haul Maintenance
NUMBER OF STATIONS:	29.21	256.19
CLEARING & GRUBBING:	$4,096	-
EXCAVATION AND FILL:	$1,734	-
MISC. MAINTENANCE:	-	$5,357
ROAD ROCK:	$27,036	$12,093
ROCK STOCKPILE PROD:	-	-
CULVERTS AND FABRIC:	$10,214	$1,148
STRUCTURES:	-	-
MOBILIZATION:	Built into other costs	
TOTAL COSTS:	$43,080	$18,597
COST PER STATION:	$1,475	$73
ROAD DEACTIVATION & ABANDONMENT COSTS:		$802

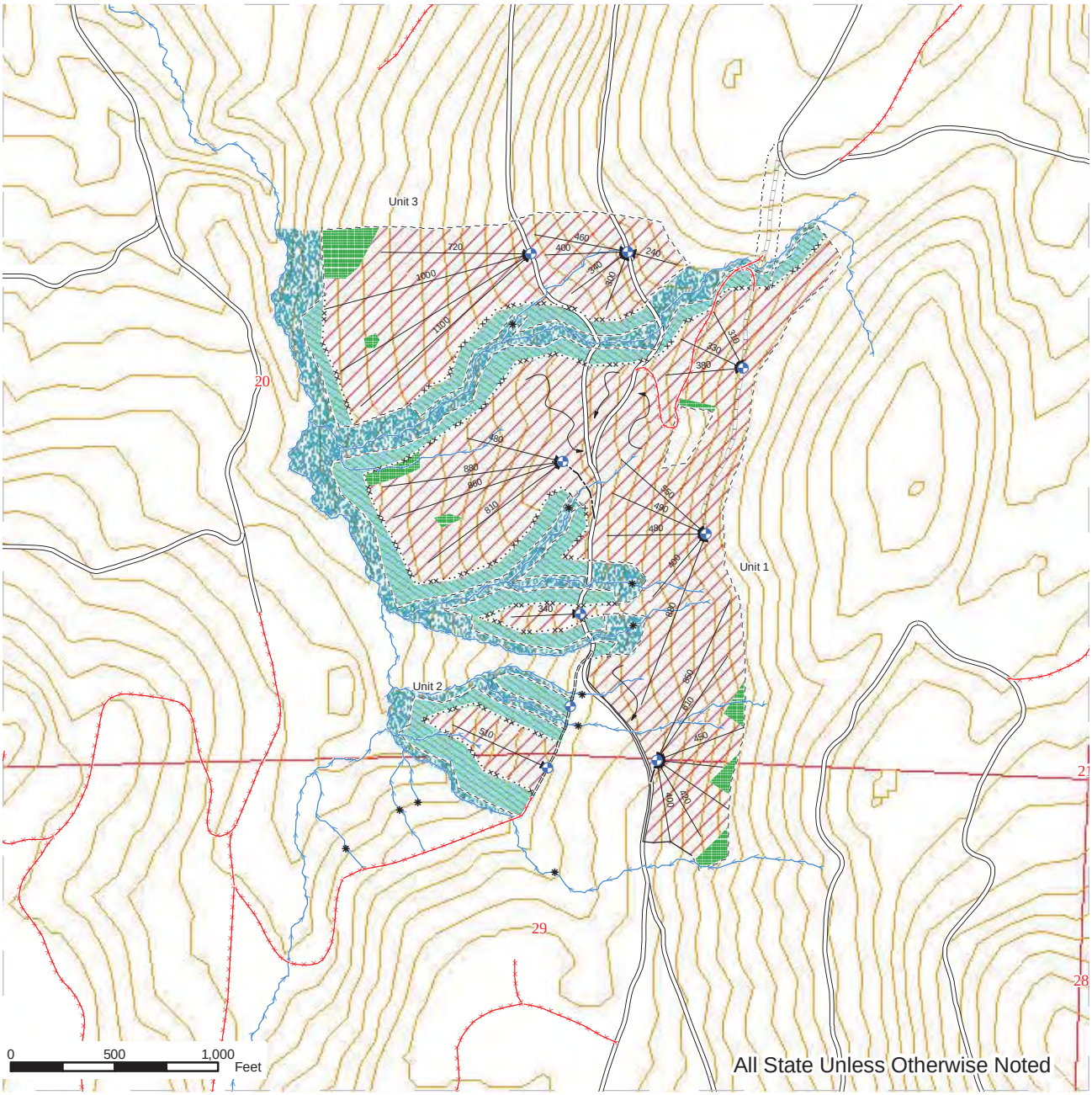
TOTAL (All Roads)	**=**	**$62,479**
SALE VOLUME MBF	**=**	**2600**
TOTAL $/MBF	**=**	**$24.03**

Compiled by: Westra Date: 11/30/15

LOGGING PLAN MAP

SALE NAME: EL DORADO
AGREEMENT#: 93091
TOWNSHIP(S): T40R05E
TRUST(S): Common School and Indemnity(3)

REGION: Northwest Region
COUNTY(S): WHATCOM
ELEVATION RGE: 1296-2126



Variable Retention Harvest
Variable Density Thinning
Existing Road
Leave Tree Area
Cut Line
ROW Tags
Sale Boundary Tags
Special Managment Tags
Yarding Roads
Ground
Streams
Required Reconstruction
Optional Construction
Optional Reconstruction
Landings
Contours 40-foot

N

Prepared By: spet490

Creation Date: 12/9/2015

Modification Date: 12/10/2015