



TIMBER NOTICE OF SALE

SALE NAME: RAINFOREST

AGREEMENT NO: 30-094153

AUCTION: November 16, 2016 starting at 10:00 a.m., COUNTY: Jefferson
Olympic Region Office, Forks, WA

SALE LOCATION: Sale located approximately 26 miles southeast of Forks WA

PRODUCTS SOLD AND SALE AREA: All timber, except trees marked with a band of blue paint or bounded out by leave tree area tags; bounded by timber sale boundary tags in Units 1 and 3; by timber sale boundary tags and the H-1009 in Unit 2; by timber sale boundary tags and the H-1000 Road in Units 4 and 5; all timber bounded by right of way boundary tags.

In no instance shall downed red cedar be removed.

All timber that has been on the ground for five years or more shall be left undisturbed and not yarded (five years is defined by more than 1.5 inches of sap rot). Located on part(s) of Sections 31, 32 and 33 all in Township 27 North, Range 10 West, W.M., containing 165 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:

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

MINIMUM BID: \$844,000.00 BID METHOD: Sealed Bids

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

EXPIRATION DATE: October 31, 2018 ALLOCATION: Export Restricted

BID DEPOSIT: \$84,400.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: 40% cable/60% ground. 30' equipment limitation zones on all typed waters. There will be no operations, other than haul, in the eastern portion of Unit 2 and the northeastern portion of Unit 5 (as shown on timber sale map) from April 1 to September 23 for murrelet restrictions. Falling and Yarding will not be permitted from October 15 to April 15 unless authorized in writing by the Contract Administrator in Unit 1.



TIMBER NOTICE OF SALE

ROADS: 33.70 stations of optional construction. 345.05 stations of optional pre-haul maintenance. 9.3 stations of deactivation. Road construction and timber haul will not be permitted from October 15 to April 15 unless authorized in writing by the Contract Administrator on the H-1068 Road.

ACREAGE DETERMINATION

CRUISE METHOD: Sale acreage was 100% GPS'd. Sale units were cruised using a variable plot sample.

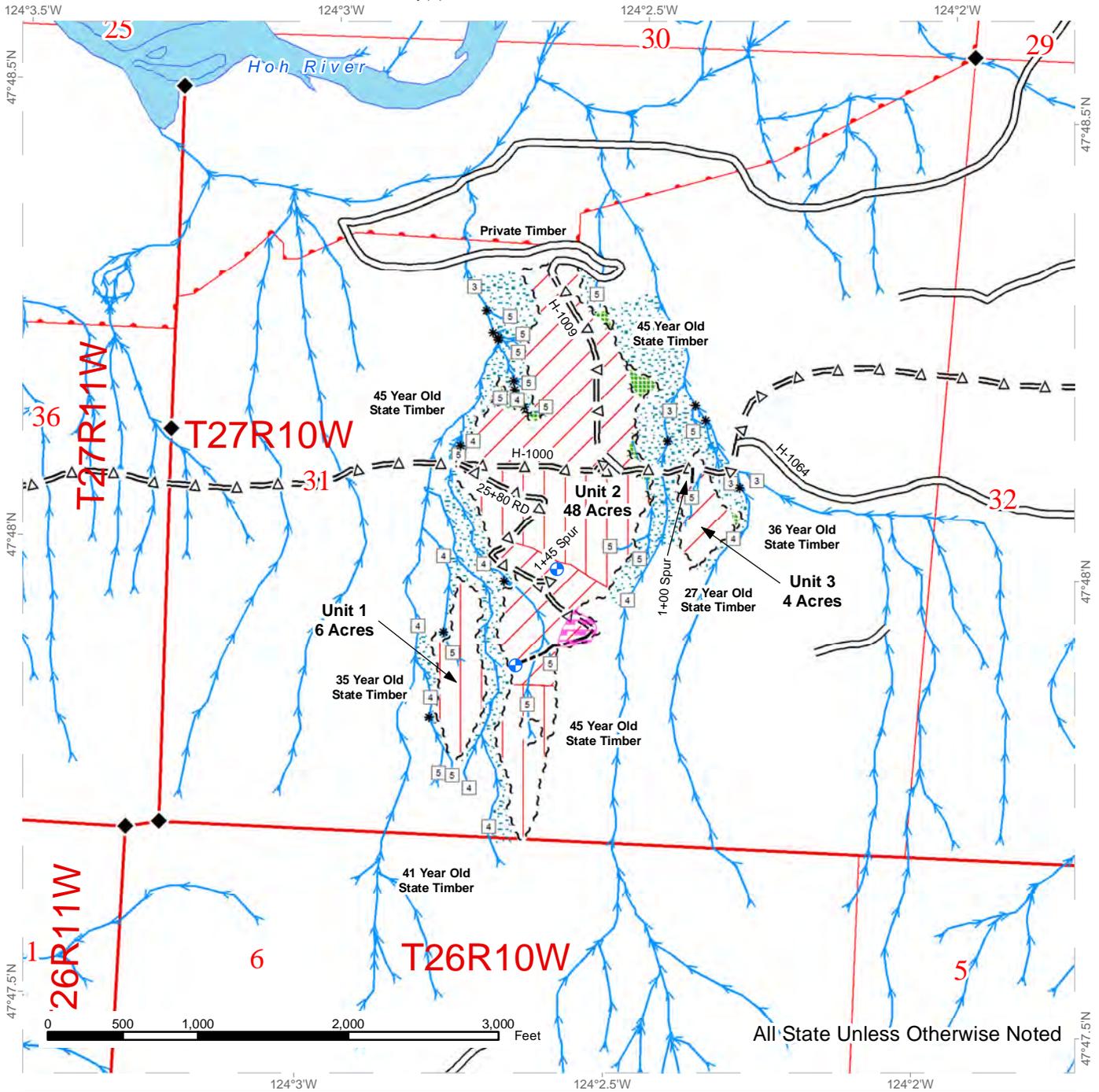
FEES: \$89,300.25 is due on day of sale. \$9.00 per MBF is due upon removal. These are in addition to the bid price.

SPECIAL REMARKS: None.

TIMBER SALE MAP

SALE NAME: RAINFOREST
AGREEMENT #: 30-094153
TOWNSHIP(S): T26R10W, T27R10W
TRUST(S): Common School and Indemnity(3)

REGION: Olympic Region
COUNTY(S): JEFFERSON
ELEVATION RGE: 562-1617



All State Unless Otherwise Noted

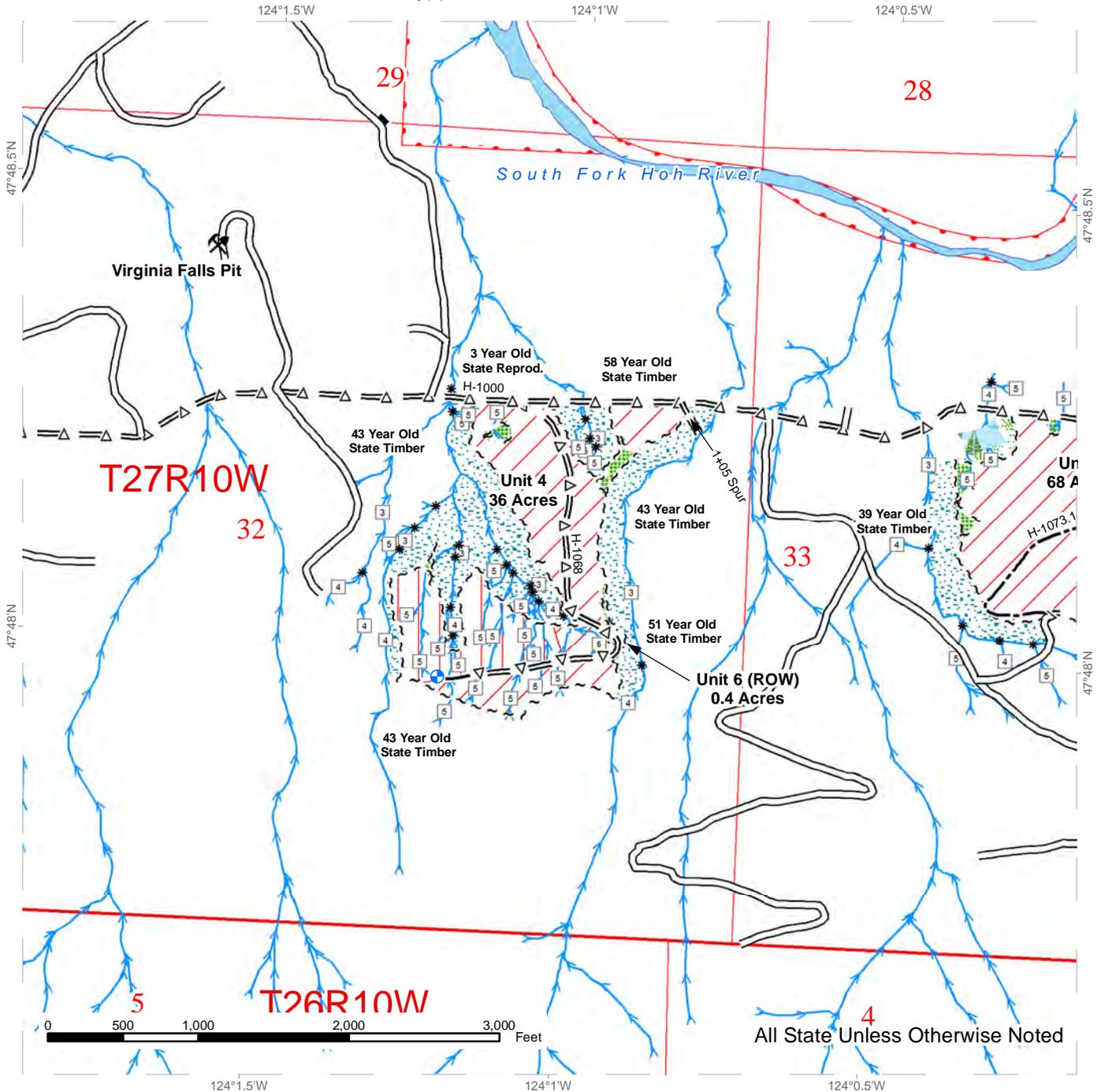
Stream Type	Optional Prehaul Maintenance	Leave Tree Area
Stream Type Break	Optional Construction	Forested Wetland
Monumented Corners	Existing Road	Open Water
Landing	Marbled Murrelet Timing Restrictions	Ground
Existing Rock Pit	Riparian Management Zone	Cable
Streams	Wetland Management Zone	Public Land Survey Sections
Timber Sale Boundary Tags		Public Land Survey Townships
Leave Tree Area Tags		DNR Managed Lands
Right of Way Tags		



TIMBER SALE MAP

SALE NAME: RAINFOREST
AGREEMENT #: 30-094153
TOWNSHIP(S): T26R10W, T27R10W
TRUST(S): Common School and Indemnity(3)

REGION: Olympic Region
COUNTY(S): JEFFERSON
ELEVATION RGE: 562-1617



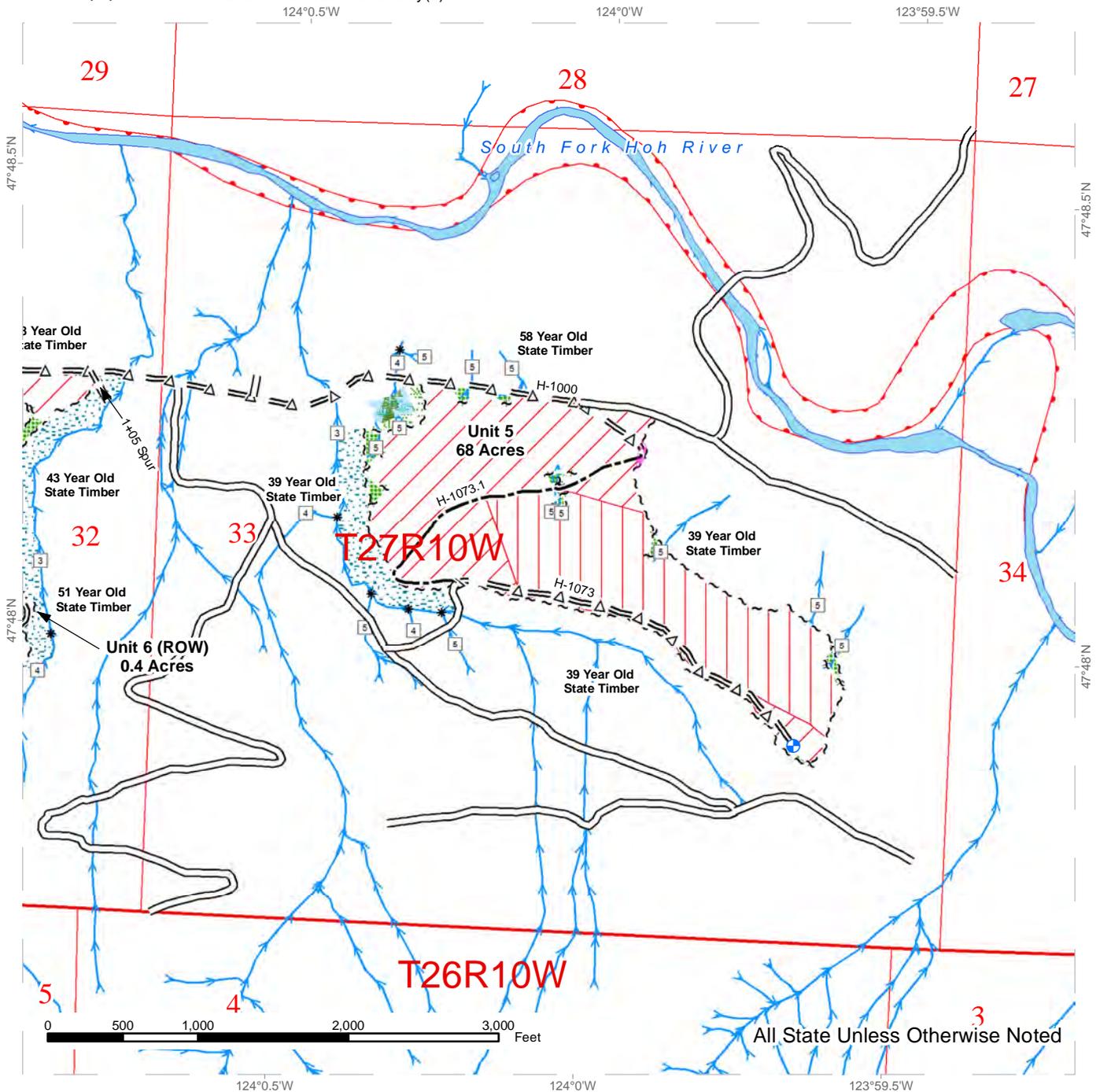
Stream Type	Optional Prehaul Maintenance	Leave Tree Area
Stream Type Break	Optional Construction	Forested Wetland
Monumented Corners	Existing Road	Open Water
Landing	Marbled Murrelet Timing Restrictions	Ground
Existing Rock Pit	Riparian Management Zone	Cable
Streams	Wetland Management Zone	Public Land Survey Sections
Timber Sale Boundary Tags		Public Land Survey Townships
Leave Tree Area Tags		DNR Managed Lands
Right of Way Tags		



TIMBER SALE MAP

SALE NAME: RAINFOREST
AGREEMENT #: 30-094153
TOWNSHIP(S): T26R10W, T27R10W
TRUST(S): Common School and Indemnity(3)

REGION: Olympic Region
COUNTY(S): JEFFERSON
ELEVATION RGE: 562-1617



All State Unless Otherwise Noted

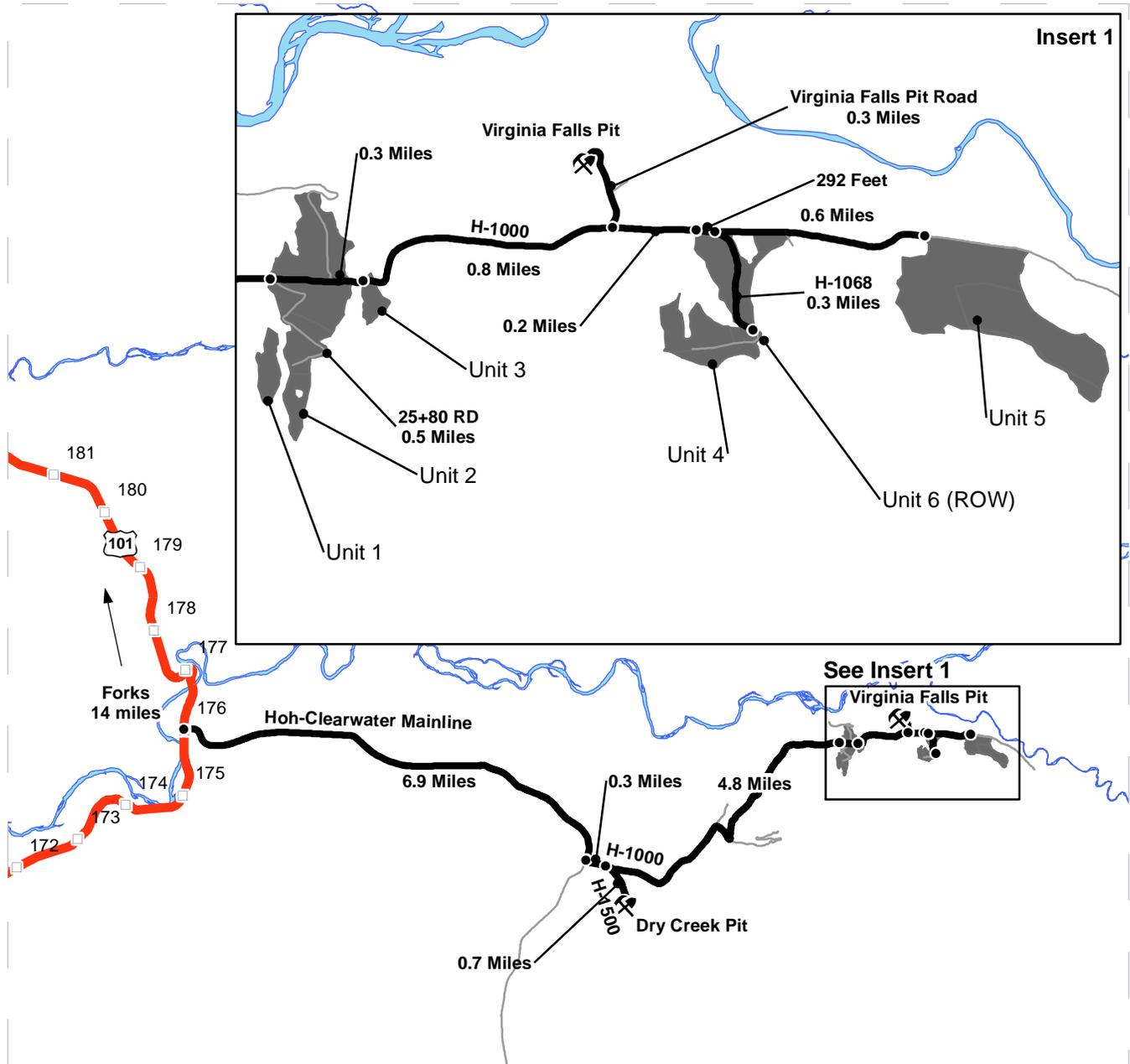
Stream Type	Optional Prehaul Maintenance	Leave Tree Area
Stream Type Break	Optional Construction	Forested Wetland
Monumented Corners	Existing Road	Open Water
Landing	Marbled Murrelet Timing Restrictions	Ground
Existing Rock Pit	Riparian Management Zone	Cable
Streams	Wetland Management Zone	Public Land Survey Sections
Timber Sale Boundary Tags		Public Land Survey Townships
Leave Tree Area Tags		DNR Managed Lands
Right of Way Tags		



DRIVING MAP

SALE NAME: RAINFOREST
AGREEMENT#: 30-092836
TOWNSHIP(S): T26R10W, T27R10W
TRUST(S): Common School and Indemnity(3)

REGION: Olympic Region
COUNTY(S): JEFFERSON
ELEVATION RGE: 562-1617



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

DRIVING DIRECTIONS:

Dry Creek Pit: From Forks, drive 14 miles South on US 101 and turn East onto the Hoh-Clearwater Mainline. Go 6.9 miles and turn left onto the H-1000. Go 0.3 miles on the H-1000 and turn right onto the H-1500. Dry Creek Pit will be 0.7 miles up the H-1500.

Unit 1 & 2: From the H-1000/H-1500 Junction, continue East on the H-1000 for 4.8 miles to reach the beginning of Unit 2. Unit 1 will be uphill on your right.

Unit 3: From the beginning of Unit 2, continue East 0.3 miles to reach Unit 3.

Virginia Falls Pit: From the beginning of Unit 3, continue East on the H-1000 for 0.8 miles and turn left onto the Virginia Falls Pit Road. Go 0.3 miles on the Virginia Falls Pit Road to reach Virginia Falls Pit.

Unit 4: From the H-1000/Virginia Falls Pit Road Junction, continue East on the H-1000 for 0.2 miles. The beginning of Unit 4 will be on your right.

Unit 6 (ROW): From the beginning of Unit 4, continue East on the H-1000 for 292 feet and turn right onto the H-1068. Go 0.3 miles on the H-1068 to reach Unit 6.

Unit 5: From the H-1000/H-1068 Junction, head East 0.6 miles. The beginning of Unit 5 will be on your right.



**STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES**

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

Export Restricted Lump Sum AGREEMENT NO. 30-094153

SALE NAME: RAINFOREST

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

Section G: General Terms

G-001 Definitions

The following definitions apply throughout this contract;

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

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

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

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

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

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

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

G-011 Right to Remove Forest Products and Contract Area

Purchaser was the successful bidder on November 16, 2016 and the sale was confirmed on _____. The State, as owner, agrees to sell to Purchaser, and Purchaser agrees to purchase as much of the following forest products as can be cut and removed during the term of this contract: All timber, except trees marked with a band of blue paint or bounded out by leave tree area tags; bounded by timber sale boundary tags in Units 1 and 3; by timber sale boundary tags and the H-1009 in Unit 2; by timber sale boundary tags and the H-1000 Road in Units 4 and 5; all timber bounded by right of way boundary tags.

In no instance shall downed red cedar be removed.

All timber that has been on the ground for five years or more shall be left undisturbed and not yarded (five years is defined by more than 1.5 inches of sap rot), located on approximately 165 acres on part(s) of Sections 31, 32, and 33 all in Township 27 North, Range 10 West W.M. in Jefferson County(s) as designated on the sale area and as shown on the attached timber sale map.

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

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

G-020 Inspection By Purchaser

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

that they enter this contract without any reliance upon the volume estimates, acreage estimates, appraisals, pre-bid documentation, or any other representations by the State Department of Natural Resources.

G-025 Schedules

The following attached schedules are hereby incorporated by reference:

Schedule	Title
A	SLASH PILING SPECS
B	GREEN TREE RETENTION PLAN

G-031 Contract Term

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

G-040 Contract Term Adjustment - No Payment

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

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

G-051 Contract Term Extension - Payment

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

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

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

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

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

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

- e. Payment of \$641.00 per acre per annum for the acres on which an operating release has not been issued.
- f. In no event will the extension charge be less than \$200.00.
- g. Extension payments are non-refundable.

G-053 Surveys - Sensitive, Threatened, Endangered Species

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

G-060 Exclusion of Warranties

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

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

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

G-062 Habitat Conservation Plan

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

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

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

G-063 Incidental Take Permit Notification Requirements

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

G-064 Permits

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

G-065 Regulatory Disclaimer

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

G-066 Governmental Regulatory Actions

a. Risk

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

b. Sale Area

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

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

c. Adjustment of Price

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

G-070 Limitation on Damage

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

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

G-080 Scope of State Advice

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

G-091 Sale Area Adjustment

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

G-101 Forest Products Not Designated

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

The pricing schedule has not been set for the sale.

G-106 Adding Naturally Damaged Forest Products

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

G-111 Title and Risk of Loss

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

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

G-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 Forks, 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; Hoh-Clearwater Mainline, H-1000, H-1009, H-1068, H-1073, H-1073.1, 1+00 Spur, 1+05 Spur, 1+45 Spur and the 25+80 Road. 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 H-1000 Road, unless authority is granted in writing by the Contract Administrator.

G-380 Road Easement and Road Use Permit Requirements

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

Easement #55-000467 with Bert and Norma Cole, dated October 3, 1966.

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.

Section P: Payments and Securities**P-011 Initial Deposit**

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

P-020 Payment for Forest Products

Purchaser agrees to pay the total, lump sum contract price of \$134,579.25. The total contract price consists of a \$0.00 contract bid price plus \$134,579.25 in fees. Fees collected shall be retained by the state unless the contract is adjusted via the G-066 clause. Purchaser shall be liable for the entire purchase price, and will not be entitled to any refunds or offsets unless expressly stated in this contract.

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

P-045 Guarantee of Payment

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

P-050 Billing Procedure

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

P-080 Payment Account Refund

Advance payments made under P-045 or P-045.2 remaining on account above the value for the charges shall be returned to Purchaser within 30 days following the final report

of charges. Refunds not made within the 30 day period will accrue interest at the interest rate, as established by WAC 332-100-030, computed on a daily basis until paid.

P-090 Performance Security

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

P-100 Performance Security Reduction

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

Section H: Harvesting Operations

H-013 Reserve Tree Damage Definition

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

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

- a. A reserve tree has one or more scars on its trunk exposing the cambium layer, which in total exceeds 100 square inches.
- b. A reserve tree top is broken or the live crown ratio is reduced below 30 percent.
- c. A reserve tree has more than 1/3 of the circumference of its root system injured such that the cambium layer is exposed.

If the Contract Administrator determines that a reserve tree has been cut or damaged, the Purchaser shall provide a replacement reserve tree of like condition, size, and species within the sale 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 12 inches as measured from the natural ground line. To reduce soil damage, the Contract Administrator may require water bars to be constructed, grass seed to be placed on exposed soils, or other mitigation measures. Suspended operations shall not resume unless approval to do so has been given, in writing, by the Contract Administrator.

H-018 Temporary Stream Crossings

A temporary stream crossing is required to access portions of Units 2, 3 and 4.

Purchaser shall comply with the following during the yarding operation:

- a. Adhere to the approved Hydraulic Permit Application (HPA) or Forest Practice Application (FPA) with approved hydraulic project work, if required, amend a current FPA or obtain a new FPA prior to commencing any new stream crossing construction.
- b. Location of the temporary stream crossing must be approved by the Contract Administrator.
- c. A temporary stream crossing shall not exceed 20 feet in width, including rub trees.
- d. Purchaser shall suspend operations during periods of wet weather when a high potential for sediment delivery into typed waters may occur.
- e. Temporary stream crossings shall be removed at the time of completion of yarding as required by the Contract Administrator.

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

H-035 Fall Trees Into Sale Area

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

H-051 Branding and Painting

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

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

H-080 Snags Not to be Felled

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

H-120 Harvesting Equipment

Forest products sold under this contract shall be harvested by cable and ground methods 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 H-1068 Road in Unit 4 from October 15 to April 15 unless authorized in writing by the Contract Administrator.

H-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

1. While felling timber, two warning signs must be posted on the H-1000 and H-1009 Roads.
2. Yarding equipment shall not cross live streams without an HPA.
3. The Purchaser shall notify all employees and contractors working on this sale that any danger tree, marked or unmarked, may be felled. Any felled marked danger tree shall be replaced with a suitable tree of similar size and species as approved by the Contract Administrator.
4. Purchaser shall pre-mark corridors for cable yarding to Unit 1 and give three days notice for Geologist approval.

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

H-141 Additional Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

As shown on the timber sale map in the eastern portion of Unit 2 and the northeastern portion of Unit 5, there will be no operations one hour before to two hours after official sunrise and one hour before to one hour after official sunset from April 1 through September 23 for murrelet restrictions.

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

H-190 Completion of Settings

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

H-220 Protection of Residual or Adjacent Trees

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

H-230 Tops and Limbs Outside the Sale Boundary

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

Section C: Construction and Maintenance

C-040 Road Plan

Road construction and associated work provisions of the Road Plan for this sale, dated 4/12/2016 are hereby made a part of this contract.

C-050 Purchaser Road Maintenance and Repair

Purchaser shall perform work at their own expense on H-1068, H-1073, H-1073.1, 1+00 Spur, 1+05 Spur, 1+45 Spur, and the 25+80 Road. All work shall be completed to the specifications detailed in the Road Plan.

C-060 Designated Road Maintainer

If required by the State, Purchaser shall perform maintenance and replacement work as directed by the Contract Administrator on H-1000, H-1009, Dry Creek Pit Road and Virginia Falls Pit Road, and any other roads not covered in C-050. Purchaser shall furnish a statement in a form satisfactory to the State showing the costs incurred while performing this work. Costs shall be based on the rates set forth in the on file at the region and Olympia offices. The State shall reimburse Purchaser for said costs within 30 days of receipt and approval of the statement.

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-035 Logging Debris Clean Up

Slash and debris created from harvest activities shall be treated in a manner approved in writing by the Contract Administrator.

S-050 Cessation of Operations for Low Humidity

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-100 Stream Cleanout

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

S-110 Resource Protection

No equipment may operate within 30' of any typed waters or wetlands unless authority is granted in writing by the Contract Administrator.

S-120 Stream Protection

No timber shall be felled into, across, or yarded through any streams.

S-130 Hazardous Materials

a. Hazardous Materials and Waste - Regulatory Compliance

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

b. Hazardous Materials Spill Prevention

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

c. Hazardous Materials Spill Containment, Control and Cleanup

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

d. Hazardous Material Release Reporting

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

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

DNR Contract Administrator

ECY - Northwest Region:

1-425-649-7000

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

ECY - Southwest Region:

1-360-407-6300

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

ECY - Central Region:

1-509-575-2490

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

ECY - Eastern Region:

1-509-329-3400

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

S-131 Refuse Disposal

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

Section D: Damages

D-013 Liquidated Damages or Failure to Perform

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

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

substantial injury to the State. Therefore, Purchaser agrees to pay the State the full lump sum contract price in P-020 in the event of failure to perform.

D-041 Reserve Tree Excessive Damage

When Purchaser’s operations exceed the damage limits set forth in clause H-013, Reserve Tree Damage Definition, and when the Contract Administrator determines that a suitable replacement for a damaged reserve tree is not possible, the damaged trees result in substantial injury to the State. The value of the damaged reserve trees at the time of the breach is not readily ascertainable. Therefore, the Purchaser agrees to pay the State as liquidated damages at the rate of \$500.00 per tree for all damaged reserve trees that are not replaced in sale units.

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

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

Purchaser

Mona Griswold
Olympic Region Manager

Date: _____

Date: _____

Address:

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

STATE OF _____)

COUNTY OF _____)

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

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

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

Notary Public in and for the State of

My appointment expires _____

Schedule A
SLASH PILING SPECS

Specifications for Slash Piling

The landings shall be piled by creating circular piles of slash and brush conforming to the following specifications:

1. Piles shall be a minimum of 12 feet tall by 8 feet wide to a maximum of 30 feet tall and 16 feet wide. Piles shall be cone shaped and stable.
2. Piles shall be free of topsoil, large rotten logs and large stumps. No material larger than 8 inches in diameter shall be piled. Any burnable material shall be well scattered.
3. Piles shall not be placed on large stumps or logs.
4. Piles shall be stacked a minimum of 50 feet from all unit boundaries, Riparian Management Zones, leave tree areas and any standing timber; a minimum of 100 feet from any public roads and highways; and a minimum of 200 feet from any structures.
5. Piling shall be completed using an approved hydraulic shovel and grapples.
6. Slash and displaced soil shall be removed from swales and natural drainage channels concurrent with yarding.
7. Slash shall be placed in skid roads or ahead of machinery. Slash which accumulates on landings and/or roads shall be lopped and scattered within the harvest area or as designated by the Contract Administrator.
8. Slash generated during cable yarding shall be stacked in dirt free piles and shall not block roads or interfere with functioning of drainage structures, ditches, or stream channels.

Schedule B
GREEN TREE RETENTION PLAN

Leave the following as directed by the Contract Administrator:

1. All trees marked with a blue band of paint and all leave tree area clumps shall remain standing. The perimeter of the leave tree clumps are designated by Leave Tree Area tags. The tags face outward from the leave tree clumps.

Unit #	# of Individually Marked Trees	# of Clumps	# of Trees Clumped	Total # of Leave Trees
1	48	0	0	48
2	68	6	316	384
3	4	1	28	32
4	51	4	237	288
5	136	8	432	568



WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOREST EXCISE TAX ROAD SUMMARY SHEET

Region:

Timber Sale Name:

Application Number:

EXCISE TAX APPLICABLE ACTIVITIES

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

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

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

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

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

EXCISE TAX EXEMPT ACTIVITIES

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

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

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

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

(Revised 5/16)

DNR Timber Sale Trust Distribution Form

Sale Name
RAINFOREST

Agreement Number
C 30-000 94153

Region
Olympic

District
COAST

Unit

Legal Location

Section(s)	31, 32, 33	Township	27	Range	10	E/W	W
------------	------------	----------	----	-------	----	-----	---

Auction Date
11/16/2016

Contract Expiration Date
10/31/2018

Sale Acres
165

Sale Class
Board

Sale Method
Lump Sum

Stand Origin Year
1971

FPA Number
2614422

FPA Renewal Date
8/21/2019

Sale Volume Ratio

Conifer		
Spruce	839	16.70%
Red cedar	4	0.10%
Hemlock	2290	45.50%
Douglas fir	1737	34.50%
Totals For Conifer	4870	96.80%
Hardwood		
Red alder	132	2.60%
Maple	29	0.60%
Totals For Hardwood	161	3.20%
Total	5031	100.00%

Harvest Type

Harvest Type	% of Sale
Variable Retention Harvest	100.00%
Total	100.00%

Trust Distribution Table

County	3	Totals							
16 - Jefferson	100.00%	100.00%							
		100.00%							

DNR Timber Sale Trust Distribution Form

Trust Levy Codes

Instructions:

To ensure proper distribution of funds to the trust beneficiaries of this sale, the State Lands Assistant must review the data in NaturE and sign in the space provided below.

NaturE Data Reviewed by:

X

(Print Name)

(Signature)

Date:

DNR Timber Sale Trust Distribution Form

Trust Distribution Details

16-Jefferson

Trust	Harvest Area	Acres
3	1	6.00
	2	48.00
	3	4.00
	4	36.00
	5	71.00
Total for 3		165.00

Total For 16-Jefferson 165.00

Total Acres 165.00

**State of Washington
Department of Natural Resources
Timber Bill of Sale Extension Charges**

Extension Per Acre Charge Worksheet

Agreement No.:

Sale Name:

Region:

Sale Method:

Harvest Type:

Geographic Area:

Site Class (westside only):

- 1. Growth Loss
 - 2. Additional Growth
 - 3. Loss thru Disrupt.
- Per Acre Charge**

Westside PC/Thin		Westside Evenage		Eastside PC/Thin		Eastside Evenage	
scale	lump	scale	lump	scale	lump	scale	lump
			15.00				
			596.57				
			29.83				
\$0.00	\$0.00	\$0.00	\$641.40	\$0.00	\$0.00	\$0.00	\$0.00

Total Per Acre Charge:

This figure to be Input into the G-050 or G051 clause.

Cruise Narrative

Sale Name: Rainforest	Region: Olympic
Agreement #: 30-	District: Coast
Lead Cruiser: Kevin Peterson	Completion Date: 5/26/2016
Other Cruisers: None	Revised 8/4/16

Unit acreage specifications:

Unit #	Cruised Acres	Cruised acres agree with sale acres? Y/N	If acres do not agree explain why.
1	6	Y	
2	48	Y	
3	4	Y	
4	36	Y	
5	68	Y	
6 R/W	0.4	Y	
Total	162.4	Y	

Unit cruise specifications:

Unit #	Sample Type (VP,FP,ITS,100%)	Expansion Factor (baf,full/half)	Sighting Height (4.5', 16')	Grid Size (plot spacing)	Plot Ratio (cruise/count)	Number of plots
1	VP	54.44/40	4.5'	290 X 290	All Cruise	3
2	VP	54.44/40	4.5'	290 X 290	1:1	24
3	VP	54.44/40	4.5'	290 X 290	All Cruise	2
4	VP	54.44/40	4.5'	290 X 290	1:1	18
5	VP	54.44/40	4.5'	290 X 290	1:2	36
6 R/W	VP	40	4.5'	Random	All Cruise	1

Sale/Cruise Description:

Minor species cruise intensity	Minor species sampled using same cruise plots. Red Cedar, Red Alder and Bigleaf Maple cruised with 40 BAF
Minimum cruise spec:	40% of Form Factor at 16 ft. D.O.B or 5 inch top.
Average ring count:	DF = 5 WH = 5 SS = 4
Leave/take tree description:	Leave tree clumps are bounded out with yellow tags, pink flashers and blue paint. Individual leave trees are marked with blue bands and two blue butt marks.
Other conditions:	Exterior boundaries are marked with white tags and pink flashers

<p>Sort Description:</p>	<p>HA– Logs meeting the following criteria: Surface characteristics for a high quality A sort will have sound tight knots not to exceed 1 ½” in diameter, numbering not more than an average of one per foot of log length. May include logs with not more than two larger knots. Knots and knot indicators ½” in diameter and smaller shall not be a determining factor. Logs will have a growth ring count of 6 or more rings per inch in the outer third top end of the log. (minimum diameter 8”.)</p> <p>HB – Logs meeting the following criteria: Surface characteristics for a B sort will have sound tight knots not to exceed 1 ½” in diameter. May include logs with not more than two larger knots up to 2 ½” in diameter. Logs will have a growth ring count of 6 or more rings per inch in the outer third to end of the log. (minimum diameter 8”.)</p> <p>R – Logs meeting the following criteria: Gross diameter of 12 inches or greater, excessive knots greater than 2 ½ inches with recovery less than 65% of the net scale.</p>
---------------------------------	--

Field Observations:

This is a five unit sale with one right of way located on the H-1000 in the Clearwater block. The sale has a total of 162.4 harvestable acres, with good access to the units.

The Net volume for the sale is 5,031 MBF and is comprised of 46% Western Hemlock, 35% Douglas-fir, 16% Sitka Spruce and trace amounts of Red Alder, Western Red Cedar and Bigleaf Maple. The average WH has a DBH of 14.3” and a bole height of 66’ with forks and sweep being common defects. The average DF has a DBH of 16.3” and a bole height of 70’ with spike knots, forks and sweep being common defects.

Grants: 03

Prepared By: Kevin Peterson – Olympic Region Cruiser

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																	
T027 R010 S31 Ty00U1 THRU T027 R010 S33 Ty00U5				Project: RAIN										Page 1							
				Acres 162.40										Date 5/26/2016			Time 12:02:44PM				
S Spp	So T	Gr rt	ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf	
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
WH	D	2S		27	7.6	4,166	3,847	636			87	13			5	95	39	14	282	1.92	13.6
WH	D	3S		53	4.9	7,922	7,536	1,221		98	2			0	17	83	38	8	87	0.70	86.8
WH	D	4S		17	1.8	2,539	2,492	387	69	31			25	33	36	7	24	5	28	0.30	88.3
WH	D	UT		3		325	325	46	75	25			100				11	5	12	0.21	26.6
WH Totals				46	5.0	14,952	14,201	2,290	14	58	25	3	7	6	16	71	29	7	66	0.65	215.3
DF	D	2S		25	7.3	2,955	2,739	453			100				100	40	13	226	1.70	12.1	
DF	D	3S		59	7.5	6,753	6,246	1,002		100				0	15	85	38	9	101	0.86	61.8
DF	D	4S		14	5.7	1,663	1,567	259	87	13			22	43	24	11	26	5	27	0.31	58.9
DF	D	UT		2		141	141	23	82	18			74		26		11	5	12	0.25	11.7
DF Totals				35	7.1	11,512	10,693	1,737	14	61	26		4	6	12	77	31	7	74	0.75	144.4
SS	D	2S		61	11.9	3,522	3,101	513			65	35			21	79	37	15	329	2.51	9.4
SS	D	3S		24	5.3	1,299	1,230	203		100				5	63	33	34	9	90	0.88	13.6
SS	D	4S		12	5.1	643	610	101	72	28			24	76			22	6	23	0.34	26.2
SS	D	UT		3		130	130	22	89	11			83	17			16	5	16	0.32	8.1
SS Totals				16	9.3	5,594	5,072	839	11	28	40	21	5	11	28	56	27	8	89	1.00	57.3
RC	D	4S		100		23	23	4	100					100			32	5	30	0.46	.8
RC Totals				0		23	23	4	100					100			32	5	30	0.46	.8
RA	D	2S		1		12	12	2		47	53		100				20	11	89	1.14	.1
RA	D	3S		27	11.7	239	211	35		100			44	56			25	10	80	0.83	2.7
RA	D	4S		51	13.3	475	411	68		100			20	43	38		30	7	44	0.47	9.3
RA	D	UT		21		161	161	27	100				61	39			18	5	19	0.21	8.4
RA Totals				3	10.3	887	796	132	20	79	1		36	45	20		24	7	39	0.44	20.5
BM	D	2S		74	3.6	150	144	21			60	40	23		77		30	15	264	2.22	.5
BM	D	3S		15	16.0	34	29	5		50	50		50	50			25	12	105	1.14	.3
BM	D	4S		11	16.7	25	21	3		100				100			27	8	50	0.66	.4
BM Totals				1	7.2	209	194	29		18	52	30	24	18	58		28	12	157	1.49	1.2
Totals					6.6	33,177	30,978	5,031	13	54	27	5	6	8	16	69	29	7	70	0.72	439.5

TC PSTATS		PROJECT STATISTICS							PAGE	1	
		PROJECT RAIN							DATE	5/26/2016	
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt	
027	010	31	RAIN	00U1	THR	162.40	77	400	S	W	
027	010	33	RAIN	00U5							
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL			84	400	5.2						
CRUISE			41	186	4.8	37,305	.5				
DBH COUNT REFOREST COUNT			43	209	5.5						
BLANKS			100 %								
STAND SUMMARY											
SAMPLE TREES		TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC	
WHEMLOC	73	107.8	14.4	67	32.2	122.5	14,952	14,201	4,079	4,078	
DOUG FIR	72	71.2	16.3	70	25.6	103.3	11,512	10,693	3,359	3,352	
S SPRUCE	24	36.0	15.5	49	12.0	47.3	5,594	5,072	1,527	1,527	
R ALDER	13	9.3	12.1	65	2.1	7.4	887	796	220	220	
BL MAPLE	3	.5	22.1	76	0.3	1.5	209	194	51	51	
WR CEDAR	1	.8	12.0	38	0.2	.6	23	23	11	11	
TOTAL	186	225.5	15.2	65	72.6	282.5	33,177	30,978	9,247	9,240	
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL	68.1	COEFF		TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOC		104.1	11.8	95	108	121					
DOUG FIR		103.9	11.8	63	71	80					
S SPRUCE		165.5	18.8	29	36	43					
R ALDER		387.6	44.1	5	9	13					
BL MAPLE		877.5	99.9	0	1	1					
WR CEDAR		877.5	99.9	0	1	2					
TOTAL		40.0	4.6	215	226	236	64	33	16		
CL	68.1	COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOC		97.8	11.1	109	122	136					
DOUG FIR		97.6	11.1	92	103	115					
S SPRUCE		171.3	19.5	38	47	57					
R ALDER		359.5	40.9	4	7	10					
BL MAPLE		877.5	99.9	0	1	3					
WR CEDAR		877.5	99.9	0	1	1					
TOTAL		32.4	3.7	272	283	293	42	21	10		
CL	68.1	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOC		98.9	11.3	12,601	14,201	15,800					
DOUG FIR		97.4	11.1	9,507	10,693	11,879					
S SPRUCE		191.9	21.8	3,964	5,072	6,180					
R ALDER		366.8	41.8	463	796	1,128					
BL MAPLE		877.5	99.9	0	194	387					
WR CEDAR		877.5	99.9	0	23	45					
TOTAL		37.1	4.2	29,671	30,978	32,285	55	28	14		
CL	68.1	COEFF		V_BAR/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOC				103	116	129					
DOUG FIR				92	104	115					
S SPRUCE				84	107	131					
R ALDER		327.1	37.2	62	107	152					

TC PSTATS		<u>PROJECT STATISTICS</u>							PAGE	2
		PROJECT		RAIN					DATE	5/26/2016
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
027	010	31	RAIN	00U1	THR	162.40	77	400	S	W
027	010	33	RAIN	00U5						
CL	68.1		COEFF	V_BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.00		VAR.	S.E.%	LOW	AVG	HIGH	5	7	10
BL MAPLE			877.5	99.9	0	134	267			
WR CEDAR			877.5	99.9	0	38	76			
TOTAL			<i>36.1</i>	<i>4.1</i>	<i>105</i>	<i>110</i>	<i>114</i>	52	27	13

T027 R010 S31 T00U1										T027 R010 S31 T00U1				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
027	010	31	RAIN	00U1	6.00	3	16	S	W					

S Spp	So T	Gr rt ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre			
								Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/				
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf				
WH	DM	3S	82	5.2	19,461	18,447	107	100				9 91				39	7	78	0.62	235.1			
WH		DM 4S	18		3,928	3,928	24	100				51 37 12				17	5	17	0.24	235.1			
WH	Totals		74	4.3	23,390	22,375	131	18	82					9	7	9	75	28	6	48	0.51	470.2	
DF	DM	2S	20		1,664	1,664	10	100				100				40	12	200	1.48	8.3			
DF		DM 3S	65	6.8	5,534	5,159	31	100				100				40	9	115	0.91	44.8			
DF		DM 4S	15		1,119	1,119	7	100				30 70				27	5	31	0.35	36.5			
DF	Totals		26	4.5	8,317	7,942	48	14	65	21					4		10	86	35	8	89	0.79	89.6
Type Totals				4.4	31,706	30,317	179	17	78	5					8	5	10	78	29	6	54	0.56	559.7

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	RAIN		DATE	5/26/2016		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
027	010	31	RAIN	00U1	6.00	3	16	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		3	16	5.3						
CRUISE		3	16	5.3	1,679		1.0			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOC	12	235.1	13.0	64	60.3	217.8	23,390	22,375	6,710	6,704
DOUG FIR	4	44.8	17.2	73	17.5	72.6	8,317	7,942	2,459	2,459
TOTAL	16	279.9	13.8	65	78.2	290.3	31,706	30,317	9,169	9,163
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOC	31.2	21.6		184	235	286				
DOUG FIR	88.8	61.4		17	45	72				
TOTAL	17.3	12.0		246	280	313	17	9	4	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOC	25.0	17.3		180	218	255				
DOUG FIR	86.6	59.9		29	73	116				
TOTAL	10.8	7.5		269	290	312	7	3	2	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOC	15.6	10.8		19,966	22,375	24,785				
DOUG FIR	86.7	60.0		3,178	7,942	12,705				
TOTAL	12.2	8.4		27,767	30,317	32,867	8	4	2	
CL:	68.1 %	COEFF	V-BAR/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOC	15.6	10.8		92	103	114				
DOUG FIR	86.7	60.0		44	109	175				
TOTAL	12.2	8.4		96	104	113	8	4	2	

T TSPCSTGR	Species, Sort Grade - Board Foot Volumes (Type)										Page 1									
Project: RAIN										Date 5/26/2016										
										Time 11:57:11AM										
T027 R010 S31 T00U2										T027 R010 S31 T00U2										
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt											
027	010	31	RAIN	00U2	48.00	24	60	S	W											
S Sp	So T	Gr rt ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
				Def%	Gross	Net		Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/ Lf	
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft		
WH	DM	2S	21	3.7	3,342	3,219	155								100	40	14	295	1.82	10.9
WH	DM	3S	49	6.8	8,015	7,468	358		94	6				19	81	39	8	96	0.73	78.1
WH	DM	4S	25	4.1	3,889	3,728	179	55	45			15	28	53	4	26	5	33	0.33	113.5
WH	DM	UT	5		648	648	31	66	34			100				10	5	14	0.23	46.0
WH	Totals		51	5.2	15,895	15,064	723	17	59	24		8	7	23	62	28	7	61	0.59	248.6
DF	DM	2S	35	7.6	4,049	3,740	180								100	40	14	254	1.86	14.7
DF	DM	3S	49	8.5	5,700	5,215	250		100					1	32	36	8	90	0.78	57.8
DF	DM	4S	14	9.1	1,596	1,450	70	58	42			33	32	36		23	5	26	0.31	56.7
DF	DM	UT	2		150	150	7	79	21			100				9	5	10	0.20	15.0
DF	Totals		36	8.2	11,495	10,555	507	9	55	35		6	5	21	69	29	7	73	0.76	144.3
SS	DM	2S	16	8.7	525	479	23								100	40	17	420	3.08	1.1
SS	DM	3S	58	4.3	1,784	1,707	82		100						80	33	9	95	0.94	18.1
SS	DM	4S	16	9.3	528	479	23	69	31			5	95			25	6	27	0.39	17.5
SS	DM	UT	10		284	284	14	100				73	27			16	5	15	0.28	19.5
SS	Totals		10	5.5	3,120	2,948	142	21	63	16		8	18	46	28	25	7	52	0.69	56.2
BM	DM	2S	74	3.6	517	498	24			60	40	23			77	30	15	264	2.22	1.9
BM	DM	3S	15	16.0	117	99	5		50	50		50	50			25	12	105	1.14	.9
BM	DM	4S	11	16.7	86	71	3		100					100		27	8	50	0.66	1.4
BM	Totals		2	7.2	720	668	32		18	52	30	24	18		58	28	12	157	1.49	4.3
RA	DM	4S	77	12.5	289	253	12			100					100	40	8	70	0.61	3.6
RA	DM	UT	23		72	72	3	100				100				19	5	20	0.22	3.6
RA	Totals		1	10.0	362	325	16	22	78			22			78	30	6	45	0.49	7.2
Type Totals				6.4	31,591	29,560	1,420	14	57	26	2	8	8	24	61	28	7	64	0.66	460.6

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	RAIN		DATE	5/26/2016		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
027	010	31	RAIN	00U2	48.00	24	119	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		24	119	5.0						
CRUISE		13	60	4.6	11,163		.5			
DBH COUNT										
REFOREST										
COUNT		11	54	4.9						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOC	23	129.4	13.4	63	34.7	127.0	15,895	15,064	4,086	4,085
DOUG FIR	24	64.5	16.5	71	23.5	95.3	11,495	10,555	3,173	3,173
S SPRUCE	8	33.2	14.1	49	9.6	36.3	3,120	2,948	962	962
BL MAPLE	3	1.9	22.1	76	1.1	5.0	720	668	177	177
R ALDER	2	3.6	13.0	68	0.9	3.3	362	325	104	104
TOTAL	<i>60</i>	<i>232.6</i>	<i>14.5</i>	<i>63</i>	<i>70.1</i>	<i>266.9</i>	<i>31,591</i>	<i>29,560</i>	<i>8,502</i>	<i>8,502</i>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOC	90.2	18.8		105	129	154				
DOUG FIR	104.5	21.8		50	64	79				
S SPRUCE	124.3	25.9		25	33	42				
BL MAPLE	489.9	102.1			2	4				
R ALDER	489.9	102.1			4	7				
TOTAL	<i>35.7</i>	<i>7.4</i>		<i>215</i>	<i>233</i>	<i>250</i>	<i>53</i>	<i>27</i>	<i>13</i>	
CL:	68.1 %	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOC	91.7	19.1		103	127	151				
DOUG FIR	88.0	18.3		78	95	113				
S SPRUCE	114.2	23.8		28	36	45				
BL MAPLE	489.9	102.1			5	10				
R ALDER	489.9	102.1			3	7				
TOTAL	<i>22.0</i>	<i>4.6</i>		<i>255</i>	<i>267</i>	<i>279</i>	<i>20</i>	<i>10</i>	<i>5</i>	
CL:	68.1 %	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOC	94.8	19.7		12,089	15,064	18,038				
DOUG FIR	92.6	19.3		8,518	10,555	12,591				
S SPRUCE	118.0	24.6		2,223	2,948	3,673				
BL MAPLE	489.9	102.1			668	1,349				
R ALDER	489.9	102.1			325	658				
TOTAL	<i>30.2</i>	<i>6.3</i>		<i>27,703</i>	<i>29,560</i>	<i>31,417</i>	<i>38</i>	<i>19</i>	<i>9</i>	
CL:	68.1 %	COEFF	V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOC				95	119	142				
DOUG FIR	45.3	9.4		89	111	132				
S SPRUCE	46.8	9.7		61	81	101				
BL MAPLE	489.9	102.1			134	270				
R ALDER	489.9	102.1			98	197				
TOTAL	<i>184.6</i>	<i>38.5</i>		<i>104</i>	<i>111</i>	<i>118</i>	<i>1,419</i>	<i>724</i>	<i>355</i>	

T027 R010 S31 T00U3										T027 R010 S31 T00U3				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
027	010	31	RAIN	00U3	4.00	2	10	S	W					

Spp	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs Per /Acre						
								Net	BdFt	Def%	Gross	Net	Net MBF	Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/Lf	
														4-5	6-11	12-16	17+	12-20	21-30		31-35					36-99
DF	DM	2S	16	5.0	2,495	2,371	9	100				100				40	12	190	1.48	12.5						
DF	DM	3S	69	4.1	10,565	10,134	41	100				100				40	9	123	0.95	82.6						
DF	DM	4S	15		2,140	2,140	9	100				24		50	26	28	5	31	0.35	70.1						
DF	Totals		51	3.7	15,200	14,645	59	15	69	16		3		7	89	35	8	89	0.80	165.1						
WH	DM	3S	79		9,100	9,100	36	100				100				40	7	81	0.64	111.8						
WH	DM	4S	17		2,020	2,020	8	100				29	71			22	5	26	0.25	77.2						
WH	DM	UT	4		347	347	1	100				100				11	5	10	0.17	34.7						
WH	Totals		40		11,466	11,466	46	21	79			8	12		79	29	6	51	0.51	223.7						
SS	DM	3S	85		2,339	2,339	9	100				100				40	9	120	1.01	19.5						
SS	DM	UT	15		390	390	2	100				100				19	5	20	0.29	19.5						
SS	Totals		9		2,729	2,729	11	14	86			14			86	30	7	70	0.78	39.0						
Type Totals				1.9	29,396	28,841	116	17	75	8		6	5	4	85	31	7	67	0.66	427.8						

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	RAIN		DATE	5/26/2016		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
027	010	31	RAIN	00U3	4.00	2	10	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		2	10	5.0						
CRUISE		2	10	5.0	856	1.2				
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
DOUG FIR	5	82.6	17.4	73	32.6	136.1	15,200	14,645	4,566	4,566
WHEMLOC	4	111.8	13.4	65	29.8	108.9	11,466	11,466	3,326	3,326
S SPRUCE	1	19.5	16.0	62	6.8	27.2	2,729	2,729	894	894
TOTAL	<i>10</i>	<i>213.9</i>	<i>15.3</i>	<i>68</i>	<i>69.6</i>	<i>272.2</i>	<i>29,396</i>	<i>28,841</i>	<i>8,785</i>	<i>8,785</i>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	1.4	1.3		81	83	84				
WHEMLOC	85.3	79.9		22	112	201				
S SPRUCE	141.4	132.4			19	45				
TOTAL	<i>31.2</i>	<i>29.2</i>		<i>151</i>	<i>214</i>	<i>276</i>	<i>68</i>	<i>35</i>	<i>17</i>	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	28.3	26.5		100	136	172				
WHEMLOC	70.7	66.2		37	109	181				
S SPRUCE	141.4	132.4			27	63				
TOTAL				<i>272</i>	<i>272</i>	<i>272</i>				
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	37.7	35.3		9,480	14,645	19,810				
WHEMLOC	59.4	55.6		5,094	11,466	17,839				
S SPRUCE	141.4	132.4			2,729	6,344				
TOTAL	<i>8.9</i>	<i>8.3</i>		<i>26,434</i>	<i>28,841</i>	<i>31,248</i>	<i>6</i>	<i>3</i>	<i>1</i>	
CL:	68.1 %	COEFF	V-BAR/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	37.7	35.3		70	108	146				
WHEMLOC	59.4	55.6		47	105	164				
S SPRUCE	141.4	132.4			100	233				
TOTAL	<i>8.9</i>	<i>8.3</i>		<i>97</i>	<i>106</i>	<i>115</i>	<i>6</i>	<i>3</i>	<i>1</i>	

T027 R010 S32 T00U4 **T027 R010 S32 T00U4**
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt
 027 010 32 RAIN 00U4 36.00 18 42 S W

Spp	So	Gr	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
				Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf	
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
DF	DM	2S	26	3.9	3,513	3,377	122	100				100				40	13	238	1.72	14.2
DF	DM	3S	54	7.4	7,342	6,798	245	100				21 79				38	8	86	0.74	78.8
DF	DM	4S	18	7.4	2,368	2,192	79	93	7	11 50 24 15				27	5	26	0.28	83.1		
DF	DM	UT	2		231	231	8	90	10	100				9	5	10	0.16	23.1		
DF	Totals		45	6.4	13,455	12,599	454	18	55	27	4	9	16	72	30	7	63	0.64	199.2	
WH	DM	2S	53	12.1	7,046	6,191	223	84 16				5 95				39	15	298	2.16	20.8
WH	DM	3S	39		4,479	4,479	161	100				3 11 85				39	8	84	0.70	53.4
WH	DM	4S	6		631	631	23	100				33 67				24	5	26	0.28	24.5
WH	DM	UT	2		202	202	7	61	39	100				11	6	11	0.24	18.1		
WH	Totals		41	6.9	12,358	11,503	414	7	40	45	9	4	5	7	84	31	8	98	0.93	116.8
SS	DM	2S	28	4.4	967	925	33	52 48				100				40	16	387	2.73	2.4
SS	DM	3S	49	7.8	1,749	1,612	58	100				59 41				35	9	96	0.91	16.7
SS	DM	4S	19		629	629	23	81	19	69 31				19	5	24	0.34	26.6		
SS	DM	UT	4		111	111	4	100				100				16	5	20	0.34	5.6
SS	Totals		12	5.2	3,456	3,277	118	19	53	15	14	17	6	29	48	25	7	64	0.78	51.3
RA	DM	3S	48		320	320	12	100				45	55	25 11 94 0.96				3.4		
RA	DM	4S	41	6.3	289	270	10	100				18	82	28 7 40 0.44				6.8		
RA	DM	UT	11		67	67	2	100				100				17	5	20	0.20	3.4
RA	Totals		2	2.7	676	658	24	10	90	40 60				24	7	49	0.53	13.5		
Type Totals				6.4	29,945	28,037	1,010	13	49	32	5	6	8	13	72	30	7	74	0.75	380.9

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	RAIN			DATE	5/26/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
027	010	32	RAIN	00U4	36.00	18	88	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		18	88	4.9						
CRUISE		9	42	4.7	7,272		.6			
DBH COUNT										
REFOREST										
COUNT		9	46	5.1						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	21	107.6	14.5	67	32.5	124.0	13,455	12,599	3,863	3,863
WHEMLOC	10	55.5	17.9	71	22.9	96.8	12,358	11,503	3,402	3,403
S SPRUCE	8	32.1	14.4	44	9.6	36.3	3,456	3,277	1,004	1,004
R ALDER	3	6.8	13.4	58	1.8	6.7	676	658	175	175
TOTAL	42	202.0	15.5	64	67.1	263.7	29,945	28,037	8,444	8,445
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	92.4	22.4		84	108	132				
WHEMLOC	102.0	24.7		42	56	69				
S SPRUCE	151.8	36.8		20	32	44				
R ALDER	291.0	70.5		2	7	12				
TOTAL	39.0	9.5		183	202	221	64	33	16	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	87.6	21.2		98	124	150				
WHEMLOC	101.3	24.5		73	97	121				
S SPRUCE	136.1	33.0		24	36	48				
R ALDER	308.7	74.8		2	7	12				
TOTAL	17.7	4.3		252	264	275	13	7	3	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	88.0	21.3		9,912	12,599	15,286				
WHEMLOC	101.3	24.5		8,680	11,503	14,326				
S SPRUCE	142.3	34.5		2,147	3,277	4,407				
R ALDER	303.9	73.6		173	658	1,142				
TOTAL	22.1	5.4		26,535	28,037	29,538	21	11	5	
CL:	68.1 %	COEFF	V-BAR/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR				80	102	123				
WHEMLOC				90	119	148				
S SPRUCE	83.7	20.3		59	90	121				
R ALDER	303.9	73.6		26	99	171				
TOTAL	201.3	48.8		101	106	112	1,713	874	428	

T027 R010 S33 T00U5 **T027 R010 S33 T00U5**
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt
 027 010 33 RAIN 00U5 68.00 36 55 S W

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf	
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
WH		DM	2S	25	5.8	3,873	3,647	259			83	17			7	93	39	14	264	1.81	13.8
WH		DM	3S	56	5.2	8,607	8,164	580			100				19	81	38	8	85	0.72	96.1
WH		DM	4S	17		2,520	2,520	179	73	27			30	30	28	11	24	5	27	0.29	92.2
WH		DM	UT	2		198	198	14	100					100			12	5	10	0.17	19.8
WH	Totals			43	4.4	15,198	14,529	1,000	14	61	21	4	7	5	17	71	30	7	65	0.64	222.0
DF		DM	2S	18	10.6	2,085	1,865	132			100				100		40	12	194	1.57	9.6
DF		DM	3S	67	7.3	7,092	6,572	467			100				5	95	39	9	116	0.98	56.4
DF		DM	4S	13	2.5	1,379	1,344	95	100				21	53	9	17	26	5	27	0.33	49.6
DF		DM	UT	2		110	110	8	77	23			23		77		21	5	21	0.38	5.3
DF	Totals			29	7.3	10,666	9,890	672	14	67	19		3	7	5	85	33	8	82	0.81	121.0
SS		DM	2S	80	12.6	7,359	6,432	457			70	30			23	77	37	15	322	2.47	20.0
SS		DM	3S	9	4.9	801	762	54			100				18	51	34	8	77	0.75	9.9
SS		DM	4S	10	5.2	823	780	55	69	31			14	86			22	6	22	0.32	35.6
SS		DM	UT	1		34	34	2			100		100				11	9	20	0.68	1.7
SS	Totals			24	11.2	9,017	8,007	539	7	13	56	24	2	10	23	65	28	9	119	1.25	67.2
RA		DM	3S	26	16.5	395	329	23			100		44	56			25	10	74	0.78	4.5
RA		DM	4S	50	14.6	737	630	45			100		25	45	30		29	7	41	0.44	15.2
RA		DM	UT	24		287	287	20	100				48	52			18	5	19	0.21	15.2
RA	Totals			4	12.2	1,419	1,246	88	23	77			35	50	15		24	6	36	0.41	34.8
RC		DM	4S	100		53	53	4	100						100		32	5	30	0.46	1.8
RC	Totals			0		53	53	4	100						100		32	5	30	0.46	1.8
Type Totals					7.2	36,352	33,726	2,303	13	52	28	8	6	9	15	71	30	7	75	0.76	446.7

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	RAIN		DATE	5/26/2016		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
027	010	33	RAIN	00U5	68.00	29	164	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		36	164	5.7						
CRUISE		18	90	5.0	16,293		.3			
DBH COUNT										
REFOREST										
COUNT		18	109	6.1						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOC	24	109.3	14.5	69	33.0	125.8	15,198	14,529	4,260	4,260
DOUG FIR	18	59.2	17.6	71	23.7	99.5	10,666	9,890	3,257	3,240
S SPRUCE	7	44.0	16.6	50	16.1	65.7	9,017	8,007	2,348	2,347
R ALDER	5	15.2	11.5	67	3.2	11.0	1,419	1,246	337	337
WR CEDAR	1	1.8	12.0	38	0.4	1.4	53	53	26	26
TOTAL	55	229.5	15.6	65	76.9	303.4	36,352	33,726	10,227	10,210
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOC	107.6	20.3		87	109	132				
DOUG FIR	108.7	20.5		47	59	71				
S SPRUCE	163.0	30.8		30	44	58				
R ALDER	315.1	59.5		6	15	24				
WR CEDAR	538.5	101.7			2	4				
TOTAL	37.5	7.1		213	229	246	58	30	15	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOC	102.2	19.3		101	126	150				
DOUG FIR	108.5	20.5		79	99	120				
S SPRUCE	157.2	29.7		46	66	85				
R ALDER	304.8	57.5		5	11	17				
WR CEDAR	538.5	101.7			1	3				
TOTAL	29.7	5.6		286	303	320	36	19	9	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOC	102.9	19.4		11,706	14,529	17,351				
DOUG FIR	108.8	20.5		7,858	9,890	11,922				
S SPRUCE	158.1	29.8		5,618	8,007	10,397				
R ALDER	302.2	57.1		535	1,246	1,958				
WR CEDAR	538.5	101.7			53	106				
TOTAL	33.3	6.3		31,602	33,726	35,849	46	23	11	
CL:	68.1 %	COEFF	V-BAR/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOC				93	116	138				
DOUG FIR				79	99	120				
S SPRUCE				85	122	158				
R ALDER	260.5	49.2		48	113	177				
WR CEDAR	538.5	101.7			38	77				
TOTAL	306.7	57.9		104	111	118	3,890	1,984	972	

T027 R010 S32 TU6RW										T027 R010 S32 TU6RW				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
027	010	32	RAIN	U6RW	.40	1	3	S	W					

S Spp	So T	Gr rt ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
								Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/	
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf	
RA	DM	2S	50	4,830	4,830	2	47	53		100				20	11	89	1.14	54.0		
RA	DM	4S	39	22.1	4,738	3,689	1	100		41	59			25	7	35	0.52	105.0		
RA	DM	UT	11		1,019	1,019	0	100		100				19	5	20	0.24	50.9		
RA Totals			100	9.9	10,587	9,537	4	11	63	27	77	23		22	8	45	0.61	209.9		
Type Totals				9.9	10,587	9,537	3	11	63	27	77	23		22	8	45	0.61	209.9		

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	RAIN		DATE	5/26/2016		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
027	010	32	RAIN	U6RW	0.40	1	3	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				TREES	TREES	TREES				
TOTAL		1	3	3.0						
CRUISE		1	3	3.0	42		7.1			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
R ALDER	3	105.0	14.5	53	31.5	120.0	10,587	9,537	2,849	2,849
TOTAL	3	105.0	14.5	53	31.5	120.0	10,587	9,537	2,849	2,849
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										

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

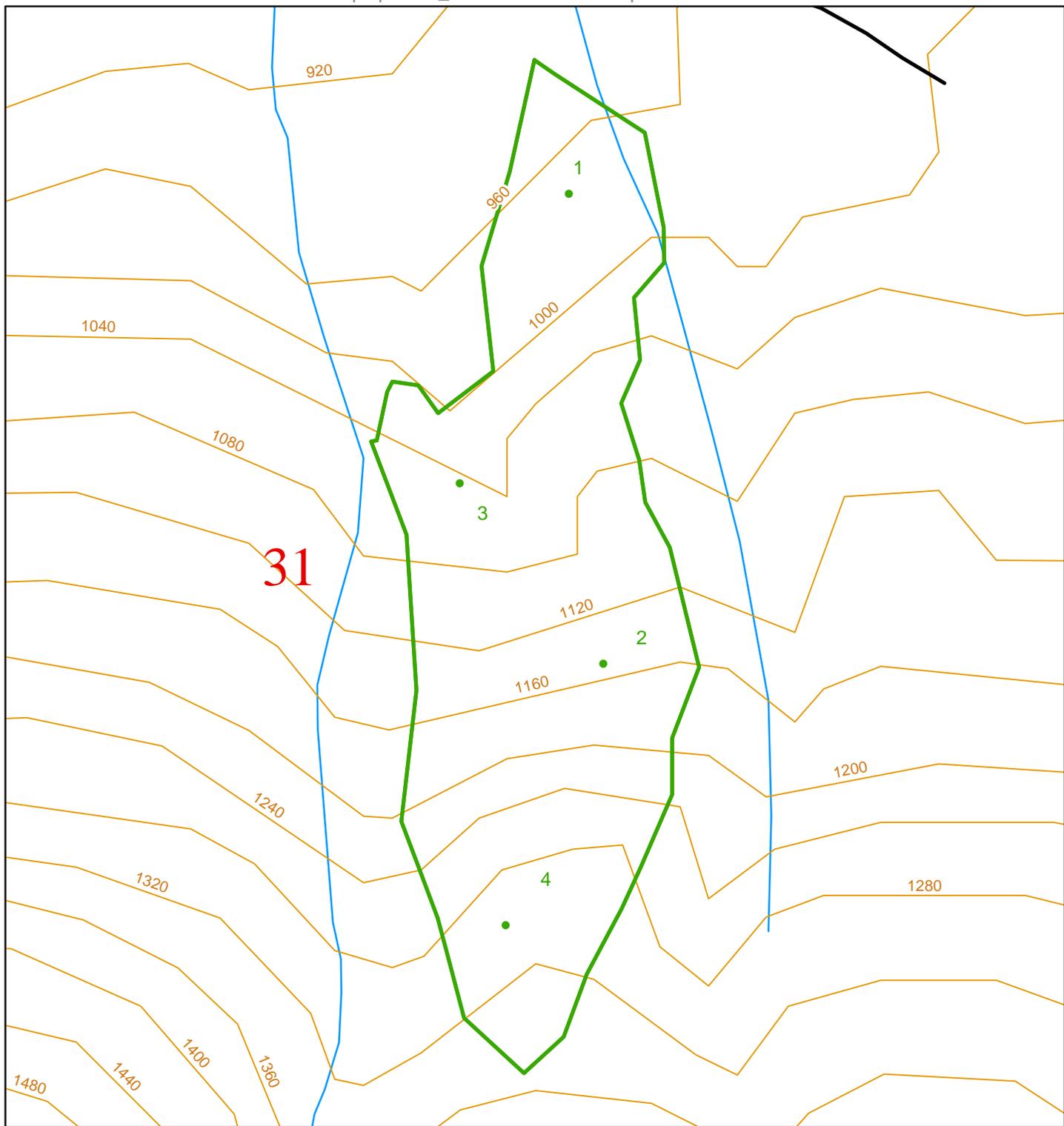
T027 R010 S31 Ty00U1	6.0
T027 R010 S31 Ty00U2	48.0
T027 R010 S33 Ty00U5	71.0

Project RAIN
Acres 165.40

Page No 1
Date: 5/26/2016
Time 12:05:03PM

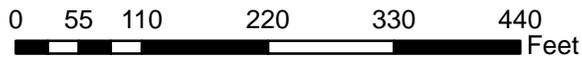
Species	Total	Total	Total	Net Cubic Ft/		CF/ LF	Total CCF		Total MBF	
	Trees	Logs	Tons	Tree	Log		Gross	Net	Gross	Net
WHEMLOC	17,828	35,613	21,587	37.84	18.94	0.65	6,746	6,746	2,473	2,349
DOUG FIR	11,772	23,887	15,835	47.10	23.21	0.74	5,556	5,545	1,904	1,769
S SPRUCE	5,952	9,470	6,567	42.43	26.67	1.00	2,526	2,525	925	839
R ALDER	1,538	3,392	1,000	23.64	10.72	0.44	364	364	147	132
BL MAPLE	90	204	226	94.16	41.67	1.49	85	85	35	32
WR CEDAR	125	125	43	14.75	14.75	0.46	18	18	4	4
Totals	37,305	72,691	45,258	40.97	21.02	0.72	15,295	15,283	5,487	5,124

Wood Type Species	Total	Total	Total	Net Cubic Ft/		CF/ LF	Total CCF		Total MBF	
	Trees	Logs	Tons	Tree	Log		Gross	Net	Gross	Net
C	35,677	69,094	44,032	41.58	21.47	0.72	14,846	14,834	5,306	4,960
H	1,628	3,597	1,225	27.56	12.48	0.50	449	449	181	164
Totals	37,305	72,691	45,258	40.97	21.02	0.72	15,295	15,283	5,487	5,124



Cruiser Sample Point Locations

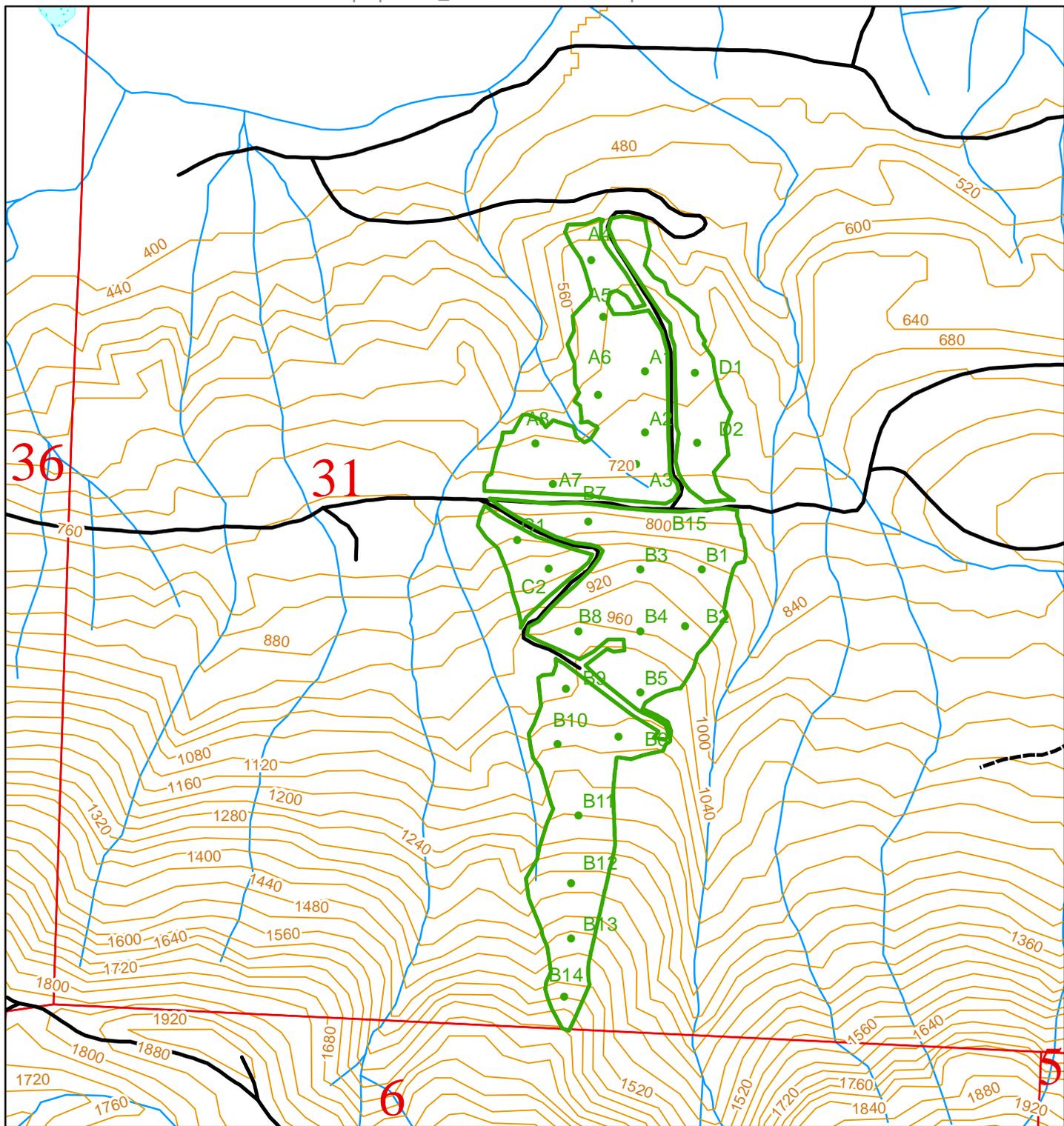
LAYER NAME:	slimey_spike_vrh	Township:	T27R10W
POLY ID:	1	Total Sample Points:	6
Acres:	acres	Spacing Between Points:	225
		Point Rotation Degrees:	0



Scale 1:2,000

Legend

- Sample Points
- Unit
- Public Land Survey Sections
- Contours 40-foot



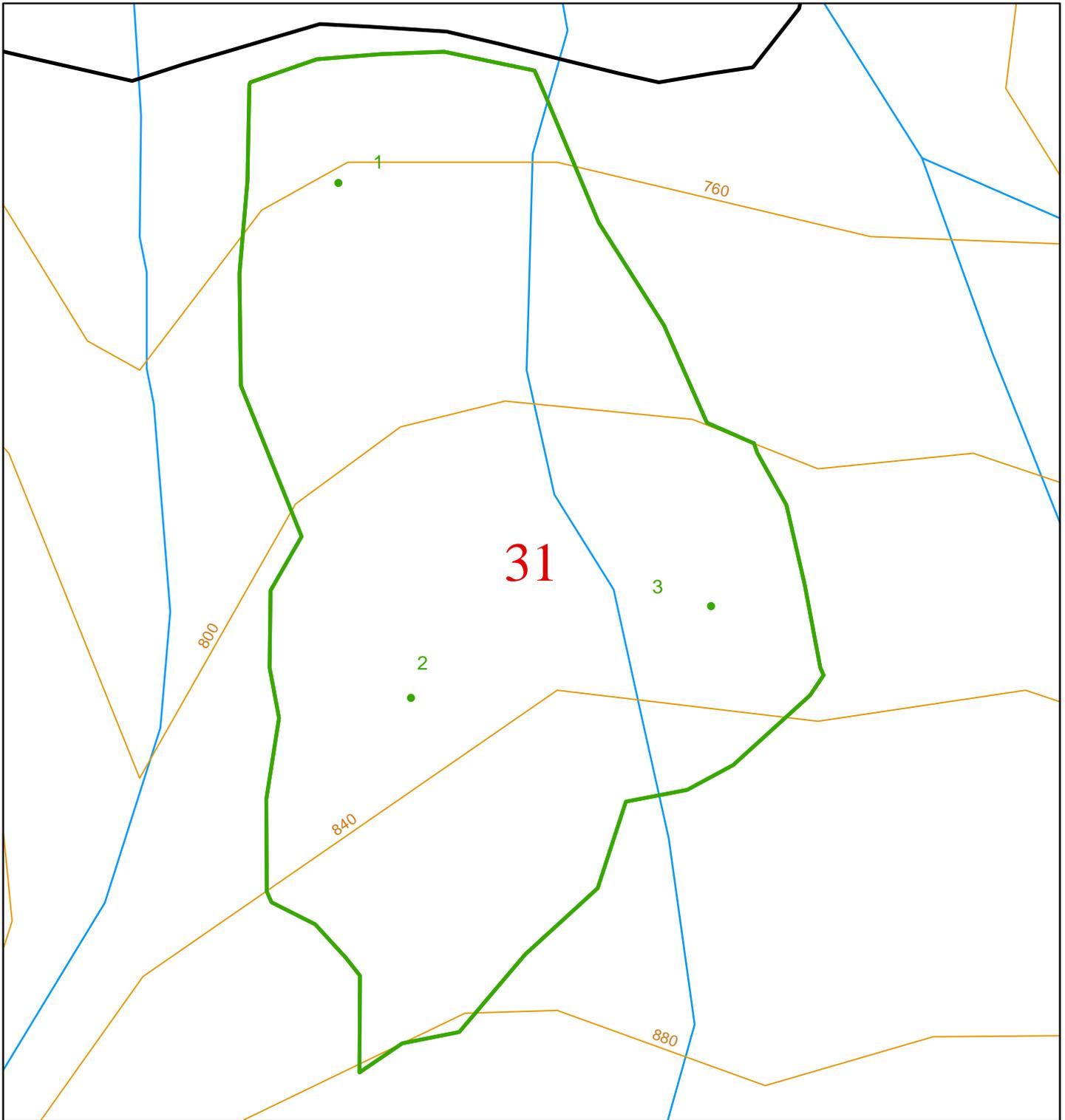
Cruiser Sample Point Locations

LAYER NAME:	slimey_spike_vrh	Township:	T27R10W
POLY ID:	3	Total Sample Points:	2
Acres:	3	Spacing Between Points:	Width: 290 Height: 290
		Point Rotation Degrees:	0



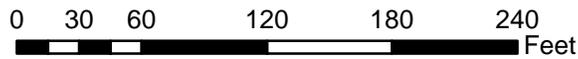
Legend

- Sample Points
- Unit
- Public Land Survey Sections
- Contours 40-foot

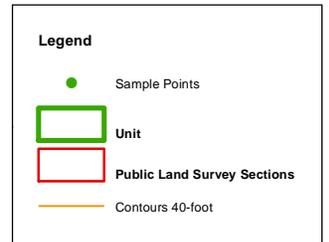


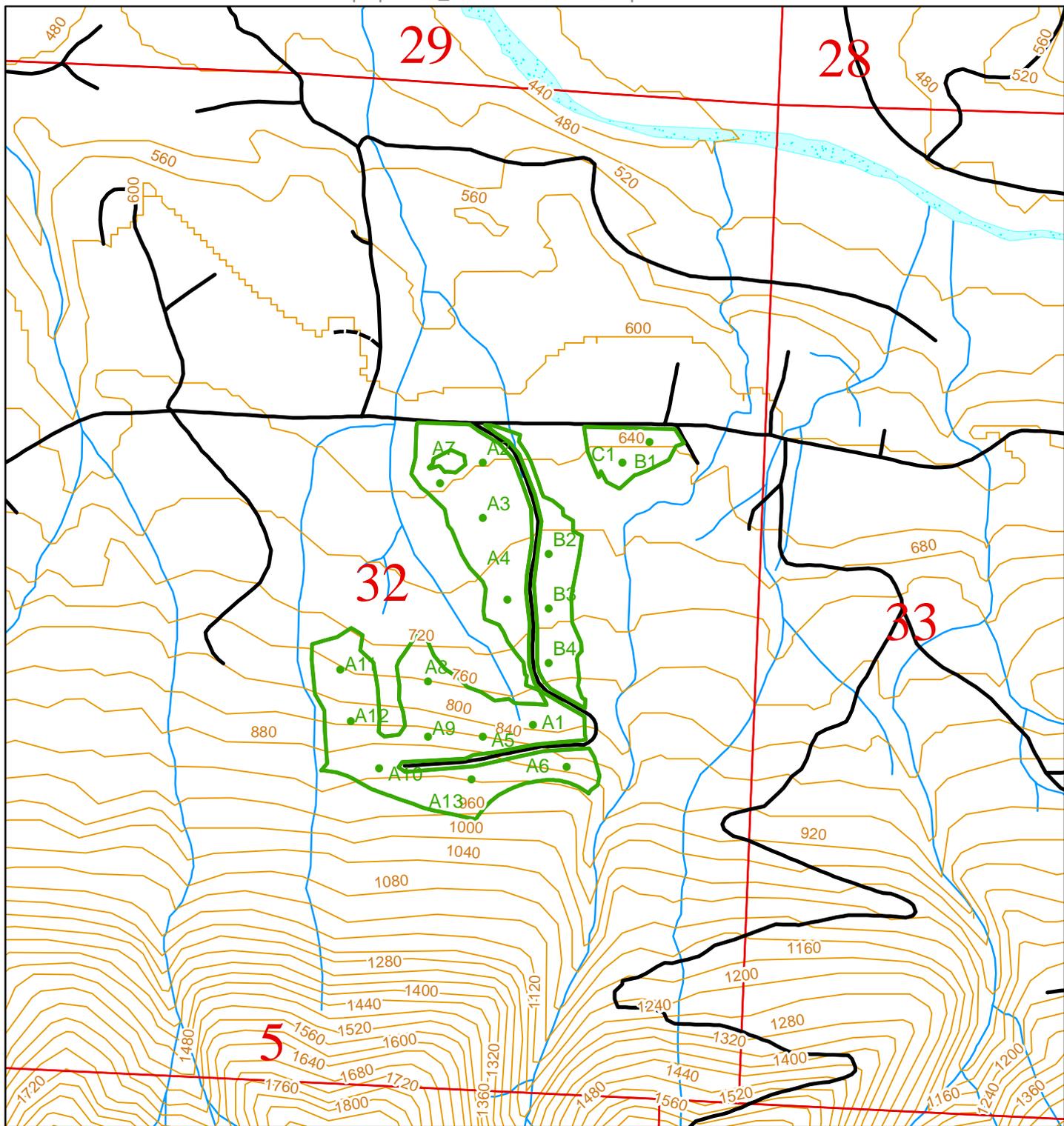
Cruiser Sample Point Locations

LAYER NAME:	slimey_spike_vrh	Township:	T27R10W
POLY ID:	1	Total Sample Points:	6
Acres:	4	Spacing Between Points:	175
		Point Rotation Degrees:	0



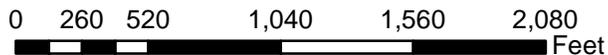
Scale 1:1,100





Cruiser Sample Point Locations

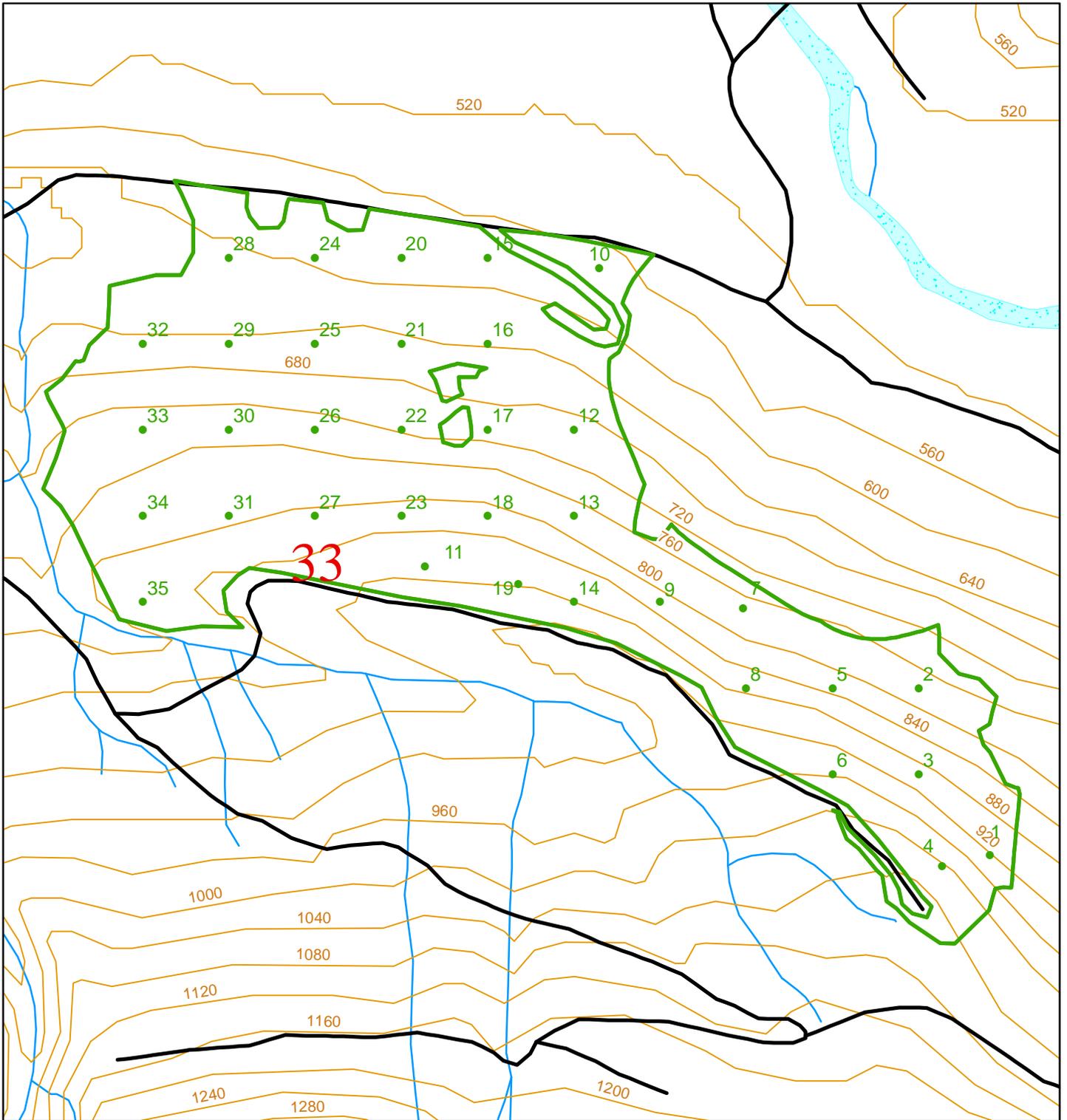
LAYER NAME:	slimey_spike_vrh	Township:	T27R10W
POLY ID:	2	Total Sample Points:	4
Acres:	5	Spacing Between Points:	Width: 290 Height: 290
		Point Rotation Degrees:	0



Scale 1:9,000

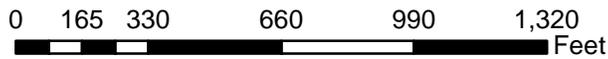
Legend

- Sample Points
- Unit
- Public Land Survey Sections
- Contours 40-foot



Cruiser Sample Point Locations

LAYER NAME:	slimey_spike_vrh	Township:	T27R10W
POLY ID:	1	Total Sample Points:	35
Acres:	71	Spacing Between Points:	Width: 290 Height: 290
		Point Rotation Degrees:	0



Scale 1:5,700

Legend

- Sample Points
- Unit
- Public Land Survey Sections
- Contours 40-foot



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

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

FPA/N No: 2614422
 Effective Date: 8/26/2016
 Expiration Date: 8/26/2019
 Shut Down Zone: 652 SW
 EARR Tax Credit: Eligible [] Non-eligible
 Reference: DNR, Rain Forest, 30-094153
 Michelle Helms

Decision

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

FPA/N Classification

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

Number of Years Granted on Multi-Year Request

4 years [] 5 years

Conditions on Approval / Reasons for Disapproval

Issued By: Jenny Garstang

Region: Olympic

Title: Forest Practice Forester

Date: 8/26/2016

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

Issued in person: Landowner Timber Owner Operator By:

Shannon A. Armitage
 Shannon A. Armitage

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.eho.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
Olympic Region
411 Tillicum Lane
Forks, WA 98331

Other Applicable Laws

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

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

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

Continuing 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 _____, WA,
(date) (post office location)
postage paid, a true and accurate copy of this document. Notice of Decision FPA # 2614422

(Printed name)

(Signature)

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

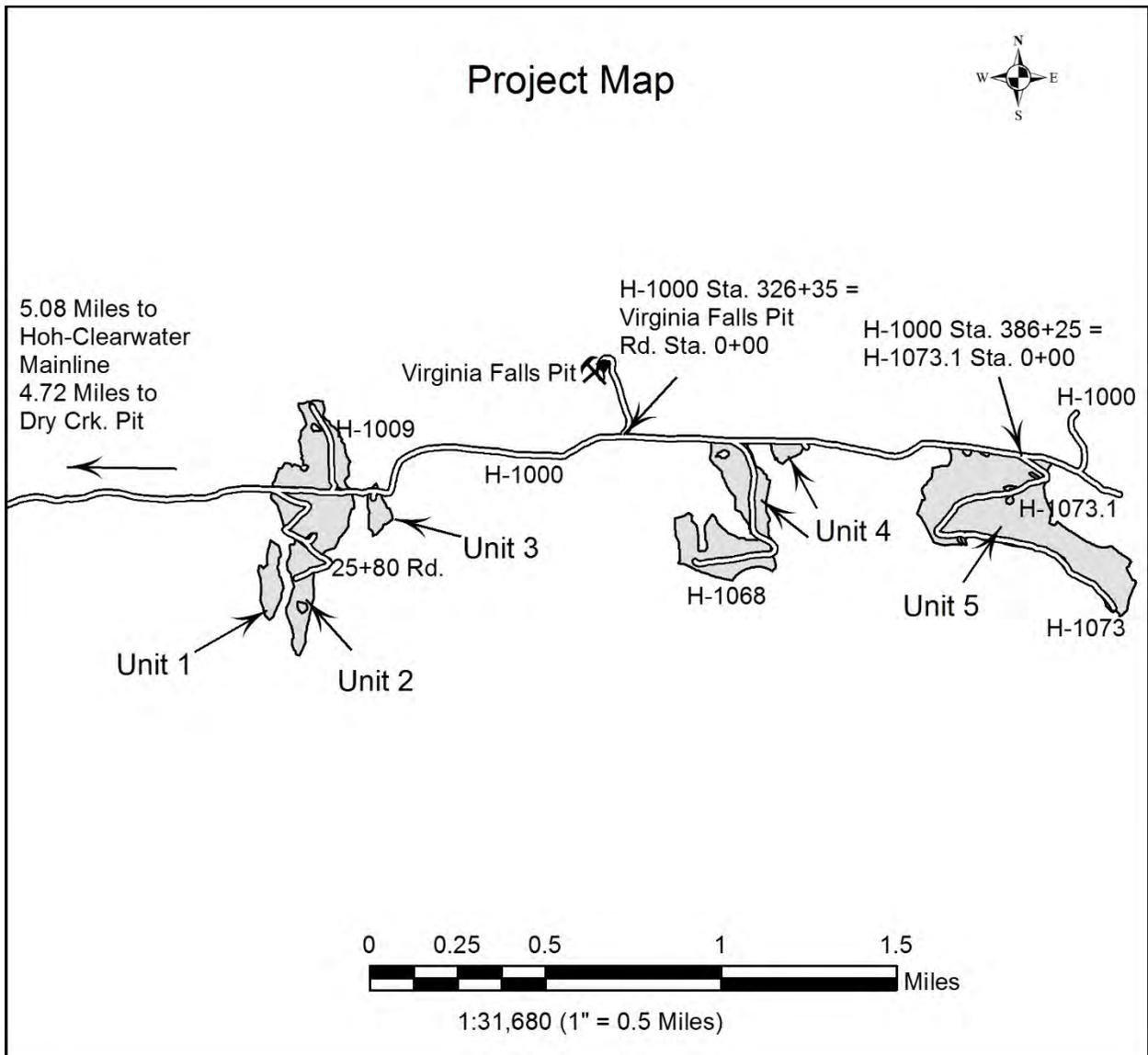
RAINFOREST TIMBER SALE ROAD PLAN
JEFFERSON COUNTY
COAST DISTRICT

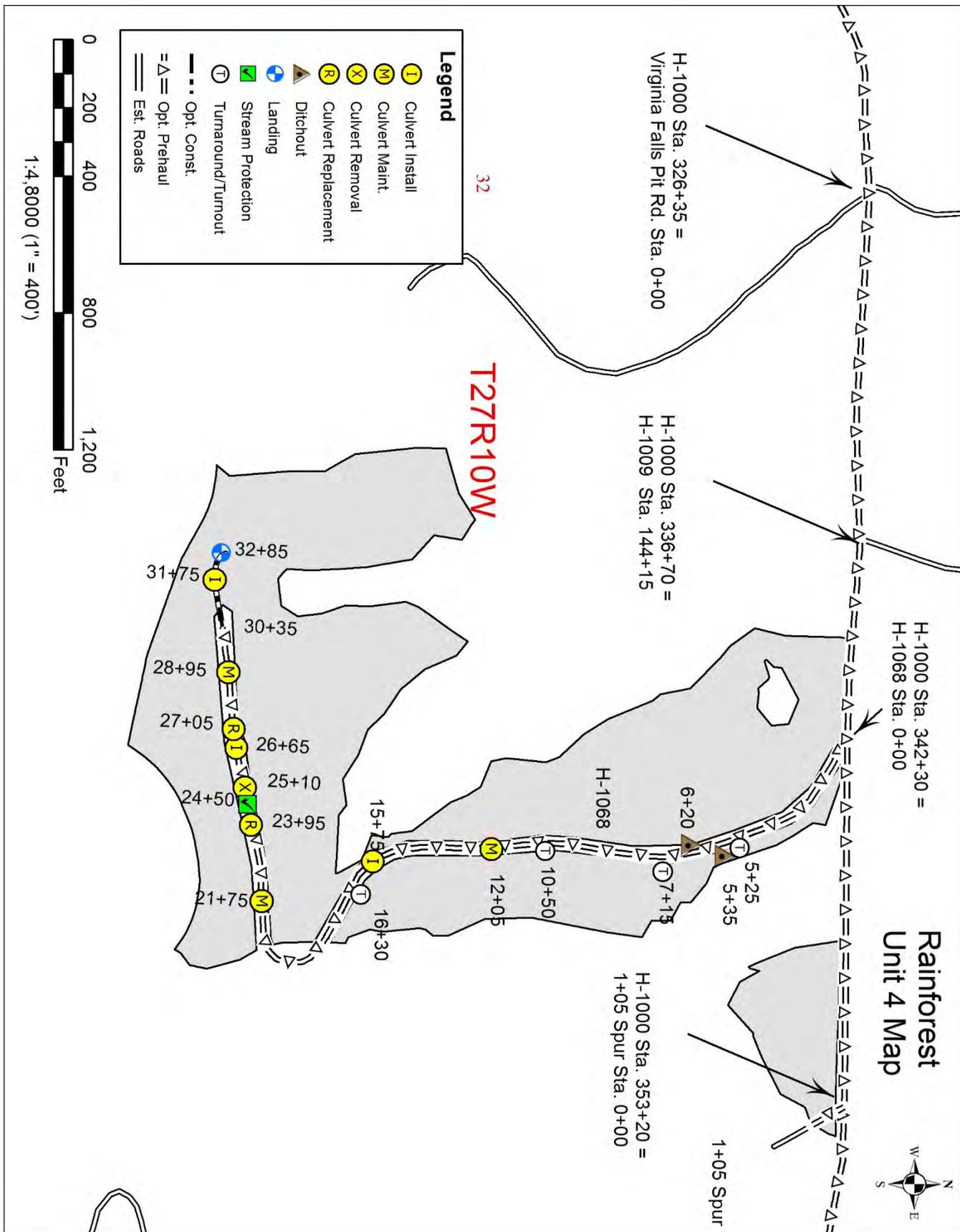
AGREEMENT NO. 30-094153

DISTRICT ENGINEER: BILL MEHL

DATE: APRIL 12, 2016

DRAWN & COMPILED BY: GREG ELLIS

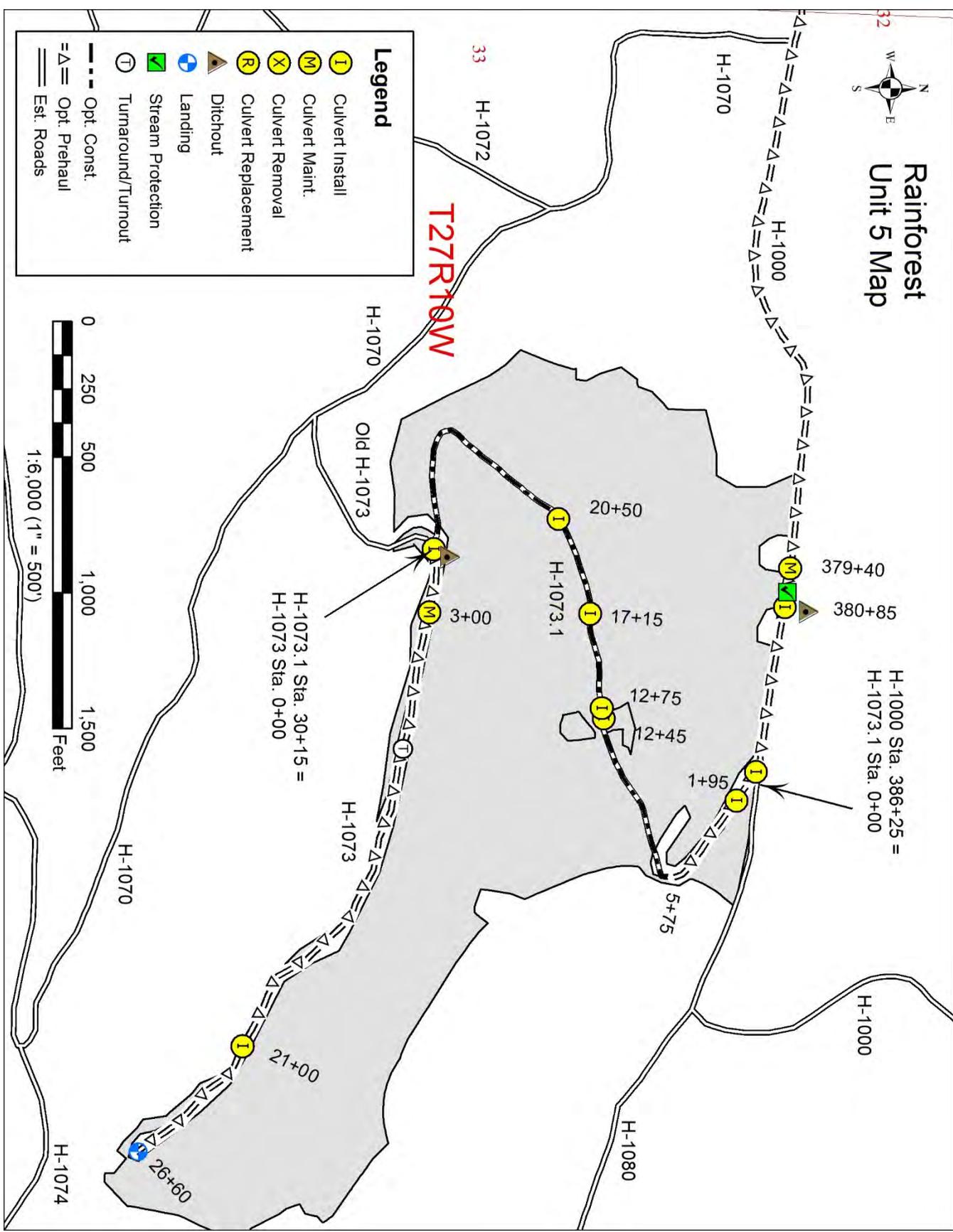
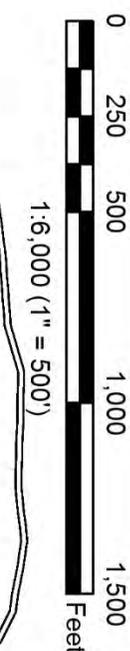






Rainforest Unit 5 Map

Legend	
	Culvert Install
	Culvert Maint.
	Culvert Removal
	Culvert Replacement
	Ditchout
	Landing
	Stream Protection
	Turnaround/Turnout
	Opt. Const.
	Opt. Prehaul
	Est. Roads



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.

0-3 OPTIONAL ROADS

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

<u>Road</u>	<u>Stations</u>	<u>Type</u>
H-1000	245.75	Pre-haul Maintenance
H-1009	14.1	Pre-haul Maintenance
25+80 Rd	20.0	Pre-haul Maintenance
25+80 Rd	5.8	Construction
1+45 Spur	1.45	Pre-haul Maintenance
1+00 Spur	1.0	Construction
H-1068	30.35	Pre-haul Maintenance
H-1068	2.5	Construction
1+05 Spur	1.05	Pre-haul Maintenance
H-1073	26.6	Pre-haul Maintenance
H-1073.1	5.75	Pre-haul Maintenance
H-1073.1	24.4	Construction

0-4 CONSTRUCTION

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
25+80 Rd	20+00 – 25+80	See Below
1+00 Spur	0+00 – 1+00	See Below
H-1068	30+35 – 32+85	See Below
H-1073.1	5+75 – 30+15	See Below

Construction includes, but is not limited to:

Clearing, grubbing, right-of-way debris disposal, excavation and/or embankment to subgrade, end hauling material for construction, compacting road surfaces, constructing ditchlines, constructing ditchouts, constructing turnouts and turnarounds, curve widening, acquisition and installation of drainage structures, application of rock, spreading grass seed and hay.

0-6 PRE-HAUL MAINTENANCE

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
H-1000	140+50 – 386+25	Grade, shape and compact existing running surface as directed by contract administrator, apply rock in accordance with Rock list, install culvert in accordance with

		culvert list, apply sediment control in accordance with Clause 8-1 and construct ditchouts.
H-1009	0+00 – 14+10	Grade, shape and compact existing running surface as directed by contract administrator, apply rock in accordance with Rock list, install culvert in accordance with culvert list, clean/construct ditch lines in accordance with Clause 2-7 and construct ditchouts.
25+80 Rd	0+00 – 20+00	Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 4-38, grade, shape and compact existing running surface, apply rock in accordance with Rock list, clean culverts, clean/construct ditch lines in accordance with Clause 2-7, construct ditchouts and add turnouts/turnarounds.
1+45 Spur	0+00 – 1+45	Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 4-38, grade, shape and compact existing running surface and apply rock in accordance with Rock list.
H-1068	0+00 – 30+35	Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 4-38, grade, shape and compact existing running surface, apply rock in accordance with Rock list, clean culverts, install culverts in accordance with culvert list, clean/construct ditch lines in accordance with Clause 2-7, construct ditchouts and add turnouts/turnarounds.
1+05 Spur	0+00 – 1+05	Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 4-38, grade, shape and compact existing running surface and apply rock in accordance with Rock list.
H-1073	0+00 – 26+60	Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 4-38, grade, shape and compact existing running surface, apply rock in accordance with Rock list, clean culverts, install culverts in accordance with culvert list, clean/construct ditch lines in accordance with Clause 2-7, construct ditchouts and add turnouts/turnarounds.
H-1073.1	0+00 – 5+75	Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 4-38, grade, shape and compact existing running surface, apply

		rock in accordance with Rock list, install culverts in accordance with culvert list and clean/construct ditch lines in accordance with Clause 2-7.
--	--	--

Maintenance includes, but is not limited to:

Brushing right-of-way, right-of-way debris disposal, cleaning ditches, constructing ditches, installing additional culverts, widening road segments, constructing headwalls, cleaning culvert inlets and outlets, cross drain culvert replacement, installing erosion control materials and sediment removal structures, spot rocking, grading and shaping existing road surface and turnouts, constructing additional turnouts, compaction of road surface, application of rock, acquisition and application of grass seed and hay.

0-7 POST-HAUL MAINTENANCE

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

0-8 CLOSURE

This project includes road closure listed in Clause 9-15 ROAD CLOSURE.

0-9 DEACTIVATION

This project includes, but is not limited to deactivation listed in Clause 9-20 Road Deactivation.

0-13 STRUCTURES

The Purchaser shall acquire and install all structures. Requirements for these structures are listed in Section 7 Structures.

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 shall be submitted, in writing, to the Contract Administrator for consideration. The State must approve the submitted plans before road work begins.

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

Unless controlled by construction stakes or design data (plan, profile, and cross-sections), road work shall be performed in accordance with the dimensions shown on the Typical Section Sheet and the specifications within this Road Plan.

1-6 ORDER OF PRECEDENCE

Any conflict or inconsistency in this Road Plan shall be resolved by giving the documents precedence in the following order:

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

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

1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS

The Purchaser is responsible for the repair or replacement of all materials, roadway infrastructure, and road components damaged during roadwork or operation activities. Repairs and replacements shall be directed by the Contract Administrator. Repairs to structural materials will be made according to the manufacturer's recommendation, and shall not begin without written approval from the Contract Administrator.

1-9 DAMAGED METALLIC COATING

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

1-10 WSDOT STANDARD SPECIFICATION REFERENCE

References in this road plan to "WSDOT Standard Specifications" mean the Washington State Department of Transportation's Standard Specifications for Road, Bridge, and Municipal Construction 2012 (M41-10).

1-12 SURVEY MONUMENTS

At no time during construction, reconstruction, or maintenance shall survey monuments, witness trees, or bearing trees be disturbed or damaged. If damaged or disturbed, Purchaser shall hire a licensed land surveyor to repair, replace, and/or reset them.

1-13 LOG LOADING

At no time shall the loading of logs occur on the H-1000 road without approval from the Contract Administrator. In addition, no debris from harvesting operations shall be allowed on this road.

SUBSECTION ROAD MARKING

1-15 ROAD MARKING

Road work must be in accordance with the State's marked location. All road work is marked as follows:

- Orange ribbon and paint for construction centerlines.
- Construction stakes for everything else.

1-18 REFERENCE POINT DAMAGE

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

SUBSECTION TIMING

1-20 COMPLETE BY DATE

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

1-21 HAUL APPROVAL

The Purchaser shall not use roads under this Road Plan without written approval from the Contract Administrator.

1-22 WORK NOTIFICATIONS

On all roads, the Purchaser shall notify the Contract Administrator a minimum of 3 calendar days before work begins.

1-23 ROAD WORK PHASE APPROVAL

Written approval by Contract Administrator needs to be given at these phases of road work:

- Subgrade approval
- Drainage installation
- Subgrade compaction
- Rock application
- Rock compaction

SUBSECTION RESTRICTIONS

1-25 ACTIVITY TIMING RESTRICTION

On the following road(s), the specified activities are not permitted during the listed closure period(s) unless authorized in writing by the Contract Administrator.

<u>Road</u>	<u>Stations</u>	<u>Activity</u>	<u>Closure Period</u>
H-1068	All	All	October 15 th – April 15 th

1-26 OPERATING DURING CLOSURE PERIOD

If permission is granted to operate during a closure period listed in Clause 1-25 Activity Timing Restriction, the Purchaser shall provide a maintenance plan to include further protection of State resources. The Contract Administrator must approve the maintenance plan in writing, and preventative measures shall be put in place, before operation in the closure period. The Purchaser shall be 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 shall be developed. All parties shall follow this plan.

1-27 TIMING RESTRICTION FOR MARBLED MURRELET

On the following road(s), any road work, right-of-way timber falling and yarding, rock pit operations, or operation of heavy equipment is not permitted from one hour before official sunrise to two hours after official sunrise, and from one hour before official sunset to one hour after official sunset from April 1 through September 23. This restriction does not apply to the hauling of timber, rock, or equipment.

<u>Road</u>	<u>Stations</u>
25+80 Rd	18+00 – 23+00
H-1073.1	5+00 – 7+00

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 shall suspend road work or hauling of right-of-way timber, forest products, or rock under the following conditions:

- 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, the Purchaser will be required to cease operations, or perform corrective maintenance or repairs, subject to specifications within this Road Plan. Before and during any suspension, the Purchaser shall protect the work from damage or deterioration.

1-32 BRIDGE AND ASPHALT SURFACE RESTRICTION

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

If tracked equipment is used on bridge or asphalt surfaces, Purchaser shall immediately cease all road work and hauling operations. Any dirt, rock, or other material tracked or spilled on bridge or asphalt surface(s) shall be removed immediately. Any damage to the surface(s) shall be repaired at the Purchaser’s expense as directed by the Contract Administrator.

1-33 SNOW PLOWING RESTRICTION

On all roads, snow plowing shall be permitted only after the execution of a Snow Plowing Agreement, which is available from the Contact Administrator upon request. Purchaser shall request a Snow Plowing Agreement each time plowing occurs. If damage occurs while plowing, further permission to plow may be revoked by the Contract Administrator.

SUBSECTION OTHER INFRASTRUCTURE

1-40 ROAD APPROACHES TO COUNTY ROADS AND STATE HIGHWAYS

At existing road approaches to county roads and state highways, any mud, dirt, rock or other material tracked or spilled on the asphalt surface shall be removed immediately by the Purchaser.

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

The following county roads and state highways are affected by this sale:

<u>Road Name</u>
Hoh – Clearwater Mainline
Hwy 101

1-41 REQUIREMENTS FOR PAVED ROAD APPROACHES

Requirements for the H-1000 road approaches:

Purchaser shall build up approaches to allow a smooth grade transition between the non-paved portion of the H-1000 and the paved portion of the H-1000. The top of the non-paved portion of the H-1000 road surfacing must be kept level with the surface of the paved portion at all times. The surface of the non-paved portion must slope down from the edge of the paved portion of the road at the rate of 2%, unless otherwise directed 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.

2-4 PASSAGE OF LIGHT VEHICLES

Purchaser shall maintain the following road(s) in a condition that will allow the passage of light administrative vehicles.

<u>Road</u>	<u>Stations</u>
H-1000	0+00 – 353+20

2-5 MAINTENANCE GRADING – EXISTING ROAD

On the following road(s), a grader shall be used to shape the existing surface.

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
H-1000	140+50 – 386+25	Grade, shape, compact and remove shoulder vegetation as required by contract administrator.
25+80 Rd	0+00 – 20+00	Grade, shape, compact and remove shoulder vegetation.
H-1009	0+00 – 14+10	Grade, shape, compact and remove shoulder vegetation.
H-1068	0+00 – 30+35	Grade, shape, compact and remove shoulder vegetation.
1+05 Spur	0+00 – 1+05	Grade, shape, compact and remove shoulder vegetation.
H-1073	0+00 – 26+60	Grade, shape, compact and remove shoulder vegetation.
H-1073.1	0+00 – 5+75	Grade, shape, compact and remove shoulder vegetation.

2-6 CLEANING CULVERTS

On the following road(s), all inlets and outlets of culverts shall be cleaned before the start of timber haul and shall be subject to the written approval of the Contract Administrator.

<u>Road</u>	<u>Stations</u>
25+80 Rd	15+30
H-1068	12+05, 21+75 and 28+95
H-1073	3+00

2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS

On the following road(s), Purchaser shall clean and/or construct the ditches, headwalls, and catch basins. Work shall be completed before the start of timber haul and shall be done in accordance with the Typical Section Sheet. Pulling ditch material across the road or mixing in with the road surface will not be allowed. Ditchlines, headwalls, and catch basins shall not encroach into the existing road.

<u>Road</u>	<u>Stations</u>	<u>Left or Right</u>	<u>Comments</u>
H-1000	379+40	Right	Headwall Install
25+80 Rd	11+25 – 13+45	Right	Ditching
25+80 Rd	11+25	Right	Catch Basin Install
H-1009	1+75 – 14+10	Right	Ditching
H-1009	3+50 – 6+25	Left	Ditching
H-1009	8+30 – 14+10	Left	Ditching
H-1068	0+00 – 8+15	Right	Ditching
H-1068	5+35 – 6+95	Left	Ditching
H-1068	7+80 – 14+90	Left	Ditching
H-1068	15+75 – 19+30	Right	Ditching

H-1068	19+60 – 20+15	Left	Ditching
H-1068	20+90 – 28+95	Left	Ditching
H-1073	0+00 – 10+35	Right	Ditching
H-1073	0+65 – 9+90	Left	Ditching
H-1073.1	0+00 – 5+75	Right	Ditching

2-9 REMOVING VEGETATIVE MATERIAL

On the following road(s), Purchaser shall remove all vegetative material, dirt, mud, and other debris on the existing road surface with a minimum loss of rock. Material removed shall be disposed of in accordance with Clause 4-36 through Clause 4-38.

<u>Road</u>	<u>Stations</u>
25+80 Rd	0+00 – 20+00
1+45 Spur	0+00 – 1+45
H-1068	0+00 – 30+35
1+05 Spur	0+00 – 1+05
H-1073	0+00 – 26+60

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

SUBSECTION CLEARING

3-5 CLEARING

Purchaser shall fall all vegetative material larger than 5 inches DBH or over 15 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.

3-7 RIGHT-OF-WAY DECKING

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

3-8 PROHIBITED DECKING AREAS

Right-of-way timber shall not be decked 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.

SUBSECTION GRUBBING

3-10 GRUBBING

Remove all stumps between the grubbing limits specified on the Typical Section Sheet. Those stumps outside the grubbing limits but with undercut roots shall also be removed.

Stump removal shall be accomplished using a hydraulic mounted excavator unless authorized, in writing, by the Contract Administrator. Grubbing shall be completed before starting excavation and embankment.

3-12 STUMP PLACEMENT

Grubbed stumps shall be placed outside of the clearing limits, as directed by the Contract Administrator and in compliance with all other clauses in this road plan. Stumps shall be positioned upright with root wads in contact with the forest floor and on stable locations.

3-13 STUMPS FOR PUNCHEON MATERIAL

On the following road(s), stumps from within the grubbing limits may be overturned and driven flush with the ground surface for use as subgrade puncheon material.

<u>Road</u>	<u>Stations</u>
25+80 Rd	20+00 – 25+80
1+00 Spur	0+00 – 1+00
H-1068	30+35 – 32+85

SUBSECTION ORGANIC DEBRIS

3-20 ORGANIC DEBRIS DEFINITION

Organic debris is defined as all vegetative material not eligible for removal by Contract Clauses G-010 Products Sold And Sale Area or G-011 Right To Remove Forest Products And Contract Area, that is larger than one cubic foot in volume within the grubbing Typical Section Sheet.

3-21 DISPOSAL COMPLETION

All disposal of organic debris, shall be completed before the application of rock.

3-23 PROHIBITED DISPOSAL AREAS

Organic debris shall not be deposited in the following areas:

- Within 5 feet of a cross drain culvert.
- Within 50 feet of a live stream, or wetland.
- On road subgrades road prism excavation and embankment slopes.
- On slopes greater than 45%.
- Within the operational area for cable landings where debris may shift or roll.
- On locations where brush will fall into the ditch or onto the road surface.
- Against standing timber.

3-24 BURYING ORGANIC DEBRIS RESTRICTED

Organic debris shall not be buried unless otherwise stated in this Road Plan.

3-25 SCATTERING ORGANIC DEBRIS

Organic debris shall be scattered outside of the grubbing limits in accordance with Clause 3-23 unless otherwise detailed in this Road Plan and as directed by the Contract Administrator.

SECTION 4 – EXCAVATION

4-1 EXCAVATOR CONSTRUCTION

All roads shall be constructed, reconstructed, and maintained using a track mounted hydraulic excavator unless stated otherwise within this Road Plan, or permission to do otherwise is granted in writing by the Contract Administrator.

4-2 PIONEERING

Pioneering shall not extend past construction that will be completed during the current construction season. Pioneering shall not extend more than 1000 feet beyond completed construction unless approved in writing by the Contract Administrator. In addition, the following actions shall be taken as pioneering progresses:

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

4-3 ROAD GRADE AND ALIGNMENT STANDARDS

The following road grade and alignment standards shall be followed:

- Grade and alignment shall have smooth continuity, without abrupt changes in direction.
- Maximum grade shall not exceed 18 percent favorable and 16 percent adverse.
- Minimum curve radius is 60 feet at centerline.
- Sag vertical curves shall not have a grade change greater than 5% in 100 feet.
- Crest vertical curves shall not have a grade change greater than 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. The following standards for switchbacks shall be followed:

- Adverse grades on switchbacks shall not exceed 10%.
- Favorable grades through switchbacks shall not exceed 12%.
- Transition grades entering and leaving switchbacks shall not exceed a 5% grade change.
- Transition grades required to meet switchback grade limitations shall be constructed on the tangents preceding and departing from the switchbacks.

4-5 CUT SLOPE RATIO

Unless construction staked or designed excavation slopes shall be constructed no steeper than shown on the following table:

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

4-6 EMBANKMENT SLOPE RATIO

Unless construction staked or designed embankment slopes shall be constructed no steeper than shown on the following table:

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

4-7 SHAPING CUT AND FILL SLOPE

Excavation and embankment slopes shall be constructed 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.

Embankment widening shall be applied equally to both sides of the road to achieve the required width.

4-12 FULL BENCH CONSTRUCTION

On the following roads, where side slopes exceed 45%, Purchaser shall use full bench construction for the entire subgrade width.

SUBSECTION INTERSECTIONS, TURNOUTS AND TURNAROUNDS

4-21 TURNOUTS

Turnouts shall be intervisible with maximum of 1,000 feet between turnouts unless shown otherwise on drawings. Locations shall be adjusted to fit the final subgrade alignment and sight distances. Turnout locations shall be subject to written approval by the Contract Administrator.

4-22 TURNAROUNDS

Turnarounds shall be no larger than 50 feet long and 30 feet wide. Locations shall be subject to written approval by the Contract Administrator.

SUBSECTION DITCH CONSTRUCTION

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

The Purchaser shall construct ditches into the subgrade as specified on the Typical Section Sheet. Excavated slopes shall be consistent with Clause 4-5 Cut Slope Ratio. Ditches shall be constructed concurrently with construction of the subgrade.

4-27 DITCH WORK – MATERIAL USE PROHIBITED

On all roads, pulling ditch material across the road or mixing in with the road surface will not be allowed. Excavated material shall be disposed of as specified in Clause 4-36 through Clause 4-38.

4-28 DITCH DRAINAGE

Ditches must drain to cross-drain culverts or ditchouts.

4-29 DITCHOUTS

Ditchouts shall be constructed at locations shown on the list below, and as needed to fit as built conditions. Ditchouts shall be constructed in a manner that diverts ditch water onto the forest floor and shall have excavation backslopes no steeper than a 1:1 ratio. L or R denotes ditchout left or ditchout right heading in.

<u>Road</u>	<u>Stations</u>	<u>Left or Right</u>
H-1000	380+85 (approx. 10')	Left
H-1009	6+25 (approx. 20')	Left
H-1009	7+50 (approx. 15')	Right
H-1009	9+90 (approx. 20')	Right
H-1009	14+10 (approx. 20')	Left
H-1068	5+35 (approx. 20')	Left
H-1068	6+20 (approx. 20')	Right
H-1073	0+65 (approx. 25')	Left

SUBSECTION WASTE MATERIAL (DIRT)

4-35 WASTE MATERIAL DEFINITION

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

4-36 DISPOSAL OF WASTE MATERIAL

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

4-38 PROHIBITED WASTE DISPOSAL AREAS

Waste material shall not be deposited in the following areas:

- Within 5 feet of a cross drain culvert.
- Within 50 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.

4-39 WASTE AREA COMPACTION

Excavated material may be deposited adjacent to the road prism on side slopes up to 45% if the waste material is compacted and free of debris. On side slopes of 45% or more, all excavation shall be end hauled or pushed to designated waste areas. All waste material shall be compacted. The minimum acceptable compaction is achieved by placing embankments in 2 foot or shallower lifts and routing excavation equipment over the entire width of the lifts, with the exception of side hill embankments too narrow to accommodate excavation equipment which may be placed by end-dumping or sidecasting until sufficiently wide to support the equipment.

SUBSECTION BORROW

4-47 NATIVE MATERIAL

Native material shall be excavated material free of organic debris, trash, and rocks greater than 12" in any dimension.

SUBSECTION SHAPING

4-55 ROAD SHAPING

The road subgrade and surface shall be shaped as shown on the Typical Section Sheet. The subgrade and surface shape shall ensure runoff in an even, un-concentrated manner, and shall be uniform, firm, and rut-free.

4-56 DRY WEATHER SHAPING

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

SUBSECTION COMPACTION

4-60 FILL COMPACTION

Purchaser shall compact all embankment and waste material in accordance with the Compaction List by routing equipment over the entire width of each lift. A plate compactor must be used for areas specifically requiring keyed embankment construction, and embankment segments too narrow to accommodate equipment.

4-61 SUBGRADE COMPACTION

Purchaser shall compact constructed and reconstructed subgrades in accordance with the Compaction List by routing equipment over the entire width, except ditch. Purchaser shall obtain written approval from the Contract Administrator for subgrade compaction before placement of rock.

4-62 DRY WEATHER COMPACTION

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

4-63 EXISTING SURFACE COMPACTION

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

4-64 WASTE MATERIAL COMPACTION

All waste material shall be compacted by running equipment over it or bucket tamping.

4-65 CULVERT BACKFILL COMPACTION

Culvert backfills shall be accomplished by using a jumping jack compactor, performing at least 2 passes per lift, in lifts not to exceed 8 inches.

4-66 COMPACTION BY METHOD

Compaction shall consist of three complete passes over the entire width of each lift with a vibratory drum roller weighing a minimum of 6,000 pounds at a maximum operating speed of 3 mph. For embankment segments too narrow to accommodate a drum roller, a plate compactor shall be used.

SECTION 5 – DRAINAGE

5-3 PUNCHEON PLACEMENT

On the following road(s), puncheon shall be utilized in the subgrade on the following road. Puncheon shall consist of logs of at least 4 inches in diameter and shall be at least 17 feet long.

<u>Road</u>	<u>Stations</u>
25+80 Rd	20+00 – 25+80
1+00 Spur	0+00 – 1+00
H-1068	30+35 – 32+85

SUBSECTION CULVERTS

5-5 CULVERTS

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

5-6 USED CULVERT MATERIAL

The Purchaser may install used culverts on the following roads. All other roads shall have new culverts installed.

<u>Road</u>	<u>Stations</u>
1+00	0+10
25+80 Rd	21+00, 23+50, 24+55
H-1068	31+75

5-11 UNUSED MATERIALS STATE PROPERTY

On required roads, any materials listed on the Culvert List and Rock List that are not installed shall become the property of the State. Purchaser shall stockpile materials as directed by the Contract Administrator.

SUBSECTION CULVERT INSTALLATION

5-15 CULVERT INSTALLATION

Installation shall be in accordance with the Typical Cross Drain Culvert Installation Detail, Typical Type Ns Np Culvert Installation 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 shall be installed in a manner consistent with the manufacturer's recommendations.

5-17 CROSS DRAIN SKEW AND SLOPE

Cross drains on road grades in excess of 3% shall 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. Where the cross drain is at the low point in the road, culverts shall not be skewed. Cross drain culverts shall 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 shall be installed with a depth of cover of not less than 18 inches of compacted depth over the top of the culvert at the shallowest point. Stream crossing culverts shall be installed with a depth of cover specified in the Engineer's design, Type Ns Np Typical Detail Sheet, or to the minimum depth recommended by the culvert manufacturer for the type of cover material over the pipe, whichever is greater.

SUBSECTION ENERGY DISSIPATERS

5-20 ENERGY DISSIPATERS

Energy dissipaters shall be installed to prevent erosion and are subject to approval by the Contract Administrator. Rock shall weigh at least 10 pounds and be placed by zero-drop-height method. Energy dissipater shall extend a minimum of ¾ foot to each side of the culvert at the outlet and a minimum of 2 feet beyond the outlet.

5-21 DOWNSPOUTS AND FLUMES

Downspouts and flumes longer than 10 feet shall be staked on both sides at maximum intervals of 10 feet with 6-foot heavy-duty steel posts or 1 ½" X 3/16" angle iron, and fastened securely to the posts with No. 10 galvanized smooth wire, or bolted using minimum 5/16" bolts and 2 washers per bolt, in accordance with the Culvert Installation Typical Details Page.

SUBSECTION CATCH BASINS, HEADWALLS, AND ARMORING

5-25 CATCH BASINS

Catch basins shall be constructed to resist erosion. Approximate dimensions are 1-2 feet deep, 1-2 feet wide, and 2-4 feet long.

5-26 HEADWALLS FOR CROSS DRAIN CULVERTS

Headwalls shall be constructed in accordance with the Typical Cross Drain Culvert Installation Detail at all cross drain culverts that specify the placement of rock. Rock used for headwalls shall consist of oversize or quarry spall material. Rock shall be placed on shoulders, slopes, and around culvert inlets and outlets. Rock shall not restrict the flow of water into culvert inlets or catch basins. No end dumping of rock is allowed.

SECTION 6 – ROCK AND SURFACING

SUBSECTION ROCK SOURCE

6-2 ROCK SOURCE ON STATE LAND

Rock used in accordance with the quantities on the Rock List may be obtained from the following source(s) on state land at no charge to the Purchaser. Use of material from any other source must have prior written approval from the Contract Administrator. If other operators are using, or desire to use, the rock source(s), a joint operating plan shall be developed. All parties shall follow this plan. The Purchaser shall notify the Contract Administrator a minimum of 5 calendar days before starting any operations in the listed locations.

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
Virginia Falls Pit	T27 R10W Sec 32	Pit Run Ballast
Dry Creek Pit	T26 R11W Sec 15	Oversized / Crushed Rock

6-3 ROCK SOURCE STATE LAND, EXISTING STOCKPILE

Rock used in accordance with the quantities on the Rock List may be obtained from the following existing stockpile(s) on state land at no charge to the Purchaser. Purchaser shall remove no more than 560 cubic yards of 1 ¼”minus crushed rock.

<u>Source</u>	<u>Location</u>	<u>Quantity (yd³)</u>
Dry Creek Pit	T26 R11W Sec 15	560 yd ³

6-5 ROCK FROM COMMERCIAL SOURCE

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

SUBSECTION ROCK SOURCE DEVELOPMENT

6-10 ROCK SOURCE DEVELOPMENT PLAN BY STATE

All rock source development and use shall be in accordance with a written Rock Source Development and Reclamation Plan prepared by the State and included in this Road Plan. Rock source operations shall be conducted as directed by the Contract Administrator and in accordance with the plan. Upon completion of operations, the rock source shall be left in the condition specified in the Rock Source Development and Reclamation Plan, and approved in writing by the Contract Administrator. The Purchaser shall notify the Contract Administrator a minimum of 5 calendar days before starting any operations in the rock source.

6-12 ROCK SOURCE SPECIFICATIONS

Rock sources shall be in accordance with the following unless otherwise specified in Rock Source Development and reclamation plan:

- Pit walls shall not be undermined or over-steepened. The maximum slope of the walls shall 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 shall be maintained in a condition to minimize the possibility of the walls sliding or failing.
- The width of pit benches shall be a minimum of 1.5 times the maximum length of the largest machine used.
- The surface of pit floors and benches shall be uniform and free-draining at a minimum 2% outslope gradient.

- All operations shall 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.
- Block all vehicle access to the top of the pit faces.

SUBSECTION ROCK SOURCE DEVELOPMENT

6-15 REQUIRED ROCK SOURCE WORK

The following rock source work is required. Work is to be done according to the approved Rock Source Development And Reclamation Plan and as directed by the Contract Administrator.

<u>Site</u>	<u>Requirements</u>
Virginia Falls Pit	Strip approximately 0.23 acres to useable rock as directed by the Contract Administrator. Stripping must be completed before Pre haul maintenance.

SUBSECTION ROCK GRADATIONS

6-28 1 ¼-INCH MINUS CRUSHED ROCK

% Passing 1 ¼" square sieve	100%
% Passing 5/8" square sieve	50 - 80%
% Passing U.S. #4 sieve	30 - 50%
% Passing U.S. #40 sieve	3 - 18%
% Passing U.S. #200 sieve	5%

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

6-52 OVERSIZE

% Passing 8" square sieve	100%
% Passing 4" square sieve	0%

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

SUBSECTION ROCK MEASUREMENT

6-55 ROCK APPLICATION MEASURED BY COMPACTED DEPTH

Measurement of specified rock depths are defined as the compacted depth(s) using the compaction methods required in this Road Plan. Estimated quantities specified in the Rock List are estimated truck yards. Purchaser shall apply adequate amounts of rock to meet the specified rock depths. Specified rock depths are minimum requirements and are not subject to reduction.

SUBSECTION ROCK APPLICATION

6-70 APPROVAL BEFORE ROCK APPLICATION

Subgrade drainage installation including grading and compaction, shall be completed and approved in writing by the Contract Administrator, before rock application.

6-71 ROCK APPLICATION

Rock shall be applied in accordance with the specifications and quantities shown on the Rock List. Rock shall be spread, shaped, and compacted full-width concurrent with rock hauling operations. Rock shall be compacted in accordance with Compaction List, in lifts not to exceed 6 inches.

6-72 ROCK APPLICATION AFTER HAULING

On the following road(s), upon completion of all hauling operations, Purchaser shall apply 1 1/4" minus crushed rock or Pit run rock in accordance with the quantities shown on the Rock List.

<u>Road</u>	<u>Stations</u>	<u>Amount</u>	<u>Type</u>
H-1000	140+50 – 386+25	300 yd ³	Crushed Rock
H-1009	0+00 – 14+10	100 yd ³	Pit Run

6-73 ROCK FOR WIDENED PORTIONS

Turnarounds, turnouts, and areas with curve widening shall have rock applied to the same depth and specifications as the traveled way.

6-78 ROCK FOR SPOT PATCHING

Rock for spot patching shall be applied before any grading is done and before any rock lifts are applied. Once applied, spot patches shall be graded into the existing running surface.

SECTION 7 – STRUCTURES

SUBSECTION STREAM CROSSING STRUCTURES GENERAL

7-5 STRUCTURE DEBRIS

The Purchaser shall ensure that debris from the installation or removal of structures does not enter any stream. Components removed from the existing structures(s) shall be placed at designated site(s), as directed in writing by the Contract Administrator. The Purchaser is responsible for maintaining a clean jobsite, with all materials stored away from any high water mark or other area presenting a risk of the materials entering a stream. Debris entering any stream shall be removed immediately and placed in the site(s) designated for stockpiling or disposal. The Purchaser is responsible for retrieving all material carried downstream from the jobsite by the stream current.

7-6 STREAM CROSSING INSTALLATION

Installation of stream crossing structures shall be in accordance with the manufacturer's requirements, and as directed by the District Engineer or their designee.

SECTION 8 – EROSION CONTROL

8-1 SEDIMENT CONTROL STRUCTURES

On the following road(s), sediment control shall be accomplished as listed below.

<u>Road</u>	<u>Stations</u>	<u>Left or Right</u>	<u>Comments</u>
H-1000	361+75 – 364+50	Left and Right	Roadside Crushed rock Berms
H-1000	378+75 – 379+40	Right	Roadside Crushed rock Berms
H-1000	380+25	Right	Silt fence
25+80 Rd	11+25	Right	Silt fence
H-1068	24+50	Left	Silt fence
H-1068	28+95 – 30+00	Left	Roadside Crushed Rock Berms

8-2 PROTECTION FOR EXPOSED SOIL

Purchaser shall furnish and evenly spread a 3-inch layer of straw to all exposed soils at stream culvert installations. Soils shall not be allowed to sit exposed during any rain event.

SUBSECTION REVEGETATION

8-15 REVEGETATION

Purchaser shall grass seed and hay mulch all exposed soils including, but not limited to, stream culverts, waste areas, sidecast pull back areas, stream crossing removals, bridge installations, and other areas directed by the Contract Administrator. Revegetation of exposed soils shall be accomplished by manual dispersal of grass seed unless otherwise detailed in this Road Plan. Other methods of revegetation must be approved in writing by the Contract Administrator.

8-16 REVEGETATION SUPPLY

All seed, mulch, hay, matting, etc. will be provided by the Purchaser.

8-17 REVEGETATION TIMING

Purchaser shall perform revegetation during the first available opportunity. Soils shall not be allowed to sit exposed for longer than one month without receiving revegetation treatment unless otherwise approved in writing by the Contract Administrator. Soils shall not be allowed to sit exposed during any rain event.

8-18 PROTECTION FOR SEED

Purchaser shall provide a protective cover over the revegetated area. The protective cover may consist of, but not be limited to, such items as dispersed hay mulch 3" thick.

8-19 ASSURANCE FOR SEEDED AREA

The Purchaser shall be responsible to ensure a uniform and dense crop of grass. The Purchaser shall reapply the seed and/or mulch in areas that have been damaged through any cause, before approval from the Contract Administrator. The Purchaser shall restore eroded or disturbed areas, clean up and properly dispose of eroded materials, and reapply the seed and/or mulch at no additional cost to the state.

SUBSECTION SEED, FERTILIZER, AND MULCH

8-25 GRASS SEED

Purchaser shall evenly spread the seed mixture listed below on all exposed soils at a rate of 60 pounds per acre of exposed soil.

<u>Seed Species</u>	<u>% by Weight</u>
• Perennial Ryegrass	40.00
• Creeping Red Fescue	40.00
• White Dutch Clover	10.00
• Colonial Bentgrass	10.00

Grass seed shall meet the following specifications:

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

SECTION 9 – POST-HAUL ROAD WORK

SUBSECTION POST-HAUL MAINTENANCE

9-5 POST-HAUL MAINTENANCE

Post-haul maintenance shall be performed in accordance with the Forest Access Road Maintenance Specifications and as specified below.

<u>Road</u>	<u>Stations</u>	<u>Additional Requirements</u>
All	All	Clean culverts, clean ditches, grade road shape and compact as directed by the Contract Administrator
H-1000	140+50 – 386+25	Apply post haul rock as per Clause 6-72.
H-1009	0+00 – 14+10	Apply post haul rock as per Clause 6-72.

SUBSECTION POST-HAUL LANDING MAINTENANCE

9-10 LANDING DRAINAGE

On all roads, Purchaser shall provide for drainage of the landing surface as approved in writing by the Contract Administrator.

9-11 LANDING EMBANKMENT

On all roads, landing embankments shall be sloped to original construction specifications.

SUBSECTION DEACTIVATION AND ABANDONMENT

9-20 ROAD DEACTIVATION

The following road(s) shall be deactivated by the Purchaser before the termination of this contract.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
1+00 Spur	0+00 – 1+00 Spur	Light Deactivation
25+80 Rd	20+00 – 25+80	Light Deactivation
H-1068	30+35 – 32+85	Light Deactivation

9-22 LIGHT DEACTIVATION

Deactivation shall consist of:

1. Removing all culverts. Resulting back slopes shall be 1:1 or shallower. Material removed shall be placed on the roadbed and compacted, with slopes of 2:1 or shallower. Culverts removed shall become the property of the Purchaser and removed from State land.
2. Construct non-drivable water bars as directed by the Contract Administrator. On grades in excess of 3%, non-drivable water bars shall be skewed 30 degrees from the perpendicular of the road centerline.
3. Restore all ditchouts to drain water.
4. Repair or construct ditchlines.
5. Remove any berms, except as directed.
6. Restoration of natural stream channels across road prism, as directed by the Contract Administrator.
7. Removing all fill material as approved by the Contract Administrator.
8. All material from fill removals, culvert removals, and bridge removals shall be placed on roadbed and compacted, except that material listed in Clause 4-37.

9. Purchaser shall furnish and apply grass seed to all areas of exposed soil, including but not limited to: water bars, waste piles, and culvert removal sites. Grass seed shall be applied at a rate of 60 pounds per acre.

10. Block road to vehicular traffic using logs, slash, and stumps, as directed by the Contract Administrator.

SECTION 10 MATERIALS

SUBSECTION CULVERTS

10-15 CORRUGATED STEEL CULVERT

Metallic coated steel culverts shall meet AASHTO M-36 (ASTM A-760) specifications. Culverts shall be aluminized (aluminum type 2 coated meeting AASHTO M-274).

10-17 CORRUGATED PLASTIC CULVERT

Polyethylene culverts shall meet AASHTO M-294 specifications. Culverts shall be Type S – double walled with a corrugated exterior and smooth interior.

10-20 FLUME AND DOWNSPOUT

Downspouts and flumes shall meet the AASHTO specification designated for the culvert. Plastic downspouts and flumes shall be Type S – double walled with a corrugated exterior and smooth interior.

10-21 METAL BAND

Metal coupling and end bands shall meet the AASHTO specification designated for the culvert and shall have matching corrugations. On culverts 24 inches and smaller, bands shall have a minimum width of 12 inches. On culverts over 24 inches, bands shall have a minimum width of 24 inches.

10-22 PLASTIC BAND

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

10-23 RUBBER CULVERT GASKETS

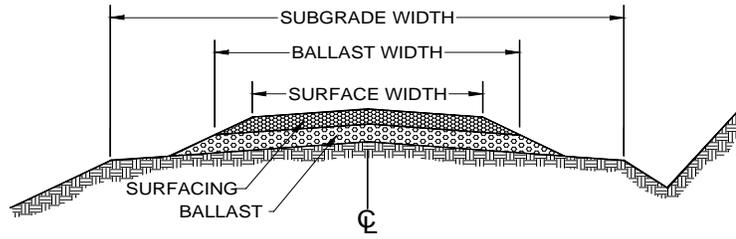
Rubber gaskets must be continuous closed cell, synthetic expanded rubber gaskets conforming to the requirements of ASTM D 1056. Rubber gaskets must be used with all corrugated metal pipe coupling bands.

10-24 GAGE AND CORRUGATION

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

<u>Diameter</u>	<u>Gage</u>	<u>Corrugation</u>
18"	16 (0.064")	2 ² / ₃ " X 1/2"
24" to 42"	14 (0.079")	2 ² / ₃ " X 1/2"
48" to 54"	12	3" X 1"
60" +	10	5" X 1"

ROCK LIST SHEET

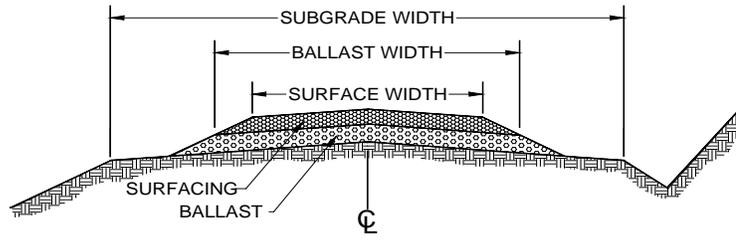


SECTION VIEW

1. Rock quantities, subtotals and totals are "truck measure" estimates. Rock shall be applied to at least the depths listed.
2. All depths are compacted depths.
3. Rock slopes shall be 1½ (H) : 1 (V).
4. All rock sources are subject to approval by the Contract Administrator.
5. Pitrun is defined as pitrun or ballast per Line 6. Crushed is defined as any crushed rock from ¼" minus to 4" minus per Line 6. Oversize is defined as oversize, quarry spalls, light loose rip rap, or heavy loose rip rap per Line 6.
6. Rock sources ---1: Virginia Falls Pit Ballast, 2: Dry Creek Clark1 ¼" minus, 3: Dry Creek Pit Oversized

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Pitrun SOURCE	Pitrun WIDTH (ft)	Pitrun DEPTH (in)	Pitrun Quantity(yd³/sta)	Pitrun SUBTOTAL(yd³)	Crushed SOURCE	Crushed WIDTH (ft)	Crushed DEPTH (in)	Crushed Quantity(yd³/sta)	Crushed Subtotal(yd³)	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd³)
H-1000															
Misc.	140+50	386+25							2				200		
Rock Berm	361+75	364+50							2				40		
Rock Berm	378+75	379+40							2				10		
Culvert	380+85			1				10	2				10		
Post Haul	140+50	386+25							2				300		
25+80 Rd.															
Lift	0+00	20+00		1	12	6	35	700							
Turnaround	6+15			1				50							
Turnout	13+45			1				20							
Lift	20+00	25+80	17	1	12	18	110	640							
Culvert	21+00			1				20							
Culvert	23+50			1				20							
Culvert	25+55			1				20							
Landing	25+80			1				50							
1+45 Spur															
Lift	0+00	1+45		1	12	6	35	50							
Landing	1+45			1				50							
H-1009															
Lift	0+00	14+10		1	12	6	35	500							
Culvert	14+10			1				20							
Totals:								2150					560		

ROCK LIST SHEET CONTINUED

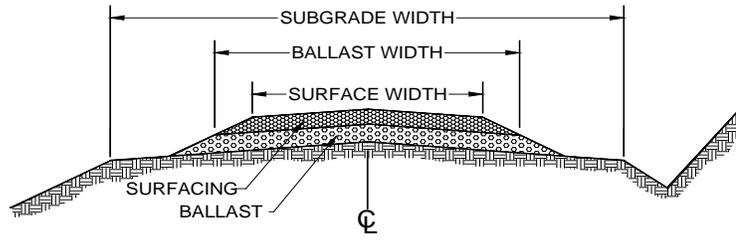


SECTION VIEW

1. Rock quantities, subtotals and totals are "truck measure" estimates. Rock shall be applied to at least the depths listed.
2. All depths are compacted depths.
3. Rock slopes shall be 1½ (H) : 1 (V).
4. All rock sources are subject to approval by the Contract Administrator.
5. Pitrun is defined as pitrun or ballast per Line 6. Crushed is defined as any crushed rock from ¼" minus to 4" minus per Line 6. Oversize is defined as oversize, quarry spalls, light loose rip rap, or heavy loose rip rap per Line 6.
6. Rock sources ---1: Virginia Falls Pit Ballast, 2: Dry Creek Clark1 ¼" minus, 3: Dry Creek Pit Oversized

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Pitrun SOURCE	Pitrun WIDTH (ft)	Pitrun DEPTH (in)	Pitrun Quantity(yd ³ /sta)	Pitrun SUBTOTAL(yd ³)	Crushed SOURCE	Crushed WIDTH (ft)	Crushed DEPTH (in)	Crushed Quantity(yd ³ /sta)	Crushed Subtotal(yd ³)	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd ³)
H-1009 Cont.															
Post Haul	0+00	14+10		1				100							
1+00 Spur															
Lift	0+00	1+00	17	1	12	18	110	110							
Culvert	0+10			1				20							
H-1068															
Lift	0+00	30+35		1	12	6	35	1060							
Turnaround	5+25			1				50							
Turnaround	7+15			1				50							
Turnout	10+50			1				20							
Culvert	15+75			1				20							
Turnout	16+30			1				20							
1/2 Lane Lift	20+90	23+15		1	6	18	55	130							
1/2 Lane Lift	23+15	24+50		1	6	48	185	250							
Culvert	23+95			1				20						3	5
1/4 Lane Lift	24+50	25+15		1	3	24	40	30							
Culvert	25+10			1				20							
1/2 Lane Lift	25+15	26+90		1	6	24	80	140							
Culvert	26+65			1				20						3	5
1/4 Lane Lift	26+90	27+50		1	3	24	40	30							
Culvert	27+05			1				20							
Totals:								2110							10

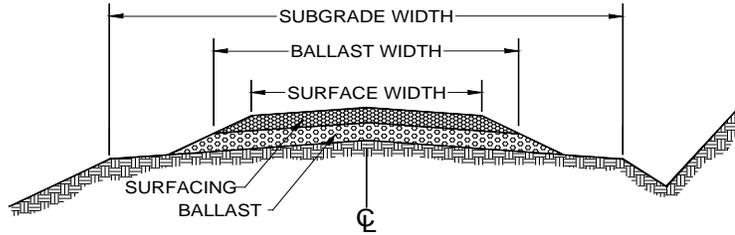
ROCK LIST SHEET CONTINUED



1. Rock quantities, subtotals and totals are "truck measure" estimates. Rock shall be applied to at least the depths listed.
2. All depths are compacted depths.
3. Rock slopes shall be 1½ (H) : 1 (V).
4. All rock sources are subject to approval by the Contract Administrator.
5. Pitrun is defined as pitrun or ballast per Line 6. Crushed is defined as any crushed rock from ¼" minus to 4" minus per Line 6. Oversize is defined as oversize, quarry spalls, light loose rip rap, or heavy loose rip rap per Line 6.
6. Rock sources ---1: Virginia Falls Pit Ballast, 2: Dry Creek Clark 1 ¼" minus, 3: Dry Creek Pit Oversized

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Pitrun SOURCE	Pitrun WIDTH (ft)	Pitrun DEPTH (in)	Pitrun Quantity(yd ³ /sta)	Pitrun SUBTOTAL(yd ³)	Crushed SOURCE	Crushed WIDTH (ft)	Crushed DEPTH (in)	Crushed Quantity(yd ³ /sta)	Crushed Subtotal(yd ³)	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd ³)
H-1068 Cont.															
Rock Berm	28+95	30+00		1				20							
Lift	30+35	32+85	17	1	12	18	100	280							
Culvert	31+75			1				20							
Landing	32+85			1				50							
1+05 Spur															
Lift	0+00	1+05		1	12	6	35	40							
H-1073															
Lift	0+00	26+60		1	12	6	35	930							
Culvert	0+25			1				20							
Turnout	8+25			1				20							
Culvert	21+00			1				20							
Landing	26+60			1				50							
H-1073.1															
Lift	0+00	5+75		1	12	6	35	200							
Culvert	0+10			1				20							
Culvert	1+95			1				20							
Lift	5+75	30+15	17	1	12	18	110	2690							
Culvert	12+45			1				20							
Totals:								4400							

ROCK LIST SHEET CONTINUED



1. Rock quantities, subtotals and totals are "truck measure" estimates. Rock shall be applied to at least the depths listed.
2. All depths are compacted depths.
3. Rock slopes shall be 1½ (H) : 1 (V).
4. All rock sources are subject to approval by the Contract Administrator.
5. Pitrun is defined as pitrun or ballast per Line 6. Crushed is defined as any crushed rock from ¼" minus to 4" minus per Line 6. Oversize is defined as oversize, quarry spalls, light loose rip rap, or heavy loose rip rap per Line 6.
6. Rock sources ---1: Virginia Falls Pit Ballast, 2: Dry Creek Clark 1 ¼" minus, 3: Dry Creek Pit Oversized

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Pitrun SOURCE	Pitrun WIDTH (ft)	Pitrun DEPTH (in)	Pitrun Quantity(yd ³ /sta)	Pitrun SUBTOTAL(yd ³)	Crushed SOURCE	Crushed WIDTH (ft)	Crushed DEPTH (in)	Crushed Quantity(yd ³ /sta)	Crushed Subtotal(yd ³)	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd ³)
H-1073.1 Cont.															
Culvert	12+75			1				20							
Culvert	17+15			1				20							
Culvert	20+50			1				20							
Totals:								60							
Grand Totals:								8720					560		10

CULVERT LIST

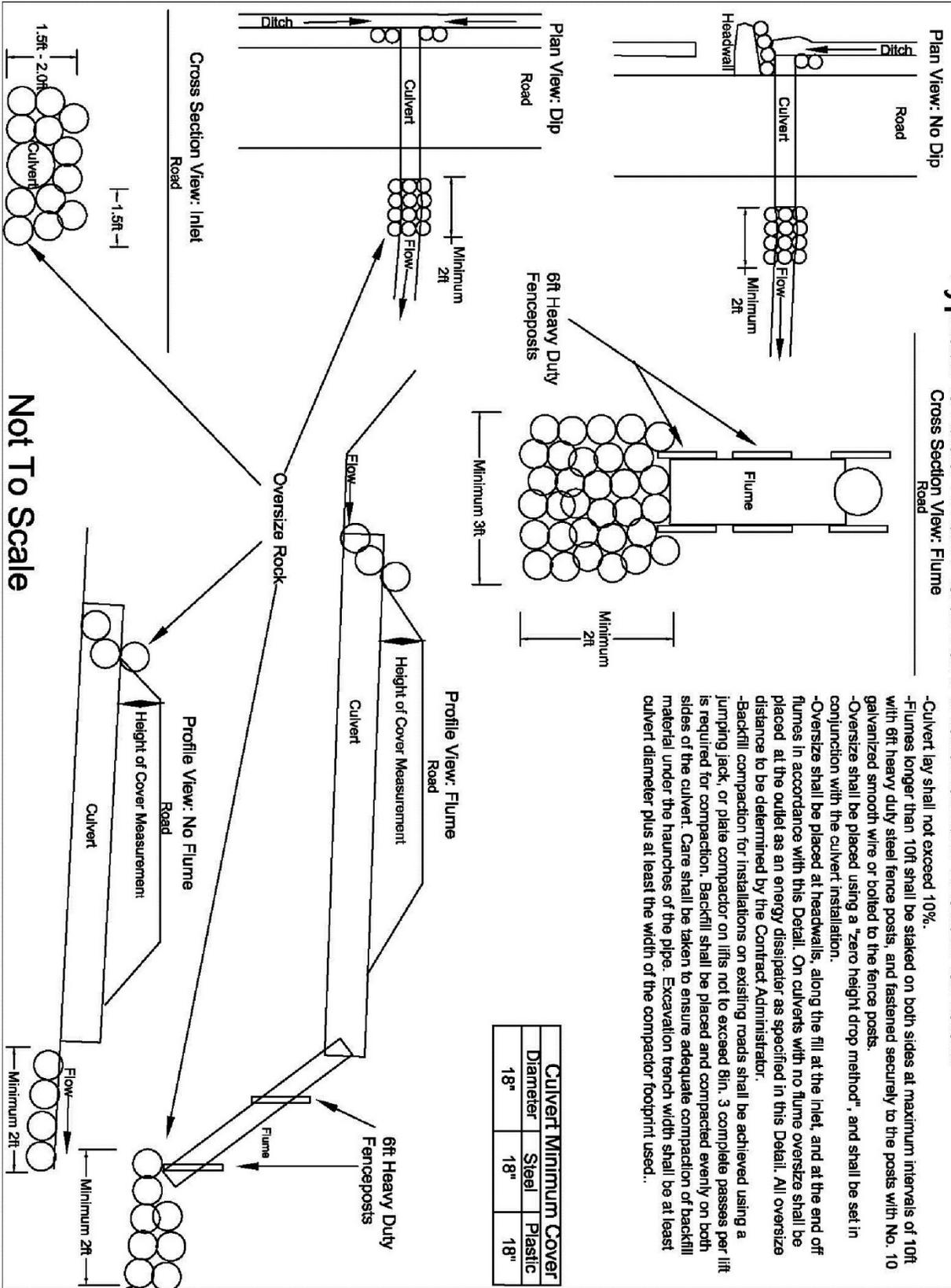
ROAD NAME	STATION	CULVERT DIAMETER (in)	CULVERT LENGTH (ft)	FLUME LENGTH (ft)	RIP RAP - INLET (cy)	RIP RAP - OUTLET (cy)	BACKFILL MATERIAL	NOTES
H-1000	379+40							Headwall installation
H-1000	380+85	24	32				PR	New culvert
25+80 Rd	15+30							Clean inlet and outlet
25+80 Rd	21+00	18	26				PR	New culvert
25+80 Rd	23+50	24	26				PR	New culvert
25+80 Rd	24+55	24	26				PR	New culvert
H-1009	14+10	18	30				PR	New culvert
1+00 Spur	0+10	18	40				PR	Culvert install/ Remove culvert during deactivation
H-1068	12+05							Clean inlet
H-1068	15+75	18	26				PR	New culvert
H-1068	21+75							Clean inlet
H-1068	23+95	24	44				PR	Replace culvert
H-1068	25+10							Culvert removal
H-1068	26+65	24	46	30			PR	New culvert and flume
H-1068	27+10	18	30				PR	Culvert replace
H-1068	28+95							Clean inlet
H-1068	31+75	24	26				PR	New culvert
H-1073	0+25	18	28				PR	New culvert
H-1073	3+00							Clean inlet
H-1073	21+00	18	30				PR	New culvert
H-1073.1	0+10	18	40				PR	New culvert
H-1073.1	1+95	18	28				PR	New culvert
H-1073.1	12+45	24	26				PR	New culvert
H-1073.1	12+75	18	26				PR	New culvert
H-1073.1	17+15	18	26				PR	New culvert
H-1073.1	20+50	18	26				PR	New culvert

All rip rap shall be Oversize unless specified in the Rock List, or in the field.
All backfill shall be native material (NT) unless specified otherwise. CR= 1 1/4"- crushed rock,
PR=Pit Run Rock

COMPACTION LIST

Road	Stations	Type	Max Depth Per Lift (inches)	Equipment Type	Minimum Equipment Weight (lbs)	Minimum Number of Passes	Maximum Operating Speed (mph)
Pre-haul	All	Culvert Backfill	8"	Jumping Jack		3	
Pre-haul	All	Rock Lifts	6"	Vibratory Smooth Drum	6,000	3	3
Construction	All	Subgrade (Except Puncheon)	6"	Vibratory Smooth Drum	6,000	2	3
Construction	All	Rock Placement	6"	Vibratory Smooth Drum	6,000	2	3
Post-haul Maintenance H-1000, H-1009	All	Rock Placement	6"	Vibratory Smooth Drum	6,000	2	3

Typical Cross Drain Culvert Installation Detail Sheet.



-Culvert lay shall not exceed 10%.

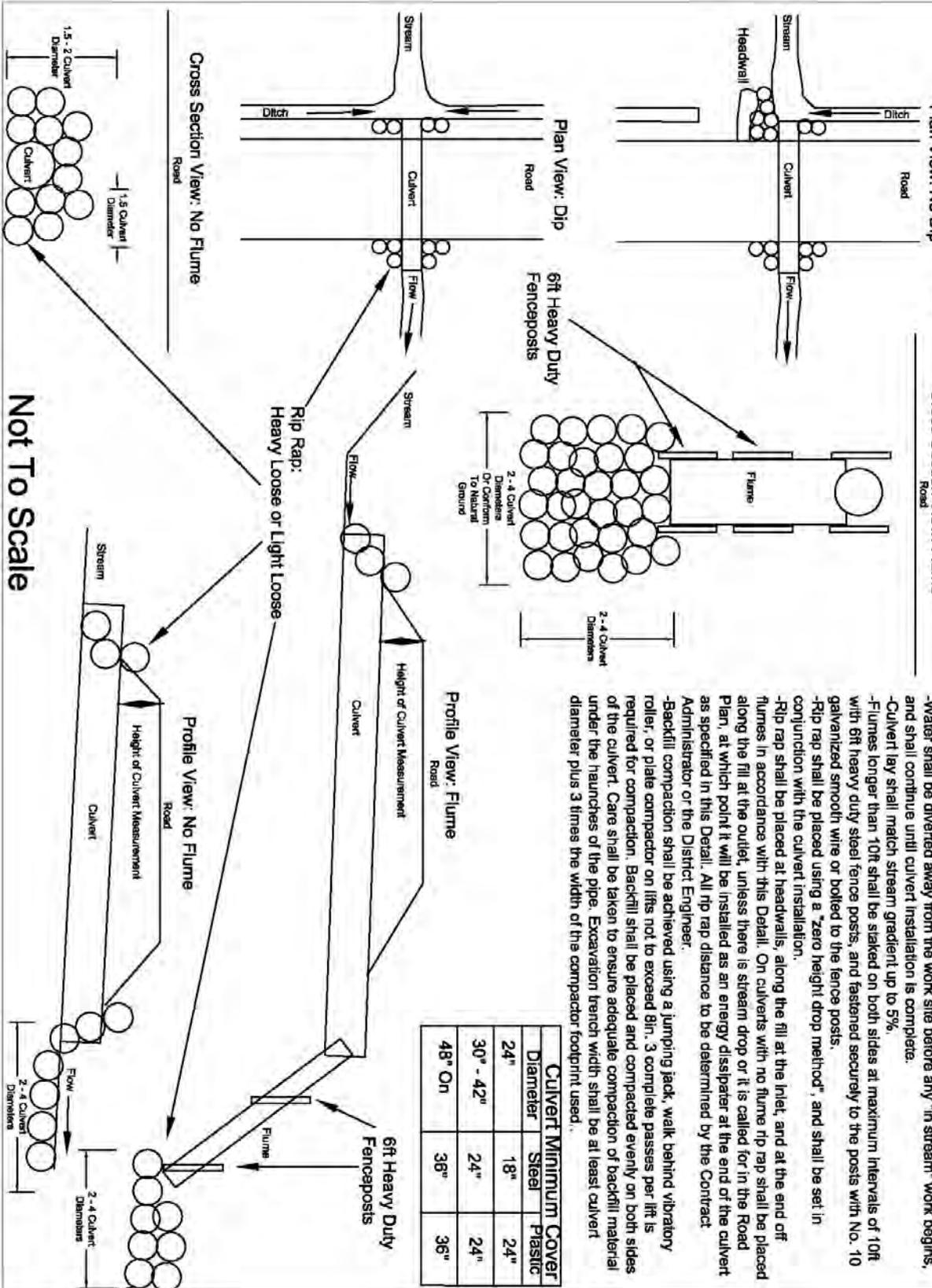
-Fumes longer than 10ft shall be staked on both sides at maximum intervals of 10ft with 6ft heavy duty steel fence posts, and fastened securely to the posts with No. 10 galvanized smooth wire or bolted to the fence posts.

-Oversize shall be placed using a "zero height drop method", and shall be set in conjunction with the culvert installation.

-Oversize shall be placed at headwalls, along the fill at the inlet, and at the end of fumes in accordance with this Detail. On culverts with no fume oversize shall be placed at the outlet as an energy dissipater as specified in this Detail. All oversize distance to be determined by the Contract Administrator.

-Backfill compaction for installations on existing roads shall be achieved using a jumping jack, or plate compactor on lifts not to exceed 8in. 3 complete passes per lift is required for compaction. Backfill shall be placed and compacted evenly on both sides of the culvert. Care shall be taken to ensure adequate compaction of backfill material under the haunches of the pipe. Excavation trench width shall be at least culvert diameter plus at least the width of the compactor footprint used.

Typical Type Ns, Np Culvert Installation Detail Sheet.



-Water shall be diverted away from the work site before any "in stream" work begins, and shall continue until culvert installation is complete.

-Culvert lay shall match stream gradient up to 5%.

-Flumes longer than 10ft shall be staked on both sides at maximum intervals of 10ft with 6ft heavy duty steel fence posts, and fastened securely to the posts with No. 10 galvanized smooth wire or bolted to the fence posts.

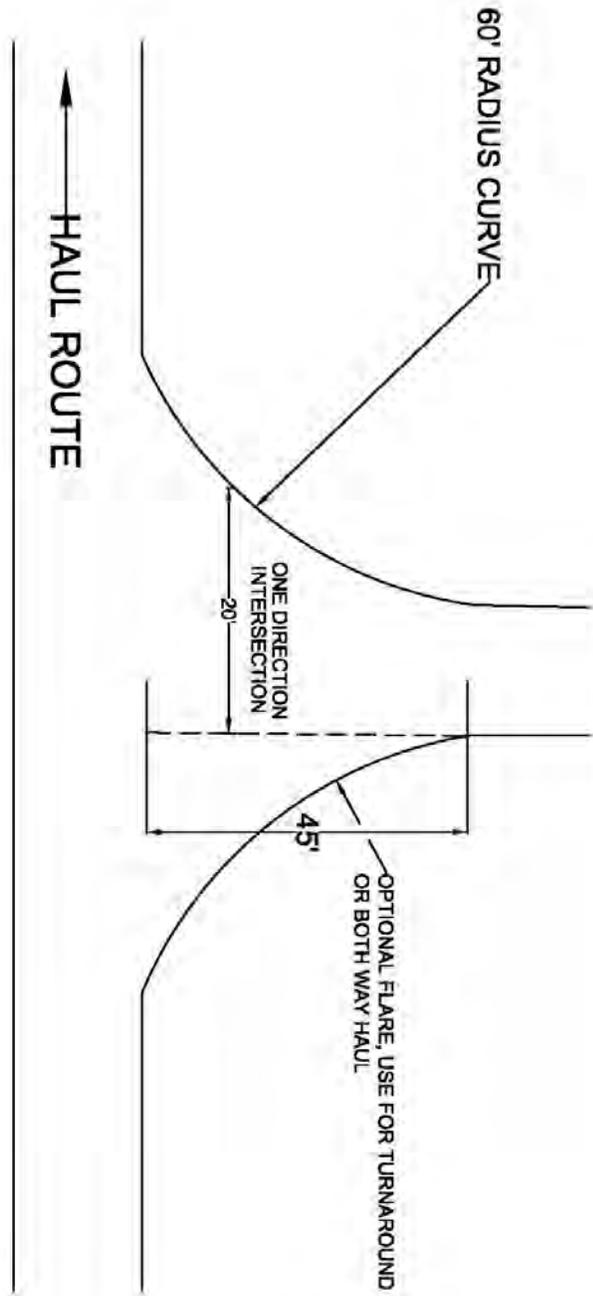
-Rip rap shall be placed using a "zero height drop method", and shall be set in conjunction with the culvert installation.

-Rip rap shall be placed at headwalls, along the fill at the inlet, and at the end of flumes in accordance with this Detail. On culverts with no flume rip rap shall be placed along the fill at the outlet, unless there is stream drop or it is called for in the Road Plan, at which point it will be installed as an energy dissipater at the end of the culvert as specified in this Detail. All rip rap distance to be determined by the Contract Administrator or the District Engineer.

-Backfill compaction shall be achieved using a jumping jack, walk behind vibratory roller, or plate compactor on lifts not to exceed 8in. 3 complete passes per lift is required for compaction. Backfill shall be placed and compacted evenly on both sides of the culvert. Care shall be taken to ensure adequate compaction of backfill material under the haunches of the pipe. Excavation trench width shall be at least culvert diameter plus 3 times the width of the compactor footprint used.

Culvert Minimum Cover			
Diameter	Steel	Plastic	
24"	18"	24"	
30" - 42"	24"	24"	
48" On	36"	36"	

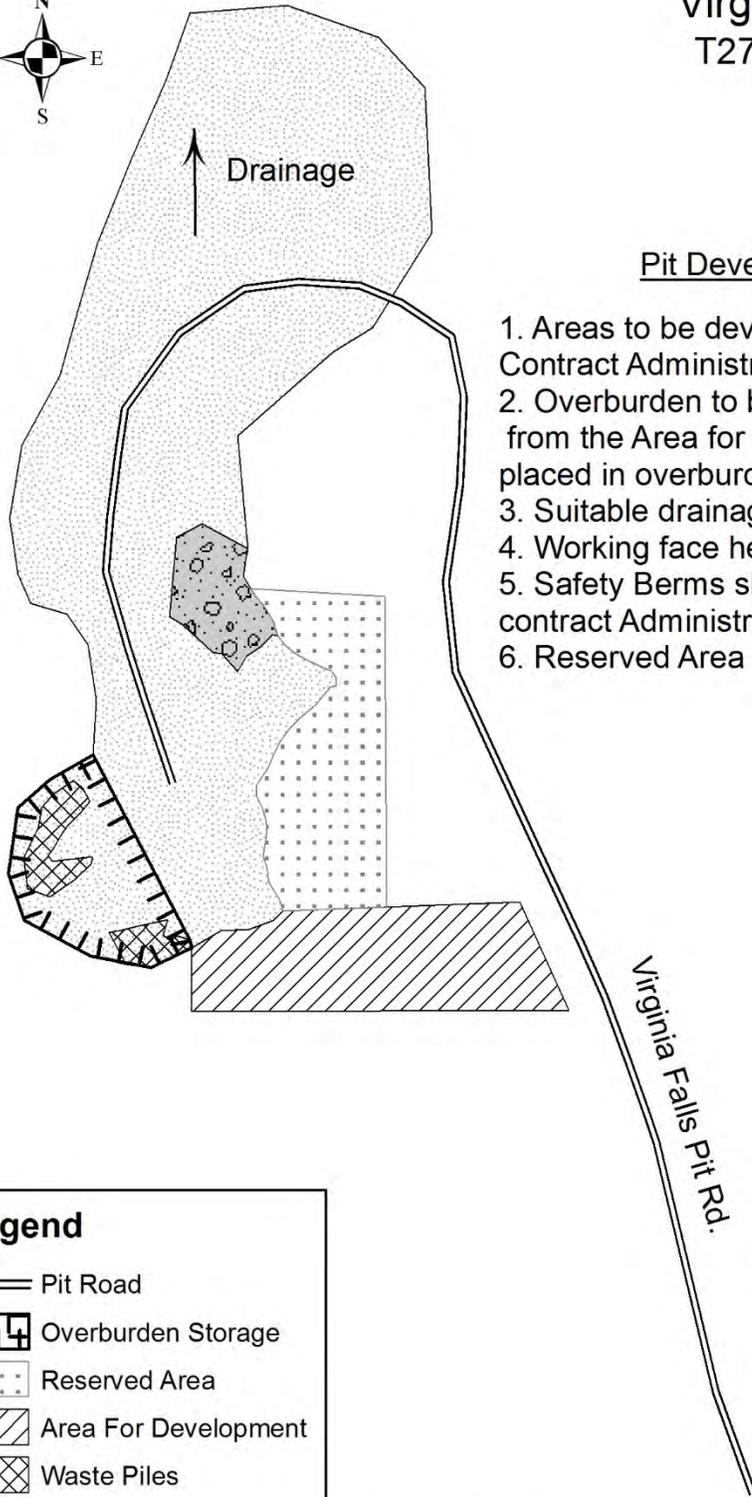
TYPICAL INTERSECTION



NOT TO SCALE

Virginia Fall Pit Plan

T27N R10W Sec. 32



Pit Development Plan

1. Areas to be developed as directed by the Contract Administrator.
2. Overburden to be stripped to useable rock from the Area for development and to be placed in overburden storage area.
3. Suitable drainage shall be maintained at all times.
4. Working face height shall not exceed 15 feet.
5. Safety Berms shall be installed as directed by contract Administrator.
6. Reserved Area shall not be used.

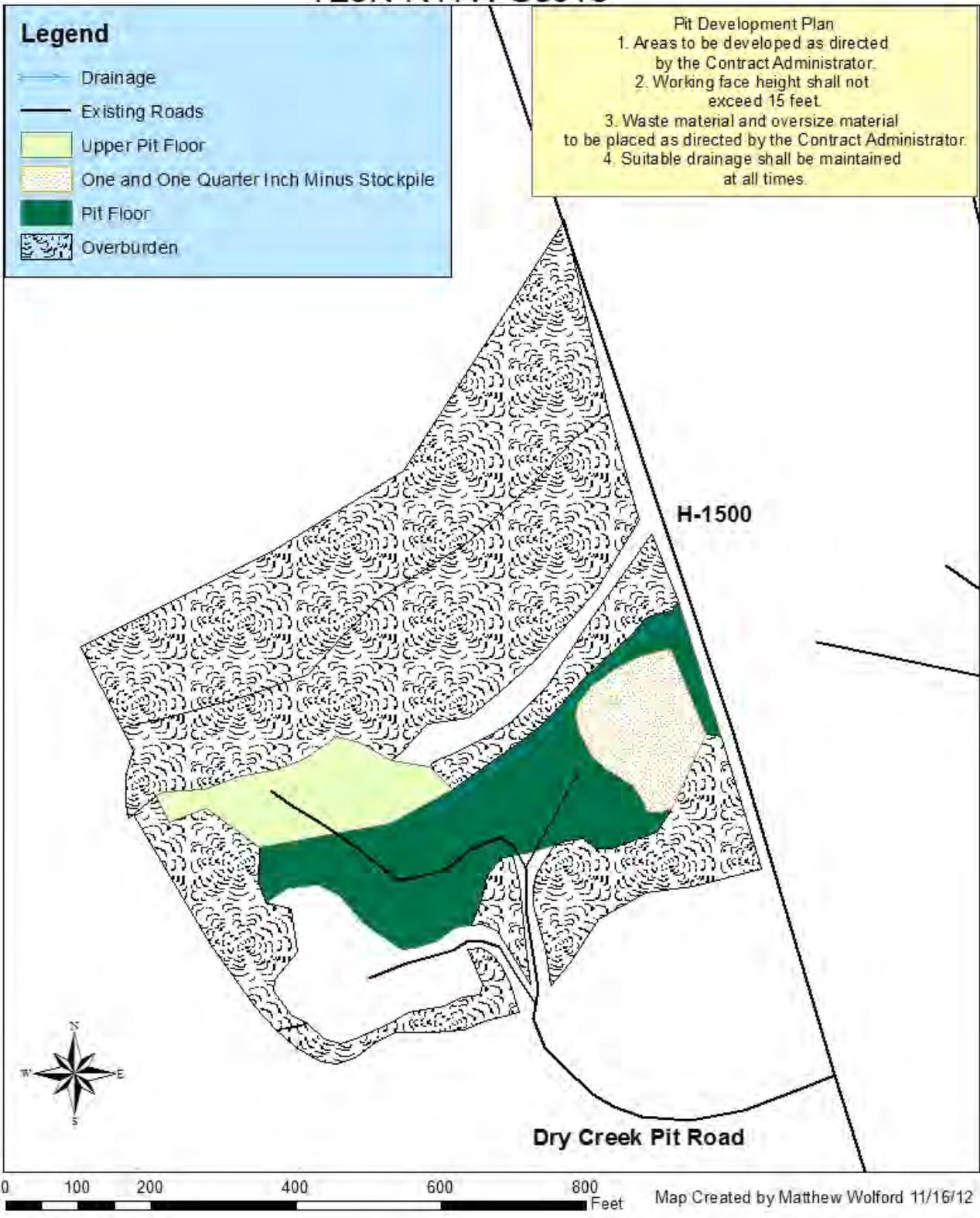
Legend	
	Pit Road
	Overburden Storage
	Reserved Area
	Area For Development
	Waste Piles
	Drain Rock
	Pit Floor



1:1200 (1"=100')

Ellis, 4/2016

Dry Creek Pit Plan T26N R11W Sec15



SUMMARY - Road Development Costs															
SALE NAME:	Rainforest	CONTRACT#:	30-094153	REGION:	Olympic	DISTRICT:	Coast					TOTAL SHEET #2			
LEGAL DESCRIPTION:	T27R10W Sec 31,32 & 33														
ROAD NAME:	25+80 Rd	1-00 Spur	H-1068	H-1073.1	H-1000	H-1009	25+80 Rd	1+45 Spur	H-1068	1+05 Spur	H-1073	TOTAL:	\$36.21		
ROAD TYPE:	Construction	Construction	Construction	Construction	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul		\$36.21		
NUMBER OF STATIONS:	6	1	3	24	246	14	20	1	30	1	27	373.00	265.60		
SIDE SLOPE:	30%	20%	20%	50%	0%	0%	0%	0%	0%	0%	0%				
CLEARING AND GRUBBING:	\$1,230	\$127	\$316	\$5,174	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,846	\$0		
ROAD BRUSHING:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
EXCAVATION AND FILL:	\$1,639	\$226	\$565	\$18,611	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$21,041	\$0		
ROAD GRADING:	\$0	\$0	\$0	\$0	\$104	\$92	\$130	\$9	\$197	\$7	\$173	\$712	\$259		
DITCH CLEANING/CONSTRUCTION:	\$0	\$0	\$0	\$0	\$0	\$815	\$86	\$0	\$1,131	\$0	\$764	\$2,796	\$224		
ROCK TOTALS (Cu. Yds.)/ROCK COSTS:															
Ballast:	8720	8720	750	131	350	2,770	10	520	770	100	1,900	40	1,040	8,380	340
Surface:	560	560	\$6,450	\$1,069	\$2,996	\$26,869	\$116	\$4,624	\$7,184	\$948	\$15,143	\$350	\$11,066	\$7,6814	\$2,912
Over-size:	10	10	\$0	\$0	\$0	\$0	\$2,948	\$0	\$0	\$0	\$0	\$0	\$0	\$2,948	\$3,402
CULVERTS AND FLUMES:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
STRUCTURES:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
MISC. EXPENSES:	\$34	\$6	\$15	\$143	\$57	\$162	\$1,629	\$114	\$2,753	\$82	\$2,128	\$7,123	\$451		
OVERHEAD:	\$1,015	\$208	\$411	\$4,787	\$365	\$572	\$813	\$96	\$2,078	\$40	\$1,387	\$11,771	\$874		
TOTAL COSTS:	\$12,292	\$2,515	\$4,979	\$57,976	\$4,423	\$6,925	\$9,842	\$1,167	\$25,168	\$478	\$16,794	\$142,558	\$9,618		
COST PER STATION:	\$2,119	\$2,515	\$1,992	\$2,376	\$18	\$491	\$492	\$805	\$829	\$456	\$631	\$382	\$36.21		
MOBILIZATION:															
ROAD DEACTIVATION AND ABANDONMENT COSTS:															
Pit Work				\$2,800											
NOTE: This appraisal has no allowance for profit and risk.															
Plans to be furnished by: Greg Ellis															
Sheet 1 of 2															
Compiled by: Greg Ellis															
Date: 4/13/2016															
TOTAL (All Roads) =												\$162,333			
SALE VOLUME MBF =												5,130			
TOTAL COST PER MBF =												\$31.64			
TOTAL COST PER STATION =												\$254.20			

FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

Cuts and Fills

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

Surface

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

Drainage

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

Preventative Maintenance

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

Termination of Use or End of Season

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

Debris

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

