

Washington DNR Timber Sales Program

Updated information is being provided for **Sempre VHR & VDT timber sale documents as follows:**

Documents amended:

Brief Description	DATE
Notice –The following was added to the Special Remarks:	6/10/16
1. The DNR's standard conversion factor is 600 board feet per cord (cord = 128 cubic feet). Cedar salvage forest products removed on a cord basis will be converted to MBF for payment purposes. Approximately 30 cords scattered throughout the Unit #1 (% shingle material and % shake material estimates were not made). This volume equates to approximately 18 mbf of cedar which was added to the 4S in the sale volume above. The cedar salvage material removed on a cord basis will be paid for at a separate rate which is fixed at \$220.00 per mbf.	
ROAD PLAN – Correction to Materials List:	6/10/2016
The diameter for the culvert on the BC-ML Road at station 435+63 has been corrected to 24”.	



TIMBER NOTICE OF SALE

SALE NAME: *SEMPRE VRH & VDT*

AGREEMENT NO: 30-092796

AUCTION: June 15, 2016 starting at 10:00 a.m., **COUNTY:** Skagit
Northwest Region Office, Sedro Woolley, WA

SALE LOCATION: Sale located approximately 13 miles northeast of Arlington, WA.

**PRODUCTS SOLD
AND SALE AREA:**

All timber bounded by white timber sale boundary tags, adjacent young stands and the BC-4210 Road, except trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags and forest products tagged out by blue special management tags in Unit #1 (collectively labeled 1 and 1B).

All timber bounded by white timber sale boundary tags and the BC-4232 Road, except trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags, forest products tagged out by blue special management tags and cedar snags, preexisting dead and down cedar trees and cedar logs in Unit #2.

All timber bounded by white timber sale boundary tags, except trees marked with blue paint on the bole and root collar and cedar snags, preexisting dead and down cedar trees and cedar logs in Unit #3.

All timber bounded by white timber sale boundary tags, adjacent young stands and the BC-42 Road, except trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags, forest products tagged out with blue special management tags and cedar snags, preexisting dead and down cedar trees and cedar logs in Unit #4.

All timber bounded by white timber sale boundary tags and the BC-ML Road, except trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags in Units #5 and #6.

All timber bounded by white timber sale boundary tags, except trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags and cedar snags, and preexisting dead and down cedar trees and cedar logs in Units #7, #8 and #9.

All timber as described for removal in Schedule B in the RMZ Thinning areas (beyond blue special management tags and up to the white timber sale boundary tags) in Units #1, #2 and #4.

All timber bounded by orange right of way tags, except that title to the timber within the right of way tags is not conveyed to the Purchaser unless the road segment is actually constructed, except as described for removal in Schedule B.

The above described products on part(s) of Sections 27, 28, 29 and 34 all in Township 33 North, Range 7 East, W.M., containing 169 acres, more or less.

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



TIMBER NOTICE OF SALE

ESTIMATED SALE VOLUMES AND QUALITY:

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

MINIMUM BID: \$147.5/MBF (est. value \$1,123,000.00) BID METHOD: Sealed Bids

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

EXPIRATION DATE: March 31, 2018 ALLOCATION: Export Restricted

BIDDABLE SPECIES: Silver fir, Noble fir, Hemlock

BID DEPOSIT: \$112,300.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: Cable; cable or shovel on sustained slopes 30% or less in Units 3, 5, 6, 7, 8 and 9. Cable or shovel on sustained slopes of 35% or less in Units 1, 2 and 4. Tracked skidder may be used with prior written approval from the Contract Administrator in all units. Rubber tired skidder may be used with prior written approval from the Contract Administrator in Unit 2 and 3 only, however the slope percent applies as stated above to all ground-based equipment. Falling and Yarding will not be permitted from November 1 to March 31 unless authorized in writing by the Contract Administrator (THIS PERTAINS TO GROUND-BASED EQUIPMENT ONLY) to reduce soil damage and erosion.

Additional restrictions apply, see Remarks section below.

ROADS: 21.08 stations of required reconstruction. 64.39 stations of optional construction. 14.30 stations of optional reconstruction. 14.30 stations of existing road to be abandoned. 64.39 stations of road to be abandoned if built.

Rock may be obtained from the following source(s) on State land at no charge to the Purchaser: BC-4246 Pit at station 244+32 of the BC-42 Road. BC-69 Pit at station 363+56 of the BC-ML Road.

An existing stockpile of riprap and 3-inch-minus ballast rock is available for use in the BC-4246 Pit.

An existing stockpile of riprap, shot rock and 3-inch-minus ballast rock is available for use in the BC-69 Pit.



TIMBER NOTICE OF SALE

Development of existing rock source(s) will involve clearing, stripping, drilling, shooting, and processing rock to generate riprap, shot rock, and 3-inch-minus ballast.

An estimated total quantity of rock needed for this proposal: 831 cubic yards of riprap, 150 cubic yards of shot rock and 9,144 cubic yards of ballast rock.

The Purchaser shall acquire and install a 40-foot gravel deck log stinger bridge.

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

ACREAGE DETERMINATION

CRUISE METHOD: Acres determined by GPS traverse. 178.3 acres gross. 7.1 acres deducted for green tree retention clumps and 1.8 acres deducted for existing roads. 169.4 acres net. Cruised using variable plot method. Expansion factor used is 20.00, 40.00 and 54.4. Sighting height is 4.5 feet. A total of 103 plots were taken.

Shapefiles of units are available upon request.

FEES: \$95,761.25 is due on day of sale. \$9.00 per MBF is due upon removal. These are in addition to the bid price.

SPECIAL REMARKS: 1. The DNR's standard conversion factor is 600 board feet per cord (cord = 128 cubic feet). Cedar salvage forest products removed on a cord basis will be converted to MBF for payment purposes. Approximately 30 cords scattered throughout the Unit #1 (% shingle material and % shake material estimates were not made). This volume equates to approximately 18 mbf of cedar which was added to the 4S in the sale volume above. The cedar salvage material removed on a cord basis will be paid for at a separate rate which is fixed at \$220.00 per mbf.

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

Schedule B
Thinning Prescription

RMZ removal:

Thin to 90 - 100 trees per acre leaving an average basal area of 230 square feet, by cutting all Hardwood and western hemlock less than 19 inches DBH, including blue special management tagged trees if they meet the prescription.

No other tree species will be harvested within the riparian management zone thinning areas.

No cedar salvage allowed within the riparian management zone thinning areas.

The purchaser shall accomplish the following: Three enhancement conifer trees per thinned RMZ acre from the largest diameter class of thinned trees shall be felled and left as down woody debris. Two enhancement conifer trees per thinned RMZ acre from the largest diameter class of thinned trees shall be cut in a manner that facilitates snag creation and recruitment. These enhancement trees are in addition to the residual stocking targets mentioned above. Enhancement trees are marked with yellow paint and two butt dots. Enhancement trees with two yellow bands are snag creation trees, single yellow band are felled trees. Enhancement trees shall be felled toward the stream channel. Any tops cut to create snags must be left onsite.

If the prescription creates an opening greater than 50 feet between residual trees, the purchaser shall leave one prescription tree in that area to prevent the large gap.

Compliance:

A variable radius plot with a 40 BAF will be measured to determine basal area. The number of trees in a plot will be multiplied by 40 to determine the basal area per acre for that plot. The average of all plots in the RMZ thinning unit will determine the basal area per acre for that unit. Only live trees greater than or equal to 8.0 inches DBH will be measured.

Certification of fallers and yarder operators (additional requirements beyond those outlined in the H-011)

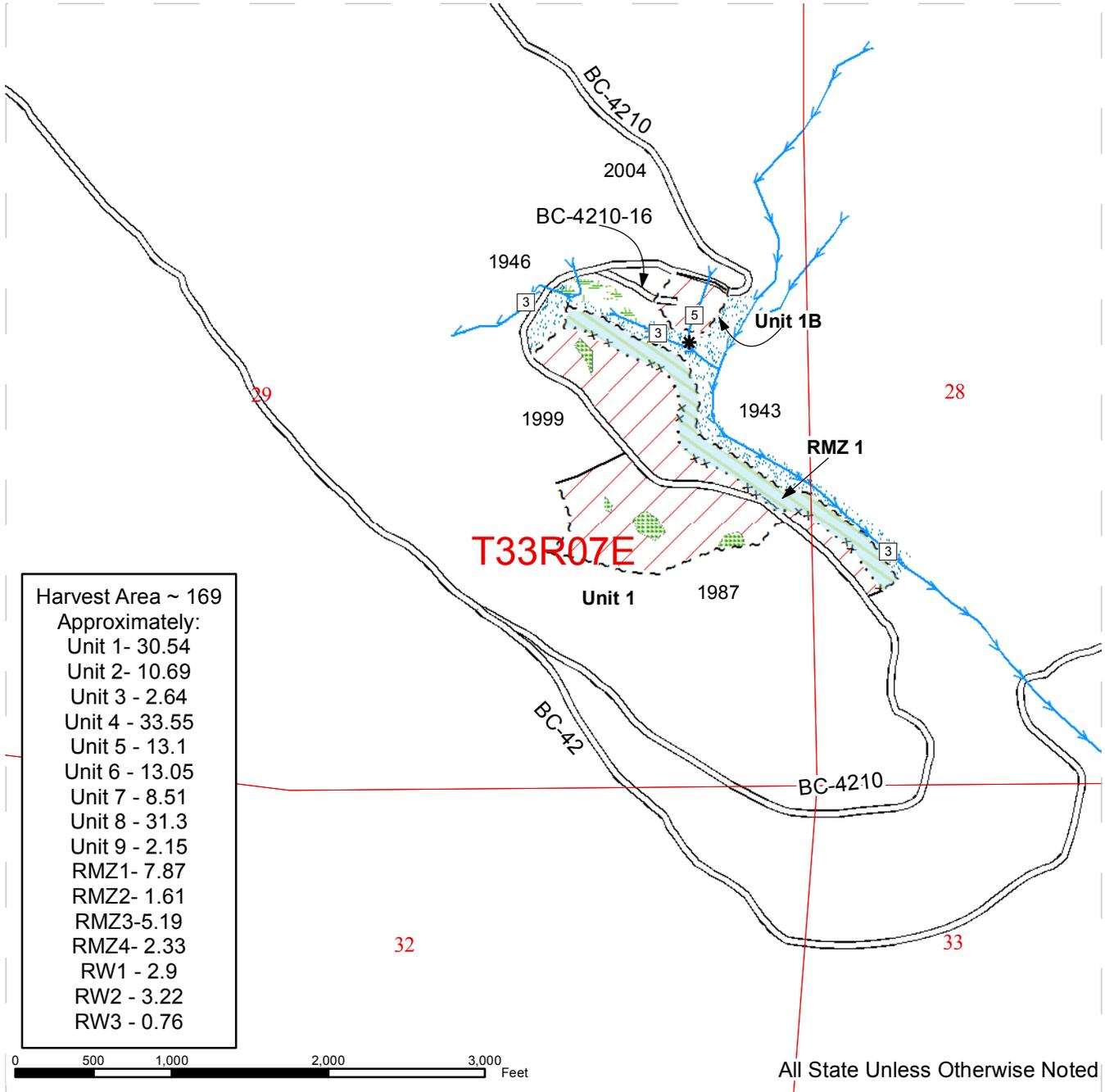
The Contract Administrator and faller/harvest operator will jointly review the take tree selection criteria as outlined in Schedule B of the sale contract. In conjunction with the Contract Administrator, the faller/harvest operator will mark a designated area as a test plot within the sale boundary. Satisfactory thinning of the test plot completes the certification process.

Certifications will be issued to individuals when they demonstrate to the Contract Administrator their ability to perform within the requirements set forth in the contract.

TIMBER SALE MAP

SALE NAME: Sempre VRH & VDT
AGREEMENT#: 30-092796
TOWNSHIP(S): T33N R07E
TRUST(S): 01 State Forest Transfer, 07 Capitol Grant, 10 Scientific School, 04 Agricultural School

REGION: Northwest
COUNTY(S): Skagit
ELEVATION RGE: 1710-2810



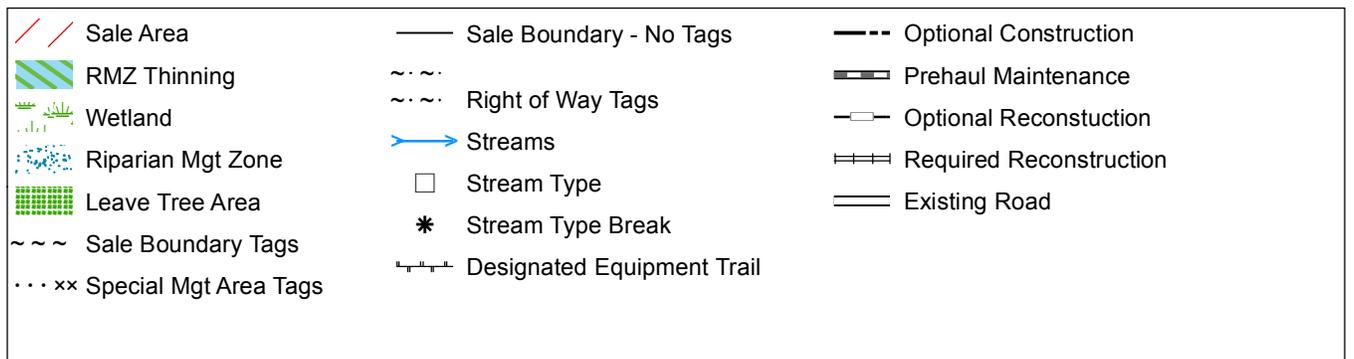
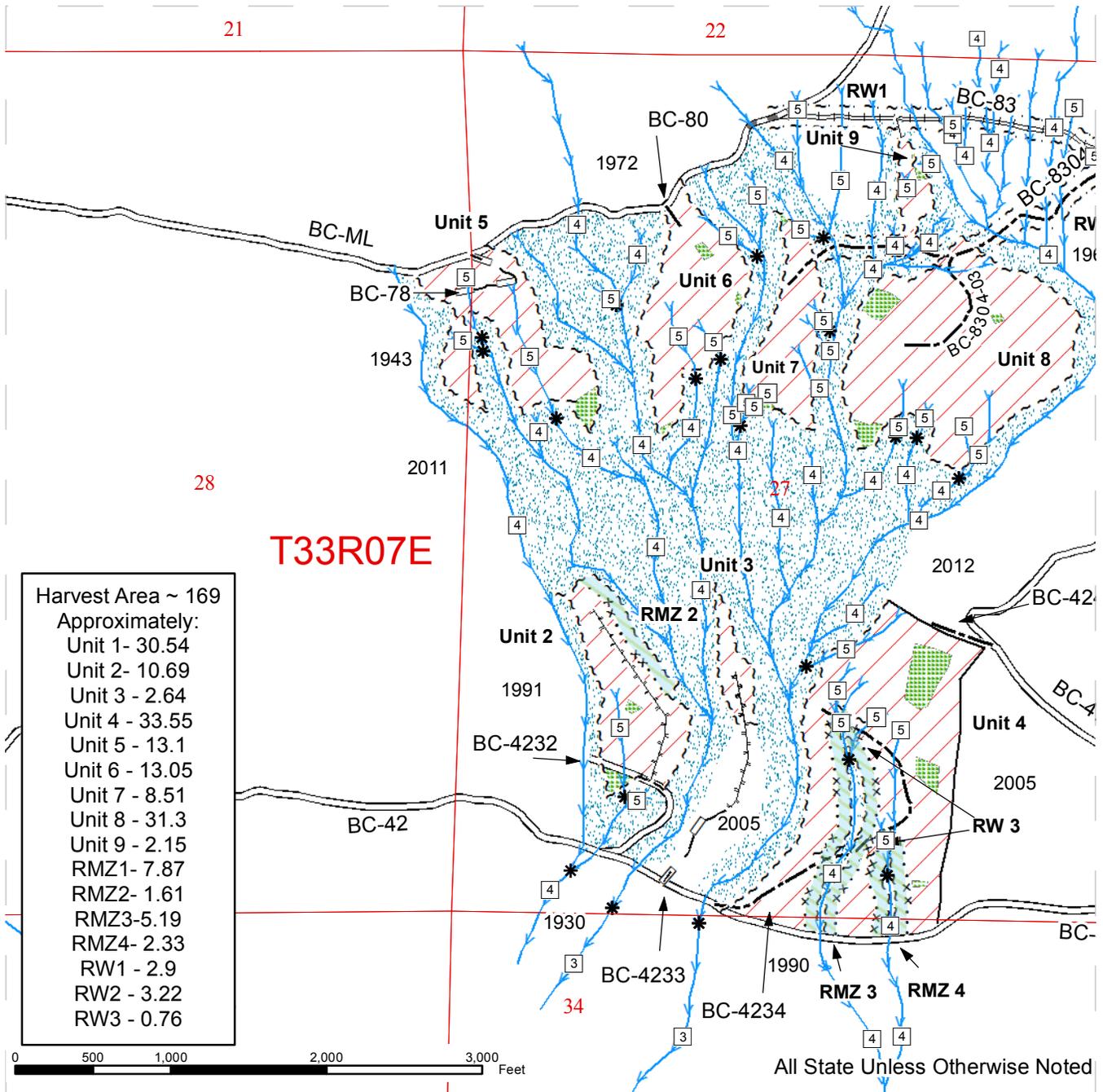
Sale Area	Sale Boundary - No Tags	Optional Construction
RMZ Thinning	Right of Way Tags	Prehaul Maintenance
Wetland	Streams	Optional Reconstruction
Riparian Mgt Zone	Stream Type	Required Reconstruction
Leave Tree Area	Stream Type Break	Existing Road
Sale Boundary Tags	Designated Equipment Trail	
Special Mgt Area Tags		



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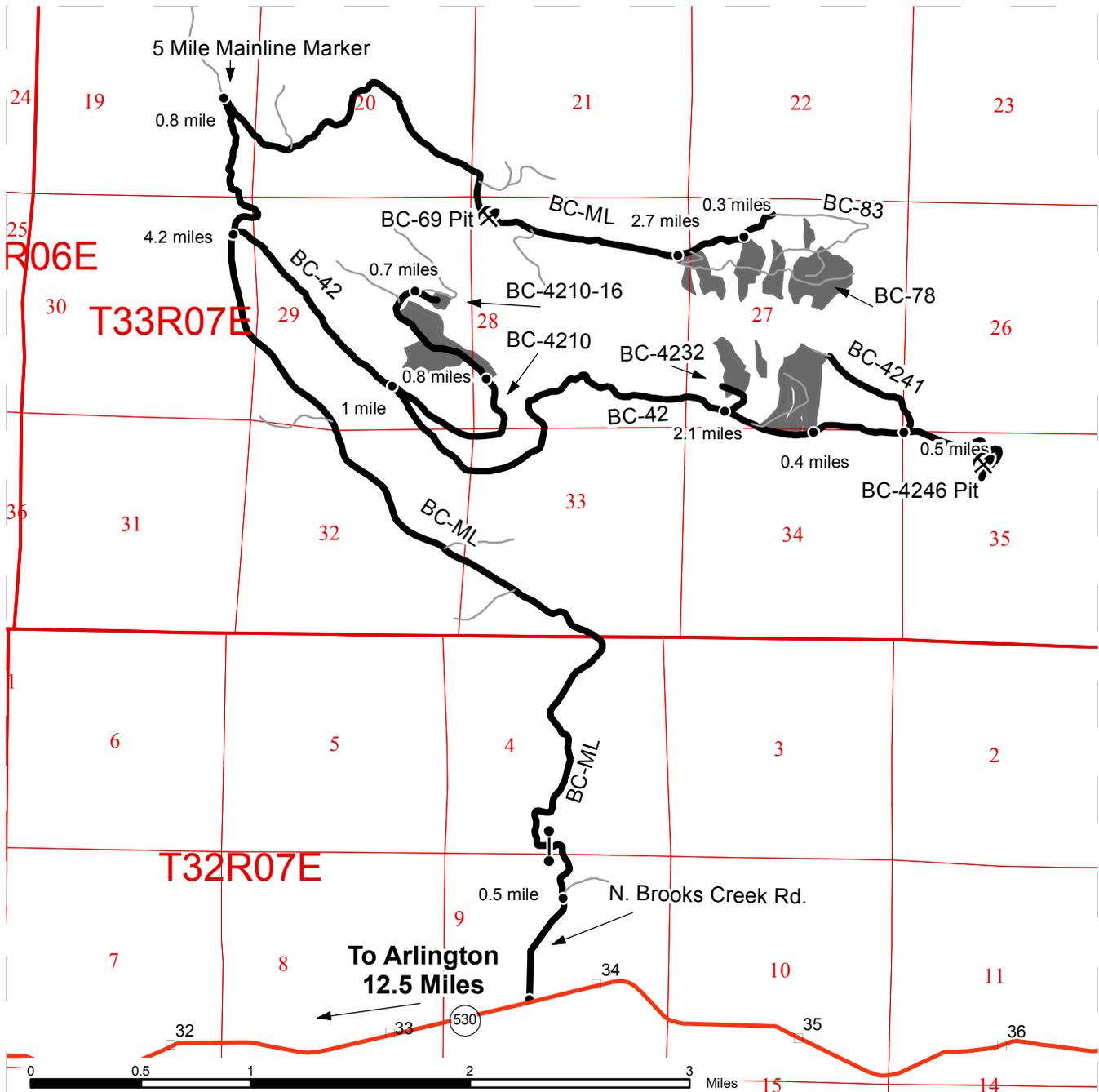
REGION: Northwest
COUNTY(S): Skagit
ELEVATION RGE: 1710-2810



DRIVING MAP

SALE NAME: Sempre VRH & VDT
 AGREEMENT#: 30-092796
 TOWNSHIP(S): T33R07E
 TRUST(S): 10 Scientific School, 07 Capitol Grant, 01 State Forest Transfer, 04 Agricultural School.

REGION: Northwest
 COUNTY(S): Skagit
 ELEVATION RGE: 1710-2810



- Timber Sale Unit
- Other Route*
- Haul Route
- Rock Pit
- Gate
- Distance Indicator

DRIVING DIRECTIONS:
 From Arlington travel east on HWY 530. Travel 12.5 miles and turn left onto North Brooks Creek Rd. Travel a half mile and turn left onto the Brooks Creek Mainline. Travel 4.2 miles.
 Units: 1, 1B, Thin 1---From 4.2 miles up the Brooks Creek mainline turn right onto the BC-42. Travel 1 mile and veer left onto the BC-4210 in 0.8 miles Unit 1 will be on your right. Continue another 0.7 miles and turn right onto the BC-4210-16 the road ends at Unit 1B in 0.1 miles.
 Units: 2, 3, 4, RMZ 2,3,4---From 4.2 miles up the Brooks Creek mainline turn right onto the BC-42. Travel 1 mile stay right on the BC-42. Travel 2.1 miles turn left onto the BC-4232 for unit 2 and Thin 2 Walk into Unit 3 from here. Continue on the BC-42 for 0.4 miles to unit 4. Upper portions of unit 4 can be reached by continuing on the BC-42 for 0.4 miles and taking the BC-4241 for a half mile.
 Units: 5, 6, 7, 8, 9---Continue on the Brooks Creek Mainline for 0.8 miles and turn right to stay on the BC-ML. Travel 2.7 miles to unit 5. Continue 0.3 miles to unit 6. Continue .25 miles and park and walk the BC-83 to access unit 8 and 9.
 At unit 5 abandoned BC-78 starts. Walking the abandoned BC-78 will access the middle of units 5, 6, 7, 8
 *Not all Other Routes are Drivable.

**STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES**

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

Export Restricted MBF Scale AGREEMENT NO. 30-092796

SALE NAME: SEMPRE VRH & VDT

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

Section G: General Terms

G-001 Definitions

The following definitions apply throughout this contract;

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

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

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

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

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

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

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

G-010 Products Sold and Sale Area

Purchaser was the successful bidder on June 15, 2016 and the sale was confirmed on _____. The State, as owner, agrees to sell to Purchaser, and Purchaser agrees to purchase, cut, and remove the following forest products: All timber bounded by white timber sale boundary tags, adjacent young stands and the BC-4210 Road, except trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags and forest products tagged out by blue special management tags in Unit #1 (collectively labeled 1 and 1B).

All timber bounded by white timber sale boundary tags and the BC-4232 Road, except trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags, forest products tagged out by blue special management tags and cedar snags, preexisting dead and down cedar trees and cedar logs in Unit #2.

All timber bounded by white timber sale boundary tags, except trees marked with blue paint on the bole and root collar and cedar snags, preexisting dead and down cedar trees and cedar logs in Unit #3.

All timber bounded by white timber sale boundary tags, adjacent young stands and the BC-42 Road, except trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags, forest products tagged out with blue special management tags and cedar snags, preexisting dead and down cedar trees and cedar logs in Unit #4.

All timber bounded by white timber sale boundary tags and the BC-ML Road, except trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags in Units #5 and #6.

All timber bounded by white timber sale boundary tags, except trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags and cedar snags, and preexisting dead and down cedar trees and cedar logs in Units #7, #8 and #9.

All timber as described for removal in Schedule B in the RMZ Thinning areas (beyond blue special management tags and up to the white timber sale boundary tags) in Units #1, #2 and #4.

All timber bounded by orange right of way tags, except that title to the timber within the right of way tags is not conveyed to the Purchaser unless the road segment is actually constructed, except as described for removal in Schedule B.

The above described products, located on approximately 169 acres on part(s) of Sections 27, 28, 29, and 34 all in Township 33 North, Range 7 East W.M. in Skagit County(s) as shown on the attached timber sale map and as designated on the sale area.

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

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

G-020 Inspection By Purchaser

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

G-025 Schedules

The following attached schedules are hereby incorporated by reference:

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

G-030 Contract Term

Purchaser shall remove the forest products conveyed and complete all work required by this contract prior to March 31, 2018.

G-040 Contract Term Adjustment - No Payment

Purchaser may request an adjustment in the contract term. A claim must be submitted in writing and received by the State within 30 days after the start of interruption or

delay. The claim must also indicate the actual or anticipated length of interruption or delay. The State may grant an adjustment without charge only if the cause for contract term adjustment is beyond Purchaser's control. The cause must be one of the following and the adjustment may be granted only if operations or planned operations under this contract are actually interrupted or delayed:

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

G-050 Contract Term Extension - Payment

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

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

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

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

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

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

- e. Payment of \$16.00 per acre per annum for the acres on which an operating release has not been issued in the Variable Retention Harvest (VRH) area. Payment of \$3.00 per acre per annum for the acres on which an operating release has not been issued in RMZ Thinning areas.
- f. In no event will the extension charge be less than \$200.00.
- g. Extension payments are non-refundable.

G-053 Surveys - Sensitive, Threatened, Endangered Species

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

G-060 Exclusion of Warranties

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

- a. The MERCHANTABILITY of the forest products. The use of the term "merchantable" in any document is not intended to vary the foregoing.
- b. The CONDITION of the forest products. The forest products will be conveyed "AS IS."
- c. The ACREAGE contained within any sale area. Any acreage descriptions appearing in the timber notice of sale, timber sale contract, or other documents are estimates only, provided solely for administrative and identification purposes.
- d. The VOLUME, QUALITY, OR GRADE of the forest products. The State neither warrants nor limits the amount of timber to be harvested. The descriptions of the forest products to be conveyed are estimates only, made solely for administrative and identification purposes.
- e. The CORRECTNESS OF ANY SOIL OR SURFACE CONDITIONS, PRE-SALE CONSTRUCTION APPRAISALS, INVESTIGATIONS, AND ALL OTHER PRE-BID DOCUMENTS PREPARED BY OR FOR THE STATE. These documents have been prepared for the State's appraisal purposes only.
- f. THAT THE SALE AREA IS FREE FROM THREATENED OR ENDANGERED SPECIES or their habitat. The State is not responsible for any interference with forestry operations that result from the presence of any

threatened or endangered species, or the presence of their habitat, within the sale area.

- g. THAT THE FORESTRY OPERATIONS to be performed under this contract WILL BE FREE FROM REGULATORY ACTIONS by governmental agencies. The State is not responsible for actions to enforce regulatory laws, such as the Washington Forest Practices Act (chapter 76.09 RCW), taken by the Department of Natural Resources or any other agency that may affect the operability of this timber sale.
- h. Items contained in any other documents prepared for or by the State.

G-062 Habitat Conservation Plan

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

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

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

G-063 Incidental Take Permit Notification Requirements

- a. Purchaser shall immediately notify the Contract Administrator of new locations of permit species covered by the Incidental Take Permits (ITP) that are discovered within the area covered by the State's Habitat Conservation Plan (HCP), including, but not limited to: locations of occupied murrelet habitat; spotted owl nest sites; wolves; grizzly bears; nests, communal roosts, or feeding concentrations of bald eagles; peregrine falcon nests; Columbian white-tailed deer; Aleutian Canada geese; Oregon silverspot butterflies; and additional stream reaches found to contain bull trout. Purchaser is required to

notify the Contract Administrator upon discovery of any fish species found in streams or bodies of water classified as non-fish bearing. In all circumstances, notification must occur within a 24 hour time period.

- b. Upon locating any live, dead, injured, or sick specimens of any permit species covered by the ITP, Purchaser shall immediately notify the Contract Administrator. Purchaser shall notify the Contract Administrator if there is any doubt as to the identification of a discovered permit species. Purchaser may be required to take certain actions to help the Contract Administrator safeguard the well-being of any live, injured or sick specimens of any permit species discovered, until the proper disposition of such specimens can be determined by the Contract Administrator. Any such requirements will be explained to Purchaser by the Contract Administrator during the Pre-Work Conference. In all circumstances, notification must occur within a 24 hour time period.
- c. Purchaser shall refer to a specific ITP number, PRT-812521 or ITP 1168 (copies which are located in the region office) in all correspondence and reports concerning permit activities.
- d. Provisions and requirements of the ITP shall be clearly presented and explained to Purchaser by Contract Administrator during the Pre-Work Conference as per contract clause G-330. All applicable provisions of the ITP and this schedule must be presented and clearly explained by Purchaser to all authorized officers, employees, contractors, or agents of Purchaser conducting authorized activities in the timber sale area. Any questions Purchaser may have about the ITP should be directed to the Contract Administrator.

G-064 Permits

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

G-065 Regulatory Disclaimer

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

G-066 Governmental Regulatory Actions

a. Risk

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

Purchaser shall remain responsible for payment of the total contract price notwithstanding the impracticability or frustration.

b. Sale Area

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

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

c. Adjustment of Price

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

G-070 Limitation on Damage

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

G-080 Scope of State Advice

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

G-090 Sale Area Adjustment

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

G-100 Forest Products Not Designated

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

G-105 Adding Naturally Damaged Forest Products

Any forest products not designated for removal that are seriously damaged by disease, insects or wind, or that may contribute seriously to the spread of insect or disease damage may be added to this sale by the Contract Administrator. Additions must be in unlogged areas of the sale and added volume shall not exceed an amount equal to 10 percent of the original advertised volume. Added forest products become a part of this contract and shall be paid for at the same rate and manner as other forest products under this contract.

G-110 Title and Risk of Loss

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

G-116 Sustainable Forestry Initiative® (SFI) Certification

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

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

G-120 Responsibility for Work

All work, equipment, and materials necessary to perform this contract shall be the responsibility of Purchaser. Any damage to improvements, except as provided in

clause G-121 or unless the State issues an operating release pursuant to clause G-280, shall be repaired promptly to the satisfaction of the State and at Purchaser's expense.

G-121 Exceptions

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

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

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

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

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

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

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

G-140 Indemnity

To the fullest extent permitted by law, Purchaser shall indemnify, defend and hold harmless State, agencies of State and all officials, agents and employees of State, from and against all claims arising out of or resulting from the performance of the contract. "Claim" as used in this contract means any financial loss, claim, suit, action, damage, or expense, including but not limited to attorneys' fees, attributable for bodily injury,

sickness, disease or death, or injury to or destruction of tangible property including loss of use resulting therefrom. Purchasers' obligations to indemnify, defend, and hold harmless includes any claim by Purchasers' agents, employees, representatives, or any subcontractor or its employees. Purchaser expressly agrees to indemnify, defend, and hold harmless State for any claim arising out of or incident to Purchasers' or any subcontractors' performance or failure to perform the contract. Purchasers' obligation to indemnify, defend, and hold harmless State shall not be eliminated or reduced by any actual or alleged concurrent negligence of State or its agents, agencies, employees and officials. Purchaser waives its immunity under Title 51 RCW to the extent it is required to indemnify, defend and hold harmless State and its agencies, officials, agents or employees.

G-150 Insurance

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

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

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

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

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

Purchaser shall include all subcontractors as insured under all required insurance policies, or shall furnish separate certificates of insurance and endorsements for each

subcontractor. Subcontractor(s) must comply fully with all insurance requirements stated herein. Failure of subcontractor(s) to comply with insurance requirements does not limit Purchaser's liability or responsibility.

The State of Washington, Department of Natural Resources, its elected and appointed officials, agents and employees shall be named as an additional insured on all general liability, excess, umbrella, and property insurance policies.

All insurance provided in compliance with this contract shall be primary as to any other insurance or self-insurance programs afforded to or maintained by State. Purchaser waives all rights against State for recovery of damages to the extent these damages are covered by general liability or umbrella insurance maintained pursuant to this contract.

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

The limits of insurance, which may be increased as deemed necessary by State of Washington, Department of Natural Resources, shall not be less than as follows:

Commercial General Liability (CGL) Insurance. Purchaser shall maintain general liability (CGL) insurance, and, if necessary, commercial umbrella insurance with a limit of not less than \$1,000,000.00 per each occurrence. If such CGL insurance contains aggregate limits, the General Aggregate limit shall be at least twice the "each occurrence" limit. CGL insurance shall have products-completed operations aggregate limit of at least two times the "each occurrence" limit. CGL coverage shall include a Logging and Lumbering Endorsement (i.e. Logger's Broad-Form) to cover the events that include, but are not limited to, fire suppression expenses, accidental timber trespasses, and wildfire property damage with limits of not less than \$2,000,000.00 each occurrence.

CGL insurance shall be written on Insurance Services Office (ISO) occurrence form CG 00 01 (or a substitute form providing equivalent coverage). All insurance shall cover liability arising out of premises, operations, independent contractors, products completed operations, personal injury and advertising injury, and liability assumed under an insured contract (including the tort liability of another party assumed in a business contract), and contain separation of insured (cross liability) condition.

Employer's Liability "Stop Gap" Insurance. Purchaser shall buy employers liability insurance, and, if necessary, commercial umbrella liability insurance with limits not less than \$1,000,000.00 each accident for bodily injury by accident or \$1,000,000.00 each employee for bodily injury by disease.

Workers' Compensation Coverage. Purchaser shall comply with all State of Washington workers' compensation statutes and regulations. Workers' compensation coverage shall be provided for all employees of Purchaser and employees of any

subcontractor or sub-subcontractor. Coverage shall include bodily injury (including death) by accident or disease, which exists out of or in connection with the performance of this contract. Except as prohibited by law, Purchaser waives all rights of subrogation against State for recovery of damages to the extent they are covered by workers' compensation, employer's liability, commercial general liability, or commercial umbrella liability insurance.

If Purchaser, subcontractor or sub-subcontractor fails to comply with all State of Washington workers' compensation statutes and regulations and State incurs fines or is required by law to provide benefits to or obtain coverage for such employees, Purchaser shall indemnify State. Indemnity shall include all fines, payment of benefits to Purchaser or subcontractor employees, or their heirs or legal representatives, and the cost of effecting coverage on behalf of such employees.

Business Auto Policy (BAP). Purchaser shall maintain business auto liability and, if necessary, commercial umbrella liability insurance with a limit not less than \$1,000,000.00 per accident. Such insurance shall cover liability arising out of "Any Auto". Business auto coverage shall be written on ISO form CA 00 01, or substitute liability form providing equivalent coverage. If necessary the policy shall be endorsed to provide contractual liability coverage and cover a "covered pollution cost or expense" as provided in the 1990 or later editions of CA 00 01. Purchaser waives all rights against State for the recovery of damages to the extent they are covered by business auto liability or commercial umbrella liability insurance.

G-160 Agents

The State's rights and duties will be exercised by the Region Manager at Sedro Woolley, Washington. The Region Manager will notify Purchaser in writing who is responsible for administering the contract. The Region Manager has sole authority to waive, modify, or amend the terms of this contract in the manner prescribed in clause G-180. No agent, employee, or representative of the State has any authority to bind the State to any affirmation, representation, or warranty concerning the forest products conveyed beyond the terms of this contract.

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

G-170 Assignment and Delegation

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

G-180 Modifications

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

G-190 Contract Complete

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

G-200 Notice

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

G-210 Violation of Contract

G-220 State Suspends Operations

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

G-210 Violation of Contract

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

G-220 State Suspends Operation

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

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

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

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

G-230 Unauthorized Activity

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

G-240 Dispute Resolution

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

- a. In the event of a dispute, Purchaser must make a written request to the Region Manager for resolution prior to seeking other relief.
- b. The Region Manager will issue a written decision on Purchaser's request within ten business days.
- c. Within ten business days of receipt of the Region Manager's decision, Purchaser may make a written request for resolution to the Deputy Supervisor - Uplands of the Department of Natural Resources.

- d. Unless otherwise agreed, a conference will be held by the Deputy Supervisor - Uplands within 30 calendar days of the receipt of Purchaser's request for review of the Region Manager's written decision. Purchaser and the Region Manager will have an opportunity to present their positions. The Deputy Supervisor - Uplands will issue a decision within a reasonable time of being presented with both Parties' positions.

G-250 Compliance with All Laws

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

G-260 Venue

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

G-270 Equipment Left on State Land

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

G-280 Operating Release

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

G-310 Road Use Authorization

Purchaser is authorized to use the following State roads and roads for which the State has acquired easements and road use permits; BC-ML (Brooks Creek Mainline), BC-42, BC4210, BC-4210-16, BC-4232, BC-4233, BC-4234, BC-4241, BC-4241-06, BC-78, BC-80, BC-83, BC-8304, and BC-8304-03 roads. 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 BC-ML Road, unless authority is granted in writing by the Contract Administrator.

G-430 Open Fires

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

G-450 Encumbrances

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

DATA MISSING

Section P: Payments and Securities

P-010 Initial Deposit

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

P-021 Payment for Forest Products

Purchaser agrees to pay the following rates per MBF Scribner net log scale for forest products conveyed and cut or removed from the sale area plus \$95,761.25 on day of sale and \$9.00 per MBF upon removal in fees. Fees collected shall be retained by the state unless the contract is adjusted via the G-066 clause.

DATA MISSING

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

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

P-027 Payment for Removal of Optional Forest Products

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

P-040 Weighing and Scaling Costs

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

P-045 Guarantee of Payment

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

P-050 Billing Procedure

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

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

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

P-080 Payment Account Refund

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

P-090 Performance Security

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

P-100 Performance Security Reduction

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

Section L: Log Definitions and Accountability

L-010 Forest Products Conveyed

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

L-020 Short Logs - Peeler Blocks

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

L-060 Load Tickets

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

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

L-071 Log and Load Reporting Service

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

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

L-080 Scaling Rules

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

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

L-110 State Approval of Log Scaling and Weighing Locations

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

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

L-120 Long Log Taper Distribution

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

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

L-130 Conversion Factors

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

Section H: Harvesting Operations

H-010 Cutting and Yarding Schedule

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

H-011 Certification of Fallers and Yarder Operators

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

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

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

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

H-012 Leave Tree Damage Definition

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

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

- a. A leave tree has one or more scars on its trunk exposing the cambium layer, which in total exceeds 20 square inches.
- b. A leave tree top is broken or the live crown ratio is reduced below 30 percent.
- c. A leave tree has more than 1/3 of the circumference of its root system injured such that the cambium layer is exposed.

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

H-013 Reserve Tree Damage Definition

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

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

- a. A reserve tree has one or more scars on its trunk exposing the cambium layer, which in total exceeds 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-016 Skid Trail Requirements

A skid trail is defined as an area that is used for more than three passes by any equipment.

Purchaser shall comply with the following during the yarding operation:

- a. A skid trail will not exceed 12 feet in width, including rub trees.
- b. Skid trails shall not cover more than 15 percent of the total acreage on one unit.
- c. Location of the skid trails must be marked by Purchaser and approved by the Contract Administrator.
- d. Except for rub trees, skid trails shall be felled and yarded prior to the felling of adjacent timber.

- e. Rub trees shall be left standing until all timber tributary to the skid trail has been removed.
- f. Excessive soil damage is not permitted. Excessive soil damage is described in clause H-017.
- g. Purchaser will not have more than two skid trails open to active skidding at any one time. All other skid trails used for skidding timber will be closed.
- h. Once a skid trail is closed, Purchaser will not reopen a skid trail unless approved in writing by the Contract Administrator.
- i. Skid trails will be water barred at the time of completion of yarding, if 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-017 Preventing Excessive Soil Disturbance

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

H-030 Timber Falling

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

H-035 Fall Trees Into Sale Area

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

H-040 Purchaser Harvest Plan

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

H-050 Rub Trees

Trees designated for cutting along skid trails and cable corridors shall be left standing as rub trees until all timber that is tributary to the skid trail or cable corridor has been removed.

H-052 Branding and Painting

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

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

H-080 Snags Not to be Felled

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

H-110 Stump Height

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

H-120 Harvesting Equipment

Forest products sold under this contract shall be felled by chainsaw and yarded by cable; felled by chainsaw or feller-buncher and yarded by cable or shovel on sustained slopes 30% or less in Units 3, 5, 6, 7, 8 and 9. Felled by chainsaw or feller-buncher and yarded by cable or shovel on sustained slopes 35% or less in Units 1, 2 and 4. Tracked skidder may be used with prior written approval from the Contract Administrator in all units. Rubber tired skidder may be used with prior written approval from the Contract Administrator in Unit 2 and 3 only, however the slope percent applies as stated above to all ground-based equipment, unless authority to use other equipment is granted in writing by the State.

H-125 Log Suspension Requirements

Lead-end suspension is required for all yarding activities.

H-130 Hauling Schedule

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

H-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

- A. An on-site pre-work meeting shall be scheduled with the Contract Administrator, which shall include the operator and fallers, prior to commencement of any activities on site.
- B. A copy of the timber sale map and contract shall be present on site during active operations.

- C. Falling and yarding shall occur away from all typed waters where possible, with the exception of RMZ enhancement trees. Avoid parallel cable yarding in, across, or adjacent to stream channels where possible. All type 5 streams shall have a 30-foot equipment limitation zone measured from each bank. The limited crossings shall be as close to perpendicular as possible and be pre-approved by the Contract Administrator prior to use.
- D. Cutting and yarding in the RMZ thinning areas shall not be permitted during the bark slippage season unless authorized in writing by the Contract Administrator. This season is estimated to run from April 1 to July 15 but may vary depending on weather conditions. If permission is granted to operate during the bark slippage season the purchaser shall be required to provide a plan outlining mitigation measures.
- E. Ground-based equipment crossings over type 5 streams shall be located by Purchaser and approved by Contract Administrator before use.
- F. Down woody debris shall be left where they lie, where operationally feasible.
- G. Marked leave trees may be traded for trees of the same size and species with prior approval from the Contract Administrator.
- H. Designated Equipment trails shall be used when ground based yarding (shovel logging) occurs over 400 feet from an existing road and to access Units 3 and the top of Unit 9. These shall be located by the Purchaser and approved by the Contract Administrator in writing prior to use. These trails shall be as narrow as practical and shall be water barred and shall be grass seeded and mulched following completion of that setting. Stump pulling is not authorized for these trails.
- I. RMZ thinning enhancement trees have been painted with yellow paint and two yellow butt dots. Two bands for snag creation enhancement trees and a single band for felled enhancement trees. Enhancement trees shall be felled toward the stream channel. Any tops cut to create snags must be left onsite.
- J. No ground-based harvesting equipment shall be allowed within the areas delineated by pink flagging. Trees are to be felled and yarded away from the areas marked with pink flagging. Harvesting in Unit 9 shall only take place during dry weather conditions.

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

H-150 Required Removal of Forest Products

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

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

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

H-157 Optional Removal of Forest Products Not Designated

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

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

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

H-160 Mismanufacture

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

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

H-180 Removal of Specialized Forest Products or Firewood

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

H-190 Completion of Settings

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

H-220 Protection of Residual or Adjacent Trees

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

Section C: Construction and Maintenance

C-040 Road Plan

Road construction and associated work provisions of the Road Plan for this sale, dated 1/12/2016 are hereby made a part of this contract.

C-050 Purchaser Road Maintenance and Repair

Purchaser shall perform work at their own expense on the BC-42, BC-4210, BC-4210-16, BC-4232, BC-4233, BC-4234, BC-4241, BC-4241-06, BC-78, BC-80, BC-83, BC-8304, and BC-8304-03 roads. All work shall be completed to the specifications detailed in the Road Plan.

C-060 Designated Road Maintainer

If required by the State, Purchaser shall perform maintenance and replacement work as directed by the Contract Administrator on the BC-ML road. Purchaser shall furnish a statement in a form satisfactory to the State showing the costs incurred while performing this work. Costs shall be based on the rates set forth in the State current Equipment Rate Schedule on file at the region and Olympia offices. The State shall reimburse Purchaser for said costs within 30 days of receipt and approval of the statement.

C-130 Dust Abatement

Purchaser shall abate dust on the on the BC-ML (MP 0.0 to MP 0.3 Gate) while hauling.

Section S: Site Preparation and Protection

S-001 Emergency Response Plan

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

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

S-010 Fire Hazardous Conditions

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

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

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

S-030 Landing Debris Clean Up

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

S-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 all streams, with the exception of RMZ enhancement trees, 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-130 Hazardous Materials**a. Hazardous Materials and Waste - Regulatory Compliance**

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

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

b. Hazardous Materials Spill Prevention

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

c. Hazardous Materials Spill Containment, Control and Cleanup

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

d. Hazardous Material Release Reporting

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

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

DNR Contract Administrator

ECY - Northwest Region:

1-425-649-7000

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

ECY - Southwest Region:

1-360-407-6300

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

ECY - Central Region:

1-509-575-2490

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

ECY - Eastern Region:

1-509-329-3400

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

S-131 Refuse Disposal

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

Section D: Damages

D-010 Liquidated Damages

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

D-020 Failure to Remove Forest Products

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

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

Where:

LD = Liquidated Damage value.

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

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

- P = Advance payments received but not yet applied to specific contract requirements.
- C = Charges assessed for contract requirements completed prior to breach of contract but not paid for.
- A = Administrative Fee = \$2,500.00.

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

Where:

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

D-030 Inadequate Log Accountability

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

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

D-040 Leave Tree Excessive Damage

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

D-041 Reserve Tree Excessive Damage

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

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

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

Purchaser

Jean Fike
Northwest Region Manager

Date: _____

Date: _____

Address:

CORPORATE ACKNOWLEDGEMENT

STATE OF _____)

COUNTY OF _____)

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

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

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

Notary Public in and for the State of

My appointment expires _____

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

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

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

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

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

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

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

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

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

FOR ALL YARDING:

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

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

WHEN SHOVEL YARDING IS AUTHORIZED:

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

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

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

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

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

Schedule B
Thinning Prescription

RMZ removal:

Thin to 90 - 100 trees per acre leaving an average basal area of 230 square feet, by cutting all Hardwood and western hemlock less than 19 inches DBH, including blue special management tagged trees if they meet the prescription.

No other tree species will be harvested within the riparian management zone thinning areas.

No cedar salvage allowed within the riparian management zone thinning areas.

The purchaser shall accomplish the following: Three enhancement conifer trees per thinned RMZ acre from the largest diameter class of thinned trees shall be felled and left as down woody debris. Two enhancement conifer trees per thinned RMZ acre from the largest diameter class of thinned trees shall be cut in a manner that facilitates snag creation and recruitment. These enhancement trees are in addition to the residual stocking targets mentioned above. Enhancement trees are marked with yellow paint and two butt dots. Enhancement trees with two yellow bands are snag creation trees, single yellow band are felled trees. Enhancement trees shall be felled toward the stream channel. Any tops cut to create snags must be left onsite.

If the prescription creates an opening greater than 50 feet between residual trees, the purchaser shall leave one prescription tree in that area to prevent the large gap.

Compliance:

A variable radius plot with a 40 BAF will be measured to determine basal area. The number of trees in a plot will be multiplied by 40 to determine the basal area per acre for that plot. The average of all plots in the RMZ thinning unit will determine the basal area per acre for that unit. Only live trees greater than or equal to 8.0 inches DBH will be measured.

Certification of fallers and yarder operators (additional requirements beyond those outlined in the H-011)

The Contract Administrator and faller/harvest operator will jointly review the take tree selection criteria as outlined in Schedule B of the sale contract. In conjunction with the Contract Administrator, the faller/harvest operator will mark a designated area as a test plot within the sale boundary. Satisfactory thinning of the test plot completes the certification process.

Certifications will be issued to individuals when they demonstrate to the Contract Administrator their ability to perform within the requirements set forth in the contract.



WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOREST EXCISE TAX ROAD SUMMARY SHEET

Region:

Timber Sale Name:

Application Number:

EXCISE TAX APPLICABLE ACTIVITIES

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

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

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

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

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

EXCISE TAX EXEMPT ACTIVITIES

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

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

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

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

(Revised 6/13)

Cruise Narrative

Sale Name: Sempre	Region: Northwest
Agree. #: 30-092796	District: Cavanguah
Lead cruiser: John Piety	Completion date: 12-15-15
Other cruisers on sale: Ken McGee, Kevin Peterson	

Unit acreage specifications:

Unit #	Cruised acres	Cruised acres agree with sale acres? Yes/No	If acres do not agree explain why.
1	27.91	Yes	
1B	2.63	Yes	
2	10.69	Yes	
3	2.64	Yes	
4	33.55	Yes	
5	13.1	Yes	
6	13.05	Yes	
7	8.51	Yes	
8	31.3	Yes	
9	2.15	Yes	
RMZ1	7.87	Yes	
RMZ2	1.61	Yes	
RMZ3	5.19	Yes	
RMZ4	2.33	Yes	
R/W 1	2.9	Yes	
R/W 2	3.24	Yes	
R/W 3	0.76	Yes	
Total	169.43	Yes	

Unit cruise specifications:

Unit #	Sample type (VP, FP, ITS,100%)	Expansion factor (BAF, full/half)	Sighting height (4.5 ft, 16 ft.)	Grid size (Plot spacing or % of area)	Plot ratio (cruise:count)	Total number of plots
1	VP	54.4 BAF	4.5	275' X 275'	1:1	15
1B	VP	54.4 BAF	4.5	200' X 200'	1:1	2
2	VP	54.4 BAF	4.5	275' X 275'	1:1	5

3	VP	54.4 BAF	4.5	200' X 200'	1:1	2
4	VP	54.4 BAF	4.5	275' X 275'	1:1	15
5	VP	54.4 BAF	4.5	275' X 275'	1:1	7
6	VP	54.4 BAF	4.5	275' X 275'	1:1	7
7	VP	54.4 BAF	4.5	275' X 275'	1:1	5
8	VP	54.4 BAF	4.5	275' X 275'	1:1	17
9	VP	54.4 BAF	4.5	275' X 275'	1:1	3
1B, 8 RMZ1, RMZ4	VP	40 BAF For minors. RC,RA				
RMZ1	VP	54.4 BAF	4.5	200' X 200'	100%	8
RMZ2	VP	54.4 BAF	4.5	200' X 200'	100%	2
RMZ3	VP	54.4 BAF	4.5	200' X 200'	100%	5
RMZ4	VP	54.4 BAF	4.5	200' X 200'	100%	2
R/W 1	VP	20 BAF	4.5	Along centerline	100%	2
R/W 2	VP	54.4 BAF	4.5	Along Centerline	100%	4
R/W 3	VP	54.4 BAF	4.5	Along Centerline	100%	2

Sale/Cruise Description:

Minor species cruise intensity:	100% up to 5 trees per species					
Minimum cruise spec:	<p>HA - Logs meeting the following criteria: Surface characteristics for a high quality A sort will have sound tight knots not to exceed 1 1/2" 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 1/2" 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. (High Quality sort. Grades SM, 2S, 3S. Lengths 16ft-40ft, 2ft multiples min TDIB 8". Max butt 27")</p> <p>HB - Logs meeting the following criteria: Surface characteristics for an Intermediate B sort will have sound tight knots not to exceed 1 1/2" in diameter. May include logs with not more than two larger knots up to 2 1/2" 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. (Intermediate sort. Grades 2S, 3S. . Lengths 16ft-40ft, 2ft multiples min TDIB 8". Max butt 27").</p> <p>D - Domestic quality logs that do not meet high quality or intermediate definitions. (Domestic sort. Grades 2S, 3S, 4S and utility. Lengths 16ft-40ft, min TDIB 2in.)</p> <p>O- Logs exceeding 27" on the large end. (Oversize sort. Grade 2S. Lengths 16ft-40ft, 2ft multiples butt diameter min dia. 27 in. +)</p> <p>R - Logs meeting the following criteria: Surface characteristics for a rough log sort will not meet the requirements for a domestic 2S, but still be in limitations for a domestic 3S. Meaning logs will contain excessive knots in excess of 2 1/2" and not exceeding 3" with a recovery of less than 65% of the net scale and greater than 33% of the gross scale. (Rough oversize sort. Grade 3S. Lengths 16ft-40ft, 2ft multiples TDIB 12"+)</p>					
Avg ring count by sp:	DF =	6	WH =	7		

Leave/take tree description:	Leave trees are banded with blue paint and tagged out with yellow leave tree tags.
Other conditions	<p>RMZ units 1, 2, 3 and 4 will be thinned down to a basal area of 230, leaving 100 plus trees per acre, by removing RA and WH under 19" and over 8" DBH. The volume marked with an "I" on the cruise documents needs to be deducted from the overall volume to get the take volume.</p> <p>There is some recoverable RC salvage. Mostly in units 5 and 6. Units 1, 2, 3 and 4 have some, but there was some previous harvest activity in these units, so not sure if the quality is there. The visual estimate is 20 +- cords. No removal allowed in the RMZ's.</p>

Field observations:

These are WH stands with RA, RC, DF and SF. They are mostly 1 ½ to 2 log trees. There are little differences in all the stands. Some have more RC, some have more SF. There is DF scattered throughout the units. The defect seen included crooks and forks, freeze cracks in the SF, WH, some butt rot and a little mistletoe. Some units are mixed aged stands, and there is some variability in the stocking levels. Unit 8 has a notable amount of old blow down and broken tops.

Grants: 01, 04, 07, 10

Prepared by:

John Piety

Title:

Cruiser

CC:

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																			
T033 R007 S27 Ty00U6 THRU T33N R07E S29 TyUNT1				Project: SEMPRE										Page 1									
				Acres 169.43										Date 12/15/2015			Time 2:52:21PM						
Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre		
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf			
									2-4	5-7	8-11	12+	12-20	21-30	31-35	36-99							
SF	D	2S		32	9.7	1,434	1,294	219										40	14	276	1.86	4.7	
SF	D	3S		47	3.6	1,943	1,873	317										40	9	113	0.89	16.5	
SF	D	4S		12	3.1	503	488	83	1	92	7			13	40	22	26	27	5	31	0.36	15.8	
SF	D	UT		5	14.0	208	179	30	6		70	24		6	24		70	25	7	73	0.86	2.5	
SF	OS	2S		4	10.8	175	156	26									100	40	20	624	3.40	.2	
SF Totals				11	6.4	4,264	3,990	676	0	11	51	37		2	6	3	89	34	8	100	0.87	39.8	
SF	L	D	2S	73	4.8	90	86	15									100	40	15	323	1.75	.3	
SF	L	D	3S	27		31	31	5									100	40	9	117	0.83	.3	
SF	L	D	UT															30	2		0.28	.1	
SF Totals				0	3.6	121	117	20			27	73						100	38	10	180	1.14	.6
WH	D	2S		41	5.1	9,915	9,405	1,594						3	2	1	94	39	14	285	1.75	33.0	
WH	D	3S		31	4.2	7,341	7,036	1,192								2	4	94	39	9	122	0.93	57.7
WH	D	4S		14	2.4	3,119	3,044	516		88	12			13	18	16	54	30	6	38	0.44	80.2	
WH	D	UT		2	8.0	528	486	82	52	20	7	20		16	22		61	28	3	10	0.18	47.1	
WH	OS	2S		11	13.7	2,913	2,514	426									100	39	19	534	3.39	4.7	
WH	OS	UT		1		167	167	28									100	30	20	520	3.23	.3	
WH Totals				65	5.6	23,983	22,651	3,838	1	12	33	54		3	6	4	87	33	8	102	0.85	223.0	
WH	L	D	2S	53	2.1	1,268	1,241	210									100	39	15	325	1.81	3.8	
WH	L	D	3S	27	2.0	629	616	104									100	39	9	121	0.84	5.1	
WH	L	D	4S	9	.7	213	211	36		88	12			13	10	9	68	31	6	41	0.46	5.1	
WH	L	D	UT	5		106	106	18	45					21			79	34	3	18	0.21	5.8	
WH	L	OS	2S	6	11.6	153	136	23									100	40	22	727	3.84	.2	
WH Totals				7	2.5	2,369	2,311	391	2	8	28	62		2	4	2	92	36	8	116	0.82	20.0	
DF	D	2S		42	5.8	770	725	123									100	38	15	345	2.26	2.1	
DF	D	3S		8	4.9	137	130	22						3		9	88	38	9	111	1.07	1.2	
DF	D	4S		8	3.3	131	127	21		100				2	51	2	44	31	6	47	0.59	2.7	
DF	D	UT																27	2		0.19	2.0	
DF	OS	2S		42	5.1	750	712	121									100	40	23	918	4.54	.8	
DF Totals				5	5.3	1,788	1,694	287			7	8	85		0	7	1	92	34	9	193	1.46	8.8
DF	L	D	2S	49	5.6	239	226	38									100	39	14	278	1.67	.8	
DF	L	D	3S	5		24	24	4						18	20		62	30	9	73	0.69	.3	
DF	L	D	4S	4		16	16	3		71	29			29			71	30	7	47	0.54	.3	
DF	L	D	UT															28	2		0.19	.2	
DF	L	OS	SM	13		62	62	11									100	40	21	760	3.34	.1	
DF	L	OS	2S	29	11.3	145	128	22							19		81	35	24	820	5.22	.2	
DF Totals				1	6.1	487	457	77			3	6	91		2	7		91	35	12	238	1.60	1.9
RC	D	3S		33	.5	753	749	127									100	36	10	142	1.35	5.3	
RC	D	4S		22	6.5	531	497	102	84	99	1			11	48	10	30	28	5	31	0.45	16.1	
RC	OS	3S		45	3.4	1,028	993	168									100	38	17	432	3.61	2.3	
RC Totals				6	3.2	2,312	2,239	397	379		22	21	57		2	12	11	75	31	7	95	1.07	23.7
RC	L	D	3S	65	2.7	313	304	52									100	35	11	153	1.35	2.0	
RC	L	D	4S	27	1.2	129	127	22		100				30	19	7	44	25	5	30	0.39	4.2	
RC	L	OS	3S	8	11.1	39	35	6									100	36	16	320	3.31	.1	

TC PSPCSTGR **Species, Sort Grade - Board Foot Volumes (Project)**

T033 R007 S27 Ty00U6 THRU T33N R07E S29 TyUNT1	Project: SEMPRE Acres 169.43	Page 2 Date 12/15/2015 Time 2:52:21PM
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S Spp	So T	Gr rt ad	% Net BdFt	Bd. Ft. per Acre Def% Gross Net			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre	
								Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf		
								2-4	5-7	8-11	12+	12-20	21-30	31-35	36-99						
RC	Totals		1	3.0	481	466	79		28	30	42		9	8	2	81	29	7	74	0.83	6.3
RA	D	2S	32	13.6	315	272	46				100		10	42	48	1	30	13	143	1.30	1.9
RA	D	3S	16	4.2	147	141	24			100			20	71		9	27	10	98	0.87	1.4
RA	D	4S	25	8.5	232	213	36		42	58				41	42	18	32	7	52	0.59	4.1
RA	D	UT	27	3.0	231	224	38	17	3	60	20		23	77		0	25	5	38	0.45	5.9
RA	Totals		2	8.2	925	850	144	5	11	47	37		12	56	26	6	28	7	64	0.67	13.3
SS	D	2S	29		60	60	10				100					100	40	18	530	2.59	.1
SS	D	3S	6	.0	11	11	2			100				100			28	10	100	1.16	.1
SS	OS	2S	65		131	131	22				100					100	40	25	1150	5.05	.1
SS	Totals		1		203	203	34		6	94			6		94		36	18	593	3.13	.3
NF	D	2S	76		78	78	13				100					100	40	14	290	1.63	.3
NF	D	3S	24		24	24	4			100						100	40	8	90	0.71	.3
NF	D	UT															24	2		0.19	.3
NF	Totals		0		102	102	17		24	76					100		35	8	127	0.94	.8
CW	D	2S	100		12	12	2				100					100	36	13	220	1.55	.1
CW	Totals		0		12	12	2			100					100		36	13	220	1.55	.1
Totals				5.3	37,047	35,091	5,945	1	12	32	54		3	7	4	85	33	8	104	0.88	338.5

5,395 Take

TC PSTATS		PROJECT STATISTICS								PAGE	1
		PROJECT				SEMPRE				DATE	12/15/2015
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt	
033	007	27	SEMPRE	00U6	THR	169.43	103	562	S	W	
33N	07E	29	SEMPRE	UNT1							
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES					
TOTAL		103	562	5.5							
CRUISE		71	374	5.3	31,392	1.2					
DBH COUNT											
REFOREST											
COUNT		32	180	5.6							
BLANKS											
100 %											
STAND SUMMARY											
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC	
WHEMLOCK	184	117.8	16.6	66	43.4	176.7	23,983	22,651	6,267	6,267	
WHEMLOCK-L	48	11.0	15.9	66	3.8	15.1	2,369	2,311	581	581	
WR CEDAR	39	16.8	16.7	47	6.3	25.7	2,312	2,239	776	777	
WR CEDAR-L	21	4.5	14.6	45	1.4	5.2	481	466	149	149	
PS FIR	34	20.3	17.5	71	8.1	33.7	4,264	3,990	1,169	1,169	
PS FIR-L	2	.3	20.9	92	0.1	.6	121	117	28	28	
DOUG FIR	19	5.7	19.6	54	2.7	11.9	1,788	1,694	431	431	
DOUG FIR-L	7	.7	25.4	93	0.5	2.5	487	457	106	106	
R ALDER	17	7.8	15.0	53	2.5	9.6	925	850	251	250	
COTWOOD	1	.1	20.0	78	0.0	.1	12	12	3	3	
NOBLE F	1	.3	20.3	95	0.1	.6	102	102	26	26	
S SPRUCE	1	.1	34.0	110	0.1	.7	203	203	38	38	
TOTAL	374	185.3	16.7	64	69.1	282.5	37,047	35,091	9,826	9,826	
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL	68.1	COEFF	SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.			
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK		76.4	5.6	278	295	311					
WHEMLOCK-L		68.0	9.8	349	386	424					
WR CEDAR		89.7	14.4	258	301	344					
WR CEDAR-L		75.1	16.8	164	198	231					
PS FIR		74.2	12.7	219	251	283					
PS FIR-L		31.4	29.4	318	450	582					
DOUG FIR		114.6	27.0	421	577	733					
DOUG FIR-L		68.4	27.8	627	869	1,110					
R ALDER		53.2	13.3	123	142	161					
COTWOOD											
NOBLE F											
S SPRUCE											
TOTAL		94.0	4.9	305	321	336	353	180	88		
CL	68.1	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.			
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK		103.0	10.1	106	118	130					
WHEMLOCK-L		438.8	43.2	6	11	16					
WR CEDAR		348.8	34.3	11	17	23					
WR CEDAR-L		487.2	48.0	2	4	7					
PS FIR		229.4	22.6	16	20	25					
PS FIR-L		717.4	70.6	0	0	0					
DOUG FIR		385.7	38.0	4	6	8					
DOUG FIR-L		701.6	69.1	0	1	1					
R ALDER		325.9	32.1	5	8	10					
COTWOOD		1014.9	99.9	0	0	0					

TC PSTATS		PROJECT STATISTICS							PAGE	2
		PROJECT SEMPRE							DATE	12/15/2015
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
033 33N	007 07E	27 29	SEMPRE SEMPRE	00U6 UNT1	THR	169.43	103	562	S	W
CL	68.1	COEFF		TREES/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.00	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10	
NOBLE F		1014.9	99.9	0	0	1				
S SPRUCE		1014.9	99.9	0	0	0				
TOTAL		<i>75.1</i>	<i>7.4</i>	<i>172</i>	<i>185</i>	<i>199</i>	<i>225</i>	<i>115</i>	<i>56</i>	
CL	68.1	COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK		80.2	7.9	163	177	191				
WHEMLOCK-L		293.2	28.9	11	15	19				
WR CEDAR		255.2	25.1	19	26	32				
WR CEDAR-L		454.8	44.8	3	5	8				
PS FIR		225.2	22.2	26	34	41				
PS FIR-L		714.1	70.3	0	1	1				
DOUG FIR		320.9	31.6	8	12	16				
DOUG FIR-L		667.9	65.8	1	3	4				
R ALDER		332.8	32.8	6	10	13				
COTWOOD		1014.9	99.9	0	0	0				
NOBLE F		1014.9	99.9	0	1	1				
S SPRUCE		1014.9	99.9	0	1	1				
TOTAL		<i>50.5</i>	<i>5.0</i>	<i>268</i>	<i>282</i>	<i>297</i>	<i>102</i>	<i>52</i>	<i>26</i>	
CL	68.1	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK		90.8	8.9	20,627	22,651	24,676				
WHEMLOCK-L		286.6	28.2	1,659	2,311	2,963				
WR CEDAR		280.1	27.6	1,622	2,239	2,857				
WR CEDAR-L		493.5	48.6	240	466	693				
PS FIR		233.3	23.0	3,073	3,990	4,906				
PS FIR-L		720.2	70.9	34	117	199				
DOUG FIR		310.0	30.5	1,177	1,694	2,211				
DOUG FIR-L		716.0	70.5	135	457	779				
R ALDER		359.8	35.4	549	850	1,150				
COTWOOD		1014.9	99.9	0	12	25				
NOBLE F		1014.9	99.9	0	102	203				
S SPRUCE		1014.9	99.9	0	203	405				
TOTAL		<i>56.2</i>	<i>5.5</i>	<i>33,149</i>	<i>35,091</i>	<i>37,033</i>	<i>126</i>	<i>64</i>	<i>32</i>	

TC		PSTNDSUMRdVBar											Stand Table Summary with RD, V-bar - Project				Page Date:		1 12/15/2015	
T33N R07E S27 TyRMZ2 THRU T33N R07E S29 TyRMZ1				Project SEMPRE							Time:				2:54:10PM					
				Acres							17.00				Grown Year:					
Spc	ST	DBH Class	Sample Trees	QMD DBH	Total Age	Bole Ht.	Total Ht.	Avg FF	Avg CR	RD	V Bar	Ht/D	Trees/Acre	BA/Acre	Gross Bd. Ft. Acre	Def %	Net Bd. Ft. Acre	MBF		
WHL		6	1	6.1	80	42	49	88		1.3	49	96.4	15.526	3.15	155		155	3		
WHL		7	2	7.3	80	44	52	91		2.3	52	84.7	21.682	6.30	325		325	6		
WHL		12	2	12.0	80	54	90	86		1.7	130	90.0	7.496	5.90	768		768	13		
WHL		13	2	13.2	80	72	95	88		1.8	141	86.3	6.815	6.47	948	4	913	16		
WHL		14	1	14.4	80	78	100	88		0.7	168	83.3	2.278	2.58	433		433	7		
WHL		16	6	15.8	80	70	88	87		4.8	136	66.4	14.063	19.25	2,625		2,625	45		
WHL		17	1	17.3	80	60	72	87		0.8	80	49.9	2.035	3.32	346	24	265	4		
WHL		18	4	17.9	80	83	105	88		2.9	152	70.1	7.087	12.37	1,885		1,885	32		
WHL		19	5	19.0	80	83	104	89		3.6	150	65.3	8.055	15.93	2,384		2,384	41		
WHL		20	3	20.1	80	79	96	88		2.0	145	57.4	4.125	9.05	1,323	1	1,309	22		
WHL		21	1	21.1	80	96	115	87		0.7	185	65.4	1.368	3.32	616		616	10		
WHL		22	3	22.0	80	86	107	89		1.9	179	58.2	3.363	8.88	1,592		1,592	27		
WHL		23	5	22.8	80	90	112	88		3.4	175	58.9	5.718	16.27	2,902	2	2,851	48		
WHL		24	1	24.0	80	85	104	89		0.6	159	52.0	1.003	3.15	552	9	501	9		
WHL		25	5	25.0	80	92	115	87		3.1	188	55.1	4.553	15.52	3,018	3	2,916	50		
WHL		26	1	26.0	80	90	111	84		0.6	184	51.2	.855	3.15	581		581	10		
WHL		27	1	27.0	80	76	105	86		0.6	128	46.7	.835	3.32	501	15	426	7		
WHL		28	1	28.0	80	98	121	90		0.6	227	51.9	.737	3.15	715		715	12		
WHL		30	1	29.5	80	86	106	86		0.6	150	43.1	.664	3.15	564	16	471	8		
WHL		31	1	31.0	80	92	113	91		0.6	217	43.7	.601	3.15	739	7	685	12		
WHL		32	1	32.0	80	90	110	86		0.6	184	41.3	.595	3.32	642	5	613	10		
WHL		Totals	48	15.9	80	66	83	88		37.8	153	62.0	109.451	150.70	23,615	2	23,029	391		
WH		10	1	10.2	80	56	67	94		1.0	106	78.8	5.553	3.15	333		333	6		
WH		13	1	13.1	80	56	80	86		0.9	118	73.3	3.549	3.32	390		390	7		
WH		14	1	13.6	80	77	94	92		0.9	149	82.9	3.123	3.15	469		469	8		
WH		15	2	15.1	80	82	101	89		1.6	152	79.7	5.035	6.30	957		957	16		
WH		16	1	16.1	80	84	103	88		0.8	156	76.8	2.229	3.15	490		490	8		
WH		17	4	16.9	80	79	97	89		3.2	133	69.0	8.480	13.18	1,919	8	1,757	30		
WH		19	1	18.9	80	96	115	87		0.8	169	73.0	1.705	3.32	563		563	10		
WH		Totals	11	14.8	80	74	91	90		9.2	139	74.0	29.673	35.58	5,120	3	4,959	84		
RCL		8	2	7.7	80	22	24	82		1.7	61	36.7	14.176	4.63	284		284	5		
RCL		9	1	8.6	80	33	38	83		0.8	74	53.0	5.738	2.31	172		172	3		
RCL		12	1	12.0	80	47	56	77		0.8	51	56.0	3.490	2.74	140		140	2		
RCL		14	2	13.8	80	45	54	82		1.2	48	47.1	4.460	4.63	224		224	4		
RCL		15	2	15.1	80	59	72	83		1.2	88	57.0	3.699	4.63	406		406	7		
RCL		17	2	16.7	80	74	92	82		1.1	122	66.1	3.043	4.63	578	3	563	10		
RCL		19	1	19.2	80	62	76	79		0.6	85	47.5	1.363	2.74	232		232	4		
RCL		20	2	20.0	80	73	91	78		1.0	103	54.6	2.122	4.63	477		477	8		
RCL		21	1	21.0	80	70	87	85		0.6	112	49.7	1.140	2.74	308		308	5		
RCL		23	2	23.0	80	84	103	77		1.2	124	53.7	1.953	5.64	723	3	699	12		
RCL		24	2	24.0	80	82	102	78		0.9	127	51.0	1.474	4.63	612	4	589	10		
RCL		25	1	25.0	80	32	45	76		0.7	26	21.6	.974	3.32	127	31	88	1		
RCL		28	2	28.0	80	79	99	71		0.9	101	42.4	1.083	4.63	509	9	466	8		
RCL		Totals	21	14.6	80	45	54	81		13.6	90	45.0	44.716	51.90	4,791	3	4,647	79		
DFL		18	1	17.8	80	86	110	87		0.8	150	74.2	1.922	3.32	500		500	8		
DFL		19	1	19.0	80	92	115	86		0.9	152	72.6	1.893	3.73	606	6	568	10		
DFL		26	1	26.0	80	100	125	87		0.7	193	57.7	1.011	3.73	768	7	718	12		

TC		PSTNDSUMRdVBar											Stand Table Summary with RD, V-bar - Project				Page		2	
													Date:		12/15/2015					
T33N R07E S27 TyRMZ2 THRU T33N R07E S29 TyRMZ1				Project				SEMPRE				Time:		2:54:10PM						
				Acres				17.00				Grown Year:								
Sp	S T	DBH Class	Sample Trees	QMD DBH	Total Age	Bole Ht.	Total Ht.	Avg FF	Avg CR	RD	V Bar	Ht/D	Trees/ Acre	BA/ Acre	Gross Bd. Ft. Acre	Def %	Net Bd. Ft. Acre	MBF		
DF	L	29	1	29.0	80	106	133	89		0.7	242	55.0	.813	3.73	902		902	15		
DF	L	33	1	33.0	80	102	128	85		0.6	231	46.5	.628	3.73	860		860	15		
DF	L	34	1	34.0	80	60	105	79		0.6	78	37.1	.527	3.32	311	17	258	4		
DF	L	41	1	41.0	80	112	141	82		0.6	201	41.3	.407	3.73	903	17	748	13		
DF	L	Totals	7	25.4	80	93	119	86		5.0	180	56.0	7.200	25.28	4,850	6	4,554	77		
SF	L	20	1	20.0	80	90	113	88		0.7	160	67.8	1.444	3.15	549	8	505	9		
SF	L	22	1	22.0	80	95	120	89		0.7	208	65.5	1.194	3.15	656		656	11		
SF	L	Totals	2	20.9	80	92	116	88		1.4	184	67.0	2.638	6.30	1,205	4	1,162	20		
RA		14	1	13.7	80	42	70	88		0.9	59	61.3	3.245	3.32	195		195	3		
RA		16	1	16.1	80	52	63	87		0.6	85	47.0	1.822	2.58	219		219	4		
RA		Totals	2	14.6	80	46	67	88		1.5	70	55.0	5.067	5.90	413		413	7		
Totals			91	15.9	80	63	79	87		69.0	141	59.0	198.746	275.66	39,994	3	38,764	659		

TC TSTATS				STATISTICS				PAGE 1		
PROJECT				SEMPRE				DATE 12/15/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
33N	07E	29	SEMPRE	UNT1	27.91	15	91	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	15	91	6.1							
CRUISE	8	46	5.8		5,577		.8			
DBH COUNT										
REFOREST										
COUNT	7	45	6.4							
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
WHEMLOCK	35	174.5	16.5	75	63.5	257.7	41,115	39,222	10,091	10,094
WR CEDAR	10	21.8	20.1	50	10.7	48.0	3,974	3,797	1,406	1,407
R ALDER	1	3.5	16.7	66	1.3	5.3	666	561	166	168
TOTAL	46	199.8	16.9	72	75.7	311.1	45,755	43,580	11,663	11,670
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	58.0	9.8	321	356	391					
WR CEDAR	79.0	26.3	257	348	439					
R ALDER										
TOTAL	62.7	9.2	317	350	382	157	80	39		
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	69.4	18.5	142	175	207					
WR CEDAR	90.2	24.1	17	22	27					
R ALDER	263.9	70.5	1	4	6					
TOTAL	61.1	16.3	167	200	232	160	81	40		
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	49.5	13.2	224	258	292					
WR CEDAR	90.2	24.1	36	48	60					
R ALDER	263.9	70.5	2	5	9					
TOTAL	42.3	11.3	276	311	346	76	39	19		
CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	52.7	14.1	33,699	39,222	44,745					
WR CEDAR	102.8	27.5	2,755	3,797	4,840					
R ALDER	263.9	70.5	166	561	956					
TOTAL	48.5	13.0	37,936	43,580	49,225	101	51	25		

T33N R07E S29 TUN1B										T33N R07E S29 TUN1B			
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt				
33N	07E	29	SEMPRE	UN1B	2.63	2	5	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 Ft	Dia In	Bd Ft		CF/ Lf
								2-4	5-7	8-11	12+	12-20	21-30	31-35	36-99					
RC	DM	3S	67	.0	3,930	3,930	10		48	52				100	36	11	184	1.79	21.4	
RC	DM	4S	33		1,852	1,852	5	100						36	6	45	0.67	41.2		
RC	Totals		54		5,782	5,782	15	32	33	35				11	8	92	1.08	62.6		
RA	DM	2S	39	50.0	3,857	1,929	5		100					100	30	13	90	1.43	21.4	
RA	DM	4S	52	14.3	2,946	2,525	7		100					100	30	9	60	0.67	42.1	
RA	DM	UT	9	50.0	842	421	1	100						100	23	4	10	0.26	42.1	
RA	Totals		46	36.2	7,645	4,875	13	9	52	40				100	27	8	46	0.70	105.6	
Type Totals				20.6	13,427	10,657	28	4	17	41	37			52	48	29	8	63	0.86	168.2

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	SEMPRE			DATE	12/15/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
33N	07E	29	SEMPRE	UNIB	2.63	2	9	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL	2	9	4.5							
CRUISE	1	5	5.0		275		1.8			
DBH COUNT										
REFOREST										
COUNT	1	4	4.0							
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
WR CEDAR	3	41.2	18.9	55	18.4	80.0	5,782	5,782	2,260	2,260
R ALDER	2	63.5	15.2	60	20.5	80.0	7,645	4,875	2,046	2,016
TOTAL	5	104.7	16.7	58	39.1	160.0	13,427	10,657	4,306	4,276
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WR CEDAR		71.2	49.3	90	177	264				
R ALDER		17.7	16.6	67	80	93				
TOTAL		75.2	37.4	86	138	190	279	142	70	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WR CEDAR		70.7	66.2	14	41	68				
R ALDER		.0	.0	64	64	64				
TOTAL		27.8	26.1	77	105	132	54	28	14	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WR CEDAR		70.7	66.2	27	80	133				
R ALDER		.0	.0	80	80	80				
TOTAL		35.4	33.1	107	160	213	88	45	22	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WR CEDAR		70.7	66.2	1,954	5,782	9,611				
R ALDER		.0	.0	4,874	4,875	4,876				
TOTAL		38.4	35.9	6,829	10,657	14,486	103	53	26	

T33N R07E S27 T0002										T33N R07E S27 T0002				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
33N	07E	27	SEMPRE	0002	10.69	5	17	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					
									Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft		CF/ Lf				
									2-4	5-7	8-11	12+	12-20	21-30	31-35	36-99									
WH		DM	2S	72	6.1	26,474	24,860	266						100		13			87	37	15	309	1.88	80.4	
WH		DM	3S	22		7,622	7,622	81						100				29	71	38	10	141	0.97	53.9	
WH		DM	4S	6		2,007	2,007	21			58	42				31	28		41	26	6	32	0.46	62.2	
WH		DM	UT																	26	2		0.31	17.5	
WH	Totals			81	4.5	36,103	34,489	369			3	25	72			11	2	6	81	33	10	161	1.19	214.0	
RA		DM	3S	24		787	787	8						100					100	30	10	110	0.73	7.2	
RA		DM	4S	53		1,695	1,695	18			40	60						13	60	33	7	75	0.63	22.7	
RA		DM	UT	23		701	701	7						100		100				18	12	90	1.09	7.8	
RA	Totals			7		3,183	3,183	34			21	57	22			22	31	32	15	29	9	84	0.71	37.7	
RC		DM	3S	37	6.7	913	852	9						100					100	34	11	140	1.31	6.1	
RC		DM	4S	17		360	360	4			100								100	33	6	40	0.52	9.0	
RC		OS	3S	46	2.8	1,062	1,033	11						100					100	40	15	350	2.75	3.0	
RC	Totals			5	3.9	2,335	2,245	24			16	38	46						54	46	34	9	124	1.21	18.1
DF		DM	2S	6		158	158	2						100					100	28	12	140	1.60	1.1	
DF		OS	2S	94	4.8	2,578	2,454	26						100					100	40	25	1085	5.30	2.3	
DF	Totals			6	4.5	2,737	2,612	28						100		6			94	36	21	770	4.34	3.4	
Type Totals					4.1	44,358	42,530	455			5	26	69			10	4	10	75	33	10	156	1.18	273.1	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	SEMPRE			DATE	12/15/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
33N	07E	27	SEMPRE	0002	10.69	5	25	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	5	25	5.0							
CRUISE	4	17	4.3		1,258		1.4			
DBH COUNT										
REFOREST										
COUNT	1	5	5.0							
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
WHEMLOCK	11	84.8	21.1	87	45.0	206.7	36,103	34,489	8,445	8,444
R ALDER	3	22.7	16.2	61	8.1	32.6	3,183	3,183	779	779
WR CEDAR	2	9.0	21.0	70	4.7	21.8	2,335	2,245	749	749
DOUG FIR	1	1.1	42.0	110	1.7	10.9	2,737	2,612	530	530
TOTAL	17	117.7	20.6	81	59.9	272.0	44,358	42,530	10,504	10,503
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	45.3	14.3	404	471	538					
R ALDER	7.1	4.9	133	140	147					
WR CEDAR	58.5	54.8	131	290	449					
DOUG FIR										
TOTAL	103.1	25.8	371	499	628	451	230	113		
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	37.0	18.4	69	85	100					
R ALDER	223.6	111.1		23	48					
WR CEDAR	150.1	74.6	2	9	16					
DOUG FIR	223.6	111.1		1	2					
TOTAL	22.6	11.2	104	118	131	25	13	6		
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	28.8	14.3	177	207	236					
R ALDER	223.6	111.1		33	69					
WR CEDAR	136.9	68.0	7	22	37					
DOUG FIR	223.6	111.1		11	23					
TOTAL			272	272	272					
CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	33.0	16.4	28,827	34,489	40,151					
R ALDER	223.6	111.1		3,183	6,720					
WR CEDAR	137.6	68.4	710	2,245	3,780					
DOUG FIR	223.6	111.1		2,612	5,515					
TOTAL			42,530	42,530	42,530					

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	SEMPRE			DATE	12/15/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
33N	07E	27	SEMPRE	0003	2.64	2	10	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	2	10	5.0							
CRUISE	2	10	5.0		274		3.7			
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
WHEMLOCK	8	93.4	20.7	91	47.9	217.6	38,607	37,980	9,263	9,263
DOUG FIR	1	4.3	34.0	110	4.7	27.2	6,169	5,651	1,218	1,218
WR CEDAR	1	5.9	29.0	80	5.1	27.2	2,787	2,609	1,025	1,025
TOTAL	10	103.6	21.9	91	58.1	272.0	47,563	46,241	11,505	11,505
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	37.4	14.1	381	444	506					
DOUG FIR										
WR CEDAR										
TOTAL	58.6	19.5	427	530	633	152	78	38		
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	50.8	47.6	49	93	138					
DOUG FIR	141.4	132.4		4	10					
WR CEDAR	141.4	132.4		6	14					
TOTAL	31.8	29.8	73	104	134	71	36	18		
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	70.7	66.2	74	218	362					
DOUG FIR	141.4	132.4		27	63					
WR CEDAR	141.4	132.4		27	63					
TOTAL	28.3	26.5	200	272	344	56	29	14		
CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	78.9	73.8	9,936	37,980	66,025					
DOUG FIR	141.4	132.4		5,651	13,135					
WR CEDAR	141.4	132.4		2,609	6,064					
TOTAL	39.5	37.0	29,135	46,241	63,346	109	56	27		

T33N R07E S27 T0004 **T33N R07E S27 T0004**
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt
 33N 07E 27 SEMPRE 0004 33.55 15 43 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		
									2-4	5-7	8-11	12+	12-20	21-30	31-35	36-99							
WH		DM	2S	44	.9	10,015	9,926	333						100	4	8		88	37	15	324	1.92	30.6
WH		DM	3S	24	.3	5,270	5,254	176						100				100	40	9	128	0.89	41.1
WH		DM	4S	7		1,738	1,738	58		79	21			9	22		69	31	6	46	0.57	37.9	
WH		DM	UT	3	18.2	736	602	20		70	30			30	70			28	3	11	0.20	56.8	
WH		OS	2S	22	5.8	5,053	4,761	160									85	38	19	569	3.26	8.4	
WH	Totals			66	2.3	22,812	22,281	748		8	26	66		3	10		86	34	8	127	0.97	174.8	
RC		DM	3S	41		2,442	2,442	82			68	32			2	19	78	37	10	139	1.29	17.6	
RC		DM	4S	18	11.4	1,196	1,060	36		100					71	13	17	31	5	34	0.40	31.2	
RC		OS	3S	41	1.7	2,464	2,424	81				100					100	40	17	469	3.57	5.2	
RC	Totals			17	2.9	6,103	5,926	199		18	28	54			14	10	76	34	8	110	1.08	53.9	
RA		DM	2S	42	.3	685	683	23							2	96	2	32	12	162	1.29	4.2	
RA		DM	4S	8		125	125	4		100					1	99		32	5	30	0.46	4.2	
RA		DM	UT	50	.2	804	802	27	15	0	84				100		0	30	7	65	0.56	12.4	
RA	Totals			5	.2	1,614	1,610	54	8	8	42	42			51	48	1	31	8	78	0.70	20.7	
DF		DM	2S	38		1,174	1,174	39							18		82	35	16	425	2.40	2.8	
DF		OS	2S	62		1,893	1,893	63									100	40	27	1370	5.93	1.4	
DF	Totals			9		3,067	3,067	103							7		93	37	20	740	3.68	4.1	
SS		DM	2S	29		305	305	10									100	40	18	530	2.59	.6	
SS		DM	3S	6	.0	58	58	2			100						100	28	10	100	1.16	.6	
SS		OS	2S	65		661	661	22									100	40	25	1150	5.05	.6	
SS	Totals			3		1,024	1,024	34			6	94			6		94	36	18	593	3.13	1.7	
Type Totals					2.1	34,619	33,908	1,138	0	9	24	67		2	12	4	81	33	8	133	1.03	255.3	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	SEMPRE			DATE	12/15/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
33N	07E	27	SEMPRE	0004	33.55	15	71	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	15	71	4.7							
CRUISE	9	43	4.8	4,882			9			
DBH COUNT										
REFOREST										
COUNT	6	23	3.8							
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
WHEMLOCK	25	101.3	16.8	63	38.0	155.9	22,812	22,281	5,679	5,679
WR CEDAR	12	31.9	18.3	60	13.6	58.0	6,103	5,926	1,961	1,961
R ALDER	4	10.4	16.2	61	3.7	14.8	1,614	1,610	445	445
DOUG FIR	1	1.4	38.0	114	1.8	10.9	3,067	3,067	559	559
S SPRUCE	1	.6	34.0	110	0.6	3.6	1,024	1,024	194	194
TOTAL	43	145.5	17.5	63	58.1	243.3	34,619	33,908	8,838	8,838
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	58.8	12.0		373	424	475				
WR CEDAR	75.6	22.8		257	333	409				
R ALDER	35.5	20.3		177	223	268				
DOUG FIR										
S SPRUCE										
TOTAL	93.2	14.2		389	453	518	347	177	87	
CL:	68.1 %	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	80.2	21.4		80	101	123				
WR CEDAR	221.3	59.1		13	32	51				
R ALDER	220.8	59.0		4	10	16				
DOUG FIR	207.0	55.3		1	1	2				
S SPRUCE	387.3	103.4			1	1				
TOTAL	70.4	18.8		118	146	173	212	108	53	
CL:	68.1 %	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	58.8	15.7		131	156	180				
WR CEDAR	171.7	45.8		31	58	85				
R ALDER	219.4	58.6		6	15	23				
DOUG FIR	207.0	55.3		5	11	17				
S SPRUCE	387.3	103.4			4	7				
TOTAL	51.2	13.7		210	243	277	112	57	28	
CL:	68.1 %	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	60.1	16.0		18,707	22,281	25,855				
WR CEDAR	172.2	46.0		3,201	5,926	8,651				
R ALDER	219.3	58.6		667	1,610	2,553				
DOUG FIR	207.0	55.3		1,371	3,067	4,763				
S SPRUCE	387.3	103.4			1,024	2,083				
TOTAL	43.6	11.6		29,958	33,908	37,857	81	42	20	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT		SEMPRE		DATE	12/15/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
33N	07E	27	SEMPRE	0005	13.10	7	24	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	7	24	3.4							
CRUISE	4	15	3.8	804			1.9			
DBH COUNT										
REFOREST										
COUNT	3	9	3.0							
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
WHEMLOCK	7	33.7	26.0	89	24.4	124.3	22,150	18,999	5,169	5,168
PS FIR	4	9.8	24.1	83	6.3	31.1	4,779	4,220	1,144	1,142
DOUG FIR	3	14.5	17.2	51	5.6	23.3	2,831	2,747	728	728
NOBLE F	1	3.5	20.3	95	1.7	7.8	1,314	1,314	338	338
TOTAL	15	61.4	23.6	79	38.4	186.5	31,073	27,280	7,379	7,377
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	38.6	15.7		509	604	699				
PS FIR	51.0	29.1		342	483	623				
DOUG FIR	91.6	63.3		131	357	583				
NOBLE F										
TOTAL	49.2	13.1		441	507	574	104	53	26	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	64.8	26.4		25	34	43				
PS FIR	172.7	70.3		3	10	17				
DOUG FIR	264.6	107.7			14	30				
NOBLE F	264.6	107.7			3	7				
TOTAL	35.8	14.6		52	61	70	59	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	
WHEMLOCK	60.4	24.6		94	124	155				
PS FIR	170.8	69.5		9	31	53				
DOUG FIR	264.6	107.7			23	48				
NOBLE F	264.6	107.7			8	16				
TOTAL	22.9	9.3		169	187	204	24	12	6	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	65.1	26.5		13,966	18,999	24,032				
PS FIR	177.2	72.1		1,177	4,220	7,262				
DOUG FIR	264.6	107.7			2,747	5,706				
NOBLE F	264.6	107.7			1,314	2,729				
TOTAL	38.8	15.8		22,972	27,280	31,588	70	36	17	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT		SEMPRE		DATE	12/15/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
033	007	27	SEMPRE	00U6	13.05	7	39	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		7	39	5.6						
CRUISE		4	18	4.5	2,207		.8			
DBH COUNT										
REFOREST										
COUNT		3	21	7.0						
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
WHEMLOCK	10	92.2	18.0	62	38.5	163.3	17,465	15,880	5,150	5,149
PS FIR	4	65.1	17.5	69	26.0	108.9	13,087	11,888	3,677	3,677
DOUG FIR	4	11.8	22.0	62	6.6	31.1	3,295	2,608	991	990
TOTAL	18	169.1	18.1	65	71.2	303.3	33,846	30,376	9,817	9,816
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	92.6	30.8	181	261	341					
PS FIR	54.7	31.2	151	220	289					
DOUG FIR	56.8	32.4	199	295	391					
TOTAL	76.2	18.5	212	259	307	245	125	61		
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	45.3	18.5	75	92	109					
PS FIR	97.5	39.7	39	65	91					
DOUG FIR	264.6	107.7		12	25					
TOTAL	33.9	13.8	146	169	192	53	27	13		
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	47.1	19.2	132	163	195					
PS FIR	100.0	40.7	65	109	153					
DOUG FIR	264.6	107.7		31	65					
TOTAL	27.1	11.0	270	303	337	34	17	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		
WHEMLOCK	55.3	22.5	12,308	15,880	19,452					
PS FIR	101.6	41.3	6,973	11,888	16,804					
DOUG FIR	264.6	107.7		2,608	5,416					
TOTAL	31.2	12.7	26,518	30,376	34,235	45	23	11		

TC TSTATS				STATISTICS				PAGE 1		
PROJECT SEMPRES				DATE 12/15/2015						
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
033	007	27	SEMPRES	00U7	8.51	5	30	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	5	30	6.0							
CRUISE	4	24	6.0	1,613		1.5				
DBH COUNT										
REFOREST										
COUNT	1	6	6.0							
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
WHEMLOCK	13	109.8	18.1	70	46.1	196.0	23,417	22,602	6,684	6,685
PS FIR	7	65.3	15.6	63	22.0	87.1	10,013	9,164	2,776	2,776
DOUG FIR	4	14.5	23.5	75	9.0	43.6	5,490	5,310	1,538	1,538
TOTAL	24	189.5	17.8	68	77.5	326.6	38,920	37,076	10,998	10,999
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7			10
WHEMLOCK	59.6	17.2	205	247	289					
PS FIR	109.6	44.6	125	226	326					
DOUG FIR	46.8	26.7	308	420	532					
TOTAL	71.4	14.9	229	270	310	213	108			53
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7			10
WHEMLOCK	56.1	27.9	79	110	140					
PS FIR	101.1	50.2	32	65	98					
DOUG FIR	175.6	87.2	2	14	27					
TOTAL	27.6	13.7	164	190	215	38	19			9
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7			10
WHEMLOCK	50.5	25.1	147	196	245					
PS FIR	83.9	41.7	51	87	123					
DOUG FIR	163.0	81.0	8	44	79					
TOTAL	11.8	5.9	308	327	346	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
WHEMLOCK	64.8	32.2	15,319	22,602	29,886					
PS FIR	89.4	44.4	5,091	9,164	13,236					
DOUG FIR	154.3	76.7	1,240	5,310	9,381					
TOTAL	22.8	11.3	32,880	37,076	41,272	26	13			6

T TSPCSTGR	Species, Sort Grade - Board Foot Volumes (Type)										Page 1											
	Project: SEMPRE										Date 12/15/2015											
											Time 2:52:22PM											
T033 R007 S27 T00U8										T033 R007 S27 T00U8												
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt													
033	007	27	SEMPRE	00U8	31.30	17	58	S	W													
Spp	S	So	Gr	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre		
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln	Dia	Bd		CF/Lf	
								2-4	5-7	8-11	12+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf			
WH	DM	2S		18	13.8	4,853	4,183									40	14	239	1.81	17.5		
WH	DM	3S		48	7.5	11,345	10,498			100			1	5	94	39	9	115	0.92	91.4		
WH	DM	4S		30	1.6	6,640	6,534		100			11	16	34	39	30	5	35	0.39	184.5		
WH	DM	UT		1		217	217		100			100				20	3	4	0.13	57.5		
WH	OS	2S		3	29.6	866	610				100					40	26	880	7.37	.7		
WH	Totals			63	7.9	23,921	22,041		1	30	48	22	4	5	13	78	31	6	63	0.64	351.6	
SF	DM	2S		33	9.3	4,117	3,734									40	15	303	1.94	12.3		
SF	DM	3S		49	1.7	5,571	5,474			100						40	9	124	0.90	44.2		
SF	DM	4S		11	2.4	1,265	1,234		100				35	25	40	32	5	34	0.36	36.3		
SF	DM	UT		7		732	732		23	7	93		7		93	26	7	80	0.84	9.2		
SF	Totals			32	4.4	11,684	11,174		350	0	11	55	33	0	4	3	93	36	8	110	0.86	101.9
RC	DM	4S		100		522	522		16				52	34	15	21	4	18	0.33	29.4		
RC	Totals			1		522	522		16				52	34	15	21	4	18	0.33	29.4		
DF	DM	2S		84	6.9	483	450		14							40	14	270	1.98	1.7		
DF	DM	4S		16		83	83		3		100				100	30	7	50	0.67	1.7		
DF	DM	UT														27	2		0.19	10.9		
DF	Totals			2	5.9	566	533		17	16	84		16	84		29	4	38	0.54	14.2		
RA	DM	2S		25	20.0	178	143		4				100			20	16	160	2.02	.9		
RA	DM	3S		53	9.9	339	306		10				50	50		24	10	79	0.89	3.9		
RA	DM	4S		8	16.7	53	45		1		100				100	36	6	50	0.80	.9		
RA	DM	UT		14		78	78		2	57	43		43	57		22	3	7	0.24	10.6		
RA	Totals			2	12.1	649	571		18	8	14	54	25	58	34	8	24	5	35	0.53	16.3	
Type Totals					6.7	37,343	34,841		1,091	1	24	49	26	4	6	9	81	31	7	68	0.68	513.4

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT		SEMPRE		DATE	12/15/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
033	007	27	SEMPRE	00U8	31.30	17	112	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	17	112	6.6							
CRUISE	9	58	6.4	9,814			.6			
DBH COUNT										
REFOREST										
COUNT	8	54	6.8							
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
WHEMLOCK	33	209.1	14.2	58	61.1	230.6	23,921	22,041	7,076	7,073
PS FIR	13	51.0	17.6	75	20.6	86.5	11,684	11,174	3,159	3,158
WR CEDAR	6	29.4	9.4	25	4.6	14.1	522	522	202	202
DOUG FIR	2	12.5	11.9	34	2.8	9.6	566	533	219	219
R ALDER	4	11.5	12.2	35	2.7	9.4	649	571	204	204
TOTAL	58	313.5	14.3	56	92.6	350.2	37,343	34,841	10,861	10,857
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	106.9	18.6		142	174	207				
PS FIR	54.3	15.7		219	259	300				
WR CEDAR	61.3	27.3		16	22	28				
DOUG FIR	141.4	132.4			160	372				
R ALDER	84.1	48.0		53	103	152				
TOTAL	99.7	13.1		150	172	195	397	202	99	
CL:	68.1 %	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	65.9	16.4		175	209	243				
PS FIR	128.6	32.1		35	51	67				
WR CEDAR	325.9	81.4		5	29	53				
DOUG FIR	266.9	66.7		4	13	21				
R ALDER	286.9	71.7		3	12	20				
TOTAL	36.2	9.1		285	314	342	56	28	14	
CL:	68.1 %	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	59.9	15.0		196	231	265				
PS FIR	126.0	31.5		59	86	114				
WR CEDAR	346.2	86.5		2	14	26				
DOUG FIR	222.7	55.6		4	10	15				
R ALDER	319.8	79.9		2	9	17				
TOTAL	23.3	5.8		330	350	371	23	12	6	
CL:	68.1 %	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	69.8	17.4		18,199	22,041	25,883				
PS FIR	126.1	31.5		7,655	11,174	14,694				
WR CEDAR	412.3	103.0			522	1,061				
DOUG FIR	299.5	74.8		134	533	931				
R ALDER	412.3	103.0			571	1,158				
TOTAL	37.6	9.4		31,571	34,841	38,111	60	31	15	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	SEMPRE			DATE	12/15/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
033	007	27	SEMPRE	00U9	2.15	3	17	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	3	17	5.7							
CRUISE	2	10	5.0	374		2.7				
DBH COUNT										
REFOREST										
COUNT	1	7	7.0							
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
WHEMLOCK	9	148.1	18.4	50	63.5	272.2	18,761	17,255	7,105	7,105
PS FIR	1	26.0	16.0	51	9.1	36.3	2,859	2,859	892	892
TOTAL	10	174.1	18.0	51	72.7	308.5	21,621	20,115	7,997	7,997
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	49.4	17.4		113	137	160				
PS FIR										
TOTAL	47.9	15.9		113	134	155	102	52	25	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	19.1	13.2		129	148	168				
PS FIR	86.6	59.9		10	26	42				
TOTAL	21.6	15.0		148	174	200	27	14	7	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	20.0	13.8		235	272	310				
PS FIR	86.6	59.9		15	36	58				
TOTAL	20.4	14.1		265	308	352	24	12	6	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	17.8	12.3		15,129	17,255	19,382				
PS FIR	86.6	59.9		1,146	2,859	4,572				
TOTAL	25.4	17.6		16,582	20,115	23,647	37	19	9	

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)										Page 1												
		Project: SEMPRE										Date 12/15/2015												
												Time 2:52:22PM												
T33N R07E S29 TRMZ1											T33N R07E S29 TRMZ1													
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt															
33N	07E	29	SEMPRE	RMZ1	7.87	8	47	S	W															
S Spp	So T	Gr rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre				
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln	Dia	Bd		CF/ Lf			
								2-4	5-7	8-11	12+	12-20	21-30	31-35	36-99	Ft	In	Ft						
WH	L	DM	2S	61	2.4	13,429	13,101	103					100			40	15	324	1.77	40.5				
WH	L	DM	3S	17		3,730	3,730	29					100			40	9	123	0.88	30.3				
WH	L	DM	4S	8	1.9	1,678	1,647	13		93	7		7	4	17	34	6	47	0.51	35.4				
WH	L	DM	UT	5		1,038	1,038	8	100							36	2	10	0.14	101.8				
WH	L	OS	2S	9	14.3	2,224	1,907	15					100			40	21	698	3.72	2.7				
WH	L	Totals		54	3.1	22,100	21,423	169		5	7	18	70		1	0	1	98		37	6	102	0.70	210.7
WH		DM	2S	21		1,770	1,770	14					100			40	12	200	1.13	8.9				
WH		DM	3S	51		4,113	4,113	32					100			40	10	153	0.88	26.9				
WH		DM	4S	28		2,220	2,220	17		100				9	91	38	5	46	0.37	47.8				
WH		DM	UT													19	2		0.12	16.6				
WH	L	Totals		21		8,104	8,104	64		27	51	22			2	98	36	7	81	0.58	100.1			
RC	L	DM	3S	59	2.2	4,511	4,412	35		1	49	50		3	1		34	11	146	1.25	30.3			
RC	L	DM	4S	30	1.4	2,335	2,302	18		100				33	20	9	24	5	30	0.37	77.3			
RC	L	OS	3S	11	11.1	842	748	6					100			36	16	320	3.31	2.3				
RC	L	Totals		19	2.9	7,688	7,462	59		32	29	39		12	7	3	27	7	68	0.76	109.9			
SF	L	DM	2S	73	4.8	1,936	1,842	15					100			40	15	323	1.75	5.7				
SF	L	DM	3S	27		668	668	5					100			40	9	117	0.83	5.7				
SF	L	DM	UT													30	2		0.28	2.6				
SF	L	Totals		6	3.6	2,604	2,510	20			27	73			100	38	10	180	1.14	14.0				
Type Totals					2.5	40,495	39,498	311		3	15	27	55		3	1	2	94		34	7	91	0.70	434.7

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	SEMPRE			DATE	12/15/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
33N	07E	29	SEMPRE	RMZ1	7.87	8	47	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	8	47	5.9							
CRUISE	8	47	5.9	2,109		2.2				
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
WHEMLOCK	8	47.8	14.5	76	14.3	54.5	8,104	8,104	2,070	2,070
WHEMLOCK-L	21	135.4	13.9	59	38.3	142.9	22,100	21,423	5,446	5,444
WR CEDAR-L	16	79.1	13.6	43	21.7	80.0	7,688	7,462	2,265	2,265
PS FIR-L	2	5.7	20.9	92	3.0	13.6	2,604	2,510	609	609
TOTAL	47	268.0	14.1	58	77.5	291.0	40,495	39,498	10,390	10,388
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	33.5	12.6	168	193	217					
WHEMLOCK-L	76.1	17.0	340	410	479					
WR CEDAR-L	78.1	20.2	160	201	241					
PS FIR-L	31.4	29.4	318	450	582					
TOTAL	82.9	12.1	267	303	340	274	140	69		
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	117.7	44.4	27	48	69					
WHEMLOCK-L	178.6	67.3	44	135	227					
WR CEDAR-L	135.2	51.0	39	79	119					
PS FIR-L	186.3	70.2	2	6	10					
TOTAL	108.3	40.8	159	268	377	533	272	133		
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	119.5	45.1	30	54	79					
WHEMLOCK-L	53.6	20.2	114	143	172					
WR CEDAR-L	136.3	51.4	39	80	121					
PS FIR-L	185.2	69.8	4	14	23					
TOTAL	56.5	21.3	229	291	353	145	74	36		
CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	120.8	45.5	4,414	8,104	11,794					
WHEMLOCK-L	40.5	15.3	18,153	21,423	24,692					
WR CEDAR-L	152.9	57.6	3,161	7,462	11,762					
PS FIR-L	187.2	70.6	738	2,510	4,282					
TOTAL	45.6	17.2	32,700	39,498	46,296	95	48	24		

TC		TSTNDSUMRdVBar		Stand Table Summary with RD, V-bar - Type														
Project														SEMPRE				
T33N R07E S29 TRMZ1											T33N R07E S29 TRMZ1							
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees				Page:	1						
33N	07E	29	SEMPRE	RMZ1	7.87	8	47				Date:	12/15/201						
											Time:	2:54:11PM						
Spc	S	DBH Class	Sample Trees	QMD DBH	Total Age	Bole Ht.	Total Ht.	Avg FF	Avg CR	RD	V Bar	Ht/D	Trees/Acre	BA/Acre	Gross Bd. Ft. Acre	Def %	Net Bd. Ft. Acre	MBF
WH	L	6	1	6.1	80	42	49	88		2.8	49	96.4	33.537	6.81	335		335	3
WH	L	7	2	7.3	80	44	52	91		5.0	52	84.7	46.834	13.61	703		703	6
WH	L	13	1	13.3	80	80	98	91		1.9	166	88.4	7.055	6.81	1,129		1,129	9
WH	L	16	2	16.0	80	65	78	85		3.4	110	58.6	9.689	13.61	1,498		1,498	12
WH	L	18	1	17.9	80	86	106	94		1.6	177	71.1	3.895	6.81	1,207		1,207	10
WH	L	19	4	19.0	80	84	103	89		6.2	152	64.9	13.831	27.23	4,151		4,151	33
WH	L	20	1	20.0	80	66	80	89		1.5	119	48.0	3.120	6.81	842	4	811	6
WH	L	22	2	22.0	80	85	105	90		2.9	188	57.0	5.157	13.61	2,553		2,553	20
WH	L	24	1	24.0	80	85	104	89		1.4	159	52.0	2.166	6.81	1,192	9	1,083	9
WH	L	25	2	25.0	80	96	118	89		2.7	195	56.4	3.993	13.61	2,875	8	2,656	21
WH	L	26	1	26.0	80	90	111	84		1.3	184	51.2	1.846	6.81	1,255		1,255	10
WH	L	28	1	28.0	80	98	121	90		1.3	227	51.9	1.592	6.81	1,544		1,544	12
WH	L	30	1	29.5	80	86	106	86		1.3	150	43.1	1.434	6.81	1,219	16	1,018	8
WH	L	31	1	31.0	80	92	113	91		1.2	217	43.7	1.299	6.81	1,597	7	1,480	12
WH		Totals	21	13.9	80	59	70	89		38.3	150	60.6	135.447	142.93	22,100	3	21,423	169
WH		10	1	10.2	80	56	67	94		2.1	106	78.8	11.994	6.81	720		720	6
WH		14	1	13.6	80	77	94	92		1.8	149	82.9	6.747	6.81	1,012		1,012	8
WH		15	2	15.1	80	82	101	89		3.5	152	79.7	10.877	13.61	2,067		2,067	16
WH		16	1	16.1	80	84	103	88		1.7	156	76.8	4.814	6.81	1,059		1,059	8
WH		17	3	16.8	80	84	103	89		5.0	159	74.1	13.326	20.42	3,246		3,246	26
WH		Totals	8	14.5	80	76	92	91		14.3	149	76.6	47.759	54.45	8,104		8,104	64
RC	L	8	2	7.7	80	22	24	82		3.6	61	36.7	30.621	10.00	612		612	5
RC	L	9	1	8.6	80	33	38	83		1.7	74	53.0	12.395	5.00	372		372	3
RC	L	14	2	13.8	80	45	54	82		2.7	48	47.1	9.634	10.00	484		484	4
RC	L	15	2	15.1	80	59	72	83		2.6	88	57.0	7.991	10.00	877		877	7
RC	L	17	2	16.7	80	74	92	82		2.4	122	66.1	6.574	10.00	1,249	3	1,216	10
RC	L	20	2	20.0	80	73	91	78		2.2	103	54.6	4.584	10.00	1,031		1,031	8
RC	L	23	1	23.0	80	80	100	78		1.0	118	52.2	1.733	5.00	641	8	589	5
RC	L	24	2	24.0	80	82	102	78		2.0	127	51.0	3.183	10.00	1,321	4	1,273	10
RC	L	28	2	28.0	80	79	99	71		1.9	101	42.4	2.339	10.00	1,099	9	1,006	8
RC		Totals	16	13.6	80	43	51	81		21.7	93	45.1	79.053	80.00	7,688	3	7,462	59
SF	L	20	1	20.0	80	90	113	88		1.5	160	67.8	3.120	6.81	1,186	8	1,092	9
SF	L	22	1	22.0	80	95	120	89		1.5	208	65.5	2.578	6.81	1,418		1,418	11
SF		Totals	2	20.9	80	92	116	88		3.0	184	66.6	5.698	13.61	2,604	4	2,510	20
Totals			47	14.1	80	58	70	87		77.5	136	59.1	267.957	290.99	40,495	2	39,498	311

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	SEMPRE			DATE	12/15/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
33N	07E	27	SEMPRE	RMZ2	1.61	2	9	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		2	9	4.5						
CRUISE		2	9	4.5	243	3.7				
DBH COUNT										
REFOREST COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
WHEMLOCK-L	8	131.4	17.4	78	52.1	217.6	36,679	36,394	8,674	8,674
R ALDER	1	19.2	16.1	52	6.8	27.2	2,309	2,309	554	554
TOTAL	9	150.6	17.3	75	58.9	244.8	38,988	38,703	9,227	9,227
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK-L		43.6	16.4	285	341	397				
R ALDER										
TOTAL		49.7	17.6	261	317	372	111	57	28	
CL:	68.1 %	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK-L		141.4	132.4		131	305				
R ALDER		141.4	132.4		19	45				
TOTAL		105.3	98.6	2	151	299	778	397	194	
CL:	68.1 %	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK-L		141.4	132.4		218	506				
R ALDER		141.4	132.4		27	63				
TOTAL		110.0	103.0		245	497	849	433	212	
CL:	68.1 %	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK-L		141.4	132.4		36,394	84,589				
R ALDER		141.4	132.4		2,309	5,366				
TOTAL		124.5	116.6		38,703	83,840	1,088	555	272	

TC		TSTNDSUMRdVBar														Stand Table Summary with RD, V-bar - Type			
Project														SEMPRE					
T33N R07E S27 TRMZ2														T33N R07E S27 TRMZ2					
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees							Page:	1				
33N	07E	27	SEMPRE	RMZ2	1.61	2	9							Date:	12/15/201				
														Time:	2:54:11PM				
Spc	S	DBH Class	Sample Trees	QMD DBH	Total Age	Bole Ht.	Total Ht.	Avg FF	Avg CR	RD	V Bar	Ht/D	Trees/Acre	BA/Acre	Gross Bd. Ft. Acre	Def %	Net Bd. Ft. Acre	MBF	
WH	L	12	1	12.3	80	50	100	87		7.8	145	97.6	32.963	27.20	3,956		3,956	6	
WH	L	14	1	14.4	80	78	100	88		7.2	168	83.3	24.050	27.20	4,570		4,570	7	
WH	L	16	1	16.2	80	88	107	88		6.8	168	79.3	19.003	27.20	4,561		4,561	7	
WH	L	18	1	18.4	80	88	110	87		6.3	168	71.7	14.730	27.20	4,566		4,566	7	
WH	L	20	1	19.7	80	100	116	89		6.1	203	70.7	12.850	27.20	5,526		5,526	9	
WH	L	22	1	22.0	80	88	112	85		5.8	159	61.1	10.304	27.20	4,328		4,328	7	
WH	L	23	1	22.9	80	96	115	85		5.7	171	60.3	9.510	27.20	4,945	6	4,660	8	
WH	L	25	1	25.0	80	80	120	86		5.4	155	57.6	7.979	27.20	4,229		4,229	7	
WH		Totals	8	17.4	80	78	107	87		52.1	167	73.6	131.389	217.60	36,679	1	36,394	59	
RA		16	1	16.1	80	52	63	87		6.8	85	47.0	19.239	27.20	2,309		2,309	4	
RA		Totals	1	16.1	80	52	63	87		6.8	85	47.0	19.239	27.20	2,309		2,309	4	
Totals			9	17.3	80	75	101	87		58.9	158	70.4	150.628	244.80	38,988	1	38,703	62	

T33N R07E S27 TRMZ3										T33N R07E S27 TRMZ3				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
33N	07E	27	SEMPRE	RMZ3	5.19	5	24	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 Ft	Dia In
				2-4	5-7	8-11							12+	12-20	21-30	31-35	36-99					
WH	L	DM	2S	49	2.1	13,774	13,478	70	100				15				85	38	15	322	1.91	41.9
WH	L	DM	3S	29	5.0	8,255	7,845	41	100				15				85	38	9	107	0.81	73.0
WH	L	DM	4S	12	.0	3,005	3,005	16	78	22	19		12	6	63	29	5	38	0.44	79.6		
WH	L	DM	UT	4		1,150	1,150	6	100				100				31	7	103	0.98	11.2	
WH	L	OS	2S	6	6.0	1,636	1,539	8	100				100				40	22	790	4.11	1.9	
WH	L	Totals		77	2.9	27,821	27,017	140	9	31	60	2	9	5	84	34	9	130	0.98	207.7		
WH		DM	2S	42		1,340	1,340	7	100				100				40	13	240	1.45	5.6	
WH		DM	3S	50		1,549	1,549	8	100				100				40	8	90	0.64	17.2	
WH		DM	4S	8		232	232	1	100	100				100				16	5	20	0.24	11.6
WH		DM	UT						100				100				26	2		0.19	5.6	
WH	L	Totals		9		3,122	3,122	16	7	50	43	7	93			31	7	78	0.67	40.0		
DF	L	DM	2S	50		1,259	1,259	7	100				100				40	12	200	1.18	6.3	
DF	L	DM	4S	18		430	430	2	88	12	12		88		35	6	54	0.54	8.0			
DF	L	OS	2S	32	17.9	966	794	4	100				100				24	23	460	4.78	1.7	
DF	L	Totals		7	6.5	2,655	2,483	13	15	2	83	2	32	66	36	10	155	1.13	16.0			
RC	L	DM	3S	100	7.1	1,810	1,682	9	35	65	17		83	36	11	157	1.66	10.7				
RC	L	Totals		5	7.1	1,810	1,682	9	35	65	17		83	36	11	157	1.66	10.7				
RA		DM	4S	100		638	638	3	100				100				30	8	60	0.64	10.6	
RA		DM	UT						100				100				16	2		0.19	10.6	
RA	L	Totals		2		638	638	3	100				100				23	5	30	0.48	21.3	
Type Totals					3.1	36,045	34,942	181	8	32	59	2	12	4	82	33	8	118	0.95	295.8		

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT		SEMPRE		DATE	12/15/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
33N	07E	27	SEMPRE	RMZ3	5.19	5	24	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL				5	24	4.8				
CRUISE				5	24	4.8	736	3.3		
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
WHEMLOCK	2	17.2	15.2	69	5.6	21.8	3,122	3,122	832	832
WHEMLOCK-L	17	99.0	18.5	74	43.0	185.0	27,821	27,017	6,990	6,990
DOUG FIR-L	2	8.0	22.3	80	4.6	21.8	2,655	2,483	646	646
WR CEDAR-L	2	7.0	23.9	61	4.4	21.8	1,810	1,682	647	647
R ALDER	1	10.6	13.7	42	2.9	10.9	638	638	234	234
TOTAL	24	141.9	18.4	71	60.9	261.1	36,045	34,942	9,350	9,349
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	70.7	66.2		74	220	366				
WHEMLOCK-L	66.3	16.6		311	372	434				
DOUG FIR-L	43.4	40.6		223	375	527				
WR CEDAR-L	86.1	80.6		45	230	415				
R ALDER										
TOTAL	68.7	14.3		287	335	383	196	100	49	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	223.6	111.1			17	36				
WHEMLOCK-L	91.8	45.6		54	99	144				
DOUG FIR-L	223.6	111.1			8	17				
WR CEDAR-L	223.6	111.1			7	15				
R ALDER	223.6	111.1			11	22				
TOTAL	93.4	46.4		76	142	208	431	220	108	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	223.6	111.1			22	46				
WHEMLOCK-L	79.5	39.5		112	185	258				
DOUG FIR-L	223.6	111.1			22	46				
WR CEDAR-L	223.6	111.1			22	46				
R ALDER	223.6	111.1			11	23				
TOTAL	77.1	38.3		161	261	361	294	150	73	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	223.6	111.1			3,122	6,590				
WHEMLOCK-L	76.6	38.1		16,736	27,017	37,299				
DOUG FIR-L	223.6	111.1			2,483	5,241				
WR CEDAR-L	223.6	111.1			1,682	3,552				
R ALDER	223.6	111.1			638	1,346				
TOTAL	75.3	37.4		21,864	34,942	48,019	280	143	70	

TC		TSTNDSUMRdVBar		Stand Table Summary with RD, V-bar - Type														
Project												SEMPRE						
T33N R07E S27 TRMZ3												T33N R07E S27 TRMZ3						
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees					Page:	1					
33N	07E	27	SEMPRE	RMZ3	5.19	5	24					Date:	12/15/201					
												Time:	2:54:11PM					
Spc	S	DBH Class	Sample Trees	QMD DBH	Total Age	Bole Ht.	Total Ht.	Avg FF	Avg CR	RD	V Bar	Ht/D	Trees/Acre	BA/Acre	Gross Bd. Ft. Acre	Def %	Net Bd. Ft. Acre	MBF
WH	L	12	1	11.8	80	56	83	86		3.2	119	84.4	14.326	10.88	1,289		1,289	7
WH	L	13	1	13.1	80	65	92	86		3.0	118	84.3	11.624	10.88	1,395	8	1,279	7
WH	L	16	2	15.6	80	70	92	87		5.5	151	70.4	16.394	21.76	3,279		3,279	17
WH	L	17	1	17.3	80	60	72	87		2.6	80	49.9	6.665	10.88	1,133	24	866	4
WH	L	18	2	17.7	80	80	102	86		5.2	135	69.1	12.739	21.76	2,927		2,927	15
WH	L	19	1	19.2	80	81	107	88		2.5	139	66.9	5.411	10.88	1,515		1,515	8
WH	L	20	1	20.4	80	75	95	86		2.4	123	55.9	4.793	10.88	1,342		1,342	7
WH	L	21	1	21.1	80	96	115	87		2.4	185	65.4	4.481	10.88	2,016		2,016	10
WH	L	23	3	22.8	80	87	110	86		6.8	150	58.0	11.546	32.64	4,965	2	4,888	25
WH	L	25	2	25.0	80	93	110	86		4.4	194	52.8	6.383	21.76	4,213		4,213	22
WH	L	27	1	27.0	80	76	105	86		2.1	128	46.7	2.736	10.88	1,642	15	1,396	7
WH	L	32	1	32.0	80	90	110	86		1.9	184	41.3	1.948	10.88	2,104	5	2,006	10
WH		Totals	17	18.5	80	74	97	86		43.0	146	62.6	99.048	184.96	27,821	3	27,017	140
WH		13	1	13.1	80	56	80	86		3.0	118	73.3	11.624	10.88	1,279		1,279	7
WH		19	1	18.9	80	96	115	87		2.5	169	73.0	5.584	10.88	1,843		1,843	10
WH		Totals	2	15.2	80	69	91	86		5.6	143	72.0	17.209	21.76	3,122		3,122	16
DF	L	18	1	17.8	80	86	110	87		2.6	150	74.2	6.296	10.88	1,637		1,637	8
DF	L	34	1	34.0	80	60	105	79		1.9	78	37.1	1.726	10.88	1,018	17	846	4
DF		Totals	2	22.3	80	80	109	85		4.6	114	58.6	8.022	21.76	2,655	6	2,483	13
RC	L	23	1	23.0	80	86	105	77		2.3	128	54.8	3.771	10.88	1,395		1,395	7
RC	L	25	1	25.0	80	32	45	76		2.2	26	21.6	3.192	10.88	415	31	287	1
RC		Totals	2	23.9	80	61	77	77		4.4	77	38.8	6.963	21.76	1,810	7	1,682	9
RA		14	1	13.7	80	42	70	88		2.9	59	61.3	10.628	10.88	638		638	3
RA		Totals	1	13.7	80	42	70	88		2.9	59	61.3	10.628	10.88	638		638	3
Totals			24	18.4	80	71	94	86		60.9	134	61.2	141.869	261.12	36,045	3	34,942	181

T33N R07E S27 TRMZ4										T33N R07E S27 TRMZ4				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
33N	07E	27	SEMPRE	RMZ4	2.33	2	11	S	W					

Spp	Sp	T	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log			Logs Per /Acre			
										Net	Def%	Gross	Net	Net MBF	Log Scale Dia.				Log Length				Ln	Dia
						2-4	5-7	8-11							12+	12-20	21-30	31-35	36-99	Ft		In		
DF	L	DM	2S		49	6.7	14,591	13,619	32					100			2	98	39	14	303	1.83	45.0	
DF	L	DM	3S		6		1,782	1,782	4					100		18	20	62	30	9	73	0.69	24.3	
DF	L	DM	4S		1		221	221	1					100		100			18	8	30	0.57	7.4	
DF	L	DM	UT																28	2		0.19	13.8	
DF	L	OS	SM		16		4,507	4,507	11					100				100	40	21	760	3.34	5.9	
DF	L	OS	2S		28	9.6	8,369	7,568	18					100				100	40	25	1003	5.35	7.5	
DF	L	Totals			62	6.0	29,469	27,697	65			7	93		2	2	96		34	12	266	1.77	104.0	
WH	L	DM	2S		48		4,996	4,996	12					100				100	40	18	530	2.20	9.4	
WH	L	DM	3S		46		4,732	4,732	11					100				100	40	10	160	0.99	29.7	
WH	L	DM	4S		6		607	607	1			100				100			26	5	30	0.34	20.2	
WH	L	DM	UT																28	2		0.34	9.4	
WH	L	Totals			23		10,335	10,335	24		6	46	48		6	94			34	9	150	0.97	68.7	
WH		DM	3S		100	38.9	3,034	1,854	4									100	40	11	110	1.13	16.9	
WH	Totals				4	38.9	3,034	1,854	4									100	40	11	110	1.13	16.9	
RC	L	DM	3S		70	.0	3,488	3,488	8			43	57					100	40	11	191	1.50	18.3	
RC	L	DM	4S		30		1,467	1,467	3			100			14	17	69		33	5	34	0.46	43.7	
RC	L	Totals			11		4,955	4,955	12		30	30	40		4	5	91		35	7	80	0.81	62.0	
Type	Totals					6.2	47,794	44,841	104		5	22	73		2	3	95		35	10	178	1.26	251.6	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	SEMPRE			DATE	12/15/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
33N	07E	27	SEMPRE	RMZ4	2.33	2	11	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	2	11	5.5							
CRUISE	2	11	5.5	291			3.8			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR-L	5	34.7	26.8	99	26.3	136.0	29,469	27,697	6,284	6,292
WHEMLOCK	1	16.9	17.2	66	6.6	27.2	3,034	1,854	754	759
WHEMLOCK-L	2	29.7	18.3	76	12.7	54.4	10,335	10,335	2,275	2,275
WR CEDAR-L	3	43.7	15.9	55	15.1	60.0	4,955	4,955	1,763	1,763
TOTAL	11	124.9	20.2	74	61.8	277.6	47,794	44,841	11,077	11,088
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR-L	55.6	27.6		771	1,066	1,361				
WHEMLOCK										
WHEMLOCK-L	84.2	78.9		94	445	796				
WR CEDAR-L	72.1	49.9		80	160	240				
TOTAL	95.9	30.3		432	619	807	404	206	101	
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-L	117.2	109.8			35	73				
WHEMLOCK	141.4	132.4			17	39				
WHEMLOCK-L	51.5	48.2		15	30	44				
WR CEDAR-L	141.4	132.4			44	102				
TOTAL	113.4	106.1			125	258	901	460	225	
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-L	84.9	79.5		28	136	244				
WHEMLOCK	141.4	132.4			27	63				
WHEMLOCK-L				54	54	54				
WR CEDAR-L	141.4	132.4			60	139				
TOTAL	86.0	80.5		54	278	501	519	265	130	
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-L	85.7	80.2		5,477	27,697	49,917				
WHEMLOCK	141.4	132.4			1,854	4,310				
WHEMLOCK-L	41.8	39.1		6,294	10,335	14,376				
WR CEDAR-L	141.4	132.4			4,955	11,516				
TOTAL	64.8	60.6		17,645	44,841	72,037	294	150	74	

TC		TSTNDSUMRdVBar		Stand Table Summary with RD, V-bar - Type														
Project												SEMPRE						
T33N R07E S27 TRMZ4												T33N R07E S27 TRMZ4						
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees					Page:	1					
33N	07E	27	SEMPRE	RMZ4	2.33	2	11					Date:	12/15/201					
												Time:	2:54:11PM					
Spc	S	DBH Class	Sample Trees	QMD DBH	Total Age	Bole Ht.	Total Ht.	Avg FF	Avg CR	RD	V Bar	Ht/D	Trees/Acre	BA/Acre	Gross Bd. Ft. Acre	Def %	Net Bd. Ft. Acre	MBF
DF	L	19	1	19.0	80	92	115	86		6.2	152	72.6	13.814	27.20	4,421	6	4,144	10
DF	L	26	1	26.0	80	100	125	87		5.3	193	57.7	7.377	27.20	5,607	7	5,238	12
DF	L	29	1	29.0	80	106	133	89		5.1	242	55.0	5.930	27.20	6,582		6,582	15
DF	L	33	1	33.0	80	102	128	85		4.7	231	46.5	4.579	27.20	6,274		6,274	15
DF	L	41	1	41.0	80	112	141	82		4.2	201	41.3	2.967	27.20	6,586	17	5,459	13
DF		Totals	5	26.8	80	99	124	86		26.3	204	55.5	34.668	136.00	29,469	6	27,697	65
WH	L	16	1	15.7	80	68	83	89		6.9	134	63.4	20.232	27.20	3,642		3,642	8
WH	L	23	1	23.0	80	94	116	95		5.7	246	60.5	9.427	27.20	6,693		6,693	16
WH		Totals	2	18.3	80	76	93	91		12.7	190	61.2	29.659	54.40	10,335		10,335	24
RC	L	12	1	12.0	80	47	56	77		5.8	51	56.0	25.465	20.00	1,019		1,019	2
RC	L	19	1	19.2	80	62	76	79		4.6	85	47.5	9.947	20.00	1,691		1,691	4
RC	L	21	1	21.0	80	70	87	85		4.4	112	49.7	8.315	20.00	2,245		2,245	5
RC		Totals	3	15.9	80	55	66	79		15.1	83	50.3	43.727	60.00	4,955		4,955	12
WH		17	1	17.2	80	66	80	88		6.6	68	55.8	16.857	27.20	3,034	39	1,854	4
WH		Totals	1	17.2	80	66	80	88		6.6	68	55.8	16.857	27.20	3,034	39	1,854	4
Totals			11	20.2	80	74	91	85		61.8	162	53.9	124.911	277.60	47,794	6	44,841	104

T033 R007 S27 T0RW1		T033 R007 S27 T0RW1
Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt		BdFt
033 007 27 SEMPRE 0RW1 2.90 2 12 S		W

Spp	So	Gr	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre		
								Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf			
								2-4	5-7	8-11	12+	12-20	21-30	31-35	36-99							
WH	DM	3S	52	9.4	2,424	2,197	6	100				100				40	9	118	1.31	18.7		
WH	DM	4S	48		1,975	1,975	6	100				53 47				29	5	30	0.46	65.2		
WH	DM	UT														18	2		0.34	3.8		
WH	Totals		56	5.2	4,399	4,172	12	47	53					25	75	31	6	48	0.69	87.7		
DF	DM	2S	56	7.8	1,979	1,825	5	100				100				40	14	298	2.21	6.1		
DF	DM	3S	27	6.7	952	888	3	100				100				40	10	140	1.06	6.3		
DF	DM	4S	17		525	525	2	100				67 33				29	6	42	0.54	12.5		
DF	Totals		44	6.3	3,456	3,239	9	16	27	56					11	5	84	34	9	130	1.17	24.9
Type Totals				5.7	7,855	7,410	21	34	42	25					19	2	79	32	7	66	0.81	112.6

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT SEMPRE				DATE 12/15/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
033	007	27	SEMPRE	ORW1	2.90	2	12	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	2	12	6.0							
CRUISE	2	12	6.0	279		4.3				
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
WHEMLOCK	9	83.9	14.0	38	24.0	90.0	4,399	4,172	1,864	1,864
DOUG FIR	3	12.5	21.0	71	6.5	30.0	3,456	3,239	1,002	1,002
TOTAL	12	96.4	15.1	42	30.9	120.0	7,855	7,410	2,865	2,865
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF					# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	68.1	24.0	55	72	90					
DOUG FIR	39.5	27.3	213	293	374					
TOTAL	93.5	28.1	92	128	163	380	194	95		
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	1.1	1.0	83	84	85					
DOUG FIR	141.4	132.4		12	29					
TOTAL	17.4	16.3	81	96	112	21	11	5		
CL: 68.1 %	COEFF	BASAL AREA/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	47.1	44.1	50	90	130					
DOUG FIR	141.4	132.4		30	70					
TOTAL			120	120	120					
CL: 68.1 %	COEFF	NET BF/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	48.2	45.1	2,291	4,172	6,052					
DOUG FIR	141.4	132.4		3,239	7,528					
TOTAL	34.7	32.5	5,002	7,410	9,818	84	43	21		

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	SEMPRE			DATE	12/15/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
033	007	27	SEMPRE	ORW2	3.24	4	21	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	4	21	5.3							
CRUISE	3	15	5.0	569	2.6					
DBH COUNT										
REFOREST										
COUNT	1	6	6.0							
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
WHEMLOCK	10	99.1	18.1	58	41.6	176.9	14,369	13,866	5,013	5,013
PS FIR	5	76.6	16.1	61	27.1	108.9	9,869	9,778	3,294	3,294
TOTAL	15	175.6	17.3	59	68.8	285.8	24,238	23,644	8,307	8,307
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	36.4	12.1	138	157	176					
PS FIR	37.0	18.4	111	136	161					
TOTAL	36.1	9.6	136	150	164	56	28	14		
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	9.3	5.3	94	99	104					
PS FIR	51.9	29.6	54	77	99					
TOTAL	24.6	14.1	151	176	200	32	16	8		
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	29.5	16.8	147	177	207					
PS FIR	40.8	23.3	83	109	134					
TOTAL	18.2	10.4	256	286	316	17	9	4		
CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	20.2	11.6	12,263	13,866	15,468					
PS FIR	44.0	25.2	7,319	9,778	12,237					
TOTAL	11.0	6.3	22,164	23,644	25,124	6	3	2		

T33N R07E S27 TRW03										T33N R07E S27 TRW03			
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt				
33N	07E	27	SEMPRE	RW03	.76	2	10	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 Ft	Dia In	Bd Ft		CF/ Lf
								2-4	5-7	8-11	12+	12-20	21-30	31-35	36-99					
RC	DM	3S	57		9,160	9,160	7		34	66		18	24	58	35	12	187	1.51	48.9	
RC	DM	4S	8		1,261	1,261	1	100				40		60	33	5	35	0.46	35.7	
RC	OS	3S	35	3.2	5,704	5,521	4		100			44		56	35	21	638	4.96	8.7	
RC	Totals		46	1.1	16,124	15,941	12	8	19	73		29	14	57	35	10	171	1.45	93.2	
WH	DM	2S	54	1.3	7,192	7,102	5		100					100	40	15	332	1.84	21.4	
WH	DM	3S	40		5,180	5,180	4		100					100	40	9	131	0.81	39.5	
WH	DM	4S	6		724	724	1	100			25	75			23	5	27	0.35	27.1	
WH	DM	UT													24	2		0.19	12.3	
WH	Totals		37	.7	13,096	13,005	10	6	40	55	1	4		94	33	9	130	0.94	100.3	
RA	DM	3S	84		2,794	2,794	2		100					100	36	11	160	1.12	17.5	
RA	DM	4S	16		524	524	0	100				100			30	5	30	0.40	17.5	
RA	Totals		9		3,318	3,318	3	16	84			16		84	33	8	95	0.79	34.9	
CW	DM	2S	100		2,743	2,743	2		100					100	36	13	220	1.55	12.5	
CW	Totals		8		2,743	2,743	2		100					100	36	13	220	1.55	12.5	
Type Totals				.8	35,281	35,007	27	7	32	61	1	16	6	77	34	9	145	1.15	240.9	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	SEMPRE			DATE	12/15/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
33N	07E	27	SEMPRE	RW03	0.76	2	10	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	2	10	5.0							
CRUISE	2	10	5.0	86			11.6			
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
WR CEDAR	5	44.3	23.7	75	27.9	136.0	16,124	15,941	4,659	4,659
WHEMLOCK	3	39.5	19.5	88	18.5	81.6	13,096	13,005	3,130	3,130
R ALDER	1	17.5	16.9	67	6.6	27.2	3,318	3,318	911	911
COTWOOD	1	12.5	20.0	78	6.1	27.2	2,743	2,743	696	696
TOTAL	10	113.7	20.9	79	59.4	272.0	35,281	35,007	9,396	9,396
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF					# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WR CEDAR	70.8	35.2	333	514	695					
WHEMLOCK	50.9	35.2	242	373	505					
R ALDER										
COTWOOD										
TOTAL	70.2	23.3	314	410	506	218	111	55		
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WR CEDAR	112.2	105.1		44	91					
WHEMLOCK	141.4	132.4		39	92					
R ALDER	141.4	132.4		17	41					
COTWOOD	141.4	132.4		12	29					
TOTAL	31.9	29.8	80	114	148	71	36	18		
CL: 68.1 %	COEFF	BASAL AREA/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WR CEDAR	84.9	79.5	28	136	244					
WHEMLOCK	141.4	132.4		82	190					
R ALDER	141.4	132.4		27	63					
COTWOOD	141.4	132.4		27	63					
TOTAL	28.3	26.5	200	272	344	56	29	14		
CL: 68.1 %	COEFF	NET BF/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WR CEDAR	68.3	63.9	5,747	15,941	26,136					
WHEMLOCK	141.4	132.4		13,005	30,228					
R ALDER	141.4	132.4		3,318	7,711					
COTWOOD	141.4	132.4		2,743	6,375					
TOTAL	3.0	2.9	34,009	35,007	36,005	1	0	0		

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

T033 R007 S27 Ty00U6	13.0
T033 R007 S27 Ty00U7	8.5
T33N R07E S29 TyUNT	27.9

Project SEMPRE
Acres 169.43

Page No 1
Date: 12/15/2015
Time 2:52:23PM

Species	S T	Total	Total	Total	Net Cubic Ft/		CF/	Total CCF		Total MBF	
		Trees	Logs	Tons	Tree	Log	LF	Gross	Net	Gross	Net
WHEMLOCK		19,961	37,781	33,980	53.20	28.10	0.85	10,619	10,618	4,063	3,838
PS FIR		3,433	6,741	5,674	57.68	29.37	0.88	1,981	1,980	722	676
WHEMLOCK	L	1,861	3,386	3,149	52.88	29.06	0.82	984	984	401	391
WR CEDAR		2,854	4,008	3,091	46.10	32.83	1.09	1,316	1,316	392	379
DOUG FIR		965	1,486	2,080	75.57	49.10	1.45	730	730	303	287
R ALDER		1,316	2,250	1,168	32.26	18.87	0.68	425	424	157	144
WR CEDAR	L	760	1,065	594	33.27	23.73	0.83	253	253	81	79
DOUG FIR	L	122	326	513	147.13	55.32	1.60	180	180	82	77
S SPRUCE		19	58	169	337.70	112.57	3.13	65	65	34	34
PS FIR	L	45	110	137	106.94	43.61	1.15	48	48	20	20
NOBLE F		45	136	127	97.83	32.61	0.93	44	44	17	17
COTWOOD		9	9	13	55.86	55.86	1.55	5	5	2	2
Totals		31,392	57,356	50,696	53.03	29.03	0.88	16,649	16,648	6,277	5,945

Wood Type Species	Total	Total	Total	Net Cubic Ft/		CF/	Total CCF		Total MBF	
	Trees	Logs	Tons	Tree	Log	LF	Gross	Net	Gross	Net
C	30,067	55,097	49,515	53.94	29.44	0.89	16,219	16,218	6,118	5,799
H	1,325	2,259	1,181	32.43	19.02	0.68	430	430	159	146
Totals	31,392	57,356	50,696	53.03	29.03	0.88	16,649	16,648	6,277	5,945

PRE-CRUISE NARRATIVE

Sale Name: Sempre	Region: Northwest
Agreement #: 30-092796	District: Cavanguah
Contact Forester: Joe Magnuson Phone / Location: 360-982-1757/Arlington WC	County(s): Choose a county, Skagit
Alternate Contact: Jesse Steele Phone / Location: 360-854-8687/Northern St WC	Other information: Click here to enter text.

Type of Sale: MBF Scale	
Harvest System: Ground based Click here to enter text.	60
Harvest System: Uphill Cable Click here to enter text.	40
Enter % of sale acres	

UNIT ACREAGES AND METHOD OF DETERMINATION:

Unit # Harvest R/W or RMZ WMZ	Legal Description (Enter only one legal for each unit) Sec/Twp/Rng	Grant or Trust	Gross Proposal Acres	Deductions from Gross Acres (No harvest acres)				Net Harvest Acres	Acreage Determinatio n (List method and error of closure if applicable)
				RMZ/ WMZ Acres	Leave Tree Acres	Existing Road Acres	Other Acres (describe)		
1	S29,28/T33/R07E	10 07 01	30.36		1.15	1.3		27.91	GPS
1B	S29/T33/R07E	10	2.83			0.2		2.63	GPS
2	S27/T33/R07E	10	11.65		0.66	0.3		10.69	GPS
3	S27/T33/R07E	10	2.68		0.04			2.64	GPS
4	S27,34/T33/R07E	10 01	35.9		2.35			33.55	GPS
5	S27,28/T33/R07E	04 01	13.85		0.75			13.1	GPS
6	S27/T33/R07E	01	13.36		0.31			13.05	GPS
7	S27/T33/R07E	01	8.92		0.41			8.51	GPS

8	S27/T33/R07E	01	32.59		1.29			31.3	GPS
9	S27/T33/R07E	01	2.28		0.13			2.15	GPS
RMZ 1	S28,29/T33/R07E	10 07	7.87					7.87	GPS
RMZ 2	S27/T33/R07E	10	1.61					1.61	GPS
RMZ 3	S27,34/T33/R07E	10 01	5.19					5.19	GPS
RMZ 4	S27,34/T33/R07E	10 01	2.33					2.33	
R/W1	S27/T33/R07E	01	2.90					2.90	GPS
R/W2	S27/T33/R07E	10 01	3.22					3.22	GPS
R/W3	S27/T33/R07E	01	0.76					0.76	
TOTAL ACRES			178.30		7.09	1.80		169.41	

HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription: (Leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
1	Variable Retention Harvest. Take all timber bound by white timber sale boundary tags, roads, and young stands, except trees marked with blue paint or bound out with yellow leave tree tags.	N/A	236 trees in four clumps. 19 scattered leave trees.
1B			13 scattered leave trees.
2			83 trees in two clumps. 8 scattered leave trees.
3			24 trees in a clump. 3 scattered leave trees.
4			259 trees in three clumps. 29 scattered leave trees.
5			109 trees in two clumps. 7 scattered leave trees.
6			99 trees in three clumps. 8 scattered leave trees.
7			69 trees in two clumps. 2 scattered leave trees.
8			245 trees in three clumps. 22 scattered leave trees. Unit 8 has been broken up into to be cruised seperatly

			due to a separate timber type within the unit.
9			23 trees in a clump. 2 scattered leave trees.
RMZ1	Variable Density Thinning. Trees will be thinned as per the prescription listed in Schedule B.	N/A	See attached Schedule B
RMZ2			
RMZ3			
RMZ4			
RW1	Marked with orange right-of-way boundary tags.	N/A	
RW2			
RW3			

OTHER PRE-CRUISE INFORMATION:

Unit #	Primary,secondary Species / Estimated Volume (MBF)	Access information (Gates, locks, etc.)	Photos, traverse maps required
1	WH,DF, 1060MBF		See attached driving and traverse maps.
1B	WH,DF, 78MBF		
2	WH,DF, 428MBF		
3	WH,DF, 114MBF		
4	WH,DF, 1273MBF		
5	WH,SF, 486MBF		
6	WH,SF, 428MBF		
7	WH,SF, 280MBF		
8	WH,SF, 1126MBF		
9	WH,SF, 59MBF		
RMZ1	WH,DF, 11MBF		
RMZ2	WH,DF,		

	24MBF		
RMZ3	WH,DF, 6MBF		
RMZ4	5MBF		
RW1	WH,DF, 34MBF		
RW2	WH,DF, 88MBF		
RW3	WH,DF 20MBF		
TOTAL MBF	5520MBF		

REMARKS:

From Arlington travel east on HWY 530. Travel 12.5 miles and turn left onto North Brooks Creek Rd. Travel a half mile and turn left onto the Brooks Creek Mainline (BC-ML). Travel 4.2 miles.

Units: 1, 1B, Thin 1

From 4.2 miles up the Brooks Creek mainline turn right onto the BC-42. Travel 1mile and veer left onto the BC-4210 in 0.8 miles Unit 1 will be on your right. Continue another 0.7 miles and turn right onto the BC-4210-16 the road ends at Unit 1B in 0.1 miles.

Units: 2, 3, 4, Thin 2, Thin 3

From 4.2 miles up the Brooks Creek mainline turn right onto the BC-42. Travel 1mile stay right on the BC-42. Travel 2.1 miles turn left onto the BC-4232 for unit 2 and Thin 2 Walk into Unit 3 from here. Continue on the BC-42 for 0.4 miles to unit 4. Upper portions of unit 4 can be reached by continuing on the BC-42 for 0.4miles and taking the BC-4241 for a half mile.

Units: 5, 6, 7, 8, 9

Continue on the Brooks Creek Mainline for 0.8 miles and turn right to stay on the BC-ML.

Travel 2.7 miles to unit 5. Continue 0.3 miles to unit 6. Continue .25 miles and park and walk the BC-83 to access unit 8 and 9.

At unit 5 abandoned DC-78 starts walking it will access the middle of units 5, 6, 7 and 8.

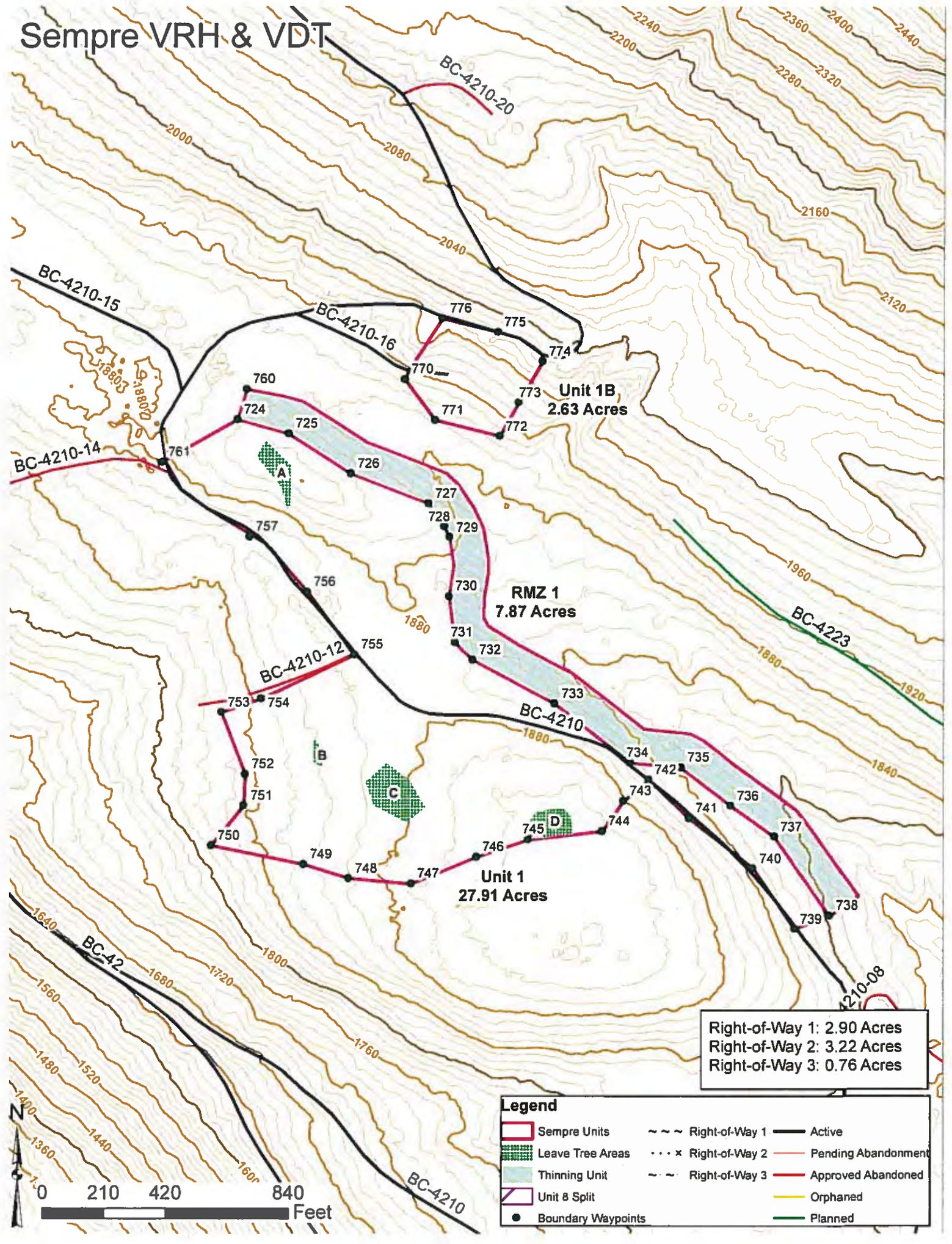
*Not all other routes are drivable.

Existing road acres calculated using the GIS measure tool.

Potential Cedar Salvage in Units 1, 5 and 6. Estimate of 1-2 cord and acre. Standing Cedar snags are excluded from salvage. Only stumps and existing down wood.

Prepared By: Date: 12/1/2015	Title: Forester	CC:
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Sempre VRH & VDT



Unit 1B
2.63 Acres

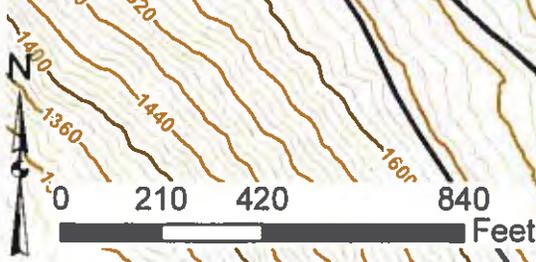
RMZ 1
7.87 Acres

Unit 1
27.91 Acres

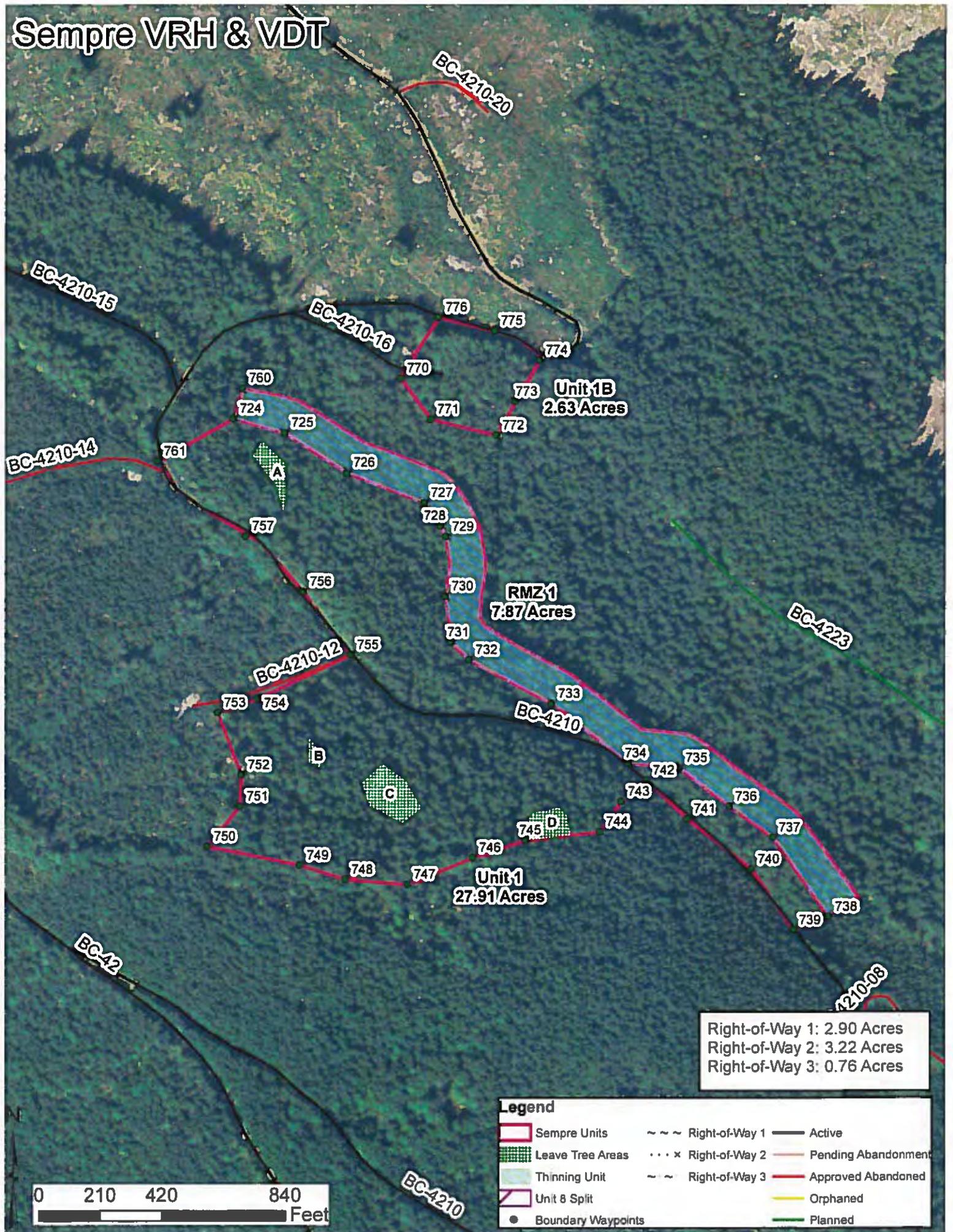
Right-of-Way 1: 2.90 Acres
Right-of-Way 2: 3.22 Acres
Right-of-Way 3: 0.76 Acres

Legend

Sempre Units	Right-of-Way 1	Active
Leave Tree Areas	Right-of-Way 2	Pending Abandonment
Thinning Unit	Right-of-Way 3	Approved Abandoned
Unit 1B Split	Orphaned	Planned
Boundary Waypoints		



Sempre VRH & VDT



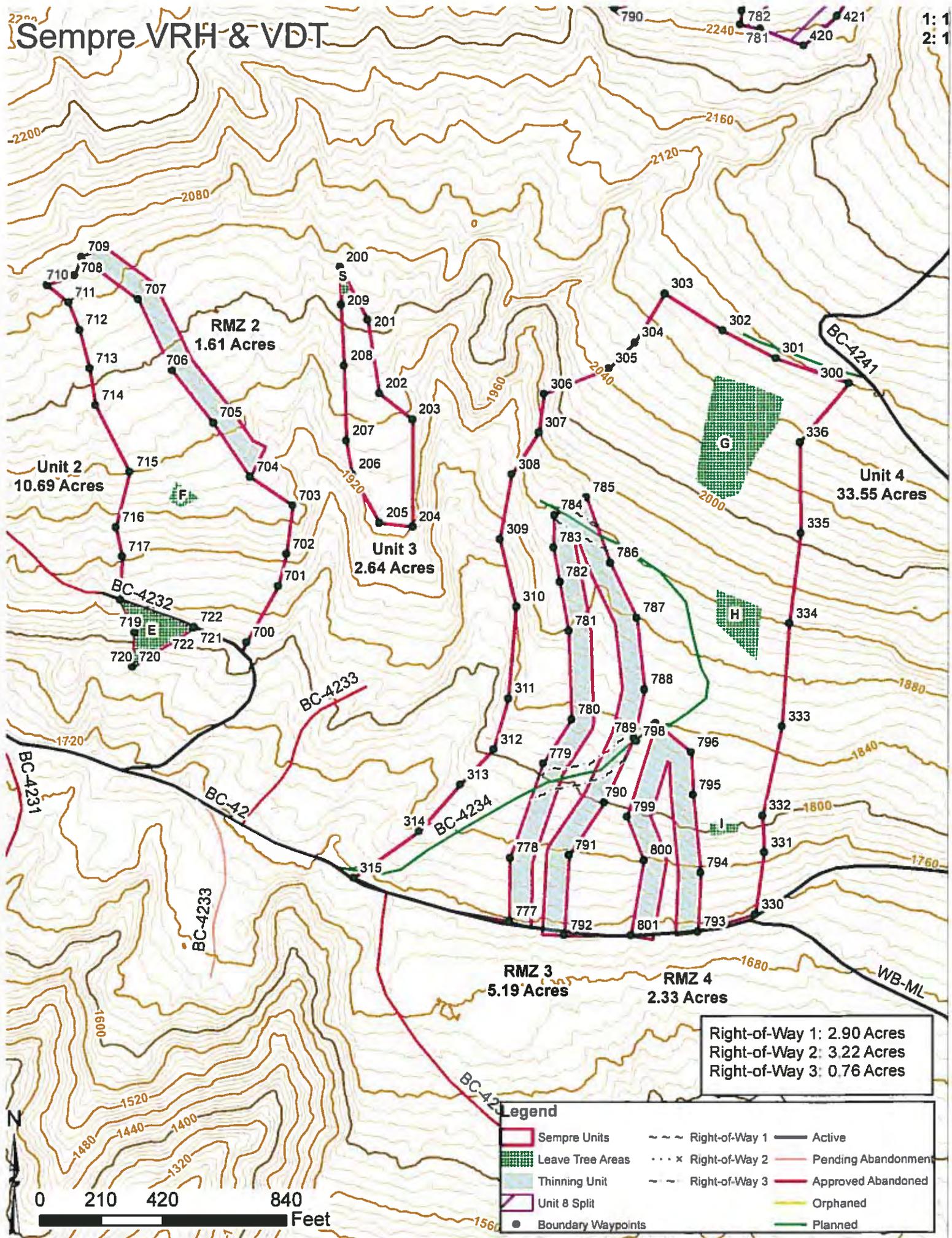
Right-of-Way 1: 2.90 Acres
 Right-of-Way 2: 3.22 Acres
 Right-of-Way 3: 0.76 Acres

Legend	
	Sempre Units
	Leave Tree Areas
	Thinning Unit
	Unit 8 Split
	Boundary Waypoints
	Right-of-Way 1
	Right-of-Way 2
	Right-of-Way 3
	Active
	Pending Abandonment
	Approved Abandoned
	Orphaned
	Planned

0 210 420 840 Feet

Sempre VRH & VDT

1: 1
2: 1



Right-of-Way 1: 2.90 Acres
Right-of-Way 2: 3.22 Acres
Right-of-Way 3: 0.76 Acres

Legend

Sempre Units	Right-of-Way 1	Active
Leave Tree Areas	Right-of-Way 2	Pending Abandonment
Thinning Unit	Right-of-Way 3	Approved Abandoned
Unit 8 Split	Orphaned	Planned
Boundary Waypoints		

Sempre VRH & VDT



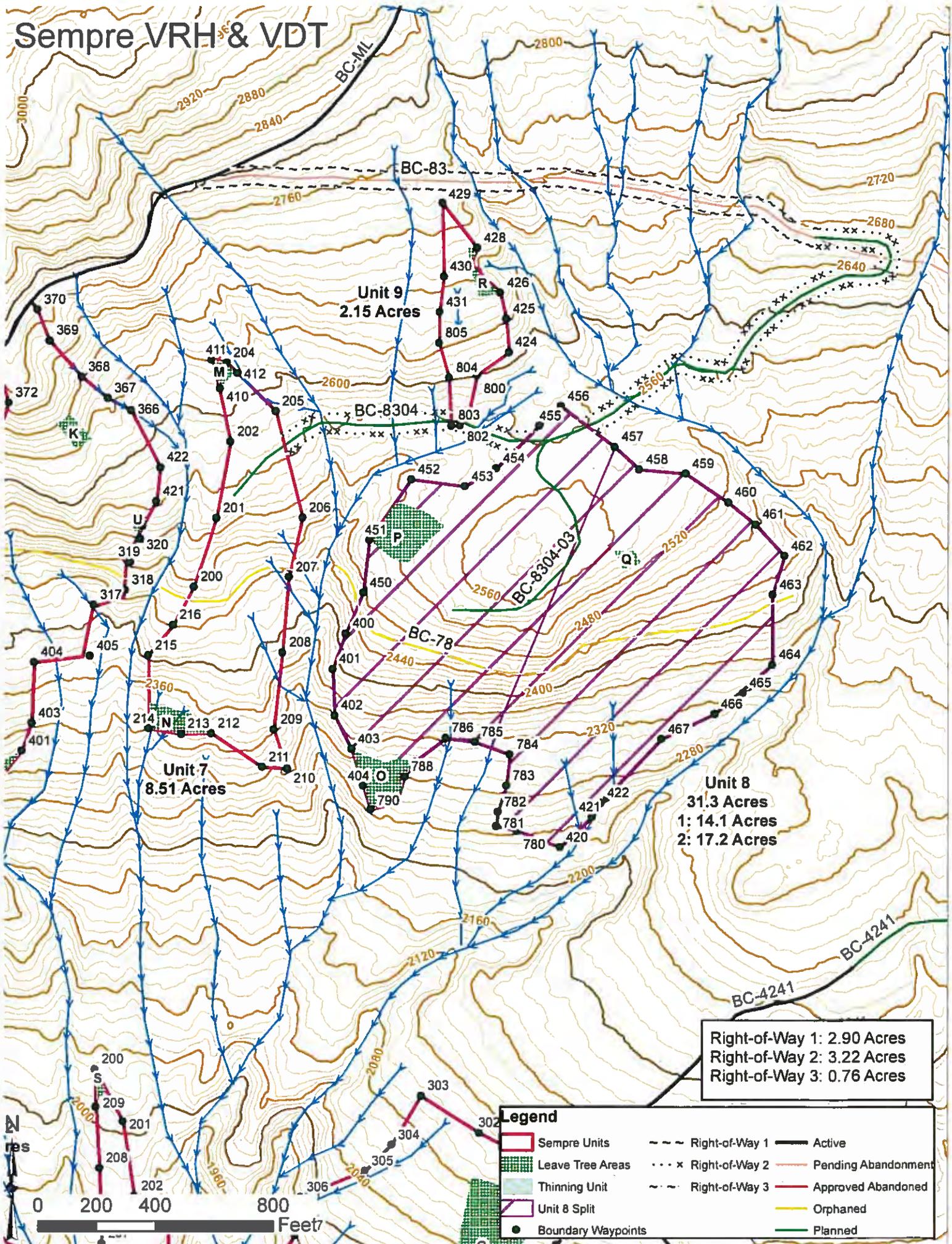
RW1: 2.9 Acres
RW2: 3.98 Acres

Legend

	Sempre Units		Active
	Leave Tree Areas		Pending Abandonment
	Thinning		Approved Abandoned
	Unit 8 Split		Orphaned
	RW1		Planned
	RW2		Unknown
	Wetland		



Sempre VRH & VDT



Unit 9
2.15 Acres

Unit 7
8.51 Acres

Unit 8
1: 14.1 Acres
2: 17.2 Acres

Right-of-Way 1: 2.90 Acres
Right-of-Way 2: 3.22 Acres
Right-of-Way 3: 0.76 Acres

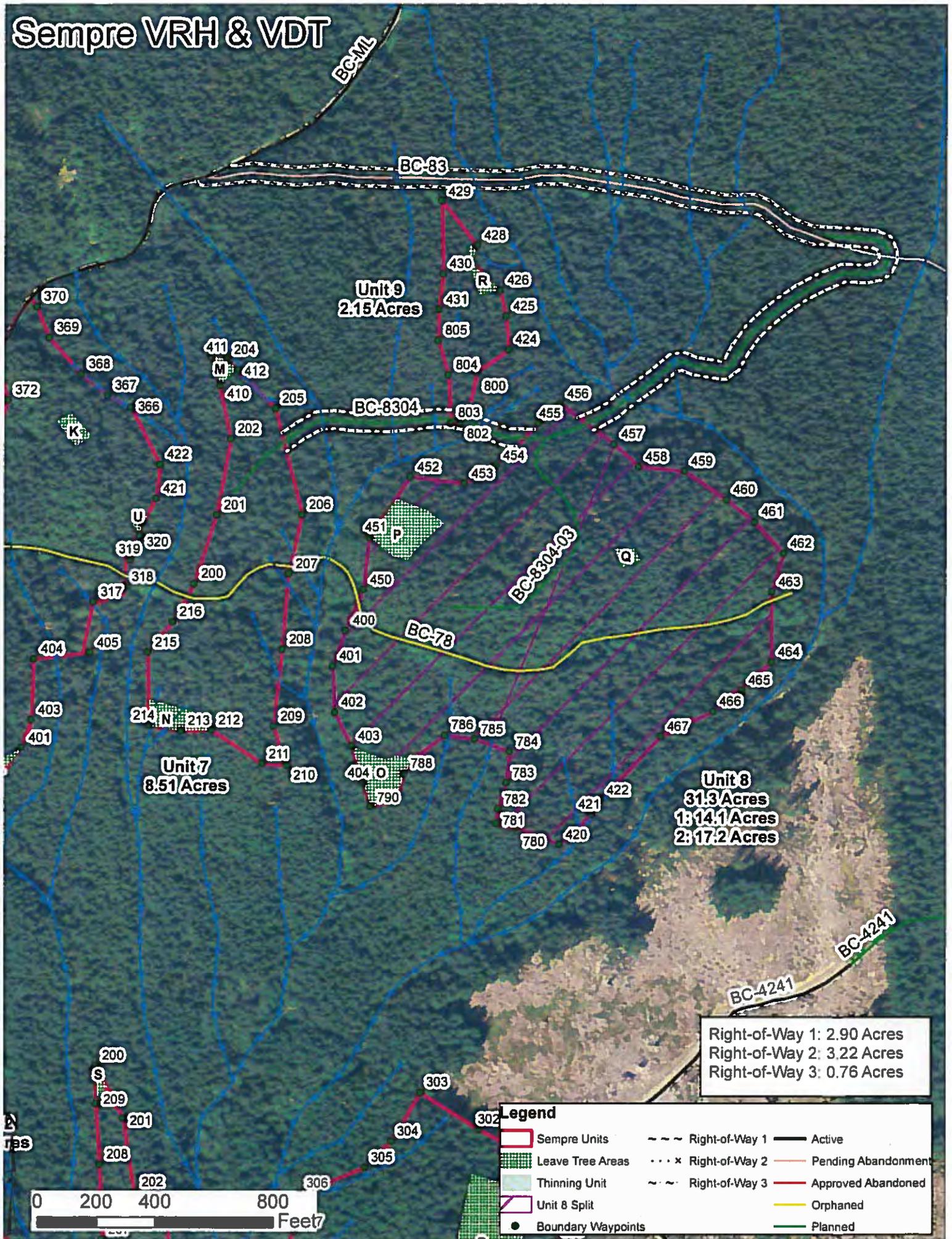
Legend

- Sempre Units
- Leave Tree Areas
- Thinning Unit
- Unit 8 Split
- Boundary Waypoints
- Right-of-Way 1
- Right-of-Way 2
- Right-of-Way 3
- Active
- Pending Abandonment
- Approved Abandoned
- Orphaned
- Planned

N

0 200 400 800 Feet

Sempre VRH & VDT



Unit 9
2.15 Acres

Unit 7
8.51 Acres

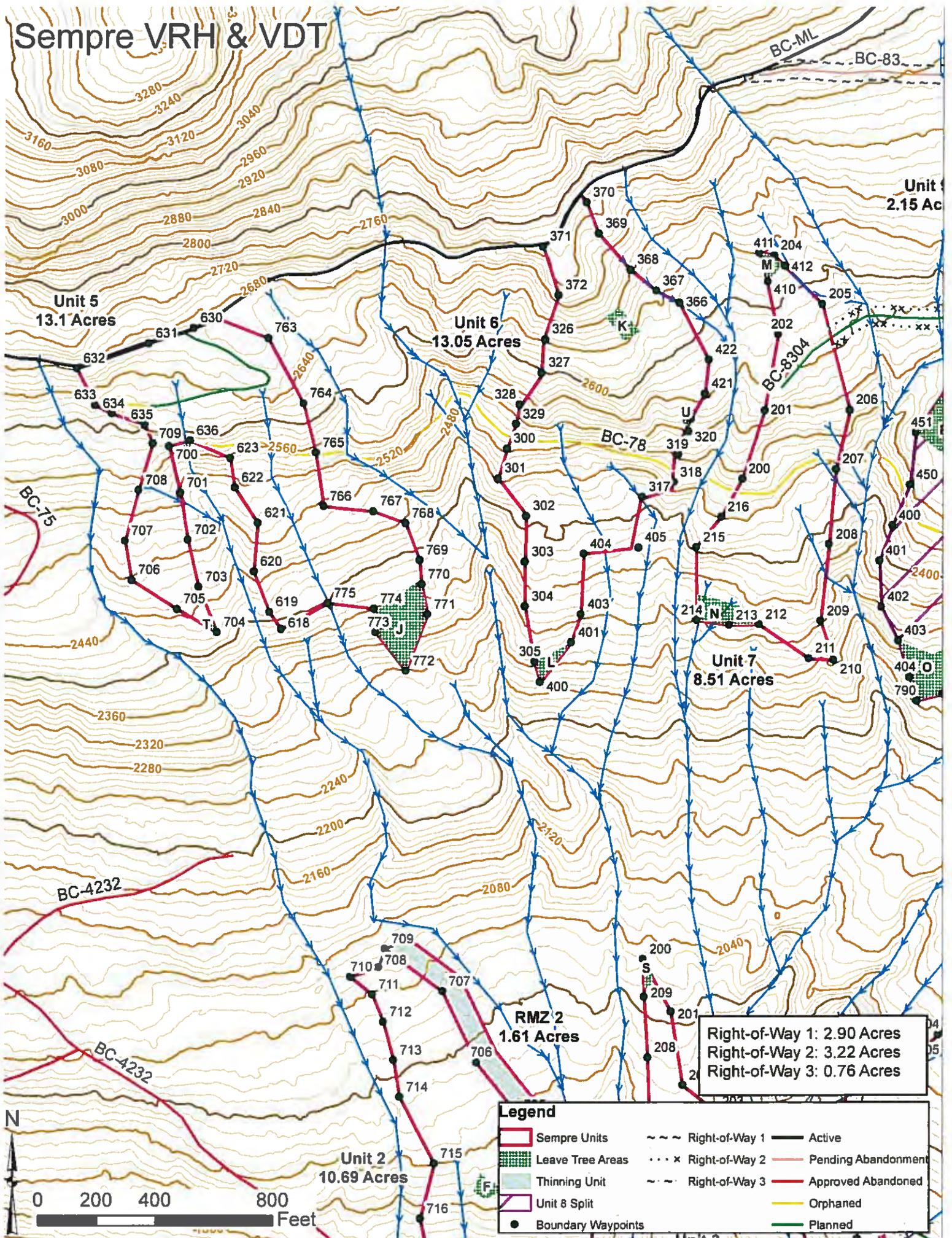
Unit 8
31.3 Acres
1: 14.1 Acres
2: 17.2 Acres

Right-of-Way 1: 2.90 Acres
Right-of-Way 2: 3.22 Acres
Right-of-Way 3: 0.76 Acres



Legend	
	Sempre Units
	Leave Tree Areas
	Thinning Unit
	Unit 8 Split
	Boundary Waypoints
	Right-of-Way 1
	Right-of-Way 2
	Right-of-Way 3
	Active
	Pending Abandonment
	Approved Abandoned
	Orphaned
	Planned

Sempre VRH & VDT

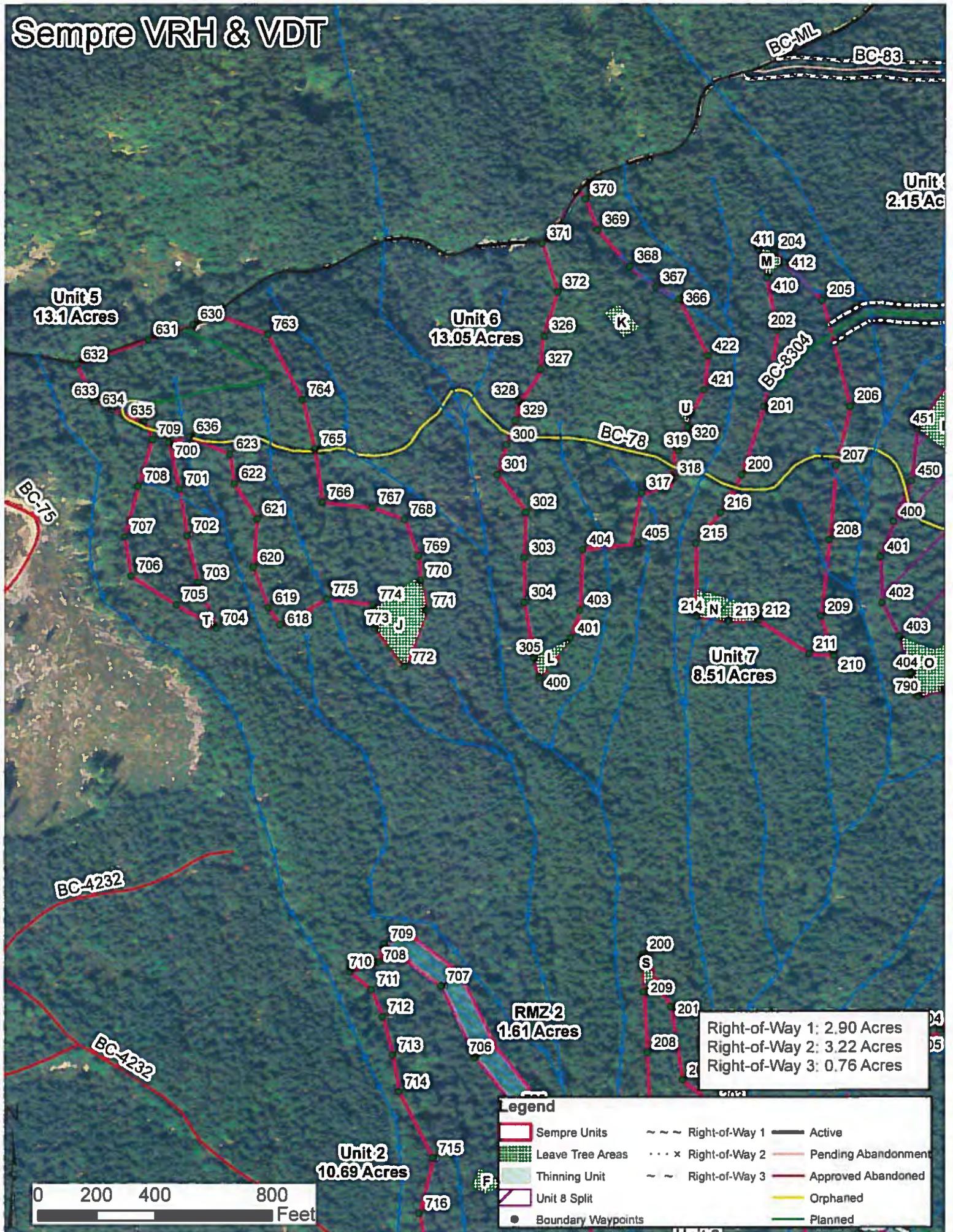


Right-of-Way 1: 2.90 Acres
 Right-of-Way 2: 3.22 Acres
 Right-of-Way 3: 0.76 Acres

Legend

Sempre Units	Right-of-Way 1	Active
Leave Tree Areas	Right-of-Way 2	Pending Abandonment
Thinning Unit	Right-of-Way 3	Approved Abandoned
Unit 8 Split	Orphaned	Planned
Boundary Waypoints		

Sempre VRH & VDT



Right-of-Way 1: 2.90 Acres
 Right-of-Way 2: 3.22 Acres
 Right-of-Way 3: 0.76 Acres

Legend	
	Sempre Units
	Leave Tree Areas
	Thinning Unit
	Unit 8 Split
	Boundary Waypoints
	Right-of-Way 1
	Right-of-Way 2
	Right-of-Way 3
	Active
	Pending Abandonment
	Approved Abandoned
	Orphaned
	Planned





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

FPA/N No: 2815029
 Effective Date: 3/21/2016
 Expiration Date: 3/21/2019

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

Shut Down Zone: 658
 EARR Tax Credit: Eligible Non-eligible
 Reference: **Sempre**

DECISION:

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

FPA/N CLASSIFICATION

Number of Years Granted on Multi-Year Request

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

Conditions on Approval / Reasons for Disapproval

Contact the Dept. of Natural Resources at least two (2) working days prior to the start of construction of the BC-83 **and** prior to the start of bridge installation **and** prior to the abandonment of the BC-83. Call 360-856-3500 for Forest Practices to leave notice for Joel Dryden.

Issued By: Joel Dryden 

Region: Northwest

Title: Stillaguamish Forest Practice Forester

Date: 3/21/2016

Copies to: Landowner, Timber Owner and Operator

Issued in Person: Landowner, Timber Owner Operator By: 

Appeal Information

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

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

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

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

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

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

And

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

Other Applicable Laws

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

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

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

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

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

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

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

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

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

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

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

DNR affidavit of mailing:

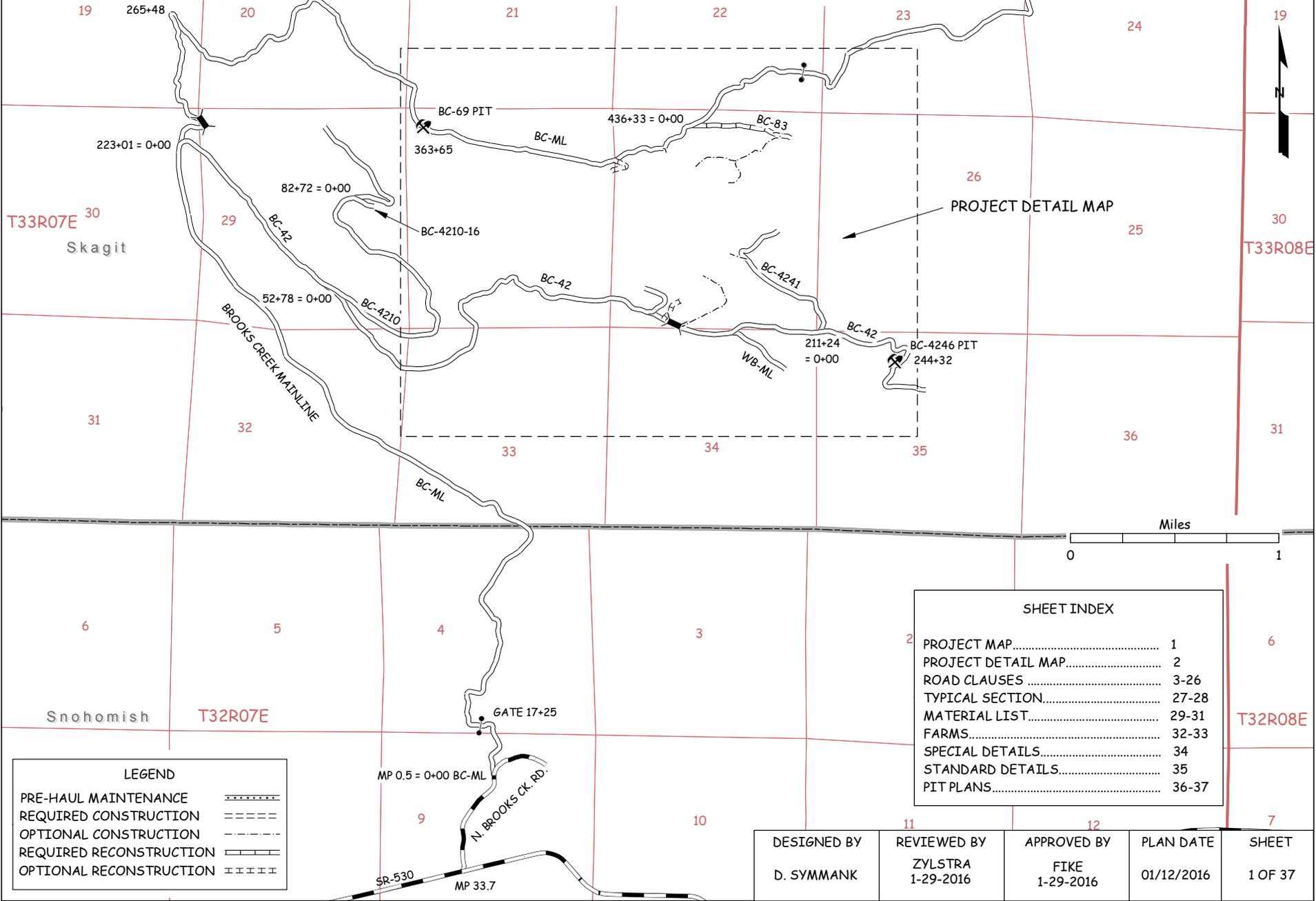
On this day _____, I placed in the United States mail at Sedro-Woolley, WA, postage paid, a true and accurate copy of the attached document. Notice of Decision FPA # __2815_____

Braelyn Hamilton
(Printed name)

(Signature)



ROAD PLAN AND SPECIFICATIONS #30-092796 SEMPRE VRH & VDT



LEGEND

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

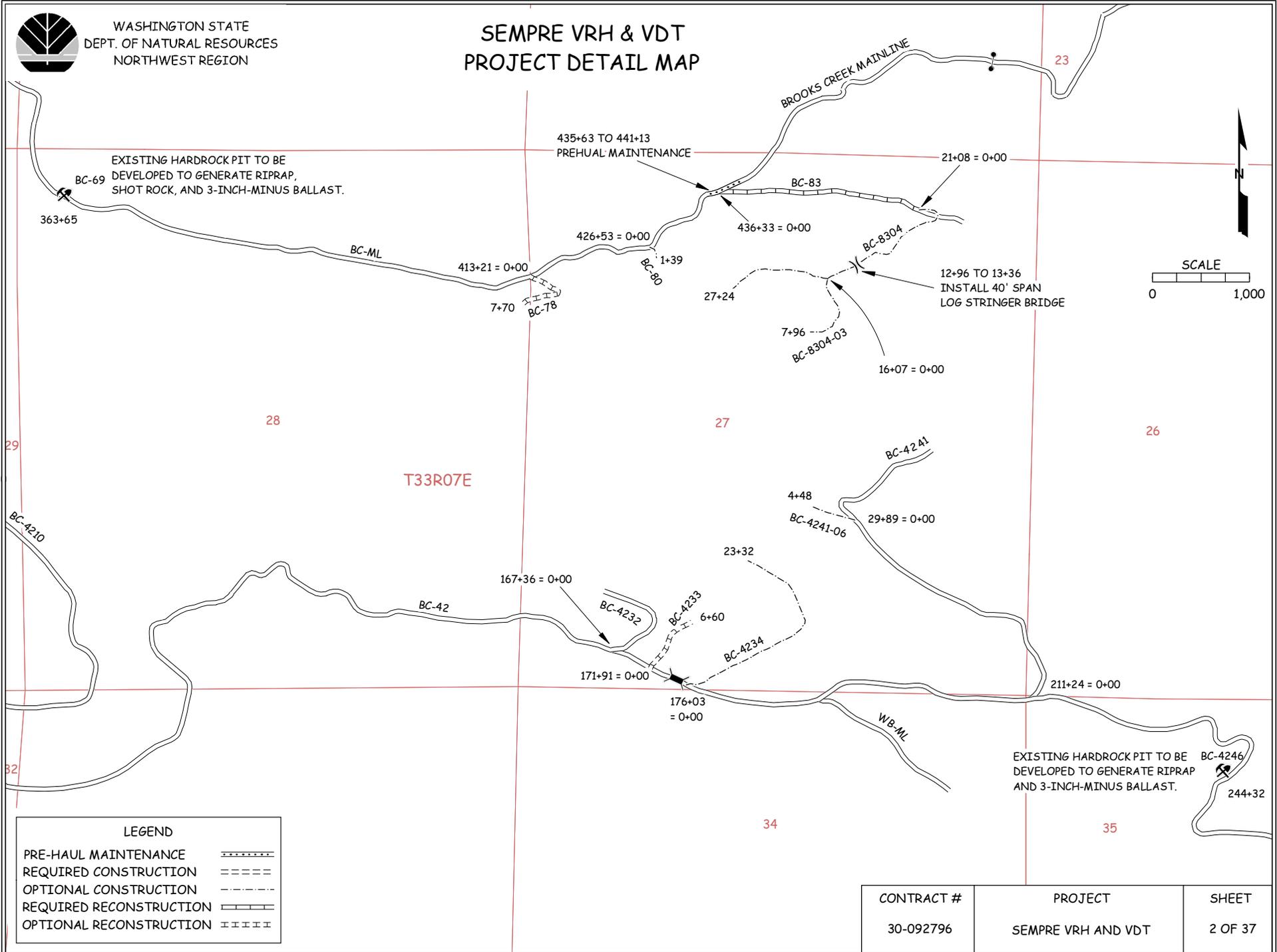
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DESIGNED BY D. SYMMANK	REVIEWED BY ZYLSTRA 1-29-2016	APPROVED BY FIKE 1-29-2016	PLAN DATE 01/12/2016	SHEET 1 OF 37
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SEMPRE VRH & VDT PROJECT DETAIL MAP



CONTRACT #	PROJECT	SHEET
30-092796	SEMPRE VRH AND VDT	2 OF 37

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

SEMPRE VRH & VDT TIMBER SALE ROAD PLAN
SKAGIT COUNTY
LAKE CAVANAUGH UNIT CLEARLAKE DISTRICT

AGREEMENT NO.: 30-092796

STAFF ENGINEER: D. SYMMANK

DATE: JANUARY 12, 2016

SECTION 0 – SCOPE OF PROJECT

0-1 ROAD PLAN SCOPE

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

0-2 REQUIRED ROADS

The specified work on the following roads is required.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
BC-ML	435+63 to 441+13	PRE-HAUL MAINTENANCE
BC-83*	0+00 to 21+08	RECONSTRUCTION

* Reconstruction is on previously abandoned road grade.

0-3 OPTIONAL ROADS

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

<u>Road</u>	<u>Stations</u>	<u>Type</u>
BC-4233*	0+00 to 6+60	RECONSTRUCTION
BC-4234	0+00 to 23+32	CONSTRUCTION
BC-4241-06	0+00 to 4+48	CONSTRUCTION
BC-78*	0+00 to 7+70	RECONSTRUCTION
BC-80	0+00 to 1+39	CONSTRUCTION
BC-8304	0+00 to 27+24	CONSTRUCTION
BC-8304-03	0+00 to 7+96	CONSTRUCTION

* Reconstruction is on previously abandoned road grade.

0-4 CONSTRUCTION

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

0-5 RECONSTRUCTION

Reconstruction includes, clearing, grubbing, landing and turnout construction, culvert installation, and application of 3-inch-minus ballast rock.

0-6 PRE-HAUL MAINTENANCE

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
BC-ML	435+63 to 441+13	<ul style="list-style-type: none"> Install culverts.

0-7 POST-HAUL MAINTENANCE

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

0-10 ABANDONMENT

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

0-12 DEVELOP ROCK SOURCE

The Purchaser shall develop existing rock sources. Development will involve clearing, stripping, drilling, shooting, and processing rock to generate riprap, shot rock, and 3-inch-minus ballast. Work for developing rock sources is listed in Section 6 ROCK AND SURFACING.

0-13 STRUCTURES

The Purchaser shall acquire and install a 40-foot gravel deck log stringer bridge. 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 shall 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, road work shall be performed in accordance with the dimensions shown on the TYPICAL SECTION SHEET and the specifications within this road plan.

1-4 ROAD TOLERANCES

Road work shall be performed within the tolerance listed below. The tolerance class for each road is listed on the TYPICAL SECTION SHEET.

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

1-6 ORDER OF PRECEDENCE

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

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

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

1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS

The Purchaser is responsible for the repair or replacement of all materials, roadway infrastructure, and road components damaged during road work 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.

1-9 DAMAGED METALLIC COATING

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

1-18 REFERENCE POINT DAMAGE

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

1-21 HAUL APPROVAL

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

1-25 ACTIVITY TIMING RESTRICTION

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

<u>Activity</u>	<u>Closure Period</u>
Rock hauling, construction, reconstruction, or abandonment	November 1 to March 31

1-26 OPERATING DURING CLOSURE PERIOD

If permission is granted to operate during a closure period listed in Clause 1-25 ACTIVITY TIMING RESTRICTION 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.

1-29 SEDIMENT RESTRICTION

Silt-bearing runoff shall not be permitted to go into streams.

1-30 CLOSURE TO PREVENT DAMAGE

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

- Surface or base stability problems persist.
- Weather is such that satisfactory results cannot be obtained in an area of operations.
- When, in the opinion of the Contract Administrator excessive road damage or rutting may occur.

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

1-33 SNOW PLOWING RESTRICTION

Snowplowing shall be permitted only after the execution of a SNOW PLOWING AGREEMENT, which is available from the Contract Administrator upon request.

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. Maintenance work shall be in accordance with FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS.

2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS

Purchaser shall clean the ditchlines, culvert headwalls, and catch basins. Work shall be completed before application of rock and shall be done in accordance with the TYPICAL SECTION.

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

3-5 CLEARING

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

3-8 PROHIBITED DECKING AREAS

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

- Within the grubbing limits.
- Within 50 feet of any stream.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- On slopes greater than 70%.
- Against standing trees unless approved by the Contract Administrator.

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. Grubbing shall be completed before starting excavation and embankment.

3-20 ORGANIC DEBRIS DEFINITION

Organic debris is defined as all vegetative material not eligible for removal by Contract 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 clearing limits as shown on the TYPICAL SECTION SHEET.

3-21 DISPOSAL COMPLETION

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

3-23 PROHIBITED DISPOSAL AREAS

Organic debris shall not be deposited in the following areas:

- Within 50 feet of a cross drain culvert.
- Within 100 feet of a live stream, or wetland.
- On embankments.
- On slopes greater than 40%.
- 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 plan.

3-25 SCATTERING ORGANIC DEBRIS

Organic debris shall be scattered outside of the clearing limits in natural openings unless otherwise detailed in this road plan.

SECTION 4 – EXCAVATION

4-2 PIONEERING

Pioneering shall not extend past construction that will be completed during the current construction season. Pioneering shall not extend more than 500 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 15 percent adverse.
- Minimum curve radius is 50 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.

Purchaser shall follow these standards for switchbacks:

- Maximum adverse grades for switchbacks is 12%.
- Maximum favorable grades for switchbacks is 15%.
- Maximum transition grades entering and leaving switchbacks is a 5% grade change.
- Transition grades required to meet switchback grade limitations must be constructed on the tangents preceding and departing from the switchbacks.

4-5 CUT SLOPE RATIO

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
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 and where side slopes exceed 50%, Purchaser shall use full bench construction for the entire subgrade width except as construction staked or designed.

<u>Road</u>	<u>Full Bench Location</u>	<u>Comments</u>
BC-8304	7+44 to 8+77	No sidecast below 8+05 culver. Push and sidecast waste material to 8+77.

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. Minimum dimensions are shown on the TYPICAL SECTION SHEET.

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

The Purchaser shall construct or reconstruct 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.

4-28 DITCH DRAINAGE

Ditches shall drain to cross-drain culverts and ditchouts.

4-35 WASTE MATERIAL DEFINITION

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

4-36 DISPOSAL OF WASTE MATERIAL

Waste material may be sidecast on side slopes up to 50% if the waste material is compacted and free of organic debris. On side slopes greater than 50%, all excavation shall be end hauled or pushed to designated embankment sites and waste areas.

4-38 PROHIBITED WASTE DISPOSAL AREAS

Waste material shall not be deposited in the following areas, except as otherwise specified in this plan:

- Within 50 feet of a cross drain culvert.
- Within 100 feet of a live stream or wetland.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Against standing timber.
- Outside the clearing limits.

4-55 ROAD SHAPING

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.

4-60 FILL COMPACTION

All embankment and waste material shall be compacted by routing equipment over the entire width of each lift.

4-61 SUBGRADE COMPACTION

Constructed and reconstructed subgrades shall be compacted by routing equipment over the entire width.

4-70 SUBGRADE REINFORCEMENT

On the following road, the Purchaser shall provide and install geotextile fabric. Subgrade reinforcement shall be installed to a width that is 2 feet more than the subgrade width, including turnouts. Geotextile fabric shall be overlapped by a minimum of 2 feet at all joints. The geotextile fabric will then be covered with a minimum of 12 inches of compacted 3-inch-minus ballast rock as specified in Clause 6-34 3-INCH MINUS BALLAST ROCK. Geotextile fabric shall meet the specifications in Clause 10-3 GEOTEXTILE FOR STABILIZATION.

<u>Road</u>	<u>Stations</u>	<u>Comments</u>
BC-8304	13+36 to 14+36	Install Geotextile after bridge to separate native ground from shot rock fill.

SECTION 5 – DRAINAGE

5-5 CULVERTS

Purchaser shall install culverts as part of this contract. Culverts must be installed concurrently with subgrade work and must be installed before subgrade compaction and rock application. Culvert locations and the minimum requirements for culvert length and diameter are designated on the MATERIALS LIST. Culvert, downspout, and flume lengths may be adjusted to fit as-built conditions and may not terminate directly on unprotected soil. Culverts may be new or used material and must meet the specifications in Clauses 10-15 through 10-23. Purchaser shall obtain approval from the Contract Administrator for the quality of used culverts before installation.

5-6 USED CULVERT MATERIAL

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

<u>Road</u>
BC-4233
BC-4234
BC-4241-06
BC-78
BC-80
BC-8304
BC-8304-03

5-11 UNUSED MATERIALS STATE PROPERTY

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

5-15 CULVERT INSTALLATION

Installation shall be in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL and the National Corrugated Metal Pipe Association's "Installation Manual for Corrugated Steel Drainage Structures."

5-16 APPROVAL FOR LARGER CULVERT INSTALLATION

Installation of culverts 36 inches in diameter and over shall be subject to written approval by the Contract Administrator before making backfill.

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

5-25 CATCH BASINS

Catch basins shall be constructed to resist erosion in accordance with CULVERT AND DRAINAGE SPECIFICATION DETAIL. Minimum dimensions of catch basins are 2 feet wide and 4 feet long with backslopes consistent with Clause 4-5 CUT SLOPE RATIO.

5-26 HEADWALLS FOR CROSS DRAIN CULVERTS

Headwalls shall be constructed in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all cross drain culverts. Rock used for headwalls shall weigh at least 50 pounds. 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 placement by end dumping or dropping of rock shall be allowed.

5-27 ARMORING FOR STREAM CROSSING CULVERTS

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

<u>Road</u>	<u>Stations</u>
BC-4234	8+66
BC-4234	11+50
BC-4234	12+28
BC-4234	17+30
BC-4234	20+20
BC-4234	21+93
BC-78	7+09
BC-83	1+80
BC-83	4+70
BC-83	6+65
BC-83	9+01
BC-83	10+81
BC-83	11+85
BC-83	12+28
BC-83	13+60
BC-83	14+13
BC-83	15+35
BC-83	16+38
BC-83	18+41
BC-83	19+35
BC-8304	4+49
BC-8304	8+05
BC-8304	9+26
BC-8304	10+58
BC-8304	13+40
BC-8304	17+62
BC-8304	20+12
BC-8304	21+31
BC-8304	23+68
BC-8304	24+31
BC-8304-03	0+90

SECTION 6 – ROCK AND SURFACING

6-2 ROCK SOURCE ON STATE LAND

Rock used in accordance with the quantities on the TYPICAL SECTION and MATERIALS LIST may be obtained from the following sources 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 sources, a joint operating plan shall be developed. All parties shall follow this plan.

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
BC-4246	STA 244+32 of the BC-42 road.	Riprap and 3-inch-minus ballast
BC-69	STA 363+56 of the BC-ML road.	Riprap, shot rock, and 3-inch-minus ballast

6-3 ROCK SOURCE STATE LAND, EXISTING STOCKPILE

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

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>	<u>Use requirements</u>
BC-4246	STA 244+32 of the BC-42 rd.	Riprap and 3-inch-minus ballast	As specified on sheet 33.
BC-69	STA 363+56 of the BC-ML rd.	Riprap, shot rock, and 3-inch-minus ballast	As specified on sheet 34.

6-5 ROCK FROM COMMERCIAL SOURCE

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

6-11 ROCK SOURCE DEVELOPMENT PLAN BY PURCHASER

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

<u>Source</u>	<u>Remarks</u>
BC-4246 Hardrock Pit	See sheet 33 for plan drawing and other requirements.
BC-69 Hardrock Pit	See sheet 34 for plan drawing and other requirements.

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

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

6-12 ROCK SOURCE SPECIFICATIONS

Rock sources must be in accordance with the following specifications, unless otherwise specified in the ROCK SOURCE DEVELOPMENT PLAN:

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

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

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

6-20 ROCK GRADATION TYPES

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

6-34 3-INCH MINUS BALLAST ROCK

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

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

6-50 LIGHT LOOSE RIP RAP

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

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

6-51 HEAVY LOOSE RIP RAP

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

<u>At Least/Not More Than</u>	<u>Weight Range</u>	<u>Size Range</u>
30% / 90%	1 ton to 3 ton	36" - 54"
70% / 90%	500 lbs. to 1 ½ ton	24" - 42"
10% / 30%	50 lbs. max	3" - 8"

6-55 ROCK APPLICATION MEASURED BY COMPACTED DEPTH

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

6-65 ROCK STOCKPILE LOCATION

The Purchaser shall stockpile rock as listed below.

<u>Rock Source</u>	<u>Quantity (c.y.)</u>
BC-4246 Hardrock Pit	Replacement of existing stockpiles to be determined by ROCK SOURCE DEVELOPMENT PLAN on sheets 33-34.
BC-69 Hardrock Pit	

6-67 ROCK STOCKPILE SPECIFICATIONS

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

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

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

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

6-70 APPROVAL BEFORE ROCK APPLICATION

Subgrade drainage installation including culvert installation, ditch construction, ditch reconstruction, headwall construction, and headwall reconstruction, 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 TYPICAL SECTION. Rock shall be spread, shaped, and compacted full width concurrent with rock hauling operations. The Contract Administrator shall direct locations for rock that is to be applied as spot patching. Road surfaces shall be compacted in accordance with the TYPICAL SECTION by routing equipment over the entire width.

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.

SECTION 7 – STRUCTURES

7-45 PURCHASER SUPPLIED BRIDGE

On the following road, the Purchaser shall supply and construct each bridge, listed below, in accordance with this road plan.

Road	Station	Length (ft)	Width ¹ (ft)	Minimum Stringer Size	Type
BC-8304	12+96 to 13+36	40-foot	14	See sheet 31 for details.	40-foot span gravel decked log stringer bridge.

¹Width between wheel guard logs.

7-50 TEMPORARY LOG BRIDGE CONSTRUCTION

The Purchaser shall construct a temporary bridge in accordance with this plan. Refer to LOG STRINGER BRIDGE INSTALLATION DETAILS design sheet for details. Douglas fir western hemlock, and western red cedar timber for the manufacture of stringers and cribbing **SHALL BE PROVIDED BY THE PURCHASER**. Purchaser may salvage logs upon completion of road use.

SECTION 8 – EROSION CONTROL

8-15 REVEGETATION

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

8-16 REVEGETATION SUPPLY

The Purchaser shall provide the seed and fertilizer.

8-17 REVEGETATION TIMING

The Purchaser shall perform revegetation during the first available opportunity after road work is completed. 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.

8-18 PROTECTION FOR SEED

Purchaser shall provide a protective cover for seed if revegetation occurs between July 1 and March 31. The protective cover shall consist of, but not be limited to dispersed straw, jute matting, or clear plastic sheets as approved by the Contract Administrator. The protective cover requirement may be waived by the Contract Administrator, in writing, if the Purchaser is able to demonstrate a revegetation plan that will result in the establishment of a uniform dense crop (at least 50% coverage) of 3-inch tall grass by October 31.

8-19 ASSURANCE FOR SEEDED AREA

The Purchaser shall be responsible to ensure a uniform and dense crop (at least 50% coverage) of 3-inch tall grass. The Purchaser shall reapply the seed and fertilizer in areas that have failed to germinate or 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 fertilizer at no addition cost to the state.

8-25 GRASS SEED

Purchaser shall evenly spread the seed mixture listed below on all exposed soil inside the grubbing limits at a rate of 50 pounds per acre of exposed soil. Grass seed shall meet the following specifications:

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

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

8-27 FERTILIZER

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

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

SECTION 9 – POST-HAUL ROAD WORK

9-3 REMOVAL OF CULVERT MATERIAL FROM STATE LAND

Culvert material removed from roads becomes the property of the Purchaser and must be removed from state land.

9-5 POST-HAUL MAINTENANCE

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

9-10 LANDING DRAINAGE

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

9-12 LANDING EMBANKMENT REMOVAL

The Purchaser shall reduce or relocate landing embankment, in a manner approved, in writing, by the Contract Administrator. Excavated material shall be placed in a waste area designated by the Contract Administrator.

9-21 ROAD ABANDONMENT

The following roads shall be abandoned by the Purchaser before the termination of this contract.

<u>Road</u>	<u>Stations</u>
BC-4233	STA 0+00 to 6+60
BC-4234	STA 0+00 to 23+32
BC-4241-06	STA 0+00 to 4+48
BC-78	STA 0+00 to 7+70
BC-80	STA 0+00 to 1+39
BC-8304	STA 0+00 to 27+24
BC-8304-03	STA 0+00 to 7+96

9-22 ABANDONMENT

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

SECTION 10 MATERIALS

10-3 GEOTEXTILE FOR STABILIZATION

Geotextiles shall meet the following minimum requirements for strength and property qualities, and shall be designed by the manufacturer to be used for stabilization or reinforcement, and filtration. Material shall be free of defects, cuts, and tears.

	<u>ASTM Test</u>	<u>Requirements</u>
Type	--	Woven
Apparent opening size	D 4751	No. 40 max
Water permittivity	D 4491	0.10 sec ⁻¹
Grab tensile strength	D 4632	315 lb
Grab tensile elongation	D 4632	50%
Puncture strength	D 6241	620 lb
Tear strength	D 4533	112 lb
Ultraviolet stability	D 4355	50% retained after 500 hours of exposure

10-15 CORRUGATED STEEL CULVERT

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

10-16 CORRUGATED ALUMINUM CULVERT

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

10-17 CORRUGATED PLASTIC CULVERT

Polyethylene culverts shall meet AASHTO M-294 specifications, or ASTM F-2648 specifications for recycled polyethylene. Culverts 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.

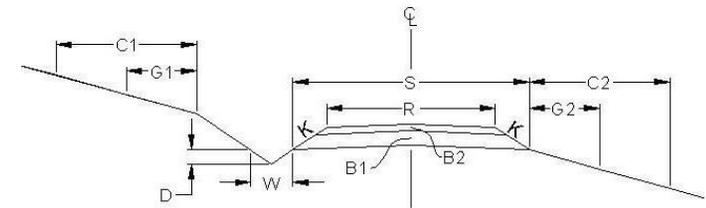
10-23 GAGE AND CORRUGATION

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

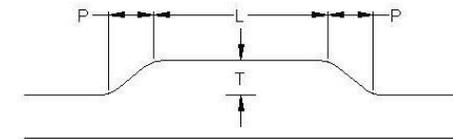
<u>Diameter</u>	<u>Gage</u>	<u>Corrugation</u>
18"	16 (0.064")	2 ² / ₃ " X 1/2"
24" to 48"	14 (0.079")	2 ² / ₃ " X 1/2"
54" to 96"	14 (0.079")	3" X 1"

ROAD #		BC-4233 ¹	BC-4234	BC-4241-06	BC-78 ³
REQUIRED / OPTIONAL		Optional	Optional	Optional	Optional
CONSTRUCT / RECONSTRUCT		Reconstruction	Construction	Construction	Reconstruction
TOLERANCE CLASS (A/B/C)		C	C	C	C
STATION / MP TO		0+00	0+00	0+00	0+00
STATION / MP		6+60	23+32	4+48	7+70
ROAD WIDTH	R	12	12	12	12
CROWN (INCHES @ C/L)		3	3	3	3
DITCH WIDTH	W	2	2	2	2
DITCH DEPTH	D	1	1	1	1
TURNOUT LENGTH	L	25	25	25	25
TURNOUT WIDTH	T	10	10	10	10
TURNOUT TAPER	P	25	25	25	25
GRUBBING	G1	5	5	5	5
	G2	5	5	5	5
CLEARING	C1	10	10	10	10
	C2	10	10	10	10
ROCK FILLSLOPE	K:1	1½	1½	1½	1½
❖ BALLAST DEPTH	B1	--	18	18	6
CUBIC YARDS / STATION		--	114	114	34
➤ TOTAL CY BALLAST		50 ²	2,659	511	262
❖ SURFACING DEPTH	B2	--	--	--	--
CUBIC YARDS / STATION		--	--	--	--
➤ TOTAL CY SURFACING		--	--	--	--
➤ TOTAL CUBIC YARDS		50 ²	2,659	511	262
SUBGRADE WIDTH	S	--	16.5	16.5	13.5
BRUSHCUT (Y/N)		N/A	N/A	N/A	N/A
BLADE, SHAPE, & DITCH (Y/N)		N/A	N/A	N/A	N/A

TYPICAL SECTION



TURNOUT DETAIL (PLAN VIEW)



SYMBOL NOTES

- ❖ Specified Rock Depth is FINISHED COMPACTED DEPTH in inches.
 - Specified Rock Quantity is LOOSE MEASURE (Truck Cubic Yards) needed to accomplish specified FINISHED COMPACTED DEPTH. Rock quantities include volume for turnouts, curve widening and landings.
- 1 This is a previously abandoned road grade.
 - 2 3-inch-minus ballast is for spot patching over culvert locations and as directed by the contract administrator.
 - 3 This is an orphaned road grade.
 - 4 Ballast rock required for log stringer bridge deck.

Rock Totals

3-inch-minus ballast – 9,144 cy
Riprap - 879 cy
Shot Rock – 960 cy

ROAD #		BC-80	BC-83 ³	BC-8304	BC-8304	BC-8304	BC-8304-03	BC-ML	
REQUIRED / OPTIONAL		Optional	Required	Optional	Optional	Optional	Optional	Required	
CONSTRUCT / RECONSTRUCT		Construction	Reconstruction	Construction	Construction	Construction	Construction	Pre-haul maintenance	
TOLERANCE CLASS (A/B/C)		C	C	C	A	C	C	C	
STATION / MP TO		0+00	0+00	0+00	12+96	13+36	0+00	435+63	
STATION / MP		1+39	21+08	12+96	13+36	27+24	7+96	441+13	
ROAD WIDTH	R	12	12	12	40-foot gravel deck log stringer bridge	12	12	12	
CROWN (INCHES @ C/L)		3	3	3		3	3	3	
DITCH WIDTH	W	2	3	2		2	2	3	
DITCH DEPTH	D	1	1	1		1	1	1	
TURNOUT LENGTH	L	25	50	25		25	25	50	
TURNOUT WIDTH	T	10	10	10		10	10	10	
TURNOUT TAPER	P	25	25	25		25	25	25	
GRUBBING	G1	5	5	5		5	5	5	
	G2	5	5	5		5	5	5	
CLEARING	C1	10	10	10		10	10	10	
	C2	10	10	10		10	10	10	
ROCK FILL SLOPE	K:1	1½	1½	1½		1½	1½	1½	
❖ BALLAST DEPTH	B1	18	12	18		6	18	18	--
CUBIC YARDS / STATION		114	72	114		--	114	114	--
➤ TOTAL CY BALLAST		159	1,518	1,478	16 ⁴	1,583	908	30 ²	
❖ SURFACING DEPTH	B2	--	--	--	--	--	--	--	
CUBIC YARDS / STATION		--	--	--	--	--	--	--	
➤ TOTAL CY SURFACING		--	--	--	--	--	--	--	
➤ TOTAL CUBIC YARDS		159	1,518	1,478	16 ⁴	1,583	908	30 ²	
SUBGRADE WIDTH	S	16.5	15	16.5	14	16.5	16.5	--	
BRUSHCUT (Y/N)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	
BLADE, SHAPE, & DITCH (Y/N)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	

MATERIALS LIST

LOCATION		CULVERT			DWNSTPT		RIPRAP			FILL TYPE	TOLERANCE	REMARKS		
ROAD #	STATION	DIAMETER	LENGTH	TYPE	LENGTH	TYPE	INLET	OUTLET	TYPE			<u>Note:</u> Galvanized metal culverts shall conform to the following specifications for gage and corrugation as a function of the diameter:		
												Diameter	Gage	Corrugation
												18"	16	2 2/3" x 1/2"
												24" – 48"	14	2 2/3" x 1/2"
												54" – 96"	14	3" x 1"
BC-4233	0+33	18	30	XX	--	--	2	3	L	NT	C			
BC-4234	0+44	18	30	XX	--	--	2	3	L	NT	C			
	2+67	18	30	XX	--	--	2	3	L	NT	C			
	6+82	18	30	XX	--	--	6	8	L	NT	C			
	8+66	36	36	XX	--	--	3	6	H/L	NT	C			Type 4 stream
	11+50	24	30	XX	--	--	3	6	H/L	NT	C			Type 5 stream
	12+28	24	30	XX	--	--	2	3	H/L	NT	C			Type 5 stream
	13+25	18	30	XX	--	--	2	3	L	NT	C			
	15+60	18	30	XX	--	--	3	6	L	NT	C			
	17+30	24	30	XX	--	--	3	6	H/L	NT	C			Type 5 stream
	20+20	24	30	XX	--	--	3	6	H/L	NT	C			Type 5 stream
	21+93	24	30	XX	--	--	2	3	H/L	NT	C			Type 5 stream
	22+31	18	30	XX	--	--	2	3	L	NT	C			
BC-4241-06	2+79	18	30	XX	--	--	2	3	L	NT	C			
BC-78	5+23	18	36	XX	--	--	2	3	L	NT	C			
	7+09	24	40	XX	--	--	3	6	H/L	NT	C			Type 5 stream
BC-83	1+80	24	36	GM	--	--	3	6	H/L	NT	C			Type 5 stream
	4+08	18	36	GM	--	--	2	3	L	NT	C			
	4+70	24	30	GM	--	--	3	6	H/L	NT	C			Type 5 stream
	5+26	24	36	GM	--	--	3	6	H/L	NT	C			
	6+65	30	30	GM	--	--	6	8	H/L	NT	C			Type 4 stream
	8+13	18	40	GM	--	--	2	3	L	NT	C			

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

MATERIALS LIST

LOCATION		CULVERT			DWNSTP		RIPRAP			FILL TYPE	TOLERANCE	REMARKS		
ROAD #	STATION	DIAMETER	LENGTH	TYPE	LENGTH	TYPE	INLET	OUTLET	TYPE			<u>Note:</u> Galvanized metal culverts shall conform to the following specifications for gage and corrugation as a function of the diameter:		
												Diameter	Gage	Corrugation
		18"		16	2 2/3" x 1/2"									
		24" – 48"		14	2 2/3" x 1/2"									
		54" – 96"		14	3" x 1"									
BC-83	9+01	72	40	GM	--	--	25	40	H/L	SR	C	Type 4 stream, Shot rock fill		
	10+81	60	40	GM	--	--	20	30	H/L	SR	C	Type 4 stream, Shot rock fill		
	11+85	24	40	GM	--	--	3	6	H/L	NT	C	Type 5 stream		
	12+28	36	40	GM	--	--	8	10	H/L	NT	C	Type 4 stream		
	13+60	48	36	GM	--	--	40	15	H/L	SR	C	Type 4 stream, Shot rock fill		
	14+13	36	36	GM	--	--	8	10	H/L	NT	C	Type 4 stream		
	15+35	36	36	GM	--	--	6	8	H/L	NT	C	Type 4 stream		
	15+91	18	40	GM	--	--	2	3	L	NT	C			
	16+38	48	40	GM	--	--	10	15	H/L	SR	C	Type 4 stream, Shot rock fill		
	17+76	18	40	GM	--	--	2	3	L	NT	C			
	18+41	48	40	GM	--	--	20	30	H/L	SR	C	Type 4 stream, Shot rock fill		
	19+35	24	30	GM	--	--	3	6	H/L	NT	C	Type 5 stream		
	21+08	18	30	GM	--	--	2	3	L	NT	C			
BC-8304	4+49	24	30	XX	--	--	3	6	H/L	NT	C	Type 5 stream		
	5+03	18	30	XX	--	--	2	3	L	NT	C			
	6+84	18	30	XX	--	--	2	3	L	NT	C			
	8+05	24	30	XX	--	--	3	6	H/L	NT	C	Type 5 stream		
	9+26	60	40	XX	--	--	20	30	H/L	NT	C	Type 4 stream		
	10+58	60	36	XX	--	--	20	30	H/L	NT	C	Type 4 stream		
BC-8304	12+96 to 13+36	Gravel deck log stringer bridge					--	--	--	--	A	Type 4 stream. See sheet 29 for more details		
	13+36 to 13+85	--	--	--	--	--	--	--	--	SR	C	150 cubic yard of shot rock fill for bridge approach.		

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 H – Heavy Loose Riprap L – Light Loose Riprap SR – Shot Rock NT – Native (Bank Run) QS – Quarry Spalls

MATERIALS LIST

LOCATION		CULVERT			DWNSPT		RIPRAP			FILL TYPE	TOLERANCE	REMARKS												
ROAD #	STATION	DIAMETER	LENGTH	TYPE	LENGTH	TYPE	INLET	OUTLET	TYPE															
										<u>Diameter</u>	<u>Gage</u>		<u>Corrugation</u>											
												Note: Galvanized metal culverts shall conform to the following specifications for gage and corrugation as a function of the diameter: <table style="margin-left: auto; margin-right: auto; border: none;"> <tr> <td style="padding: 2px 10px;"><u>Diameter</u></td> <td style="padding: 2px 10px;"><u>Gage</u></td> <td style="padding: 2px 10px;"><u>Corrugation</u></td> </tr> <tr> <td style="padding: 2px 10px;">18"</td> <td style="padding: 2px 10px;">16</td> <td style="padding: 2px 10px;">2 2/3" x 1/2"</td> </tr> <tr> <td style="padding: 2px 10px;">24" – 48"</td> <td style="padding: 2px 10px;">14</td> <td style="padding: 2px 10px;">2 2/3" x 1/2"</td> </tr> <tr> <td style="padding: 2px 10px;">54" – 96"</td> <td style="padding: 2px 10px;">14</td> <td style="padding: 2px 10px;">3" x 1"</td> </tr> </table>	<u>Diameter</u>	<u>Gage</u>	<u>Corrugation</u>	18"	16	2 2/3" x 1/2"	24" – 48"	14	2 2/3" x 1/2"	54" – 96"	14	3" x 1"
<u>Diameter</u>	<u>Gage</u>	<u>Corrugation</u>																						
18"	16	2 2/3" x 1/2"																						
24" – 48"	14	2 2/3" x 1/2"																						
54" – 96"	14	3" x 1"																						
BC-8304	13+36 to 14+36	--	--	--	--	--	--	--	--	--	C	Geotextile.												
	13+40	36	40	XX	--	--	40	6	H/L	NT	C	Place pipe to capture overflow side channel past sill log. Extra inlet riprap is to armor fill past log stringer bridge.												
	17+62	36	30	XX	--	--	6	8	H/L	NT	C	Type 4 stream												
	18+50	18	30	XX	--	--	2	3	L	NT	C													
	19+54	18	30	XX	--	--	2	3	L	NT	C													
	20+12	30	30	XX	--	--	6	8	H/L	NT	C	Type 4 stream												
	21+31	36	36	XX	--	--	8	10	H/L	NT	C	Type 4 stream												
	21+94	18	36	XX	--	--	2	3	L	NT	C													
	23+68	72	40	XX	--	--	40	60	H/L	NT	C	Type 4 stream												
	24+31	24	36	XX	--	--	6	8	H/L	NT	C	Type 5 stream												
	25+60	18	30	XX	--	--	2	3	L	NT	C													
	26+09	18	30	XX	--	--	2	3	L	NT	C													
BC-8304-03	0+90	24	30	XX	--	--	3	6	H/L	NT	C	Type 5 stream												
BC-ML	435+63	24	30	GM	--	--	3	6	H/L	NT	C													
	440+18	18	30	GM	--	--	2	3	L	NT	C													
	441+13	18	30	GM	--	--	2	3	L	NT	C													

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H – Heavy Loose Riprap L – Light Loose Riprap SR – Shot Rock NT – Native (Bank Run) QS – Quarry Spalls

FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

Cuts and Fills

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

Surface

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

Drainage

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

Preventative Maintenance

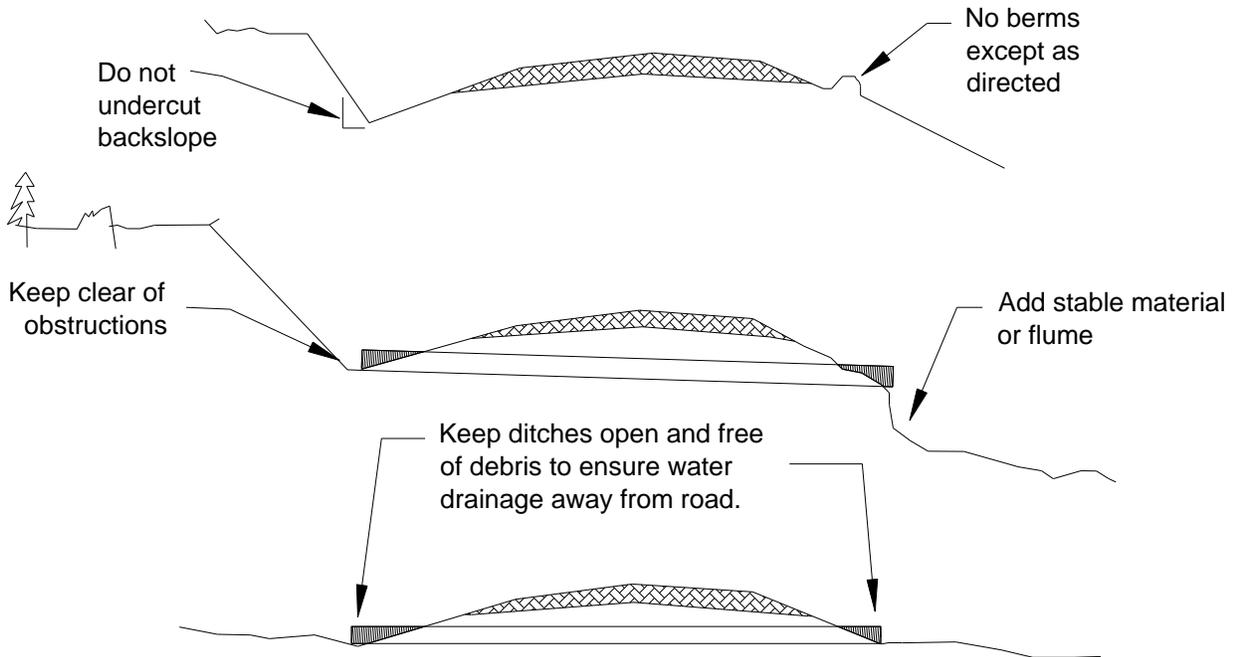
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

Termination of Use or End of Season

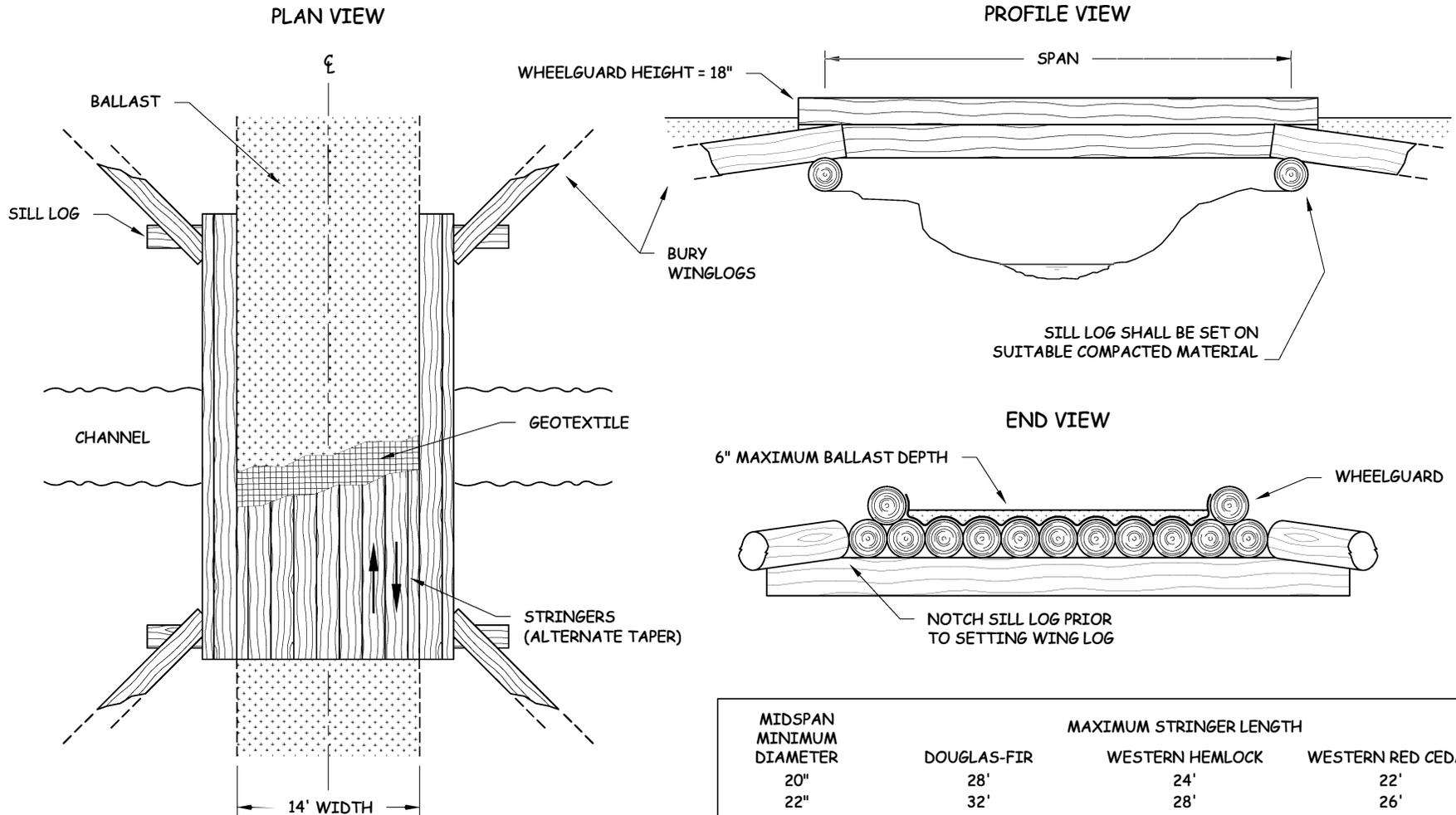
- At the conclusion of logging operations, ensure all conditions of these specifications have been met.

Debris

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



LOG STRINGER BRIDGE INSTALLATION DETAILS



NOTES:

ALL MATERIALS SHALL BE APPROVED BY THE CONTRACT ADMINISTRATOR.
 ANY DESIGN CHANGES SHALL BE APPROVED BY THE CONTRACT ADMINISTRATOR.
 STRINGERS AND WHEELGUARDS SHALL BE LASHED TOGETHER WITH 7/8" WIRE ROPE NEAR EACH END OF THE STRUCTURE.
 WING LOGS SHALL BE LASHED TO SILL LOG AND STRINGERS WITH 7/8" WIRE ROPE AT EACH END OF STRUCTURE.

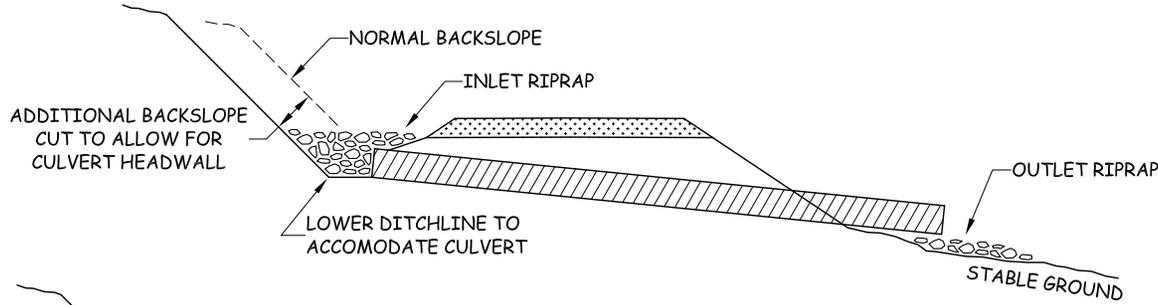
MIDSPAN MINIMUM DIAMETER	MAXIMUM STRINGER LENGTH		
	DOUGLAS-FIR	WESTERN HEMLOCK	WESTERN RED CEDAR
20"	28'	24'	22'
22"	32'	28'	26'
24"	36'	32'	28'
26"	38'	34'	32'
27"	42'	38'	34'
29"	46'	40'	38'
31"	48'	44'	40'
33"	52'	46'	42'
35"	56'	50'	46'
37"	60'	52'	48'

DRAWINGS NOT TO SCALE

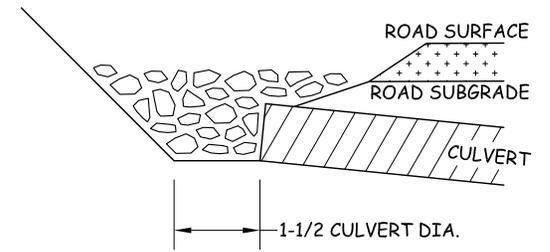
CONTRACT #	PROJECT	SHEET
30-092796	SEMPRE VRH & VDT	34 OF 37

CULVERT AND DRAINAGE SPECIFICATIONS

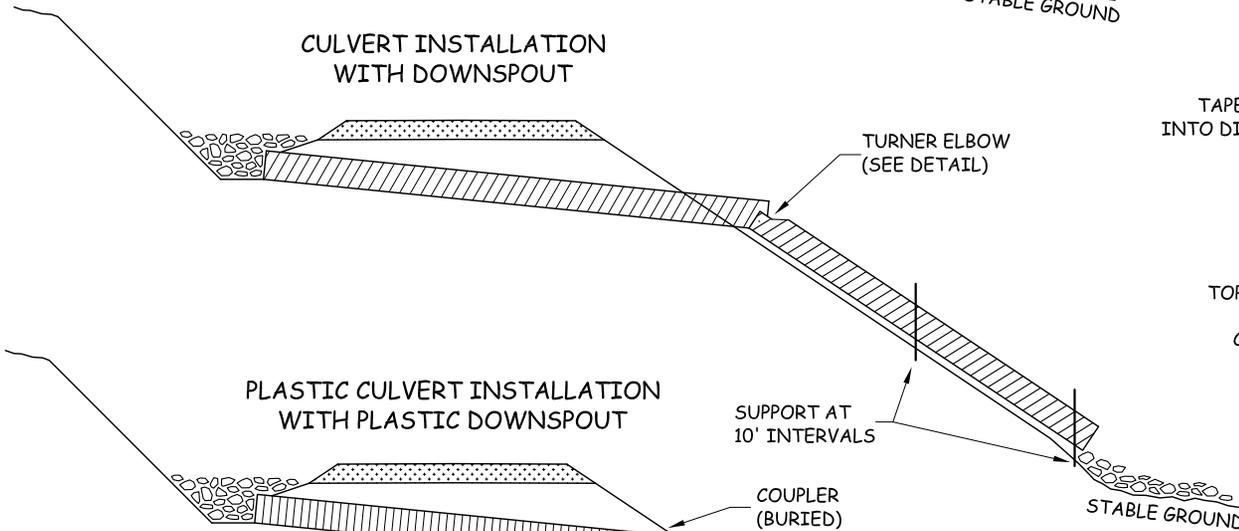
CULVERT INSTALLATION (TYPICAL)



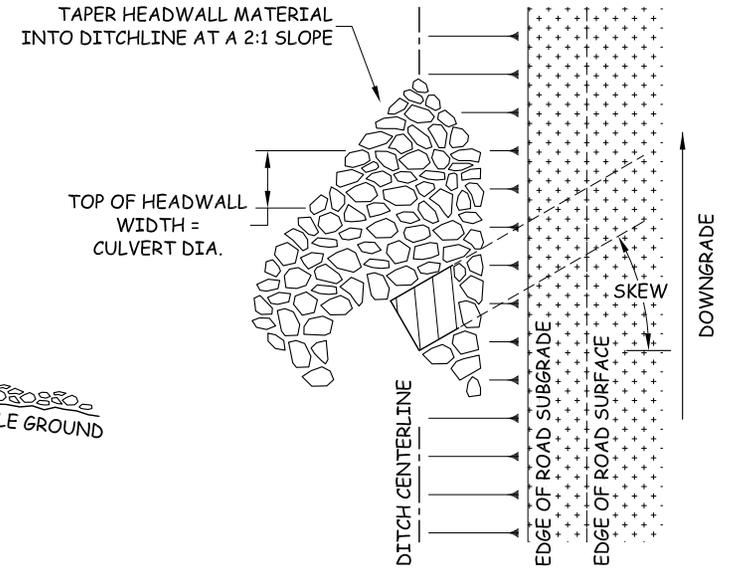
CULVERT HEADWALL - SECTION VIEW



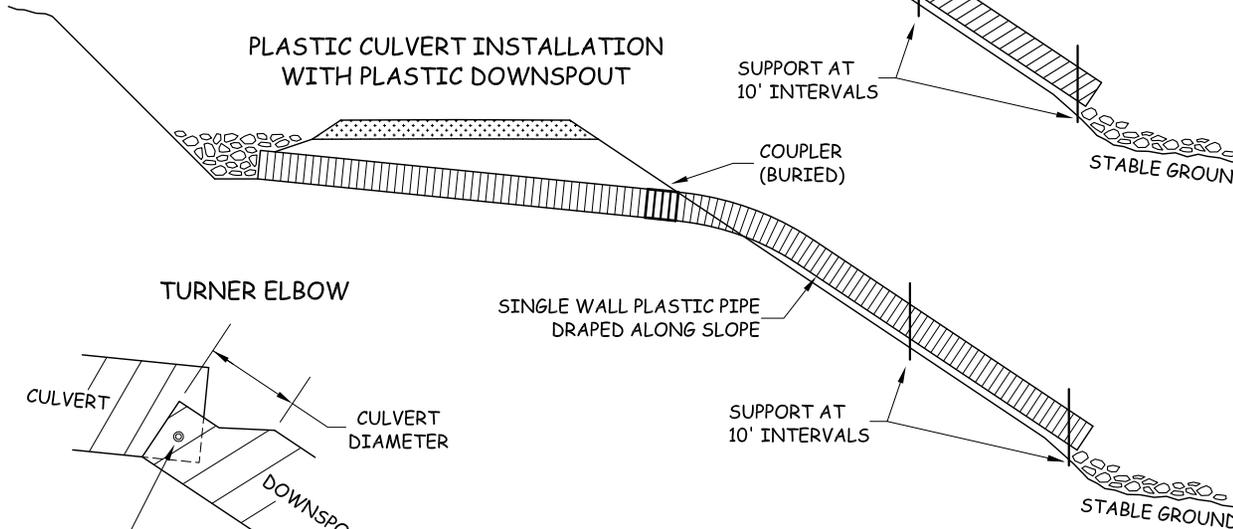
CULVERT INSTALLATION WITH DOWNSPOUT



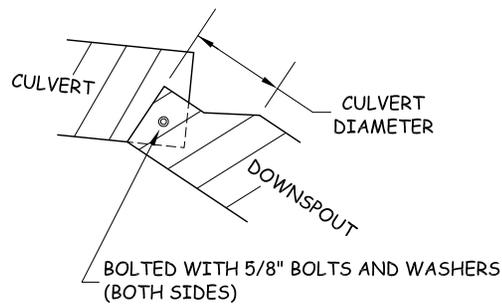
CULVERT HEADWALL - PLAN VIEW



PLASTIC CULVERT INSTALLATION WITH PLASTIC DOWNSPOUT



TURNER ELBOW



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

CONTRACT #	PROJECT	SHEET
30-092796	SEMPRE VRH AND VDT	35 OF 37

ROCK SOURCE DEVELOPMENT PLAN

BC-4246 HARDROCK PIT

1620



1650

1610

PIT ACCESS

1630

PIT BENCH

BC-42

1. AN ONSITE MEETING WITH ENGINEER IS REQUIRED PRIOR TO DEVELOPMENT OR USE.
2. ALL EXISTING STOCKPILES ARE TO BE REPLACED PRIOR TO SALE TERMINATION WITH THE QUANTITIES AGREED TO IN WRITING ON THIS PLAN PRIOR TO DEVELOPMENT AND USE.
3. ANY EXISTING SHOT ROCK MAY BE USED AS NEEDED WITHOUT REPLACEMENT.
4. BC-42 ROAD MAY BE BLOCKED WITH ROCK FOR THE DURATION OF THE SALE.

1590

WORKING FACE

244+32

PIT FLOOR

1560

1590

DRAINAGE

SCALE



SEE ALSO SECTION 6-12 FOR ROCK SOURCE DEVELOPMENT SPECIFICATIONS

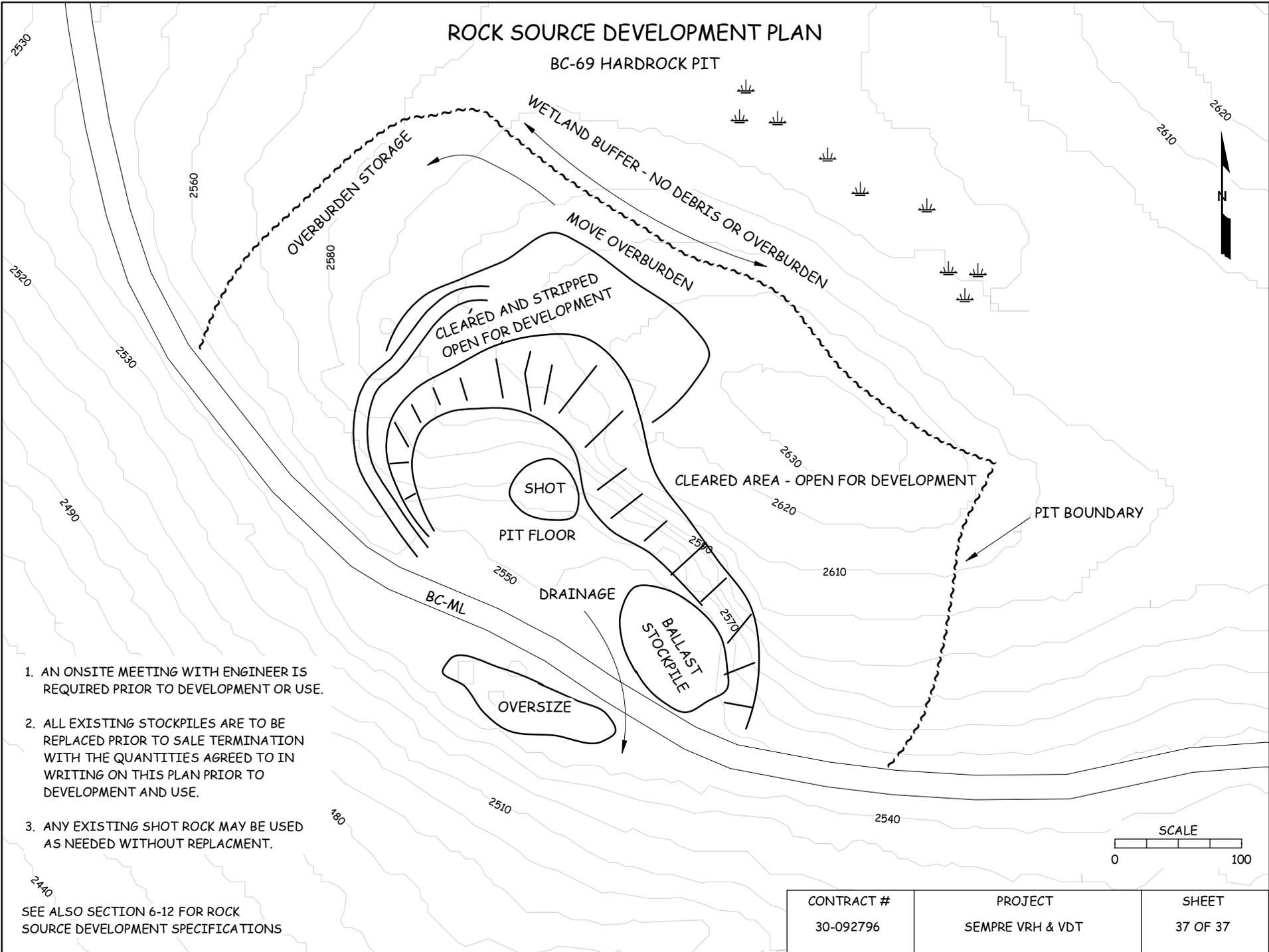
CONTRACT #
30-092796

PROJECT
SEMPRE VRH & VDT

SHEET
36 OF 37

ROCK SOURCE DEVELOPMENT PLAN

BC-69 HARDROCK PIT



1. AN ONSITE MEETING WITH ENGINEER IS REQUIRED PRIOR TO DEVELOPMENT OR USE.
2. ALL EXISTING STOCKPILES ARE TO BE REPLACED PRIOR TO SALE TERMINATION WITH THE QUANTITIES AGREED TO IN WRITING ON THIS PLAN PRIOR TO DEVELOPMENT AND USE.
3. ANY EXISTING SHOT ROCK MAY BE USED AS NEEDED WITHOUT REPLACEMENT.

SEE ALSO SECTION 6-12 FOR ROCK SOURCE DEVELOPMENT SPECIFICATIONS

CONTRACT #
30-092796

PROJECT
SEMPRE VRH & VDT

SHEET
37 OF 37

SUMMARY - Road Development Costs

REGION: NW
DISTRICT: Cascade

SALE/PROJECT NAME: Sempre VRH & VDT

CONTRACT #: 30-092796

ROAD NUMBERS: BC-4234,BC-4241-06,BC-80,BC-8304,BC-8404-03

BC-4233,BC-78,BC-83

ROAD STANDARD:	Construction	Reconstruction	Maintenance
NUMBER OF STATIONS:	64+39	35+38	5+50
CLEARING & GRUBBING:	\$15,305	\$2,291	\$0
EXCAVATION AND FILL:	\$30,289	\$7,407	\$0
MISC. MAINTENANCE:	\$0	\$0	\$0
ROAD ROCK:	\$80,466	\$25,011	\$155
ROCK STOCKPILE PROD:	\$0	\$0	\$0
CULVERTS AND FLUMES:	\$36,075	\$33,072	\$2,127
STRUCTURES:	\$7,060	\$0	\$0
MOBILIZATION:	\$4,571	\$1,421	\$9
 TOTAL COSTS:	 \$173,765	 \$69,201	 \$2,291
COST PER STATION:	\$2,699	\$1,956	\$417
ROAD DEACTIVATION & ABANDONMENT COSTS:		\$5,346	

Est.	TOTAL (All Roads) =	\$250,602
	SALE VOLUME MBF =	5,389
	TOTAL \$/MBF =	\$47

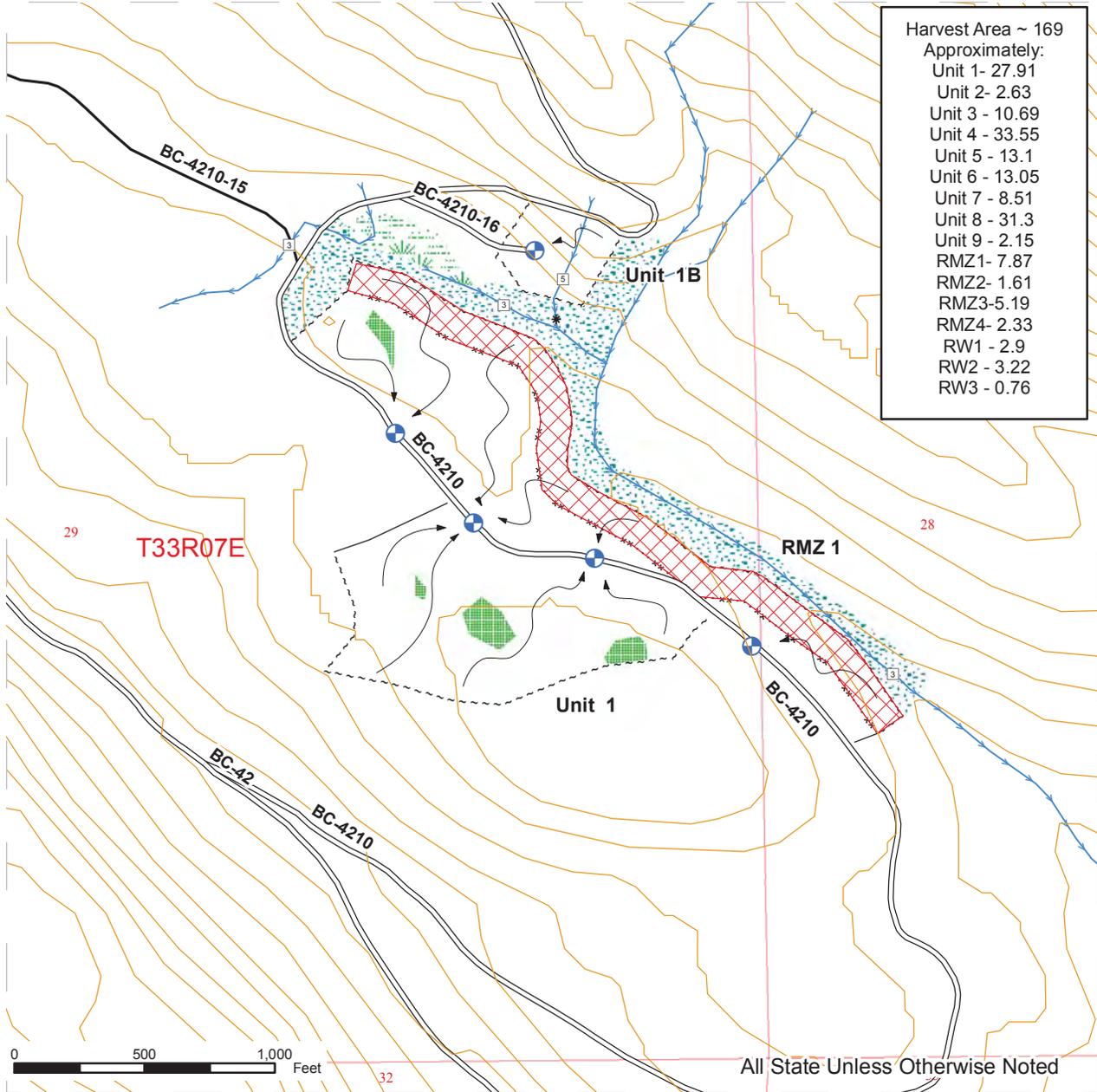
Compiled by: Symmank

Date: 03/15/16

LOGGING PLAN MAP

SALE NAME: Sempre VRH & VDT
AGREEMENT#: 30-092796
TOWNSHIP(S): T33N R07E
TRUST(S): 10 Scientific School, 07 Capitol Grant, 01 State Forest Transfer, 04 Agricultural School

REGION: Northwest
COUNTY(S): Skagit
ELEVATION RGE: 1710' - 2810'



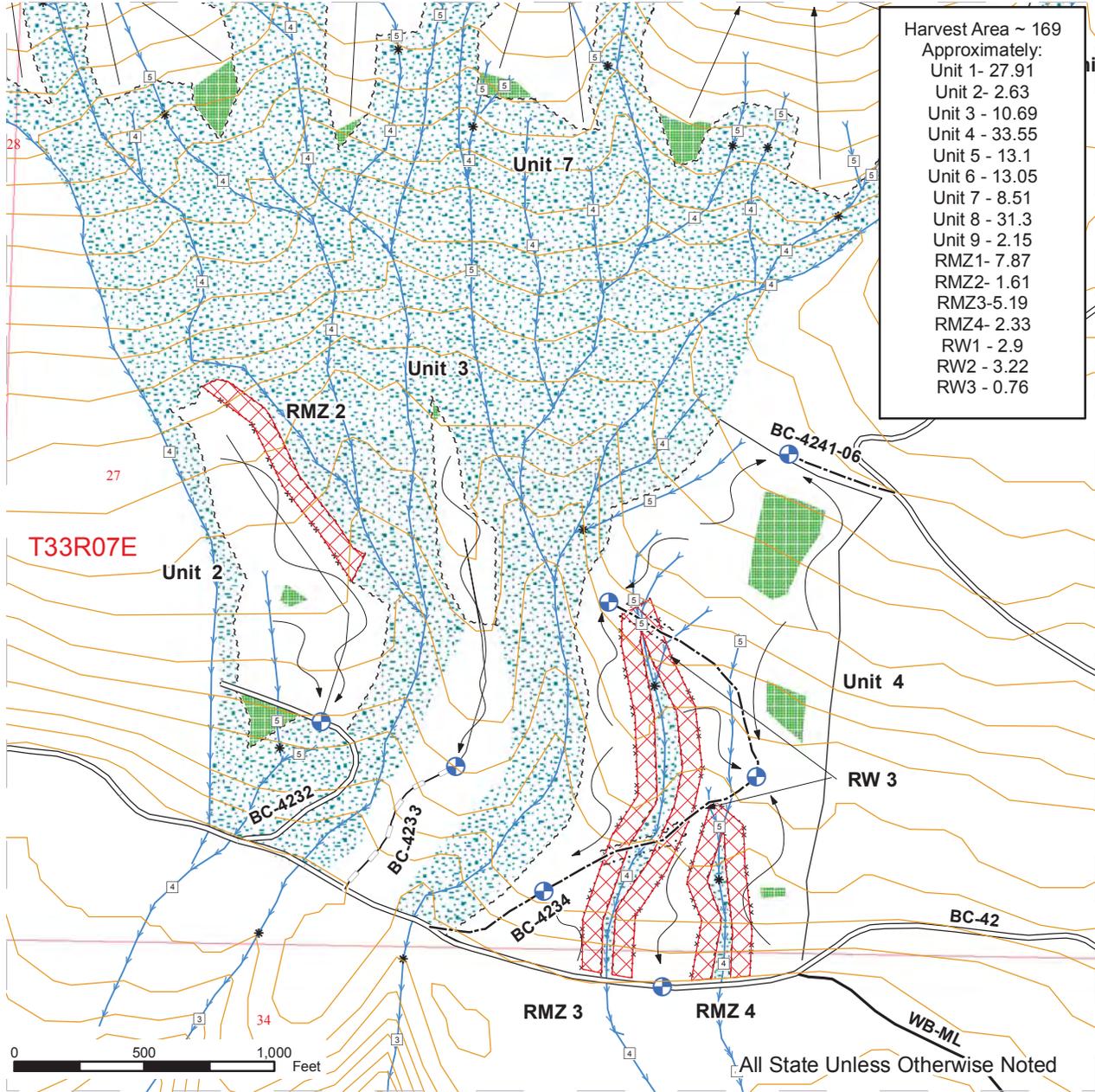
Harvest Area ~ 169	
Approximately:	
Unit 1 -	27.91
Unit 2 -	2.63
Unit 3 -	10.69
Unit 4 -	33.55
Unit 5 -	13.1
Unit 6 -	13.05
Unit 7 -	8.51
Unit 8 -	31.3
Unit 9 -	2.15
RMZ1 -	7.87
RMZ2 -	1.61
RMZ3 -	5.19
RMZ4 -	2.33
RW1 -	2.9
RW2 -	3.22
RW3 -	0.76

Ground Based	Special Mgt Area Tags	Existing Road	Streams
Thinning	Reprod	Optional Reconstruction	Stream Type
Wetland	Sale Boundary Tags	Required Construction	Stream Type Break
Riparian Mgt Zone	Right of Way Tags	Optional Construction	
Leave Tree Area		Required Reconstruction	
		Optional Reconstruction	

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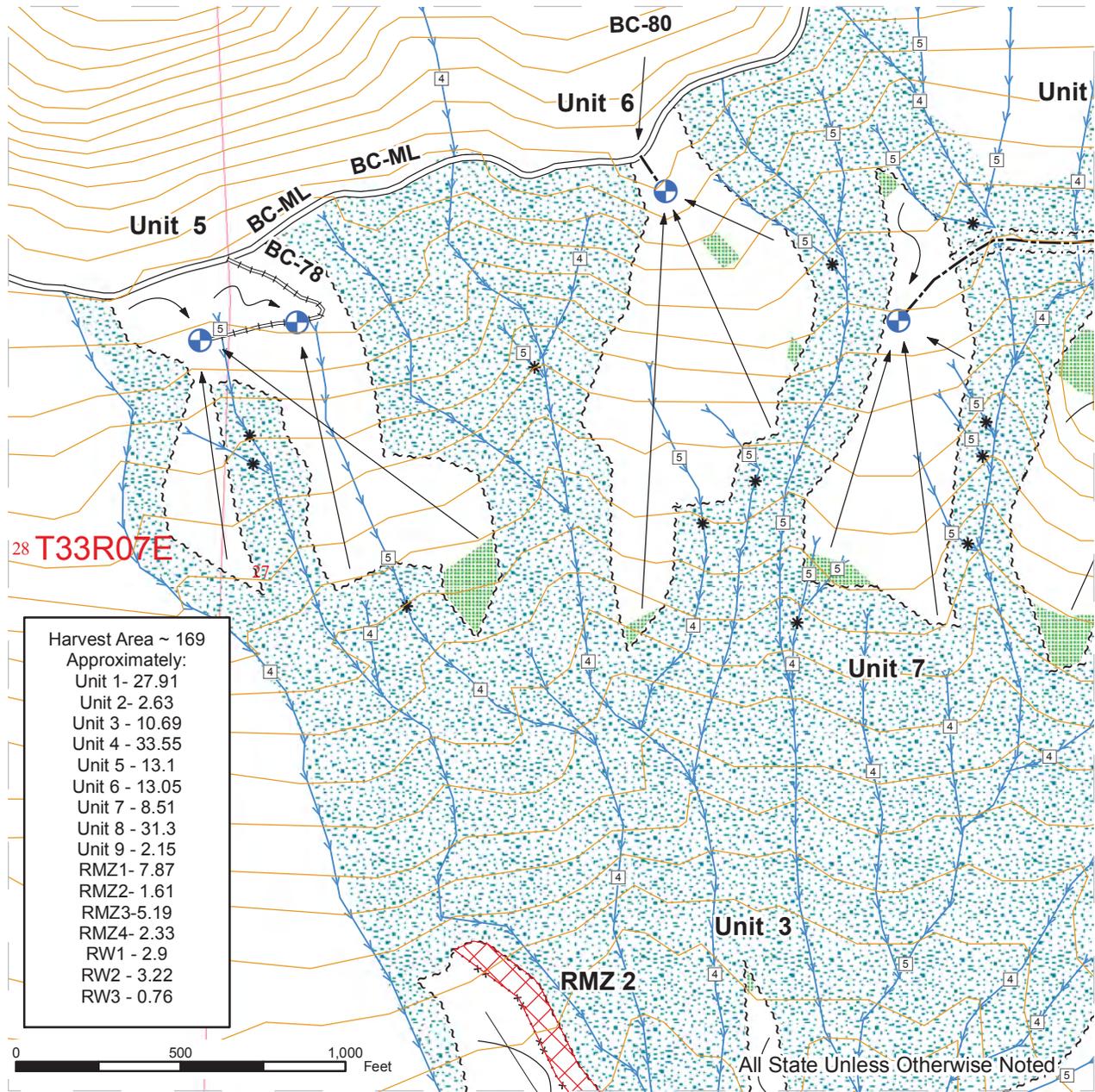
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Unit 1	27.91
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	Ground Based		Special Mgt Area Tags		Existing Road		Streams
	Thinning		Reprod		Optional Reconstruction		Stream Type
	Wetland		Sale Boundary Tags		Required Construction		Stream Type Break
	Riparian Mgt Zone		Right of Way Tags		Optional Construction		
	Leave Tree Area				Required Reconstruction		
					Optional Reconstruction		

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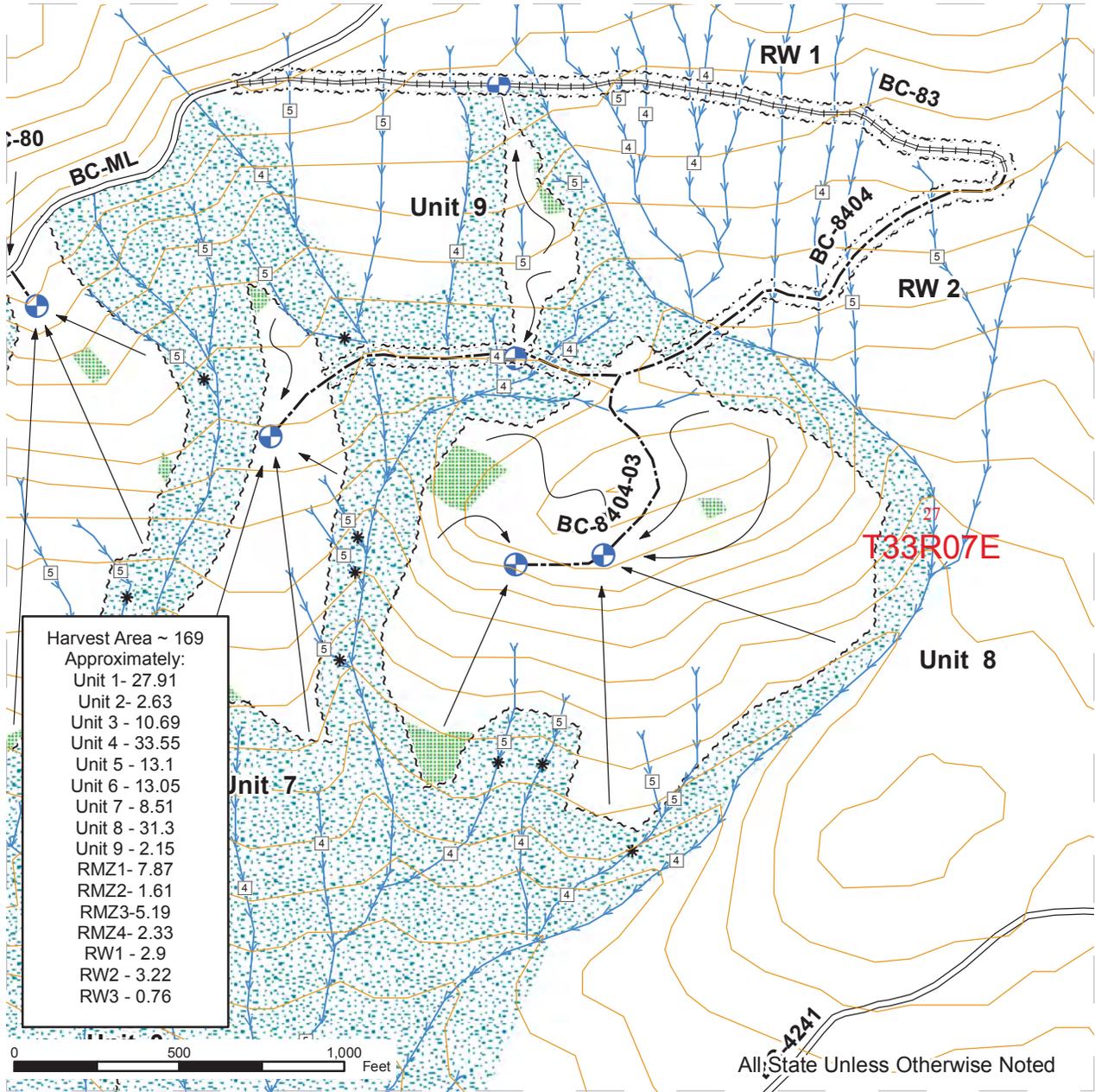
Ground Based	Special Mgt Area Tags	Existing Road	Streams
Thinning	Reprod	Optional Reconstruction	Stream Type
Wetland	Sale Boundary Tags	Required Construction	Stream Type Break
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