



TIMBER NOTICE OF SALE

SALE NAME: *SUMMER BREEZE*

AGREEMENT NO: *30-093731*

AUCTION: November 16, 2016 starting at 10:00 a.m., **COUNTY:** Snohomish
Northwest Region Office, Sedro Woolley, WA

SALE LOCATION: Sale located approximately 5 miles west of Gold Bar, WA.

**PRODUCTS SOLD
AND SALE AREA:**

All timber bounded by white timber sale boundary tags, property lines and the WF-ML and WF-36 roads, except forest products tagged out by yellow leave tree area tags, 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 #1.

All timber bounded by white timber sale boundary tags, property lines and adjacent young stands, except forest products tagged out by yellow leave tree area tags, 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 #2.

All timber bounded by white timber sale boundary tags and the WF-ML Road, except forest products tagged out by yellow leave tree area tags, trees marked with blue paint on the bole and root collar and cedar snags, preexisting dead and down cedar trees and cedar logs in Units #3 and #5.

All timber bounded by white timber sale boundary tags and the WF-ML Road, 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 #4.

All timber bounded by white timber sale boundary tags, adjacent young stands and the WF-ML Road, except forest products tagged out by yellow leave tree area tags, 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 #6.

All timber bounded by white timber sale boundary tags, property lines, adjacent young stands and the WF-ML Road, except forest products tagged out by yellow leave tree area tags, forest products tagged out with blue special management tags, 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 #7.

All timber as described for removal in Schedule B in the RMZ/WMZ Thinning areas, beyond blue special management tags and up to the white timber sale boundary tags in Unit #7.

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 20, 29 and 32 all in Township 28 North, Range 9 East, W.M., containing 96 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:

Species	Avg DBH	Ring Count	Total MBF	MBF by Grade								
				1P	2P	3P	SM	1S	2S	3S	4S	UT
Douglas fir	22	8	3,371			56	194		2,386	625	107	3
Hemlock	14		478						161	233	64	20
Red cedar	17		326							273	53	
Cottonwood	25		80						72		6	2
Red alder	17		20						5	4	7	4
Maple	16		16						9	3		4
Spruce	16		14							14		
Sale Total			4,305									

MINIMUM BID: \$1,394,000.00

BID METHOD: Sealed Bids

PERFORMANCE SECURITY:

\$100,000.00

SALE TYPE: Lump Sum

EXPIRATION DATE: March 31, 2018

ALLOCATION: Export Restricted

BID DEPOSIT: \$139,400.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: Cable; cable or shovel on sustained slopes 35% or less. In Unit #6, a self-leveling shovel and/or self-leveling harvester may operate on sustained slopes up to 50%, with prior approval from the Contract Administrator. 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: 48.85 stations of optional construction. 20.10 stations of existing road to be abandoned. 48.85 stations of road to be abandoned if built. 564.40 stations of required/optional pre-haul maintenance.

Rock may be obtained from the following source on State land at no charge to the Purchaser: WF-58 Hard Rock Pit at station 308+70 of the WF-ML Road. An existing stockpile of riprap and 3-inch-minus ballast is available for use in the WF-58 Hard Rock Pit.

Development of existing rock source will involve clearing, stripping, drilling, shooting, and processing rock to generate riprap, 3-inch-minus ballast and 2-inch-minus crushed surfacing rock.

An estimated total quantity of rock needed for this proposal: 142 cubic yards of riprap, 4,150 cubic yards of ballast rock and 3,680 cubic yards of surfacing rock.

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



TIMBER NOTICE OF SALE

31 unless authorized in writing by the Contract Administrator to reduce soil damage and siltation.

ACREAGE DETERMINATION

CRUISE METHOD: Acres determined by GPS traverse. 103.0 acres gross. 3.6 acres deducted for RMZ/WMZ areas, 2.9 acres deducted for green tree retention clumps, 0.9 acres deducted for existing roads and 0.1 acres deducted for right of way. 95.5 acres net. Cruised using variable plot method. Expansion factor used is 40.00, 62.5 and 71.1. Sighting height is 4.5 feet. A total of 71 plots were taken.

Shapefiles of units are available upon request.

FEES: \$76,413.75 is due on day of sale. \$9.00 per MBF is due upon removal. These are in addition to the bid price.

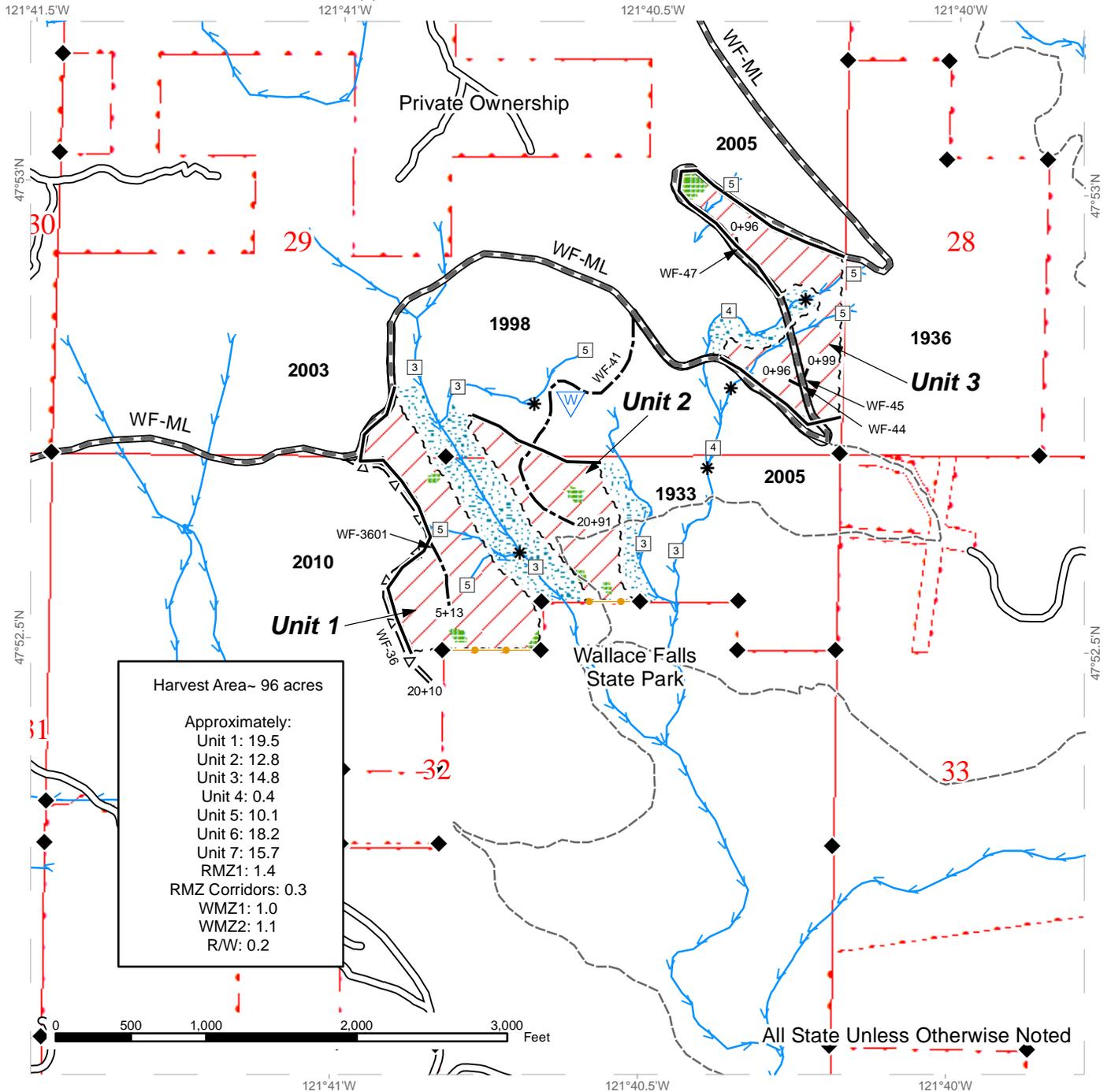
SPECIAL REMARKS:

1. Trees marked with red paint and a yellow "T" represent the last take tree along property line boundaries.
2. Cutting and yarding in the RMZ/WMZ thinning area in Unit #7 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.
3. Intermediate supports may be necessary in Unit #6.
4. HQ DF noted within the sale area. See cruise for further details (approximately 160 mbf of the above listed DF 2S is deemed high quality by the Department). Douglas-fir poles were noted within the sale area. No formal cruise was conducted for poles.

TIMBER SALE MAP

SALE NAME: SUMMER BREEZE
AGREEMENT #: 93731
TOWNSHIP(S): T28R09E
TRUST(S): State Forest Transfer(1)

REGION: Northwest Region
COUNTY(S): SNOHOMISH
ELEVATION RGE: 736-1854



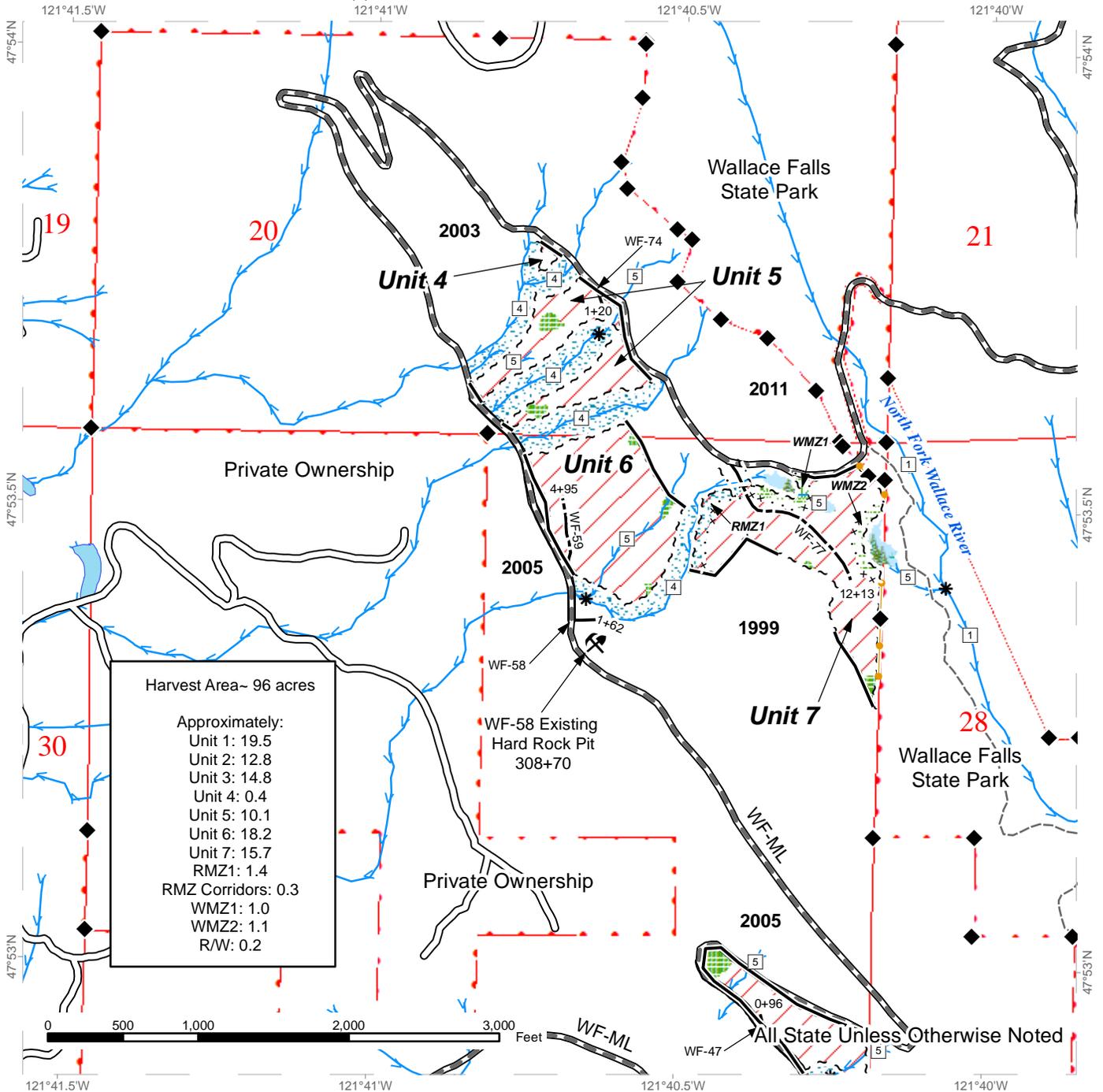
Harvest Area~ 96 acres
 Approximately:
 Unit 1: 19.5
 Unit 2: 12.8
 Unit 3: 14.8
 Unit 4: 0.4
 Unit 5: 10.1
 Unit 6: 18.2
 Unit 7: 15.7
 RMZ1: 1.4
 RMZ Corridors: 0.3
 WMZ1: 1.0
 WMZ2: 1.1
 R/W: 0.2



TIMBER SALE MAP

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WF-58 Existing Hard Rock Pit 308+70

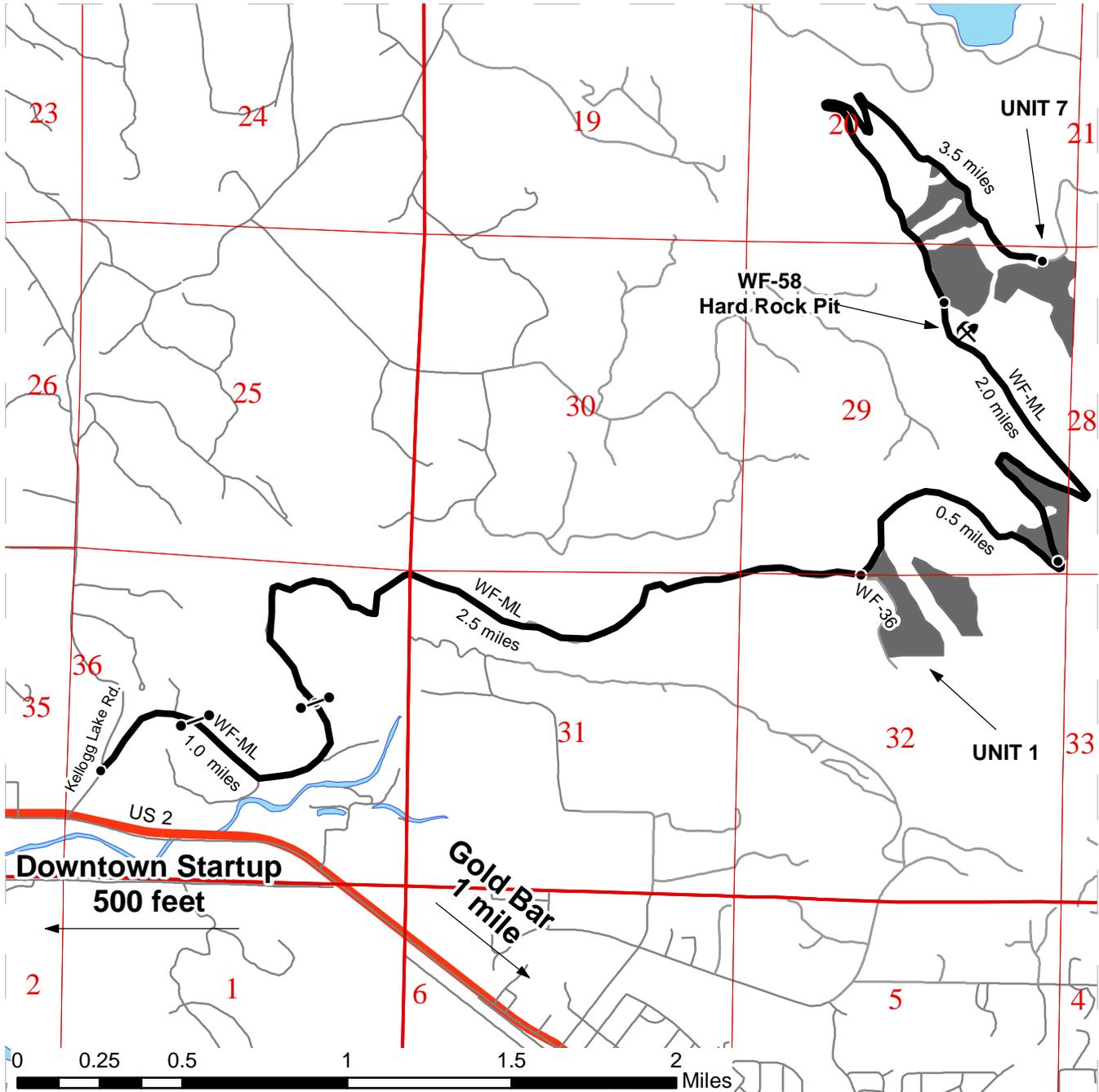
All State Unless Otherwise Noted

Sale Area	Leave Tree Area	Streams
Sale Boundary Tags	Riparian Mgt Zone	Stream Type
Sale Boundary (No Tags)	Forested Wetland	Stream Type Break
Special Mgmt Area	Wetland Mgt Zone	Monumented Corners
Right of Way Tags	Existing Roads	Existing Gate
Take / Removal Trees	Optional Pre-Haul Maintenance	Waste Area
DNR Managed Lands	Required Pre-Haul Maintenance	Existing Rock Pit
Public Land Survey Sections	Optional Construction	
	Old Grades/Trails	

DRIVING MAP

SALE NAME: SUMMER BREEZE
AGREEMENT#: None
TOWNSHIP(S): T28R09E
TRUST(S): State Forest Transfer(1)

REGION: Northwest Region
COUNTY(S): SNOHOMISH
ELEVATION RGE: 1360-1856



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

DRIVING DIRECTIONS:

Head east toward Startup on Highway 2. Immediately after leaving downtown Startup, take a left onto Kellogg Lake Road. Stay on Kellogg Lake Road for 0.2 miles, then turn right onto WF-ML. Proceed one mile up the WF-ML to the WF-ML gate. From WF-ML gate, drive 2.5 miles to the WF-36 junction where Unit 1 is located. Unit 2 can be accessed off of WF-36 as well. From Unit 1, proceed an additional 0.5 miles up WF-ML to access Unit 3, another 2 miles to Units 4, 5 and 6, and 3.5 miles to access Unit 7.



**STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES**

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

Export Restricted Lump Sum AGREEMENT NO. 30-093731

SALE NAME: SUMMER BREEZE

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

Section G: General Terms

G-001 Definitions

The following definitions apply throughout this contract;

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

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

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

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

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

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

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

G-011 Right to Remove Forest Products and Contract Area

Purchaser was the successful bidder on November 16, 2016 and the sale was confirmed on _____. The State, as owner, agrees to sell to Purchaser, and Purchaser agrees to purchase as much of the following forest products as can be cut and removed during the term of this contract: All timber bounded by white timber sale boundary tags, property lines and the WF-ML and WF-36 roads, except forest products tagged out by yellow leave tree area tags, 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 #1.

All timber bounded by white timber sale boundary tags, property lines and adjacent young stands, except forest products tagged out by yellow leave tree area tags, 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 #2.

All timber bounded by white timber sale boundary tags and the WF-ML Road, except forest products tagged out by yellow leave tree area tags, trees marked with blue paint on the bole and root collar and cedar snags, preexisting dead and down cedar trees and cedar logs in Units #3 and #5.

All timber bounded by white timber sale boundary tags and the WF-ML Road, 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 #4.

All timber bounded by white timber sale boundary tags, adjacent young stands and the WF-ML Road, except forest products tagged out by yellow leave tree area tags, 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 #6.

All timber bounded by white timber sale boundary tags, property lines, adjacent young stands and the WF-ML Road, except forest products tagged out by yellow leave tree area tags, forest products tagged out with blue special management tags, 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 #7.

All timber as described for removal in Schedule B in the RMZ/WMZ Thinning areas, beyond blue special management tags and up to the white timber sale boundary tags in Unit #7.

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 96 acres on part(s) of Sections 20, 29, and 32 all in Township 28 North, Range 9 East W.M. in Snohomish County(s) as designated on the sale area and as shown on the attached timber sale map.

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

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

G-020 Inspection By Purchaser

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

G-025 Schedules

The following attached schedules are hereby incorporated by reference:

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

G-031 Contract Term

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

G-040 Contract Term Adjustment - No Payment

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

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

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

G-051 Contract Term Extension - Payment

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

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

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

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

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

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

- e. Payment of \$668.00 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 \$95.00 per acre per annum for the acres on which an operating release has not been issued in the RMZ/WMZ Thinning area in Unit #7.

- f. In no event will the extension charge be less than \$200.00.
- g. Extension payments are non-refundable.

G-053 Surveys - Sensitive, Threatened, Endangered Species

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

G-060 Exclusion of Warranties

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

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

such as the Washington Forest Practices Act (chapter 76.09 RCW), taken by the Department of Natural Resources or any other agency that may affect the operability of this timber sale.

- h. Items contained in any other documents prepared for or by the State.

G-062 Habitat Conservation Plan

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

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

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

G-063 Incidental Take Permit Notification Requirements

- a. Purchaser shall immediately notify the Contract Administrator of new locations of permit species covered by the Incidental Take Permits (ITP) that are discovered within the area covered by the State's Habitat Conservation Plan (HCP), including, but not limited to: locations of occupied murrelet habitat; spotted owl nest sites; wolves; grizzly bears; nests, communal roosts, or feeding concentrations of bald eagles; peregrine falcon nests; Columbian white-tailed deer; Aleutian Canada geese; Oregon silverspot butterflies; and additional stream reaches found to contain bull trout. Purchaser is required to notify the Contract Administrator upon discovery of any fish species found in streams or bodies of water classified as non-fish bearing. In all circumstances, notification must occur within a 24 hour time period.
- b. Upon locating any live, dead, injured, or sick specimens of any permit species covered by the ITP, Purchaser shall immediately notify the Contract

Administrator. Purchaser shall notify the Contract Administrator if there is any doubt as to the identification of a discovered permit species. Purchaser may be required to take certain actions to help the Contract Administrator safeguard the well-being of any live, injured or sick specimens of any permit species discovered, until the proper disposition of such specimens can be determined by the Contract Administrator. Any such requirements will be explained to Purchaser by the Contract Administrator during the Pre-Work Conference. In all circumstances, notification must occur within a 24 hour time period.

- c. Purchaser shall refer to a specific ITP number, PRT-812521 or ITP 1168 (copies which are located in the region office) in all correspondence and reports concerning permit activities.
- d. Provisions and requirements of the ITP shall be clearly presented and explained to Purchaser by Contract Administrator during the Pre-Work Conference as per contract clause G-330. All applicable provisions of the ITP and this schedule must be presented and clearly explained by Purchaser to all authorized officers, employees, contractors, or agents of Purchaser conducting authorized activities in the timber sale area. Any questions Purchaser may have about the ITP should be directed to the Contract Administrator.

G-064 Permits

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

G-065 Regulatory Disclaimer

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

G-066 Governmental Regulatory Actions

a. Risk

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

b. Sale Area

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

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

c. Adjustment of Price

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

G-070 Limitation on Damage

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

G-080 Scope of State Advice

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

G-091 Sale Area Adjustment

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

reduced. The State shall calculate the reduction to the total contract price using the rates set forth in clause G-101, G-102, or G-103.

G-101 Forest Products Not Designated

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

Contract Item	Appraised Price	Overbid Factor	Price	Fees	Contract Payment Rate
Cottonwood	\$87.12	0	\$0.00	\$9.00	\$9.00
Douglas fir	\$308.16	0	\$0.00	\$9.00	\$9.00
Hemlock	\$234.98	0	\$0.00	\$9.00	\$9.00
Maple	\$206.26	0	\$0.00	\$9.00	\$9.00
Red alder	\$294.46	0	\$0.00	\$9.00	\$9.00
Red cedar	\$684.51	0	\$0.00	\$9.00	\$9.00
Spruce	\$254.17	0	\$0.00	\$9.00	\$9.00
Other	\$282.13	0	\$0.00	\$9.00	\$9.00

G-106 Adding Naturally Damaged Forest Products

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

G-111 Title and Risk of Loss

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

G-116 Sustainable Forestry Initiative® (SFI) Certification

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

Purchaser shall have at least one person regularly on-site during active operations that have completed training according to the requirements outlined within the SFI® program Standard. Purchaser shall designate in writing the name(s) of the individual(s)

who will be on-site and provide proof of their successful completion of an approved training program prior to active operations.

G-120 Responsibility for Work

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

G-121 Exceptions

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

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

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

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

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

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

Nothing contained in clauses G-120 and G-121 shall be construed as relieving Purchaser of responsibility for, or damage resulting from, Purchaser's operations or negligence, nor shall Purchaser be relieved from full responsibility for making good any defective work or materials. Authorization to haul does not warrant that Purchaser built roads are free from material defect and the State may require additional work, at 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; WF-ML, WF-36, WF-3601, WF-41, WF-44, WF-45, WF-47, WF-58, WF-59, WF-74, WF-77 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-380 Road Easement and Road Use Permit Requirements

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

Easements with:

Clarence J. and Hazel M. Mertz; #55-002345; dated October 7, 1989.

Port Blakely; #55-002451; dated March 30, 1993.

G-430 Open Fires

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

G-450 Encumbrances

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

DATA MISSING

Section P: Payments and Securities

P-011 Initial Deposit

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

P-020 Payment for Forest Products

Purchaser agrees to pay the total, lump sum contract price of \$115,158.75. The total contract price consists of a \$0.00 contract bid price plus \$115,158.75 in fees. Fees collected shall be retained by the state unless the contract is adjusted via the G-066 clause. Purchaser shall be liable for the entire purchase price, and will not be entitled to any refunds or offsets unless expressly stated in this contract.

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

P-045 Guarantee of Payment

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

P-050 Billing Procedure

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

P-080 Payment Account Refund

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

P-090 Performance Security

Purchaser agrees to furnish, within 30 days of the confirmation date, security acceptable to the State in the amount of \$100,000.00. The Security provided shall

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

P-100 Performance Security Reduction

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

Section H: Harvesting Operations

H-001 Operations Outside the Sale Boundaries

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

H-010 Cutting and Yarding Schedule

Felling 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 200 square inches.
- b. A reserve tree top is broken or the live crown ratio is reduced below 30 percent.
- c. A reserve tree has more than 1/3 of the circumference of its root system injured such that the cambium layer is exposed.

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

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

H-017 Preventing Excessive Soil Disturbance

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

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

H-035 Fall Trees Into Sale Area

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

H-040 Purchaser Harvest Plan

Purchaser shall, as part of the plan of operations, prepare an acceptable harvest plan for the work adjacent to recreational trails in Unit 2. The plan shall address the specific operating conditions for 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-051 Branding and Painting

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

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

H-080 Snags Not to be Felled

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

H-110 Stump Height

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

H-120 Harvesting Equipment

Forest products sold under this contract shall be felled by chainsaw and yarded by cable; felled by chainsaw or feller-buncher and yarded by cable or shovel on sustained slopes 35% or less. In Unit #6, a self-leveling shovel and/or self-leveling harvester may operate on sustained slopes up to 50%, with prior approval from the Contract Administrator, 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. Full suspension is required for the stream located between Unit #6 and #7, where feasible. Where it is not feasible, log cribbing on either side of the stream is required.

H-126 Tailholds on State Land

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

H-130 Hauling Schedule

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

H-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

- A. An on-site pre-work meeting shall be scheduled with the Contract Administrator, which shall include the operator and fallers, prior to commencement of any activities on site.
- B. A copy of the timber sale map and contract shall be present on site during active operations.
- C. The Purchaser's authorized site representative(s) shall be present on site every day in which operations occur.
- D. Maintain a 30-foot equipment limitation zone on either side of all type-5 streams.
- E. Any ground-based equipment crossings over type 5 streams shall be located by Purchaser and approved by Contract Administrator prior to use. Log cribbing shall be installed at the crossing, and ground-based equipment shall cross as close to perpendicular as possible.
- F. Avoid cable yarding in, across, adjacent, or parallel to stream channels where possible. When it is necessary to yard across stream channels, crossings need to be as close to perpendicular as possible and cribbing shall be in place when full suspension is not possible
- G. Trees shall be felled away from stream channels and any standing water or wet swales when feasible.
- H. Ground-based yarding shall not exceed 600 feet from any road unless authorized in writing by the Contract Administrator.
- I. No tops or limbs shall be allowed to accumulate on any landings. Tops and limbs shall be redistributed in the unit to the satisfaction of the Contact Administrator.

- J. When thinning in RMZs and WMZ's, heavy equipment must stay 25 feet back from the white timber sale boundary tags.
- K. Intermediate supports may be necessary when yarding portions of Unit #6. All intermediate supports shall be marked by the Purchaser, and approved in writing by the Contract Administrator, prior to falling any trees within the unit.
- L. When operating in Unit #7, the Contract Administrator must be present when felling trees within two tree lengths of the recreational trail near the northeastern corner of the unit. Additionally, the Contract Administrator must also be present when operating within two tree lengths of the recreational trails in Unit #2.
- M. Cutting and yarding in the RMZ/WMZ thinning area in Unit #7 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 shall 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.
- N. A minimum of five business days prior notification shall be given to the Wallace Falls State Park Office in Gold Bar, WA, and Contract Administrator, before road or logging operations begin. This is for the purpose of closing the trails that lead into the sale area.
- O. Purchaser is responsible for posting all notification signage relating to logging or road construction activity, and signage must be provided at Purchasers expense.
- P. Both gates on the WF-ML must be closed and locked at the end of each day.
- Q. Leave trees may be exchanged for unmarked trees of similar size and wildlife characteristics upon prior approval by the Contract Administrator

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

H-141 Additional Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

- A. All trees marked with double blue rings shall not be traded.
- B. Any tree accidentally felled onto State Park property adjacent to Units #1, #2 and #7 must be left as it lays on the ground.
- C. Cable corridor requirements for harvesting parts of Units #6 and #7:

1. Corridors shall be located by the Purchaser and approved by the Contract Administrator prior to operations.
2. A maximum of five total corridors is allowed for harvesting Units #6 and #7. Three are allowed to accommodate the upper landing in Unit #7, and two are allowed to accommodate the lower landing adjacent to Unit #6.
3. Corridors shall be no wider than 20 feet.
4. Corridors shall be no closer than 70 feet apart at the point where they cross the stream.
5. No corridor shall intersect any stream junction.

D. Yarding requirements for working around the recreational trail in Unit #2:

1. Purchaser shall post trail closure signs (signs provided at Purchaser's expense) where trail enters/exits Unit #2.
2. Ground-based equipment crossings shall be kept to a minimum, located by the Purchaser and approved by the Contract Administrator prior to use.
3. The trail shall not be used as a yarding corridor.
4. Trees adjacent to the trail shall be felled and yarded away from the trail.
5. Slash shall not be piled on the trail.
6. The trail shall be left in the condition that exists prior to commencement of operations.

- E. Cables may be suspended over WF-ML Road to yard Units #5 and #6. If so, Purchaser shall develop a safety plan and plan of operations for road closure of the WF-ML Road and hanging yarding cables during active yarding operations. If access is needed by other contractors or adjacent landowners on the WF-ML Road, a joint operating plan shall be developed. These plans must be approved by the Contract Administrator prior to commencement of operations in Units #5 and #6.

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

H-190 Completion of Settings

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

H-220 Protection of Residual or Adjacent Trees

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

Section C: Construction and Maintenance

C-040 Road Plan

Road construction and associated work provisions of the Road Plan for this sale, dated 5/2/2016 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 WF-36, WF-3601, WF-41, WF-44, WF-45, WF-47, WF-58, WF-59, WF-74, WF-77 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 WF-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.

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 any stream 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-013 Liquidated Damages or Failure to Perform

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

obtaining an adequate remedy. These liquidated damages provisions provide greater certainty for the Purchaser by allowing the Purchaser to better assess its responsibilities under the contract.

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

D-040 Leave Tree Excessive Damage

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

Date: _____

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

STATE OF _____)

COUNTY OF _____)

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

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

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

Notary Public in and for the State of

My appointment expires _____

DRAFT

DRAFT

DRAFT

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

Schedule B
Thinning Prescription

Trees with blue special management area tags may be cut if they meet the prescription below.
RMZ1 and WMZ1 VDT

- Residual stand must average 190 square feet of basal area per acre NOT INCLUDING corridor areas. Residual stand must average 160 square feet of basal area per acre INCLUDING corridor areas
- A minimum of 90-100 trees per acre shall be maintained throughout the unit NOT INCLUDING corridor areas. A minimum of 80-90 trees per acre shall be maintained throughout the unit INCLUDING corridor areas.
- Only live trees 8 inches or greater in DBH shall be used to calculate trees per acre and basal area.

To accomplish this prescription, fallers shall harvest trees by species in the following order:

- Cut all bigleaf maple 6 inches DBH and larger
- Cut all red alder 6 inches DBH and larger
- Western hemlock (6 to 16.5 inches DBH)
- Douglas-fir (6 to 16.5 inches DBH)

Within RMZ1, seven trees have been marked with yellow paint for down wood recruitment. From these yellow painted trees, the Purchaser must choose four trees to be cut and felled toward the stream, and three to be girdled for snag recruitment. These actions shall be performed prior to implementation of thinning prescription and shall contribute to final trees per acre and basal area goals.

Western redcedar may only be cut if located within corridors, to facilitate yarding or road construction, or those which pose safety hazards, and must be approved by the Contract Administrator prior to falling.

WMZ2 VDT

- Residual stand must average 220 square feet of basal area per acre.
- A minimum of 180-190 trees per acre shall be maintained throughout the unit
- Only live trees 7 inches or greater in DBH shall be used to calculate trees per acre and basal area.

To accomplish this prescription, fallers shall harvest trees by species in the following order:

- Cut all bigleaf maple 6 inches DBH and larger
- Cut all red alder 6 inches DBH and larger
- Western hemlock (6 to 16.5 inches DBH)
- Douglas-fir (6 to 14.5 inches DBH)

Western redcedar may only be cut to facilitate yarding, or those which pose safety hazards, and must be approved by the Contract Administrator prior to falling.

Thinning Conditions

Fallers/operators shall harvest trees of the first species and diameter range until the prescription is met. If there are not enough trees in a plot of the first species, then the faller shall harvest from the second species and diameter range and so on until the prescription is met. Fallers/operators shall cut from the full diameter range for each species as specified above and shall avoid targeting only one or two diameter ranges for harvest.

Trees that are less than 6 inches in DBH shall be protected during harvest operations where possible. There shall not be a gap between leave trees greater than 30 feet. The exception is for the tagged special management areas, as identified on the timber sale map.

The Contract Administrator shall approve and certify in writing all persons engaged in felling of timber prior to any cutting operations, per the H-011 clause of the contract.

Certification and Compliance

The Contract Administrator and Operator shall jointly review the take tree selection criteria as outlined in Schedule B of the contract. In conjunction with the Contract Administrator, the Faller/Harvest Operator shall mark a designated area as a test plot within the sale area boundary. Satisfactory thinning of this test plot completes the certification process. Certification may be revoked at any time by Contract Administrator if Contract Administrator determines that the prescription is not being implemented properly.

The contractor shall not deviate from the requirements set forth in the Compliance portion of this schedule without prior written approval by the Contract Administrator.



WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOREST EXCISE TAX ROAD SUMMARY SHEET

Region:

Timber Sale Name:

Application Number:

EXCISE TAX APPLICABLE ACTIVITIES

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

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

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

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

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

EXCISE TAX EXEMPT ACTIVITIES

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

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

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

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

(Revised 6/13)

PRE-CRUISE NARRATIVE

Sale Name: Summer Breeze	Region: Northwest
Agreement #: 30-093731	District: Cascade
Contact Forester: John VanHollebeke Phone / Location: 360-691-7677 / Granite Falls	County(s): Snohomish
Alternate Contact: John Moon Phone / Location: 360-691-7677 / Granite Falls	Other information:

Type of Sale: Lump Sum	Percent of Sale Acres
Harvest System: Ground based	75%
Harvest System: Downhill Cable	15%
Harvest System: Uphill Cable	10%

UNIT ACREAGES AND METHOD OF DETERMINATION:

Unit # Harvest R/W or RMZ WMZ	Legal Description <small>(Enter only one legal for each unit)</small> Sec/Twp/Rng	Grant or Trust	Gross Proposal Acres	Deductions from Gross Acres (No harvest acres)				Net Harvest Acres	Acreage Determination <small>(List method and error of closure if applicable)</small>
				RMZ/ WMZ Acres	Leave Tree Acres	Existing Road Acres	Other Acres (describe)		
1	32/T28/R09E	01	20.0		0.5			19.5	GPS (Garmin) / GIS
2	32/T28/R09E	01	13.3		0.5			12.8	GPS (Garmin) / GIS
3	29/T28/R09E	01	16.3		0.6	0.9		14.8	GPS (Garmin) / GIS
4	20/T28/R09E	01	0.4					0.4	GPS (Garmin) / GIS
5	20/T28/R09E	01	10.6		0.5			10.1	GPS (Garmin) / GIS
6	29/T28/R09E	01	18.6		0.4			18.2	GPS (Garmin) / GIS
7	29/T28/R09E	01	19.7	3.6	0.4			15.7	GPS (Garmin) / GIS
RMZ1	29/T28/R09E	01	1.5				R/W (0.1)	1.4	GPS (Garmin) / GIS
RMZ Corridors	29/T28/R09E	01	0.3					0.3	L x W
WMZ1	29/T28/R09E	01	1.0					1.0	GPS (Garmin) / GIS
WMZ2	29/T28/R09E	01	1.1					1.1	GPS (Garmin) / GIS
R/W	29/T28/R09E	01	0.2					0.2	L x W
TOTAL ACRES			103.0	3.6	2.9	0.9	0.1	95.5	

HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription: (Leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
1	Unit 1 is a Variable Retention Harvest (VRH). Take all trees bounded by white " <i>Timber Sale Boundary</i> " tags, the WF-ML road to the north, the WF-36 road to the west, and take trees marked with two red bands and a yellow "T" to the south. Leave tree areas are marked with yellow " <i>Leave Tree Area</i> " tags and/or individual trees marked with blue paint.	N/A	49 scattered leave trees 111 clumped leave trees Total: 160
2	Unit 2 is a Variable Retention Harvest (VRH). Take all trees bounded by white " <i>Timber Sale Boundary</i> " tags, the adjacent young stand boundary to the north, and take trees marked with two red bands and a yellow "T" to the south. Leave tree areas are marked with yellow " <i>Leave Tree Area</i> " tags and/or individual trees marked with blue paint.	N/A	23 scattered leave trees 83 clumped leave trees Total: 106
3	Unit 3 is a Variable Retention Harvest (VRH). Take all trees bounded by white " <i>Timber Sale Boundary</i> " tags, and the WF-ML road. Leave tree areas are marked with yellow " <i>Leave Tree Area</i> " tags and/or individual trees marked with blue paint.	N/A	42 scattered leave trees 81 clumped leave trees Total: 123
4	Unit 4 is a Variable Retention Harvest (VRH). Take all trees bounded by white " <i>Timber Sale Boundary</i> " tags, and the WF-ML road. Individual leave trees are marked with blue paint.	N/A	4 scattered leave trees Total: 4
5	Unit 5 is a Variable Retention Harvest (VRH). Take all trees bounded by white " <i>Timber Sale Boundary</i> " tags, and the WF-ML road. Leave tree areas are marked with yellow " <i>Leave Tree Area</i> " tags and/or individual trees marked with blue paint.	N/A	11 scattered leave trees 74 clumped Total: 85
6	Unit 6 is a Variable Retention Harvest (VRH). Take all trees bounded by white " <i>Timber Sale Boundary</i> " tags, the adjacent young stand boundary to the north, and the WF-ML road. Leave tree areas are marked with yellow " <i>Leave Tree Area</i> " tags and/or individual trees marked with blue paint.	N/A	23 scattered leave trees 126 clumped leave trees Total: 149
7	Unit 7 is a Variable Retention Harvest (VRH). Take all trees bounded by white " <i>Timber Sale Boundary</i> " tags, blue "Special Management Unit Boundary" tags, the adjacent young stand boundary to the southeast and southwest, take trees marked with two red bands and a yellow "T" to the east, and the WF-ML road to the north. Leave tree areas are marked with yellow " <i>Leave Tree Area</i> " tags and/or individual trees marked with blue paint.	Units RMZ1, WMZ1, and WMZ2 are all located within Unit 7. See unit descriptions for more details.	38 scattered leave trees 91 clumped leave trees Total: 129
RMZ1	Unit RMZ1 is a Variable Density Thinning Harvest (VDT). Thin to prescription as described in the Schedule B. All timber is bounded by white " <i>Timber Sale Boundary</i> " tags and blue " <i>Special Management Unit Boundary</i> " tags.	N/A	7 trees marked with a yellow band to be felled toward stream or girdled. See Schedule B for more details.

RMZ Corridors	Unmarked (see remarks below for further description)	N/A	N/A
WMZ1	Unit WMZ1 is a Variable Density Thinning Harvest (VDT). Thin to prescription as described in the Schedule B. All timber is bounded by white " <i>Timber Sale Boundary</i> " tags and blue " <i>Special Management Unit Boundary</i> " tags.	N/A	N/A
WMZ2	Unit WMZ2 is a Variable Density Thinning Harvest (VDT). Thin to prescription as described in the Schedule B. All timber is bounded by white " <i>Timber Sale Boundary</i> " tags and blue " <i>Special Management Unit Boundary</i> " tags.	N/A	N/A
R/W	Marked with orange " <i>Right-of-Way Boundary</i> " tags. Centerline is marked with stakes and orange flagging.	N/A	N/A

OTHER PRE-CRUISE INFORMATION:

Unit #	Primary,secondary Species / Estimated Volume (MBF)	Access information (Gates, locks, etc.)	Photos, traverse maps required
1	DF, WH, WRC 780 MBF	Access off Kellogg Lake Road through the WF-ML gate. F-1 key is needed.	See attached pre-cruise and vicinity map
2	DF, WH, WRC 512 MBF	Same as above.	Same as above.
3	DF, WH, WRC 592 MBF	Same as above.	Same as above.
4	DF, WH, WRC 16 MBF	Same as above.	Same as above.
5	DF, WH, WRC 404 MBF	Same as above.	Same as above.
6	DF, WH, WRC 728 MBF	Same as above.	Same as above.
7	WH,DF, WRC 628 MBF	Same as above.	Same as above.
RMZ1	WH, DF 15 MBF	Same as above.	Same as above.
RMZ Corridors	DF,WH 12 MBF	Same as above.	Same as above.
WMZ1	WH, DF 10 MBF	Same as above.	Same as above.
WMZ2	WH, DF 10 MBF	Same as above.	Same as above.
R/W	WH,DF, WRC 8 MBF	Same as above.	Same as above.
TOTAL MBF	3,715 MBF		

REMARKS:

General

- GPS points are marked with lime and pink flagging
- A hiking trail is located in the southern half of Unit 2, and should be avoided with cruise points. This trail is mapped.
- Existing WF-ML road Right-of-Way acreage was deducted from Unit 3.

Unit 7

- A large void (nearly ¼ acre) is located near the southwestern boundary of the unit. This is located on the pre-cruise map with a point, but was not deducted from the unit acreage. Be sure to remove any cruise points that may fall in this area.
- RMZ/WMZ acreage was determined using a combination of GPS points and the buffer tool in GIS.
- Right-of-Way determination: 150 feet of road multiplied by 60 feet width (0.2 acres).
- Portions of Units 6 and 7 will be harvested by uphill cable yarding methods across the stream between the two units. The purchaser will be limited to a maximum of 3 corridors that shall be no wider than 20 feet. All timber within these corridors will be considered harvestable. Based on landing locations and approximated corridor placement, the harvestable corridor acreage was estimated at 0.3 acres. No corridor locations are marked on the ground.

Driving Directions

Head east toward Startup on Highway 2. Immediately after leaving downtown Startup, take a left onto Kellogg Lake Road. Stay on Kellogg Lake Road for 0.2 miles, then turn right onto WF-ML. Proceed one mile up the WF-ML to the WF-ML gate. From WF-ML gate, drive 2.5 miles to the WF-36 junction where Unit 1 is located. Unit 2 can be accessed off of WF-36 as well. From Unit 1, proceed an additional 0.5 miles up WF-ML to access Unit 3, another 2 miles to Units 4, 5 and 6, and 3.5 miles to access Unit 7.

Prepared By: John VanHollebeke Date: 5/3/16	Title: NRS1	CC:
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Cruise Narrative

Sale Name: Summer Breeze	Region: Northwest
Agree. #: 30-093731	District: Cascade
Lead cruiser: Matt Llobet	Completion date: 8-15-16
Other cruisers on sale: IM,RF	

Unit acreage specifications:

Unit #	Cruised acres	Cruised acres agree with sale acres? Yes/No	If acres do not agree explain why.
1	19.5	Yes	
2	12.8	Yes	
3	14.8	Yes	
4	0.4	Yes	
5	10.1	Yes	
6	18.2	Yes	
7	15.7	Yes	
ROW	0.2	Yes	
CORR	0.3	Yes	
RMZ1 & WMZ1	2.4	No	Combined RMZ1 and WMZ1
WMZ2	1.1	Yes	
Total	95.5	Yes	

Unit cruise specifications:

Unit #	Sample type (VP, FP, ITS,100%)	Expansion factor (BAF, full/half)	Sighting height (4.5 ft, 16 ft.)	Grid size (Plot spacing or % of area)	Plot ratio (cruise:count)	Total number of plots
1	V.P.	62.5 BAF 40.0 BAF	4.5'	250' x 250'	2:1	14
2	V.P.	62.5 BAF 40.0 BAF	4.5'	250' x 250'	2:1	10

3	V.P.	62.5 BAF 40.0 BAF	4.5'	250' x 250'	2:1	11
4	V.P.	71.1 BAF 40.0 BAF	4.5'	1plot/ac	Cruise All	1
5	V.P.	62.5 BAF 40.0 BAF	4.5'	250' x 250'	2:1	6
6	V.P.	62.5 BAF 40.0 BAF	4.5'	250' x 250'	2:1	13
7	V.P.	62.5 BAF	4.5'	250' x 250'	Cruise All	12
ROW	V.P.	40.0 BAF	4.5'	1plot/ac	Cruise All	1
CORR	V.P.	62.5 BAF	4.5'	1plot/ac	Cruise All	1
RMZ1& WMZ1	V.P.	62.5 BAF	4.5'	1plot/2.4ac	Cruise All	1
WMZ2	V.P.	62.5	4.5'	1plot/ac	Cruise All	1

Sale/Cruise Description:

Minor species cruise intensity:	Units 1-6- Used a 40.0 BAF to capture minor species					
Minimum cruise spec:	Minimum DBH 8 inches, 10 Net Board feet, Minimum Top Diameter 5 inches or 40% of 16-foot form point					
Avg ring count by sp:	DF =	8	WH =	N/A	SS =	N/A
Leave/take tree description:	<p>Variable Retention Harvest- Take all trees bounded by white "Timber Sale Boundary" tags, and take trees marked with two red bands and a yellow "T". Leave tree areas are marked with yellow "Leave Tree Area" tags and/or individual trees marked with blue paint.</p> <p>RMZ & WMZ- See Schedule B</p> <p>RMZ Corridors- See Schedule B</p> <p>ROW- Marked with orange "Right-of-Way Boundary" tags. Centerline is marked with stakes and orange flagging.</p>					
Other conditions:						

Field observations:

<p>All timber was graded in variable log lengths with the Scaling Bureaus Westside/Northwest log rules. The utility wood was given a board ft. volume. Summer Breeze timber sale consists of 75% ground base logging and 25% cable logging. Summer Breeze consists 78% Douglas fir and 11% Western Hemlock. Specialty Douglas fir (HQ, SM, 3P) logs were observed throughout the sale. Douglas fir distribution/transmission poles were also observed throughout the sale. The Douglas fir had an average diameter of 22 inches with an average bole height of 97 feet.</p> <p>Prepared By: Matt Llobet Title: Forest Check Cruiser 1</p>

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																	
T28N R09E S20 Ty00U4 THRU T28N R09E S32 Ty00U2				Project: SUMMER										Page 1							
				Acres 95.50										Date 8/15/2016		Time 5:33:24PM					
Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf	
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
DF	D	2S		66	3.5	24,157	23,310	2,226			38	62		0	100	40	16	425	2.28	54.9	
DF	D	3S		18	3.2	6,765	6,547	625		100				2	3	39	9	108	0.77	60.6	
DF	D	4S		3	2.6	1,150	1,120	107	61	39			6	51	19	24	28	6	32	0.34	34.7
DF	D	UT				29	29	3	22	55	24		100			12	7	22	0.43	1.3	
DF	HA	3P		2	5.6	622	587	56			100				100	40	26	1160	5.98	.5	
DF	HAS	M		6	1.7	2,066	2,031	194			100				100	40	19	624	3.24	3.3	
DF	HA	2S		5	.5	1,680	1,672	160			92	8			100	40	14	283	1.71	5.9	
DF Totals				78	3.2	36,469	35,296	3,371	2	20	30	49	0	2	1	97	37	11	219	1.37	161.2
RC	D	3S		84	14.3	3,342	2,863	273		43	32	25		1	1	98	36	10	129	1.44	22.2
RC	D	4S		16	15.6	647	546	52	73	27			17	46	19	17	24	5	25	0.41	21.9
RC Totals				8	14.6	3,989	3,409	326	12	40	27	21	3	8	4	85	30	8	77	1.02	44.2
WH	D	2S		33	6.0	1,790	1,682	161			52	48			100	40	14	311	1.90	5.4	
WH	D	3S		49	3.9	2,538	2,440	233		100				3	97	40	8	90	0.66	27.1	
WH	D	4S		13	16.0	803	675	64	88	12			4	23	28	45	30	5	28	0.29	24.0
WH	D	UT		5		205	205	20		100					100	40	9	120	0.76	1.7	
WH Totals				11	6.3	5,336	5,001	478	12	54	17	16	1	3	5	91	36	7	86	0.66	58.3
CW	D	2S		90	7.7	818	755	72			52	48		3	97	39	15	359	2.32	2.1	
CW	D	3S		1	28.6	17	12	1		100				100		33	8	50	0.87	.2	
CW	D	4S		6		52	52	5		100					100	39	6	65	0.58	.8	
CW	D	UT		3	.0	18	18	2		100			100			17	10	60	0.89	.3	
CW Totals				2	7.5	905	837	80		10	47	43	2	3	1	93	37	12	243	1.74	3.4
RA	D	2S		22	9.5	53	48	5			100				100	30	14	190	2.11	.3	
RA	D	3S		22	15.4	54	46	4		100					100	30	11	110	1.21	.4	
RA	D	4S		37	7.1	84	78	7		100					100	30	9	65	0.92	1.2	
RA	D	UT		19		40	40	4	81	19			70	30		20	5	21	0.35	1.9	
RA Totals				0	8.4	231	211	20	15	62	23		13	87		25	8	57	0.83	3.7	
SS	D	3S		100		147	147	14		100					100	40	9	120	0.73	1.2	
SS Totals				0		147	147	14		100						100	40	9	120	0.73	1.2
BM	D	2S		56	19.7	121	97	9			100				100	30	13	143	1.72	.7	
BM	D	3S		17	25.0	39	30	3		100			100			20	11	60	1.21	.5	
BM	D	UT		27	19.0	56	46	4	65	35			43	22	35	23	5	21	0.35	2.2	
BM Totals				0	20.5	217	173	16	17	27	56		29	62	9	24	8	52	0.81	3.3	
Totals					4.7	47,294	45,075	4,305	4	26	28	42	1	3	2	94	35	10	164	1.16	275.4

TC PSTATS		PROJECT STATISTICS								PAGE	1
		PROJECT				SUMMER				DATE	8/15/2016
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt	
28N	09E	20	SUMMER	00U4	THR	95.50	71	346	S	W	
28N	09E	32	SUMMER	00U2							
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES					
TOTAL			71	346	4.9						
CRUISE			53	244	4.6	13,178	1.9				
DBH COUNT											
REFOREST											
COUNT			18	102	5.7						
BLANKS											
100 %											
STAND SUMMARY											
		SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR		147	65.5	22.1	97	37.1	174.5	36,469	35,296	8,083	8,082
WHEMLOCK		34	36.7	14.1	67	10.6	39.7	5,336	5,001	1,385	1,380
WR CEDAR		48	29.6	16.9	53	11.2	46.3	3,989	3,409	1,383	1,356
COTWOOD		6	1.6	25.1	85	1.1	5.4	905	837	219	219
BL MAPLE		4	2.2	15.6	41	0.7	2.9	217	173	69	65
R ALDER		4	1.9	17.0	54	0.7	2.9	231	211	77	77
S SPRUCE		1	.6	16.0	90	0.2	.9	147	147	36	36
TOTAL		244	138.0	19.0	78	62.5	272.5	47,294	45,075	11,252	11,216
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		68.2	5.7	784	832	879					
WHEMLOCK		84.9	14.6	172	201	230					
WR CEDAR		104.7	15.3	212	250	288					
COTWOOD		66.6	29.6	476	677	877					
BL MAPLE		80.3	45.9	60	110	160					
R ALDER		49.1	28.0	94	130	166					
S SPRUCE											
TOTAL		91.8	5.9	563	598	634	337	172	84		
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		98.9	11.7	58	66	73					
WHEMLOCK		149.5	17.7	30	37	43					
WR CEDAR		146.6	17.4	24	30	35					
COTWOOD		428.9	50.9	1	2	2					
BL MAPLE		471.2	55.9	1	2	3					
R ALDER		415.6	49.3	1	2	3					
S SPRUCE		842.6	99.9	0	1	1					
TOTAL		64.8	7.7	127	138	149	168	86	42		
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		72.2	8.6	160	174	189					
WHEMLOCK		147.0	17.4	33	40	47					
WR CEDAR		121.5	14.4	40	46	53					
COTWOOD		388.7	46.1	3	5	8					
BL MAPLE		440.0	52.2	1	3	4					
R ALDER		437.6	51.9	1	3	4					
S SPRUCE		842.6	99.9	0	1	2					
TOTAL		46.2	5.5	258	272	287	85	43	21		

PROJECT STATISTICS
PROJECT SUMMER

TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
28N	09E	20	SUMMER	00U4	THR	95.50	71	346	S	W
28N	09E	32	SUMMER	00U2						

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		75.3	8.9	32,144	35,296	38,448			
WHEMLOCK		170.0	20.2	3,993	5,001	6,010			
WR CEDAR		130.0	15.4	2,883	3,409	3,934			
COTWOOD		375.0	44.5	465	837	1,209			
BL MAPLE		481.1	57.0	74	173	271			
R ALDER		443.2	52.6	100	211	322			
S SPRUCE		842.6	99.9	0	147	294			
TOTAL		<i>57.3</i>	<i>6.8</i>	<i>42,013</i>	<i>45,075</i>	<i>48,136</i>	<i>131</i>	<i>67</i>	<i>33</i>

CL	68.1	COEFF		V BAR/ACRE			# OF PLOTS REQ.		INF. POP.
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR		33.2	3.9	184	202	220			
WHEMLOCK		129.7	15.4	101	126	152			
WR CEDAR		84.2	10.0	62	74	85			
COTWOOD		375.0	44.5	86	154	223			
BL MAPLE		442.8	52.5	26	60	95			
R ALDER		409.5	48.6	34	72	110			
S SPRUCE		842.6	99.9	0	172	344			
TOTAL		<i>54.7</i>	<i>6.5</i>	<i>154</i>	<i>165</i>	<i>177</i>	<i>119</i>	<i>61</i>	<i>30</i>

T28N R09E S20 T00U4										T28N R09E S20 T00U4			
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt				
28N	09E	20	SUMMER	00U4	.40	1	9	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
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
DF		DM	2S	65	3.3	67,287	65,037	26			49	51				100	40	16	393	1.97	165.6
DF		DM	3S	15	1.1	16,115	15,936	6	100					9	91		39	9	112	0.74	142.7
DF		DM	4S	2	20.0	1,478	1,183	0	100					100			32	6	40	0.43	29.6
DF		HA	2S	18	3.2	18,432	17,841	7		100					100		40	15	329	1.92	54.2
DF	Totals			86	3.2	103,313	99,997	40		17	50	33		3	97		39	12	255	1.42	392.1
RC		DM	3S	89	19.3	8,350	6,739	3		12	88				100		36	12	154	1.60	43.8
RC		DM	4S	11		813	813	0	100					100			35	5	40	0.46	20.3
RC	Totals			7	17.6	9,163	7,552	3	11	11	78			11	89		36	10	118	1.25	64.1
WH		DM	3S	78	8.3	6,953	6,374	3		100					100		40	9	110	0.83	57.9
WH		DM	4S	22		1,738	1,738	1	100					100			31	5	30	0.29	57.9
WH	Totals			7	6.7	8,692	8,112	3	21	79				21	79		36	7	70	0.60	115.9
Type Totals					4.5	121,167	115,661	46	2	21	48	29		5	95		38	11	202	1.25	572.0

T28N R09E S20 T00U5										T28N R09E S20 T00U5			
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt				
28N	09E	20	SUMMER	00U5	10.10	6	20	S	W				

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre Def% Gross Net			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
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
DF		DM	2S	90	5.9	42,167	39,675	401		26	74				100	40	17	477	2.53	83.2	
DF		DM	3S	8	1.1	3,911	3,869	39	100				5	8	87	37	9	113	0.79	34.2	
DF		DM	4S	1	8.8	413	377	4	100			27	73			23	7	30	0.46	12.6	
DF		DM	UT	1		80	80	1	100			100				13	10	40	0.73	2.0	
DF	Totals			77	5.5	46,572	44,001	444	10	24	66	0	1	1	98	37	14	333	1.95	132.0	
WH		DM	2S	77	11.7	7,308	6,456	65		100					100	40	19	530	3.28	12.2	
WH		DM	3S	23		1,827	1,827	18	100						100	40	10	150	1.26	12.2	
WH	Totals			15	9.3	9,135	8,283	84	22	78					100	40	15	340	2.27	24.4	
RC		DM	3S	95	11.4	5,177	4,589	46	23	45	33		3		97	35	11	163	1.62	28.2	
RC		DM	4S	5		234	234	2	75	25		100				15	5	20	0.31	11.7	
RC	Totals			8	10.9	5,411	4,823	49	4	23	42	31	5	3	92	29	9	121	1.42	39.9	
Type Totals					6.6	61,118	57,107	577	0	13	22	65	1	1	1	98	36	13	291	1.90	196.2

T28N R09E S29 T00U3		T28N R09E S29 T00U3
Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt		BdFt
28N 09E 29 SUMMER 00U3 14.80 11 29 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	
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99						
DF		DM	2S	83	3.2	35,915	34,751	514			21	79				100	40	18	535	2.76	64.9	
DF		DM	3S	6	4.3	2,677	2,561	38		100				8	13	79	35	10	116	1.01	22.0	
DF		DM	4S	1	13.6	339	293	4		100				100			25	8	40	0.61	7.3	
DF		HA	3P	3		1,531	1,531	23				100				100	40	27	1370	6.14	1.1	
DF		HA	SM	7	2.5	2,656	2,589	38				100				100	40	22	780	4.05	3.3	
DF	Totals			83	3.2	43,118	41,725	618			7	17	76		1	1	98	38	16	423	2.38	98.7
RC		DM	3S	94	14.1	4,359	3,743	55		20	13	67			3	4	94	35	12	208	2.24	18.0
RC		DM	4S	6	4.9	243	231	3		100				39		61	21	8	49	0.98	4.7	
RC	Totals			8	13.6	4,602	3,974	59		25	12	64		2	3	7	88	32	11	175	2.07	22.7
WH		DM	3S	100		2,003	2,003	30		100						100	40	7	65	0.58	30.8	
WH	Totals			4		2,003	2,003	30		100						100	40	7	65	0.58	30.8	
CW		DM	2S	95	5.5	2,392	2,260	33			28	72				100	40	19	589	3.21	3.8	
CW		DM	UT	5	.0	115	115	2		100				100			17	10	60	0.89	1.9	
CW	Totals			5	5.3	2,507	2,375	35		5	26	69		5		95	32	16	413	2.80	5.8	
Type Totals					4.1	52,231	50,078	741		12	17	72		0	1	1	97	37	13	317	1.98	158.0

Species, Sort Grade - Board Foot Volumes (Type)										Page 1											
T TSPCSTGR										Date 8/15/2016											
Project: SUMMER										Time 5:33:25PM											
T28N R09E S29 T00U6										T28N R09E S29 T00U6											
Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt										BdFt											
28N 09E 29 SUMMER 00U6 18.20 13 45 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
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf		
DF	DM	2S		63	2.1	25,059	24,526	446			43	57			100	40	16	419	2.22	58.6	
DF	DM	3S		20	3.7	8,102	7,805	142		100				1	1	98	39	9	108	0.78	72.2
DF	DM	4S		3	3.1	1,104	1,070	19	33	67			7	67	26	26	6	32	0.34	33.8	
DF	HA	3P		3	7.9	1,057	973	18			100				100	40	24	930	5.30	1.0	
DF	HA	SM		8	1.4	3,308	3,261	59			100				100	40	19	639	3.20	5.1	
DF	HA	2S		3		923	923	17			100				100	40	15	360	2.06	2.6	
DF	Totals			84	2.5	39,553	38,558	702	1	22	30	47	0	2	0	97	37	11	222	1.37	173.3
RC	DM	3S		92	12.1	3,395	2,984	54		48	22	31			2	98	36	11	171	2.14	17.5
RC	DM	4S		8		235	235	4	72	28			26	74		23	5	27	0.36	8.9	
RC	Totals			7	11.3	3,630	3,219	59	5	46	20	28	2	5	2	90	32	9	122	1.70	26.3
WH	DM	3S		70	6.6	1,058	989	18		100				42	58	36	7	65	0.57	15.1	
WH	DM	4S		30	27.0	559	408	7	100				20		80	23	5	18	0.32	23.3	
WH	Totals			3	13.6	1,617	1,397	25	29	71			6		64	28	6	36	0.45	38.4	
RA	DM	2S		22	9.5	280	253	5		100			100			30	14	190	2.11	1.3	
RA	DM	3S		22	15.4	283	239	4		100			100			30	11	110	1.21	2.2	
RA	DM	4S		37	7.1	439	407	7		100			100			30	9	65	0.92	6.3	
RA	DM	UT		19		209	209	4	81	19			70	30		20	5	21	0.35	9.8	
RA	Totals			2	8.4	1,211	1,109	20	15	62	23		13	87		25	8	57	0.83	19.6	
CW	DM	2S		80	7.6	1,530	1,414	26		100				100		40	14	257	1.86	5.5	
CW	DM	3S		4	28.6	91	65	1		100				100		33	8	50	0.87	1.3	
CW	DM	4S		16		272	272	5		100				100		39	6	65	0.58	4.2	
CW	Totals			4	7.5	1,894	1,751	32		19	81			4	96	39	10	159	1.27	11.0	
Type Totals					3.9	47,905	46,034	838	2	26	30	42	1	4	1	94	34	10	171	1.26	268.6

T28N R09E S29 T00U7		T28N R09E S29 T00U7
Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt		BdFt
28N 09E 29 SUMMER 00U7 15.70 12 55 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	
									Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft		CF/ Lf
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
DF	DM	2S		18	1.0	3,606	3,570	56	100				100				40	13	251	1.57	14.2
DF	DM	3S		45	.8	8,717	8,644	136	100				1 99				40	8	109	0.74	79.5
DF	DM	4S		9	1.0	1,823	1,805	28	84	16			8	33	9	50	31	5	33	0.31	54.1
DF	HA	SM		5		853	853	13	100				100				40	20	700	3.23	1.2
DF	HA	2S		23	.0	4,343	4,343	68	81 19				100				40	14	278	1.66	15.6
DF	Totals			50	.7	19,342	19,215	302	8	46	37	9	1	4	1	95	37	8	117	0.81	164.7
WH	DM	2S		38	1.6	6,124	6,023	95	87 13				100				40	13	241	1.46	24.9
WH	DM	3S		48	2.0	7,780	7,621	120	100				100				40	8	93	0.60	81.8
WH	DM	4S		14	10.5	2,414	2,161	34	97	3			3	29	19	49	31	5	30	0.27	72.2
WH	Totals			41	3.1	16,317	15,804	248	13	49	33	5	0	4	3	93	36	7	88	0.62	178.9
RC	DM	3S		74	29.0	2,418	1,716	27	57 43				100				36	9	76	0.78	22.5
RC	DM	4S		26	20.7	729	578	9	87	13			87 1 13				25	5	24	0.27	24.3
RC	Totals			6	27.1	3,147	2,293	36	22	46	32		22 0 78				30	7	49	0.56	46.9
SS	DM	3S		100		895	895	14	100				100				40	9	120	0.73	7.5
SS	Totals			2		895	895	14	100				100				40	9	120	0.73	7.5
Type Totals					3.8	39,701	38,208	600	11	49	34	6	1	5	2	93	36	8	96	0.70	397.9

T28N R09E S29 T0ROW										T28N R09E S29 T0ROW			
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt				
28N	09E	29	SUMMER	0ROW	.20	1	2	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		
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99							
WH	DM	2S	75	10.0	5,093	4,584	1	100				100				40	16	360	2.27	12.7		
WH	DM	3S	25		1,528	1,528	0	100				100				40	9	120	0.92	12.7		
WH	Totals		44	7.7	6,621	6,112	1	25	75					100				40	13	240	1.59	25.5
DF	DM	2S	24		1,956	1,956	0	100				100				40	13	240	1.55	8.1		
DF	DM	4S	3	25.0	326	244	0	100				100				17	9	30	0.68	8.1		
DF	HA	SM	73		5,704	5,704	1	100				100				40	20	700	3.55	8.1		
DF	Totals		56	1.0	7,986	7,904	2	3	25	72	3	97		32	14	323	2.22	24.4				
Type	Totals			4.0	14,607	14,016	3	13	47	41	2	98		36	13	281	1.87	49.9				

T28N R09E S29 TCORR										T28N R09E S29 TCORR			
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt				
28N	09E	29	SUMMER	CORR	.30	1	4	S	W				

S Spp	So T	Gr rt ad	%	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre					
								Net BdFt	Def%	Gross	Net	Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf	
												4-5	6-11	12-16	17+	12-20	21-30	31-35						36-99
DF	DM	2S	46	4.0	21,830	20,958	6			60	40					100	40	16	412	2.23	50.9			
DF	DM	3S	52	1.7	23,743	23,347	7			100						100	40	9	120	0.77	194.9			
DF	DM	4S	2		650	650	0			100					100		20	7	30	0.41	21.7			
DF	Totals		100	2.7	46,223	44,955	13		53	28	19		1		99		38	10	168	1.05	267.4			
Type Totals				2.7	46,223	44,955	13		53	28	19		1		99		38	10	168	1.05	267.4			

T28N R09E S29 TRMZ1										T28N R09E S29 TRMZ1			
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt				
28N	09E	29	SUMMER	RMZ1	2.40	1	3	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	Bd Ft	CF/ Lf	
													4-5	6-11	12-16	17+	12-20	21-30	31-35						36-99
DF	DM	3S	77	16,120	16,120	39	100				100				40	8	91	0.70	177.2						
DF	DM	4S	23	4,638	4,638	11	100				67 33				26	5	26	0.25	177.2						
DF	Totals		100	20,758	20,758	50	22	78					15	7	78	33	6	59	0.52	354.4					
Type Totals				20,758	20,758	50	22	78					15	7	78	33	6	59	0.52	354.4					

T28N R09E S29 TWMZ2										T28N R09E S29 TWMZ2			
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt				
28N	09E	29	SUMMER	WMZ2	1.10	1	2	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	Bd Ft	CF/Lf	
													4-5	6-11	12-16	17+	12-20	21-30	31-35						36-99
WH	DM	4S	100	16.7	6,875	5,730	6	100				100				36	6	50	0.37	114.6					
WH	Totals		45	16.7	6,875	5,730	6	100				100				36	6	50	0.37	114.6					
DF	DM	3S	75		5,262	5,262	6	100				100				40	8	90	0.71	58.5					
DF	DM	4S	25		1,754	1,754	2	100				100				24	5	30	0.24	58.5					
DF	Totals		55		7,016	7,016	8	25	75					25	75	32	7	60	0.53	116.9					
Type Totals				8.2	13,891	12,745	14	14	86					14	86	34	6	55	0.45	231.5					

T28N R09E S32 T00U1		T28N R09E S32 T00U1
Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt		BdFt
28N 09E 32 SUMMER 00U1 19.50 14 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	
									Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft		CF/ Lf
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
DF		DM	2S	52	2.5	16,427	16,021	312			57	43			1	99	40	15	334	1.85	48.0
DF		DM	3S	22	6.6	7,137	6,665	130		100					6	94	39	9	108	0.74	61.9
DF		DM	4S	3	1.4	1,101	1,086	21	58	42			7	47	31	14	27	6	33	0.35	32.5
DF		DM	UT			66	66	1	46	54			100				12	6	14	0.28	4.8
DF		HA	3P	3	10.2	898	806	16			100				100		40	27	1230	6.80	.7
DF		HA	SM	8	3.0	2,538	2,461	48			100				100		40	20	642	3.47	3.8
DF		HA	2S	12	.7	3,491	3,466	68		100					100		40	14	270	1.68	12.8
DF	Totals			81	3.4	31,658	30,572	596	2	23	41	33	0	2	3	95	36	10	186	1.21	164.5
RC		DM	3S	69	9.2	2,734	2,481	48		75	25				100		36	9	104	1.29	23.9
RC		DM	4S	31	15.5	1,273	1,076	21	67	33			18	34	26	22	24	5	26	0.46	41.0
RC	Totals			9	11.2	4,007	3,558	69	20	62	18		5	10	8	76	28	7	55	0.85	64.9
WH		DM	3S	32	11.1	752	668	13		100					100		40	8	80	0.79	8.4
WH		DM	4S	20	16.7	501	418	8	100				60	40			30	5	25	0.27	16.7
WH		DM	UT	48		1,002	1,002	20		100					100		40	9	120	0.76	8.4
WH	Totals			6	7.4	2,255	2,088	41	20	80			12	8	80		35	7	63	0.56	33.4
BM		DM	2S	63	19.7	595	477	9		100			100				30	13	143	1.72	3.3
BM		DM	3S	19	25.0	193	145	3		100			100				20	11	60	1.21	2.4
BM		DM	UT	18	29.1	180	128	2	38	62			38	62			26	5	22	0.36	5.7
BM	Totals			2	22.5	968	750	15	6	30	64		19	70	11		26	9	65	0.96	11.5
CW		DM	2S	100	13.2	763	662	13		19	81		19		81		35	15	295	2.19	2.2
CW	Totals			2	13.2	763	662	13		19	81		19		81		35	15	295	2.19	2.2
Type Totals					5.1	39,652	37,629	734	5	30	37	29	1	5	4	90	34	9	136	1.06	276.6

T28N R09E S32 T00U2		T28N R09E S32 T00U2
Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt		BdFt
28N 09E 32 SUMMER 00U2 12.80 10 32 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
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
DF		DM	2S	77	4.0	37,710	36,213	464			42	58				100	40	16	410	2.25	88.4
DF		DM	3S	14	3.2	6,674	6,459	83		100				4	2	94	38	9	112	0.81	57.7
DF		DM	4S	3	2.9	1,289	1,252	16	63	37				37	43	20	30	6	34	0.40	36.7
DF		DM	UT			51	51	1		100			100				11	12	50	1.01	1.0
DF		HA	SM	6		2,640	2,640	34			100					100	40	17	460	2.49	5.7
DF	Totals			87	3.6	48,363	46,615	597	2	15	33	51	0	2	1	97	37	12	246	1.51	189.6
RC		DM	3S	77	14.5	3,592	3,073	39		46	54					100	36	8	94	1.00	32.6
RC		DM	4S	23	21.8	1,166	912	12	96	4			4	50	18	28	26	5	21	0.38	43.3
RC	Totals			7	16.3	4,758	3,985	51	22	37	41		1	11	4	84	30	7	52	0.70	75.9
WH		DM	3S	79	10.8	2,746	2,450	31		100						100	40	9	119	0.85	20.6
WH		DM	4S	21	25.0	826	619	8	100						100		33	5	30	0.31	20.6
WH	Totals			6	14.1	3,572	3,069	39	20	80					20	80	37	7	74	0.61	41.3
BM		DM	UT	100		147	147	2	100				100				20	5	20	0.34	7.3
BM	Totals			0		147	147	2	100				100				20	5	20	0.34	7.3
Type Totals					5.3	56,840	53,816	689	5	20	32	44	0	2	3	95	35	10	171	1.20	314.1

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	SUMMER			DATE	8/15/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
28N	09E	20	SUMMER	00U4	0.40	1	9	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		1	9	9.0						
CRUISE		1	9	9.0	93		9.7			
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
DOUG FIR	6	142.7	23.4	115	88.2	426.7	103,313	99,997	21,762	21,762
WR CEDAR	2	32.0	21.4	75	17.3	80.0	9,163	7,552	2,845	2,849
WHEMLOCK	1	57.9	15.0	75	18.4	71.1	8,692	8,112	2,453	2,453
TOTAL	9	232.7	21.3	99	125.1	577.8	121,167	115,661	27,060	27,064
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	48.5	21.6	631	805	979					
WR CEDAR	20.2	18.9	199	245	291					
WHEMLOCK										
TOTAL	70.9	25.0	455	607	758	225	115	56		

TC TSTATS				STATISTICS				PAGE 1		
PROJECT				SUMMER				DATE 8/15/2016		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
28N	09E	20	SUMMER	00U5	10.10	6	30	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	6	30	5.0							
CRUISE	4	20	5.0	746		2.7				
DBH COUNT										
REFOREST										
COUNT	2	10	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
DOUG FIR	14	43.3	28.2	118	35.3	187.5	46,572	44,001	9,503	9,503
WHEMLOCK	1	12.2	28.0	86	9.8	52.1	9,135	8,283	2,210	2,210
WR CEDAR	5	18.4	21.6	69	10.0	46.7	5,411	4,823	1,652	1,653
TOTAL	20	73.9	26.7	101	55.4	286.3	61,118	57,107	13,364	13,365
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	48.6	13.5	1,057	1,221	1,386					
WHEMLOCK										
WR CEDAR	51.9	29.7	378	538	697					
TOTAL	56.9	13.4	908	1,049	1,190	137	70	34		
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	57.0	25.4	32	43	54					
WHEMLOCK	140.3	62.5	5	12	20					
WR CEDAR	133.1	59.3	7	18	29					
TOTAL	33.4	14.9	63	74	85	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		
DOUG FIR	47.1	21.0	148	188	227					
WHEMLOCK	140.3	62.5	20	52	85					
WR CEDAR	126.2	56.2	20	47	73					
TOTAL	37.9	16.9	238	286	335	68	35	17		
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	51.5	22.9	33,920	44,001	54,083					
WHEMLOCK	140.3	62.5	3,109	8,283	13,456					
WR CEDAR	145.4	64.8	1,700	4,823	7,946					
TOTAL	44.2	19.7	45,869	57,107	68,346	93	47	23		
CL: 68.1 %	COEFF	V-BAR/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR	20.6	9.2	181	235	288					
WHEMLOCK			60	159	258					
WR CEDAR	134.9	60.1	36	103	170					
TOTAL	131.1	58.4	160	200	239	817	417	204		

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT		SUMMER		DATE	8/15/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
28N	09E	29	SUMMER	00U3	14.80	11	54	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				TREES	TREES	TREES				
TOTAL	11	54	4.9							
CRUISE	7	29	4.1		1,172		2.5			
DBH COUNT										
REFOREST										
COUNT	4	25	6.3							
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	19	32.9	31.3	118	31.5	176.1	43,118	41,725	8,845	8,845
WR CEDAR	6	13.5	25.3	59	9.4	47.3	4,602	3,974	1,506	1,507
WHEMLOCK	2	30.8	13.0	50	7.9	28.4	2,003	2,003	711	711
COTWOOD	2	1.9	33.0	100	2.0	11.4	2,507	2,375	521	521
TOTAL	29	79.2	24.7	81	53.0	263.2	52,231	50,078	11,584	11,585
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	33.8	8.0	1,270	1,381	1,491					
WR CEDAR	53.9	24.0	351	462	573					
WHEMLOCK	10.9	10.2	58	65	72					
COTWOOD	3.4	3.2	1,200	1,240	1,280					
TOTAL	55.8	10.5	975	1,090	1,205	129	66	32		
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	76.0	24.0	25	33	41					
WR CEDAR	86.6	27.3	10	14	17					
WHEMLOCK	151.3	47.8	16	31	46					
COTWOOD	223.0	70.4	1	2	3					
TOTAL	76.0	24.0	60	79	98	254	130	63		
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	74.1	23.4	135	176	217					
WR CEDAR	73.9	23.4	36	47	58					
WHEMLOCK	151.3	47.8	15	28	42					
COTWOOD	222.5	70.3	3	11	19					
TOTAL	53.7	17.0	219	263	308	127	65	32		
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	75.9	24.0	31,718	41,725	51,732					
WR CEDAR	74.8	23.6	3,035	3,974	4,913					
WHEMLOCK	151.5	47.8	1,045	2,003	2,962					
COTWOOD	222.7	70.3	705	2,375	4,046					
TOTAL	61.9	19.5	40,292	50,078	59,864	168	86	42		
CL: 68.1 %	COEFF	V-BAR/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR			180	237	294					
WR CEDAR			64	84	104					
WHEMLOCK			37	71	104					
COTWOOD	222.7	70.3	62	209	356					
TOTAL	168.4	53.2	153	190	227	1,245	635	311		

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	SUMMER			DATE	8/15/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
28N	09E	29	SUMMER	00U6	18.20	13	66	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	13	66	5.1							
CRUISE	9	45	5.0	2,252			2.0			
DBH COUNT										
REFOREST										
COUNT	4	21	5.3							
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	26	70.5	22.4	97	40.7	192.3	39,553	38,558	8,807	8,807
WR CEDAR	9	14.7	23.2	63	8.9	43.1	3,630	3,219	1,416	1,416
WHEMLOCK	3	23.3	12.3	55	5.5	19.2	1,617	1,397	510	488
R ALDER	4	9.8	17.0	54	3.7	15.4	1,211	1,109	406	406
COTWOOD	3	5.5	21.9	80	3.1	14.4	1,894	1,751	542	542
TOTAL	45	123.8	20.5	81	62.8	284.4	47,905	46,034	11,681	11,659
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	71.4	14.3		744	868	992				
WR CEDAR	93.2	32.9		265	396	526				
WHEMLOCK	33.3	23.1		46	60	74				
R ALDER	49.1	28.0		94	130	166				
COTWOOD	21.2	14.7		282	330	378				
TOTAL	94.2	14.0		531	618	705	354	181	89	
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	91.7	26.4		52	71	89				
WR CEDAR	117.4	33.8		10	15	20				
WHEMLOCK	156.6	45.1		13	23	34				
R ALDER	157.9	45.5		5	10	14				
COTWOOD	249.8	72.0		2	6	9				
TOTAL	45.5	13.1		108	124	140	89	46	22	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	77.9	22.5		149	192	235				
WR CEDAR	116.6	33.6		29	43	58				
WHEMLOCK	156.1	45.0		11	19	28				
R ALDER	169.1	48.7		8	15	23				
COTWOOD	259.6	74.8		4	14	25				
TOTAL	41.3	11.9		251	284	318	74	38	18	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	75.5	21.8		30,167	38,558	46,949				
WR CEDAR	119.8	34.5		2,107	3,219	4,330				
WHEMLOCK	163.3	47.1		739	1,397	2,054				
R ALDER	172.0	49.6		559	1,109	1,659				
COTWOOD	256.4	73.9		457	1,751	3,045				
TOTAL	56.0	16.2		38,599	46,034	53,469	136	69	34	
CL:	68.1 %	COEFF	V-BAR/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR				157	201	244				

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT		SUMMER		DATE	8/15/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
28N	09E	29	SUMMER	00U6	18.20	13	66	S	W	
CL:	68.1%	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10	
WR CEDAR		88.8	25.6	49	75	101				
WHEMLOCK		133.7	38.5	38	73	107				
R ALDER		154.7	44.6	36	72	108				
COTWOOD		256.4	73.9	32	121	211				
TOTAL		<i>138.1</i>	<i>39.8</i>	<i>136</i>	<i>162</i>	<i>188</i>	<i>824</i>	<i>420</i>	<i>206</i>	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT		SUMMER		DATE	8/15/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
28N	09E	29	SUMMER	00U7	15.70	12	55	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	12	55	4.6							
CRUISE	12	55	4.6	3,539		1.6				
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
DOUG FIR	24	80.4	16.9	84	30.4	125.0	19,342	19,215	4,932	4,932
WHEMLOCK	21	111.8	13.4	70	29.9	109.4	16,317	15,804	4,001	3,997
WR CEDAR	9	29.5	14.0	58	8.4	31.5	3,147	2,293	954	801
S SPRUCE	1	3.7	16.0	90	1.3	5.2	895	895	217	217
TOTAL	55	225.4	14.8	73	70.3	271.1	39,701	38,208	10,105	9,948
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	74.0	15.4	280	331	382					
WHEMLOCK	72.2	16.1	185	220	256					
WR CEDAR	79.8	28.2	73	101	130					
S SPRUCE										
TOTAL	82.9	11.2	222	250	278	275	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		
DOUG FIR	99.3	29.9	56	80	104					
WHEMLOCK	66.2	19.9	90	112	134					
WR CEDAR	191.9	57.8	12	29	46					
S SPRUCE	346.4	104.3	4	8						
TOTAL	48.0	14.4	193	225	258	100	51	25		
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR	87.9	26.5	92	125	158					
WHEMLOCK	65.0	19.6	88	109	131					
WR CEDAR	198.0	59.6	13	32	50					
S SPRUCE	346.4	104.3	5	11						
TOTAL	38.4	11.6	240	271	302	64	33	16		
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	83.8	25.2	14,366	19,215	24,063					
WHEMLOCK	72.7	21.9	12,345	15,804	19,264					
WR CEDAR	196.2	59.1	938	2,293	3,649					
S SPRUCE	346.4	104.3	895	1,829						
TOTAL	39.9	12.0	33,617	38,208	42,798	69	35	17		
CL: 68.1 %	COEFF	V-BAR/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR	83.8	25.2	115	154	193					
WHEMLOCK	72.7	21.9	113	144	176					
WR CEDAR	145.2	43.7	30	73	116					
S SPRUCE	346.4	104.3	172	351						
TOTAL	37.0	11.1	124	141	158	59	30	15		

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	SUMMER			DATE	8/15/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
28N	09E	29	SUMMER	ORO	0.20	1	2	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	1	2	2.0							
CRUISE	1	2	2.0	4	47.9					
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	1	12.7	24.0	88	8.2	40.0	6,621	6,112	1,624	1,624
DOUG FIR	1	8.1	30.0	100	7.3	40.0	7,986	7,904	1,756	1,756
TOTAL	2	20.9	26.5	93	15.5	80.0	14,607	14,016	3,379	3,379
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.			
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	0				
WHEMLOCK										
DOUG FIR										
TOTAL	47.8	44.8	401	725	1,049	160	82	40		

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	SUMMER			DATE	8/15/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
28N	09E	29	SUMMER	CORR	0.30	1	4	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES				
TOTAL	1	4	4.0							
CRUISE	1	4	4.0		35		11.5			
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	4	115.6	19.9	96	56.0	250.0	46,223	44,955	10,687	10,687
TOTAL	4	115.6	19.9	96	56.0	250.0	46,223	44,955	10,687	10,687
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	74.2	42.4	291	505	719					
TOTAL	74.2	42.4	291	505	719	288	147	72		

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	SUMMER			DATE	8/15/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
28N	09E	29	SUMMER	RMZ1	2.40	1	3	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	1	3	3.0							
CRUISE	1	3	3.0	425		.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
DOUG FIR	3	177.2	13.9	72	50.2	187.5	20,758	20,758	6,112	6,112
TOTAL	3	177.2	13.9	72	50.2	187.5	20,758	20,758	6,112	6,112
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	25.0	17.3	99	120	141					
TOTAL	25.0	17.3	99	120	141	36	18	9		

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	SUMMER			DATE	8/15/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
28N	09E	29	SUMMER	WMZ	1.10	1	2	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	1	2	2.0							
CRUISE	1	2	2.0	190		1.1				
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK	1	114.6	10.0	59	19.8	62.5	6,875	5,730	1,530	1,530
DOUG FIR	1	58.5	14.0	70	16.7	62.5	7,016	7,016	1,999	1,999
TOTAL	2	173.1	11.5	63	36.8	125.0	13,891	12,745	3,529	3,529
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.			
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	0			
WHEMLOCK										
DOUG FIR										
TOTAL	58.2	54.5		39	85	131		238	121	59

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT		SUMMER		DATE	8/15/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
28N	09E	32	SUMMER	00U1	19.50	14	65	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				TREES	TREES	TREES				
TOTAL	14	65	4.6							
CRUISE	10	43	4.3	2,534			1.7			
DBH COUNT										
REFOREST										
COUNT	4	22	5.5							
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	26	61.4	21.6	103	33.6	156.3	31,658	30,572	7,238	7,237
WR CEDAR	11	44.9	15.6	47	15.2	60.0	4,007	3,558	1,576	1,568
WHEMLOCK	2	16.7	14.0	76	4.8	17.9	2,255	2,088	650	650
BL MAPLE	3	5.7	19.1	54	2.6	11.4	968	750	305	285
COTWOOD	1	1.1	27.0	85	0.9	4.5	763	662	172	172
TOTAL	43	129.9	18.8	78	57.7	250.0	39,652	37,629	9,941	9,911
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	67.5	13.5		585	676	767				
WR CEDAR	69.8	22.0		83	106	130				
WHEMLOCK	17.0	15.9		105	125	145				
BL MAPLE	56.7	39.2		85	140	195				
COTWOOD										
TOTAL	96.1	14.6		397	465	533	369	188	92	
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	83.3	23.1		47	61	76				
WR CEDAR	109.6	30.4		31	45	59				
WHEMLOCK	213.9	59.3		7	17	27				
BL MAPLE	218.1	60.4		2	6	9				
COTWOOD	374.2	103.6			1	2				
TOTAL	61.5	17.0		108	130	152	163	83	41	
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	71.5	19.8		125	156	187				
WR CEDAR	113.2	31.4		41	60	79				
WHEMLOCK	213.9	59.3		7	18	28				
BL MAPLE	213.9	59.3		5	11	18				
COTWOOD	374.2	103.6			4	9				
TOTAL	46.7	12.9		218	250	282	94	48	23	
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	75.0	20.8		24,217	30,572	36,926				
WR CEDAR	119.9	33.2		2,376	3,558	4,739				
WHEMLOCK	214.6	59.4		847	2,088	3,329				
BL MAPLE	226.1	62.6		280	750	1,219				
COTWOOD	374.2	103.6			662	1,349				
TOTAL	58.2	16.1		31,564	37,629	43,694	145	74	36	
CL:	68.1 %	COEFF	V-BAR/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	45.4	12.6		155	196	236				

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT		SUMMER		DATE	8/15/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
28N	09E	32	SUMMER	00U1	19.50	14	65	S	W	
CL:	68.1%	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10	
WR CEDAR		45.4	12.6	40	59	79				
WHEMLOCK		91.4	25.3	47	117	186				
BL MAPLE		204.2	56.6	25	66	107				
COTWOOD		374.2	103.6		148	302				
TOTAL		<i>129.4</i>	<i>35.8</i>	<i>126</i>	<i>151</i>	<i>175</i>	<i>720</i>	<i>367</i>	<i>180</i>	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT		SUMMER		DATE	8/15/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
28N	09E	32	SUMMER	00U2	12.80	10	56	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				TREES	TREES	TREES				
TOTAL	10	56	5.6							
CRUISE	6	32	5.3	2,187			1.5			
DBH COUNT										
REFOREST										
COUNT	4	24	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
DOUG FIR	23	78.7	22.9	96	47.0	225.0	48,363	46,615	10,703	10,703
WR CEDAR	6	64.2	13.1	47	16.6	60.0	4,758	3,985	1,596	1,596
WHEMLOCK	2	20.6	14.9	77	6.5	25.0	3,572	3,069	913	913
BL MAPLE	1	7.3	10.0	26	1.3	4.0	147	147	50	50
TOTAL	32	170.9	18.4	72	73.3	314.0	56,840	53,816	13,262	13,262
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	37.0	8.5	916	1,001	1,086					
WR CEDAR	118.7	52.9	56	118	181					
WHEMLOCK	9.4	8.8	137	150	163					
BL MAPLE										
TOTAL	71.7	13.5	628	726	824	213	109	53		
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	89.7	29.8	55	79	102					
WR CEDAR	96.4	32.1	44	64	85					
WHEMLOCK	175.5	58.4	9	21	33					
BL MAPLE	316.2	105.2	7	7	15					
TOTAL	51.5	17.1	142	171	200	117	60	29		
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	54.3	18.1	184	225	266					
WR CEDAR	95.6	31.8	41	60	79					
WHEMLOCK	174.8	58.2	10	25	40					
BL MAPLE	316.2	105.2	4	4	8					
TOTAL	37.4	12.4	275	314	353	62	32	15		
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	48.8	16.3	39,039	46,615	54,191					
WR CEDAR	100.7	33.5	2,649	3,985	5,320					
WHEMLOCK	175.0	58.2	1,282	3,069	4,857					
BL MAPLE	316.2	105.2	147	147	301					
TOTAL	39.3	13.1	46,777	53,816	60,855	68	35	17		
CL: 68.1 %	COEFF	V-BAR/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR			174	207	241					
WR CEDAR			44	66	89					
WHEMLOCK	53.3	17.7	51	123	194					
BL MAPLE	316.2	105.2	37	37	75					
TOTAL	151.1	50.3	149	171	194	1,011	516	253		

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

T28N R09E S20 Ty00U4	.4
T28N R09E S20 Ty00U5	10.1
T28N R09E S32 Ty00U	12.8

Project SUMMER
Acres 95.50

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Species	Total	Total	Total	Net Cubic Ft/		CF/	Total CCF		Total MBF	
	Trees	Logs	Tons	Tree	Log	LF	Gross	Net	Gross	Net
DOUG FIR	6,259	15,391	21,999	123.32	50.15	1.39	7,719	7,718	3,483	3,371
WHEMLOCK	3,500	5,567	4,233	37.66	23.68	0.67	1,323	1,318	510	478
WR CEDAR	2,826	4,218	3,103	45.83	30.70	1.03	1,320	1,295	381	326
COTWOOD	151	329	513	139.07	63.54	1.73	209	209	86	80
R ALDER	178	356	203	41.52	20.76	0.83	74	74	22	20
BL MAPLE	206	318	174	30.05	19.46	0.80	66	62	21	16
S SPRUCE	59	117	89	58.25	29.13	0.73	34	34	14	14
Totals	13,178	26,296	30,314	81.28	40.73	1.17	10,745	10,711	4,517	4,305

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	12,644	25,293	29,424	81.98	40.98	1.17	10,396	10,366	4,387	4,188
H	534	1,003	890	64.58	34.40	1.20	349	345	129	117
Totals	13,178	26,296	30,314	81.28	40.73	1.17	10,745	10,711	4,517	4,305

Summer Breeze Timber Sale

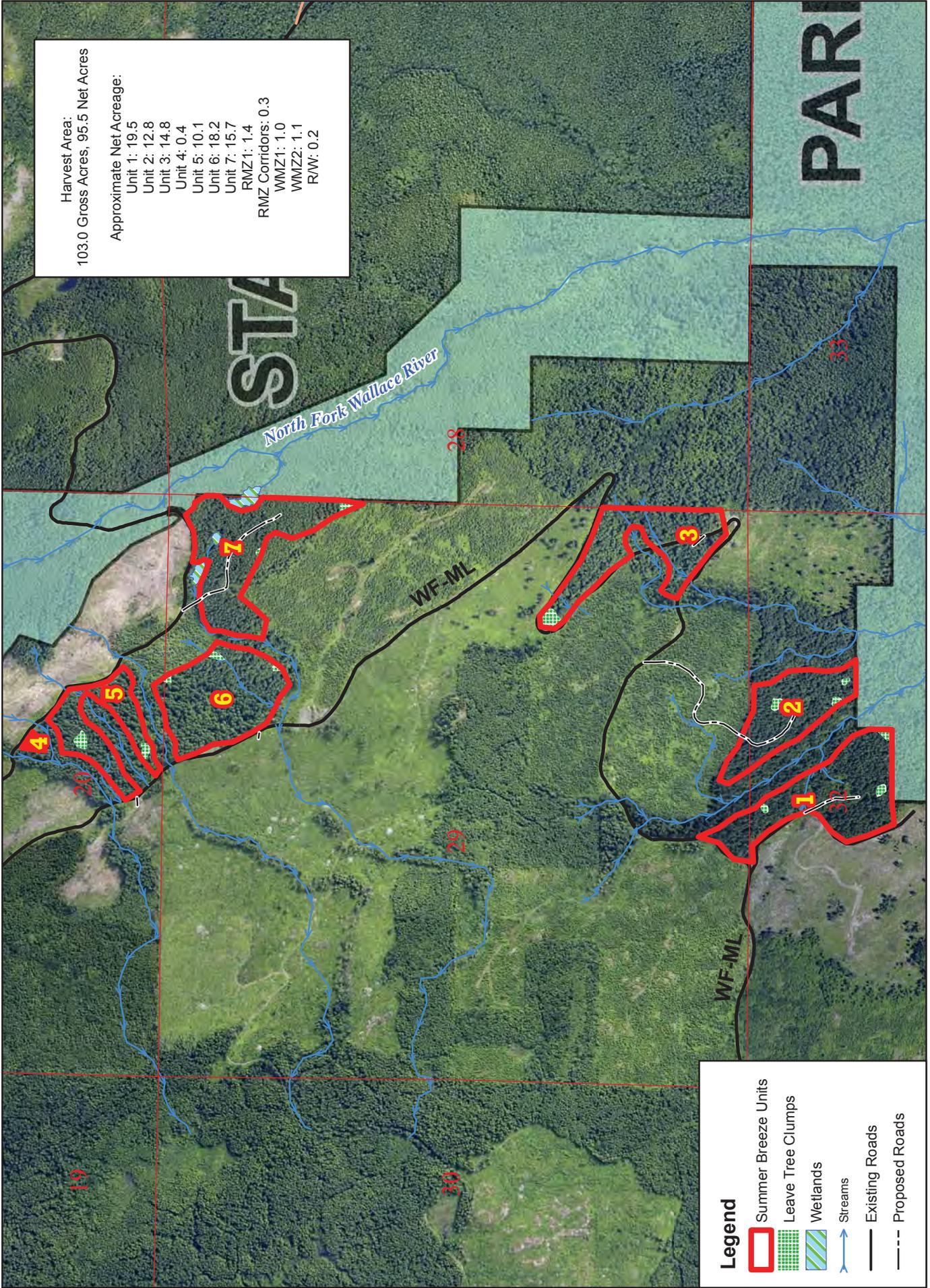
0 750 1,500 3,000 Feet



Cascade District, Boulder Unit
T28 N, R09 E, Sec 20, 29, 32

Harvest Area:
103.0 Gross Acres, 95.5 Net Acres

Approximate Net Acreage:
Unit 1: 19.5
Unit 2: 12.8
Unit 3: 14.8
Unit 4: 0.4
Unit 5: 10.1
Unit 6: 18.2
Unit 7: 15.7
RMZ1: 1.4
RMZ Corridors: 0.3
WMZ1: 1.0
WMZ2: 1.1
RW: 0.2



Legend

- Summer Breeze Units
- Leave Tree Clumps
- Wetlands
- Streams
- Existing Roads
- Proposed Roads

Summer Breeze Timber Sale

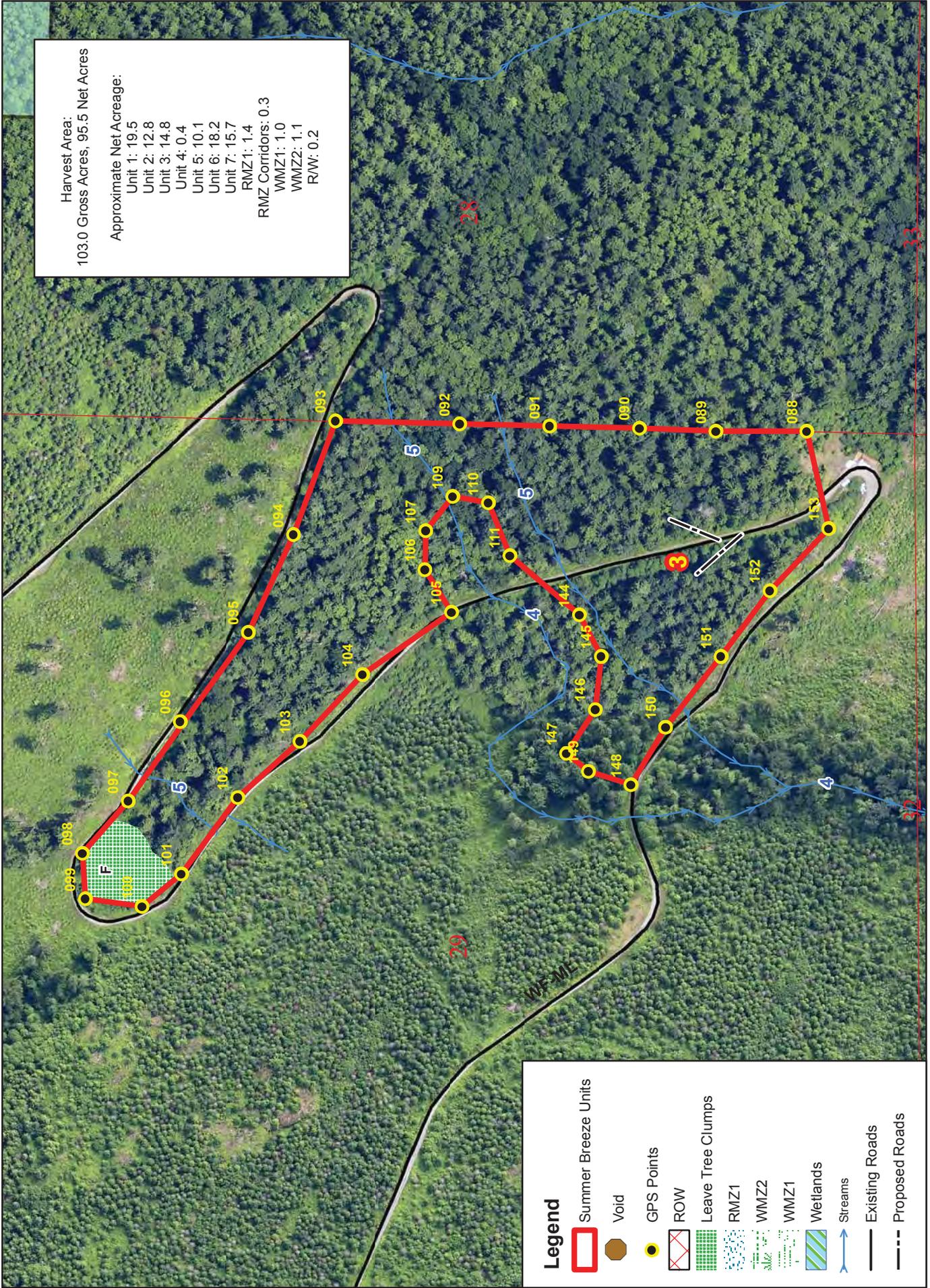


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WMZ2: 1.1
RW: 0.2

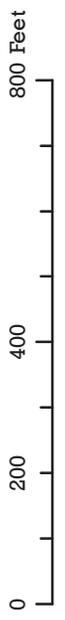


Legend

- Summer Breeze Units
- Void
- GPS Points
- ROW
- Leave Tree Clumps
- RMZ1
- WMZ2
- WMZ1
- Wetlands
- Streams
- Existing Roads
- Proposed Roads

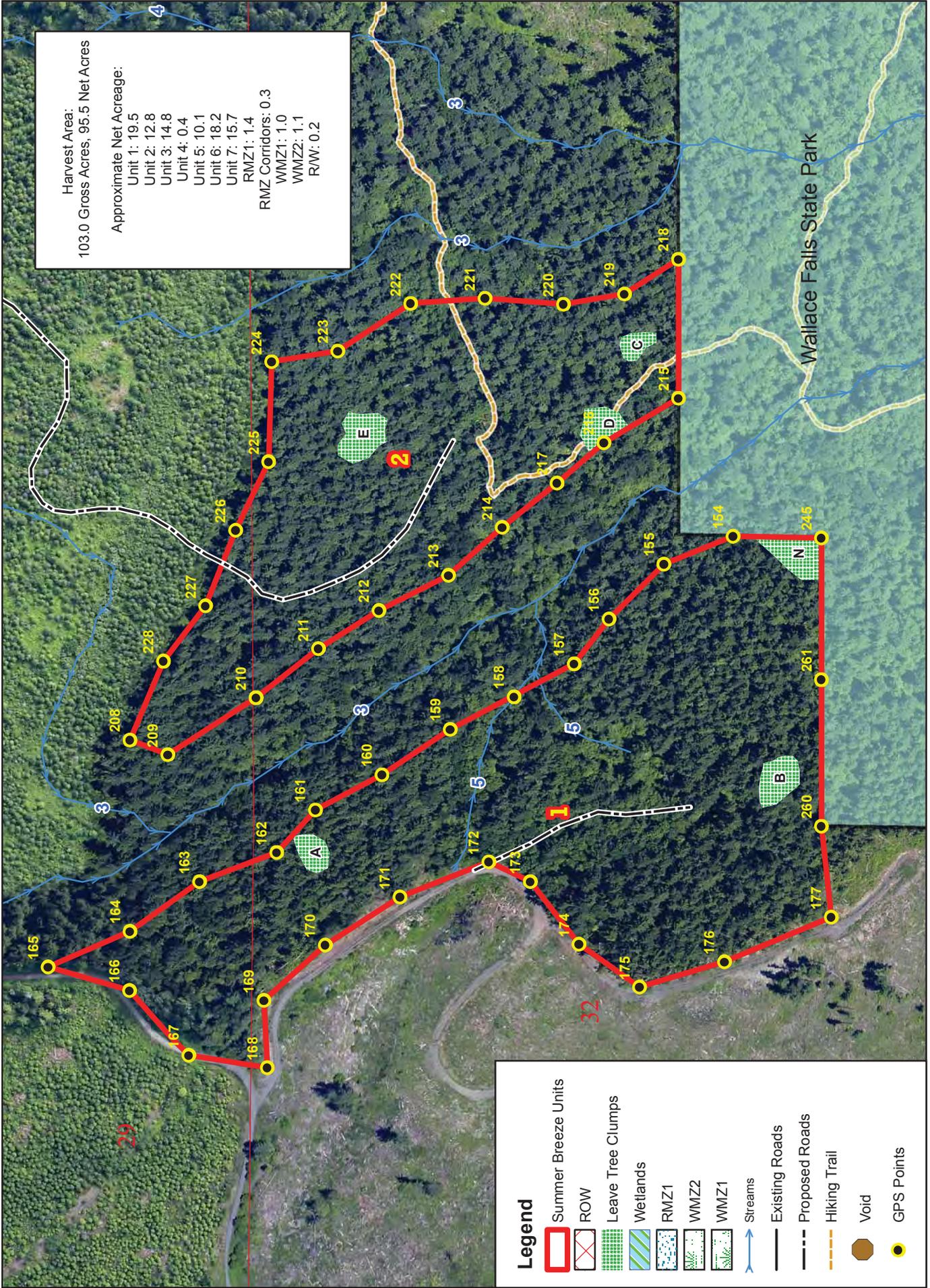
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Legend

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- ROW
- Leave Tree Clumps
- Wetlands
- RMZ1
- WMZ2
- WMZ1
- Streams
- Existing Roads
- Proposed Roads
- Hiking Trail
- Void
- GPS Points

Summer Breeze Timber Sale



800 Feet

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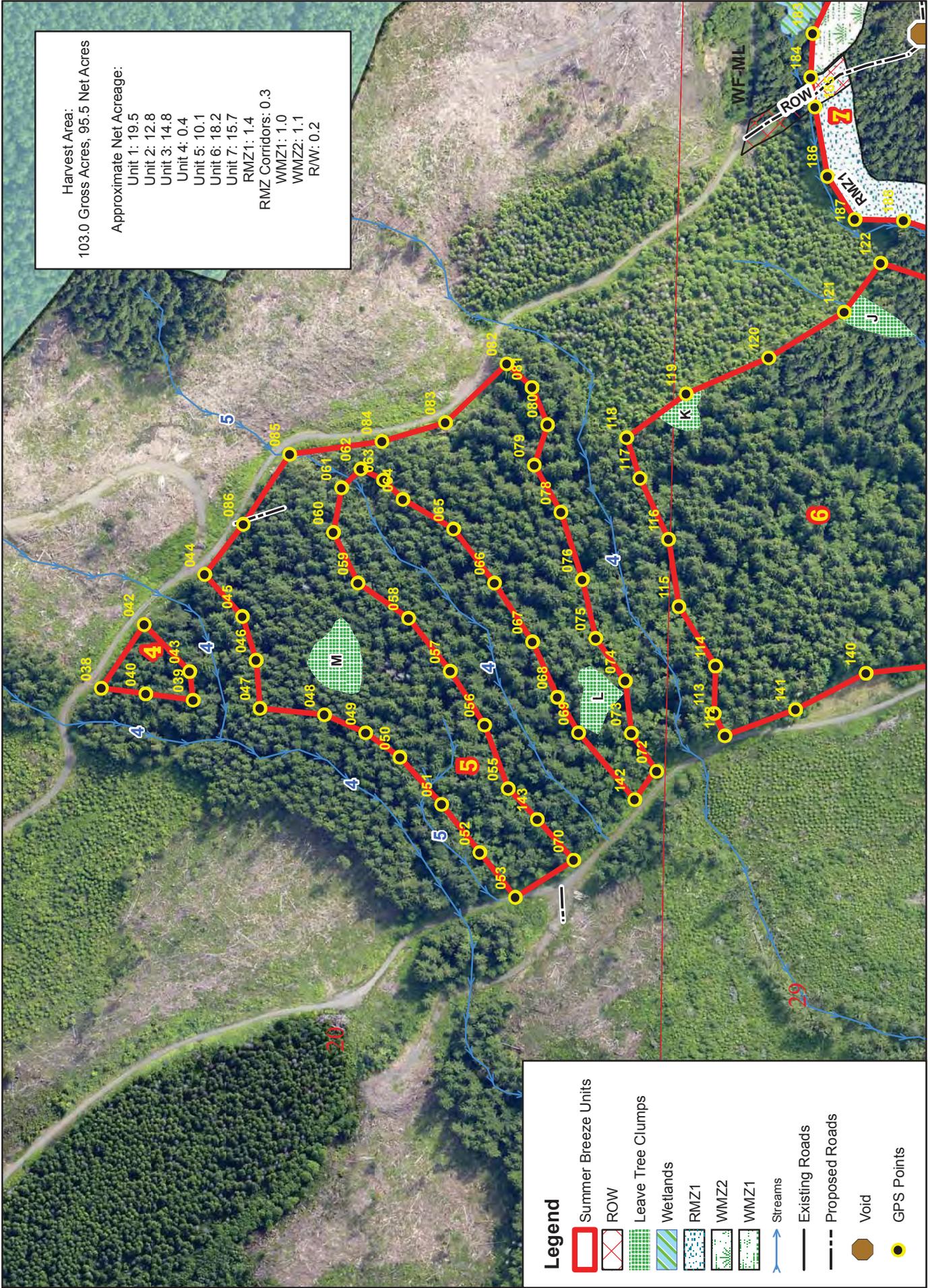
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- WMZ2
- WMZ1
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- Proposed Roads
- Void
- GPS Points

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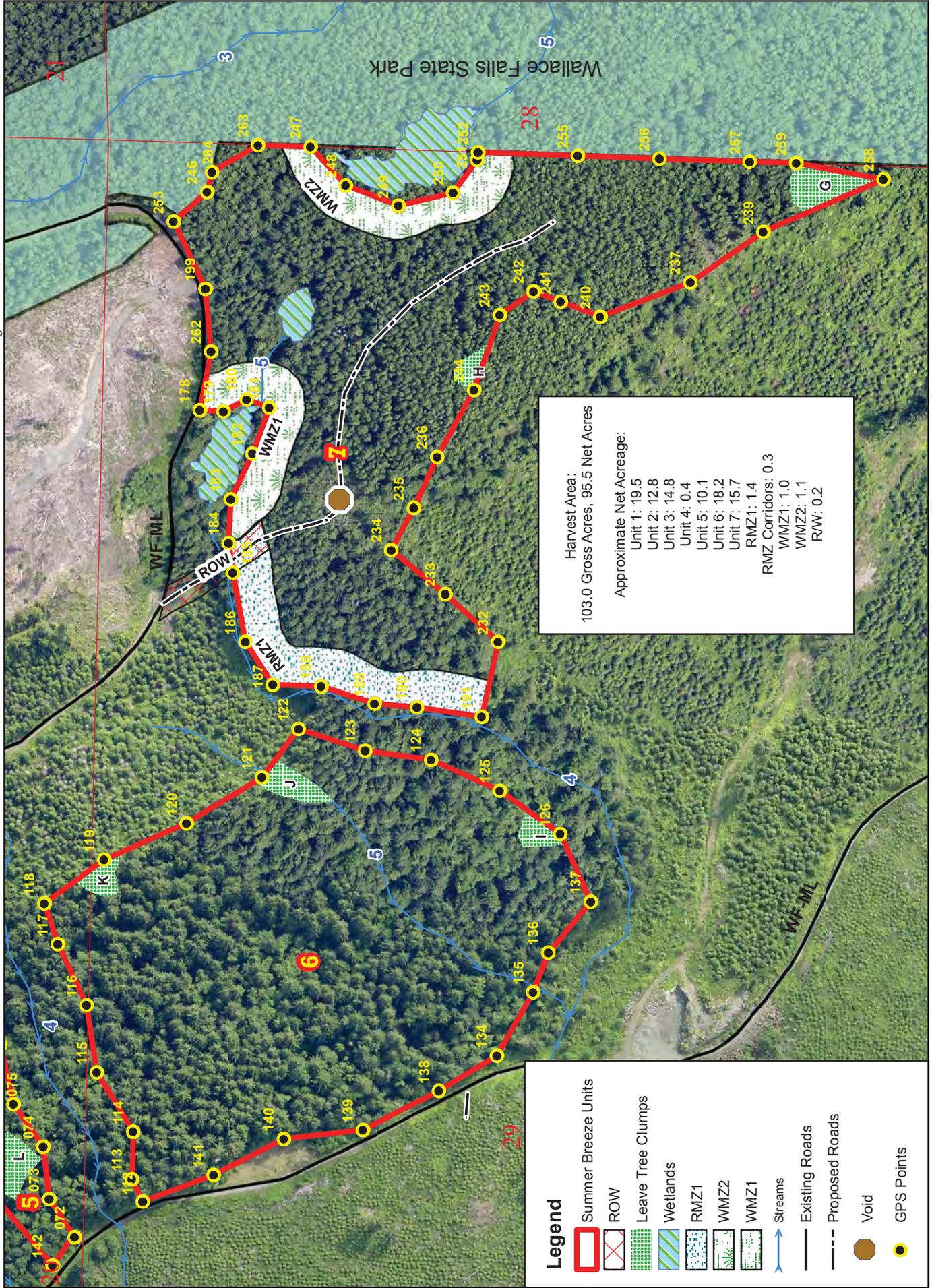


800 Feet

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- ROW
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- RMZ1
- WMZ2
- WMZ1
- Streams
- Existing Roads
- Proposed Roads
- Void
- GPS Points

Summer Breeze Timber Sale

0 750 1,500 3,000 Feet

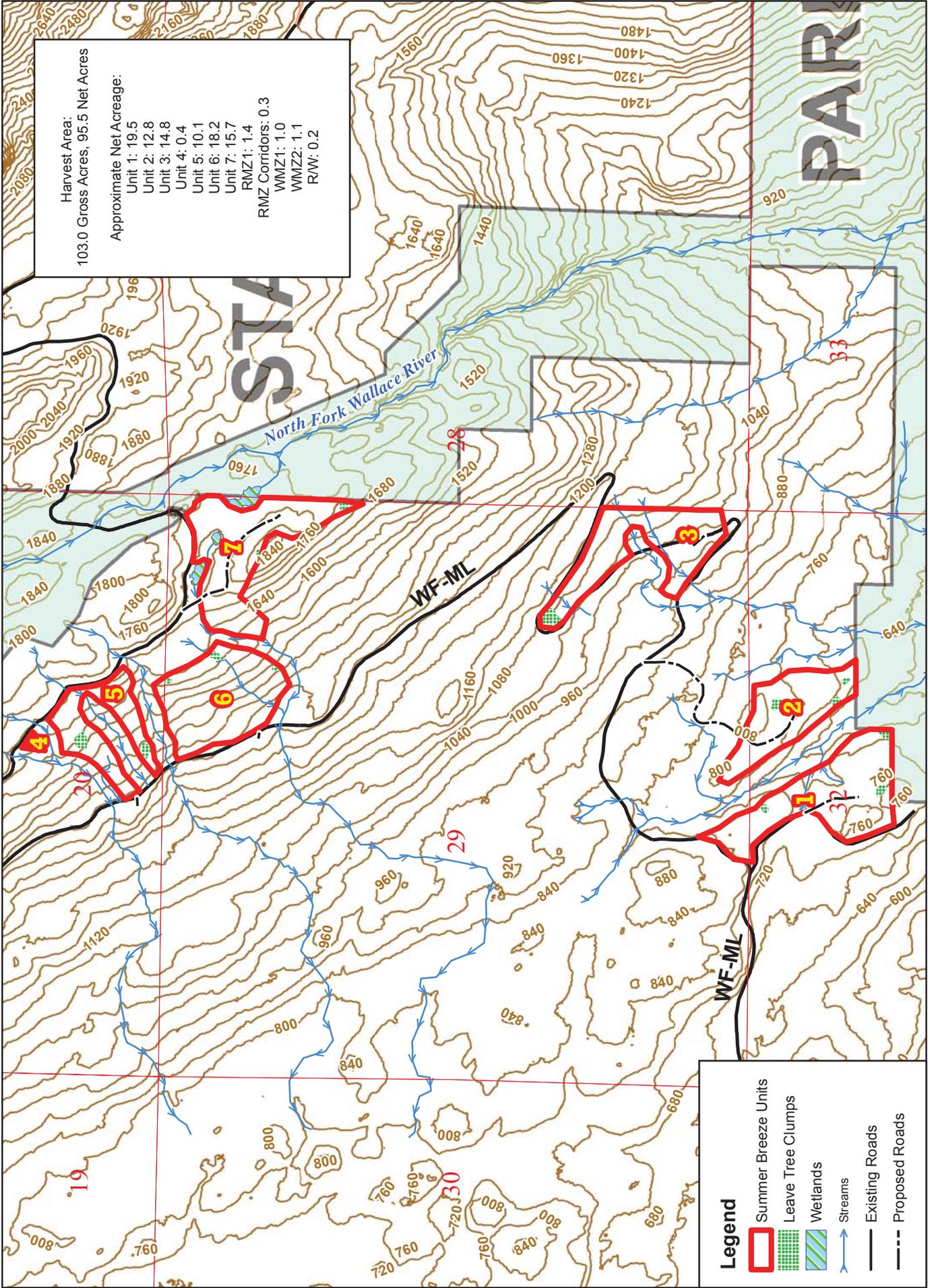


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Legend

- Summer Breeze Units
- Leave Tree Clumps
- Wetlands
- Streams
- Existing Roads
- Proposed Roads

PAR

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North Fork Wallace River

WF-ML

WF-ML

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Summer Breeze Timber Sale

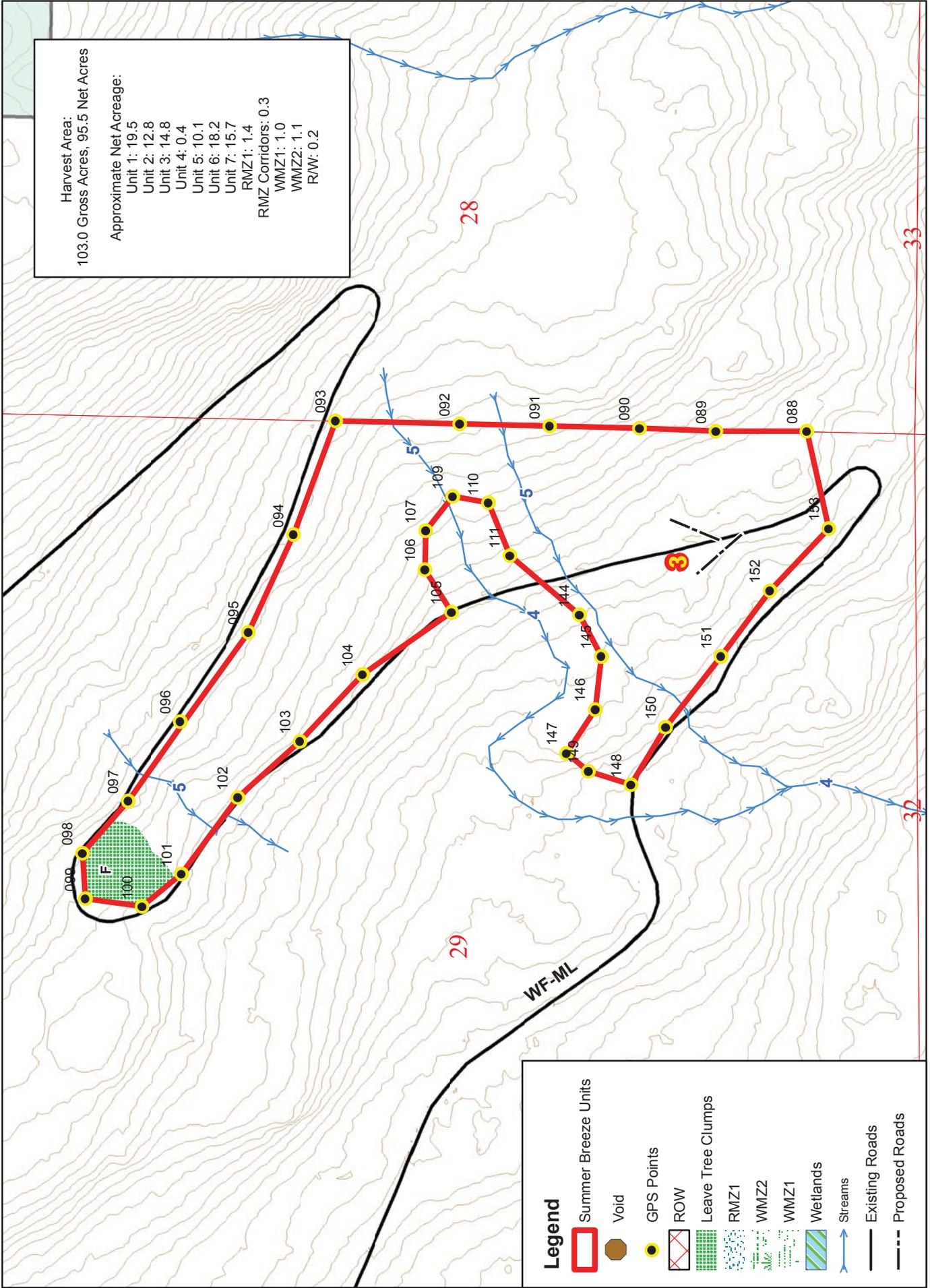
Cascade District, Boulder Unit T28 N, R09 E, Sec 20, 29, 32



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800 Feet

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RW: 0.2



Legend

- Summer Breeze Units
- Void
- GPS Points
- ROW
- Leave Tree Clumps
- RMZ1
- WMZ2
- WMZ1
- Wetlands
- Streams
- Existing Roads
- Proposed Roads

Summer Breeze Timber Sale

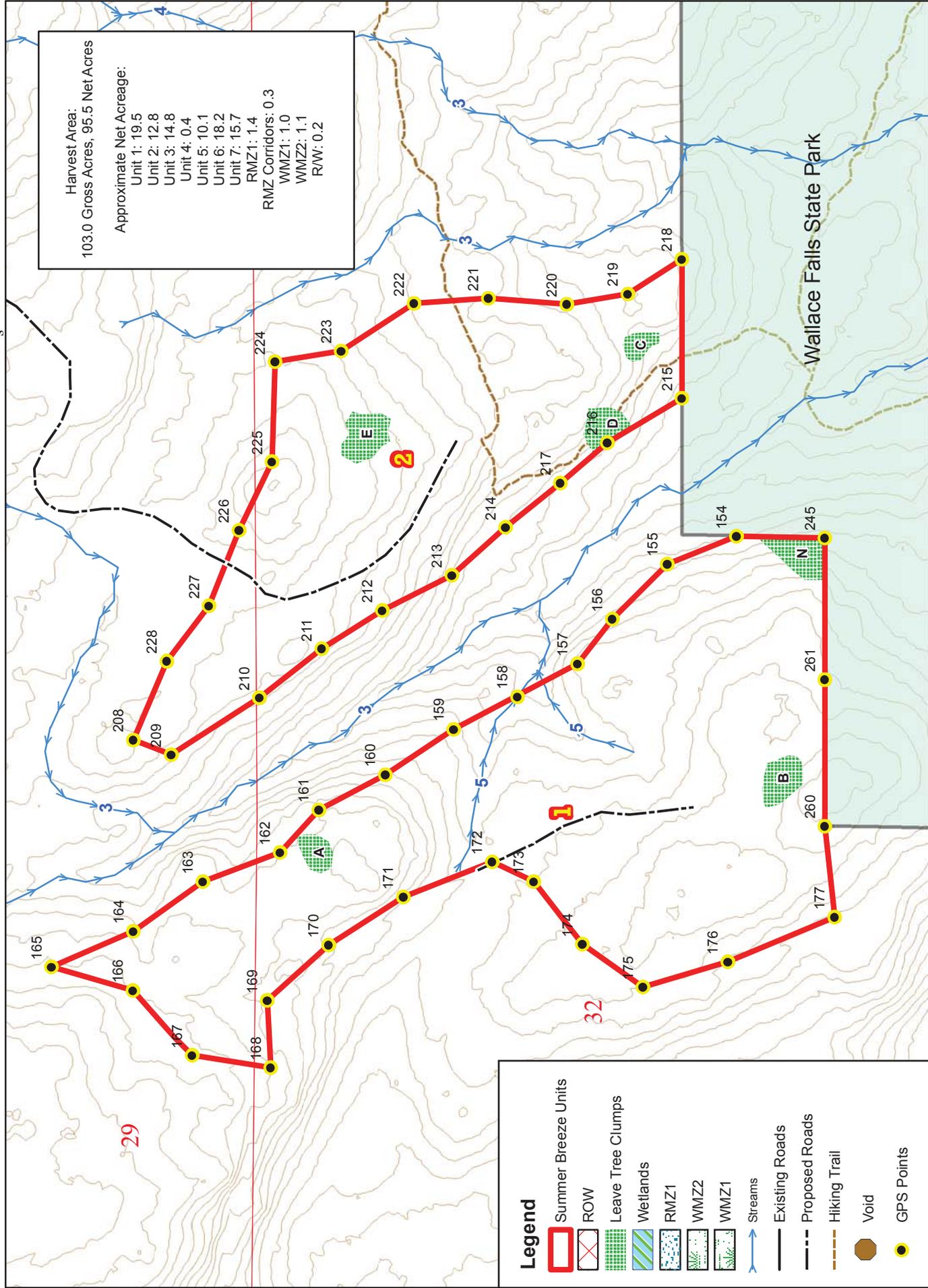
Cascade District, Boulder Unit
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800 Feet
400
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- ROW
- Leave Tree Clumps
- Wetlands
- RMZ1
- WMZ2
- WMZ1
- Streams
- Existing Roads
- Proposed Roads
- Hiking Trail
- Void
- GPS Points

Wallace Falls State Park

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Summer Breeze Timber Sale

Cascade District, Boulder Unit T28 N, R09 E, Sec 20, 29, 32

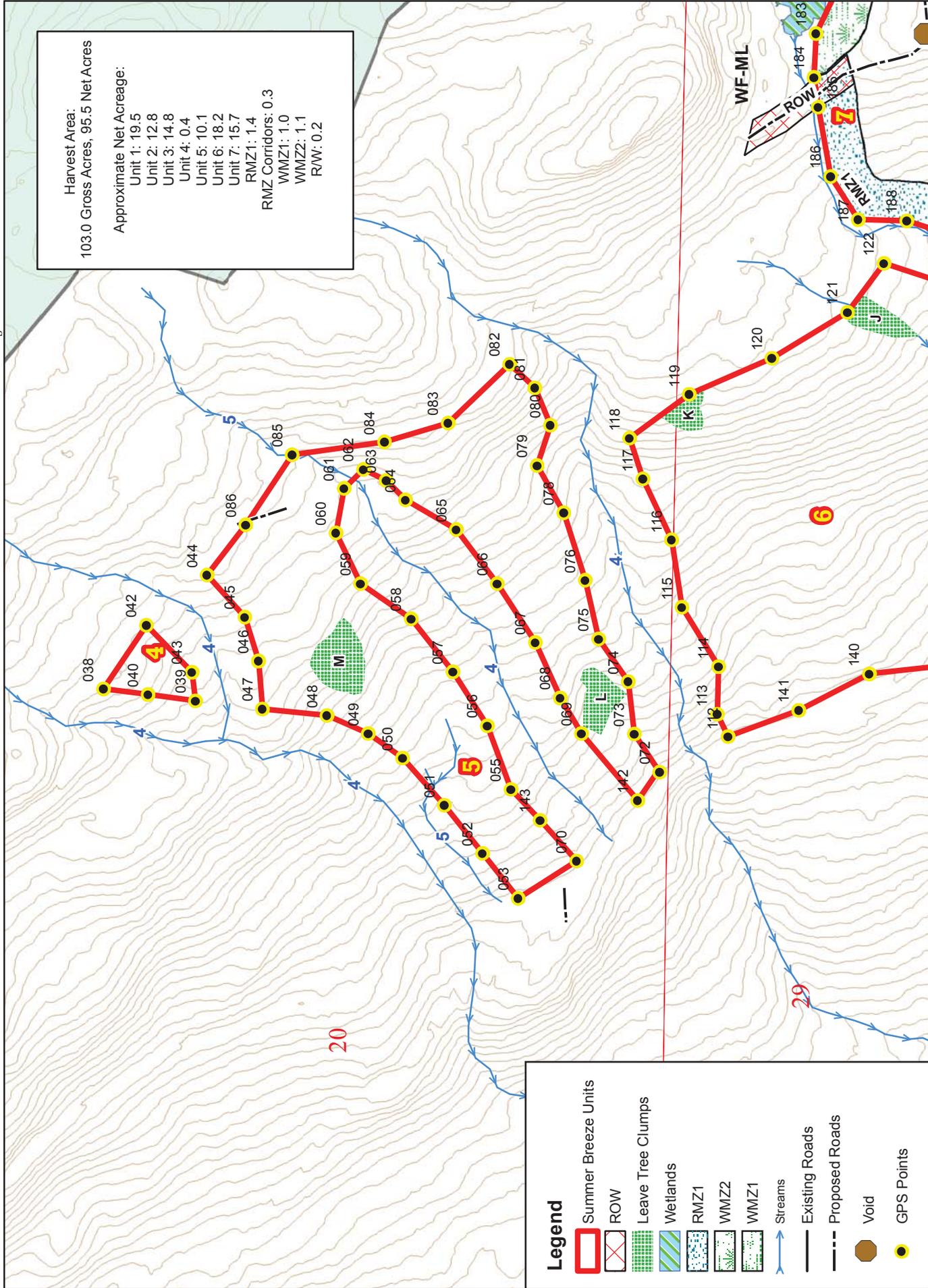


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R/W: 0.2



Legend

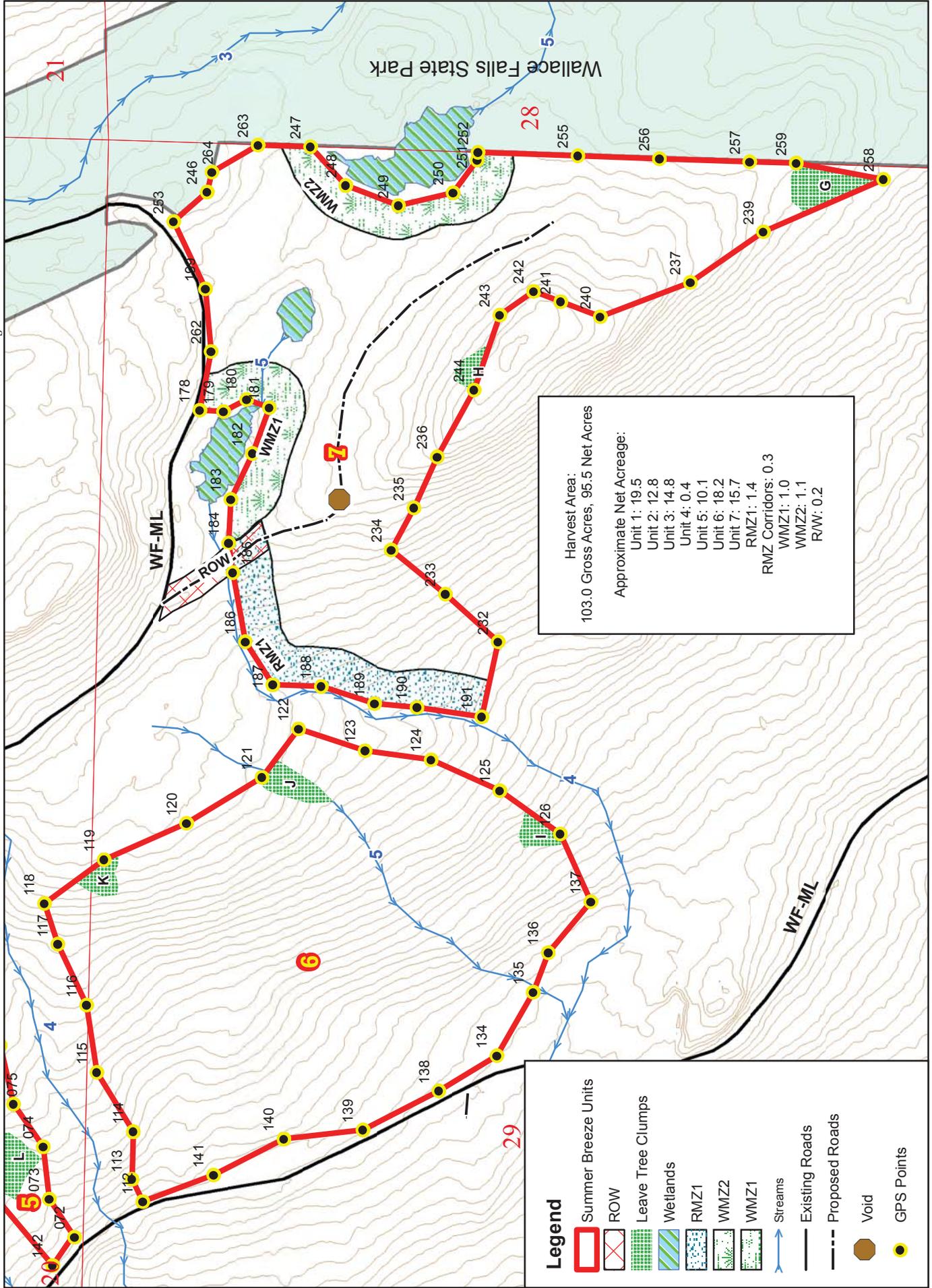
- Summer Breeze Units
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Summer Breeze Timber Sale

Cascade District, Boulder Unit
T28 N, R09 E, Sec 20, 29, 32



800 Feet
400
200
0



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

FPA/N No: 2815313
 Effective Date: 8/22/2016
 Expiration Date: 8/22/2019

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

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

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

THIS OPERATION IS SUBJECT TO THESE CONDITIONS:

No additional condition.

FOR YOUR INFORMATION:

Notify DNR Northwest Region Office (360-856-3500) 48 business hours before commencing timber harvest operations. Please provide the application number and legal description for your operation.

Issued By: Steven Huang *[Signature]*

Region: Northwest

Title: Skykomish Forest Practice Forester

Date: 8/22/2016

Copies to: Landowner, Timber Owner and Operator

Issued in Person: Landowner, Timber Owner Operator By: *[Signature]*

Appeal Information

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

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

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

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

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

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

And

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

Other Applicable Laws

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

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

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

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

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

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

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

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

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

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

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

DNR affidavit of mailing:

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

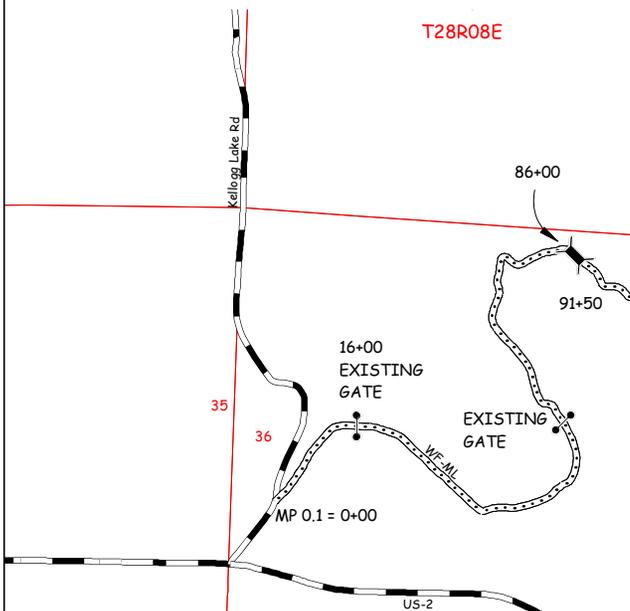
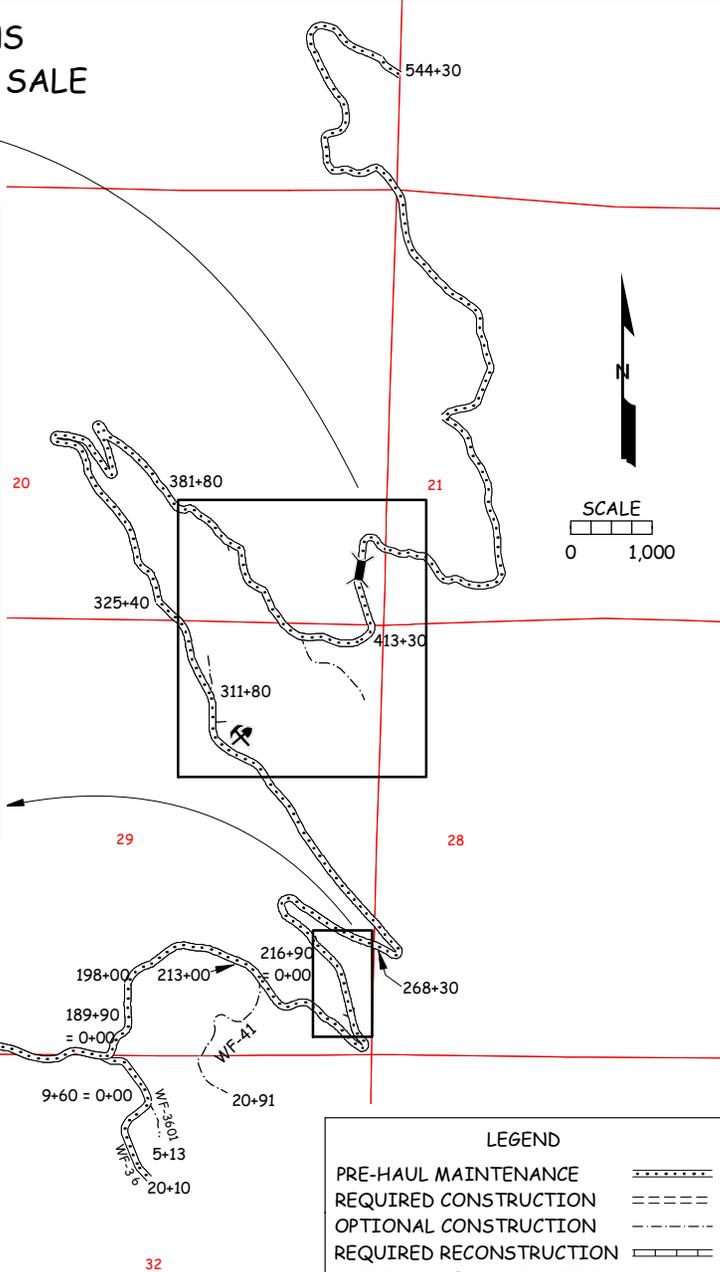
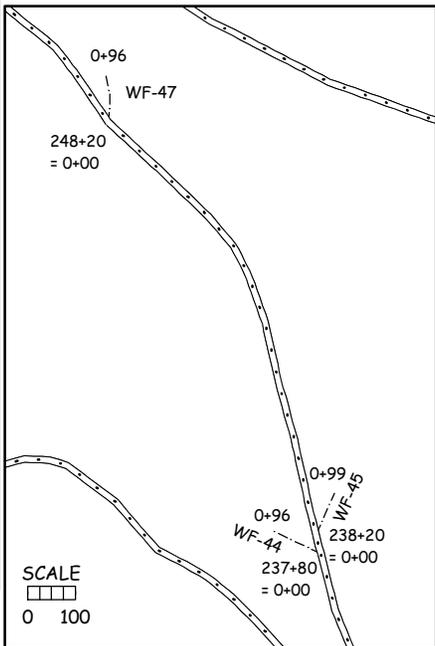
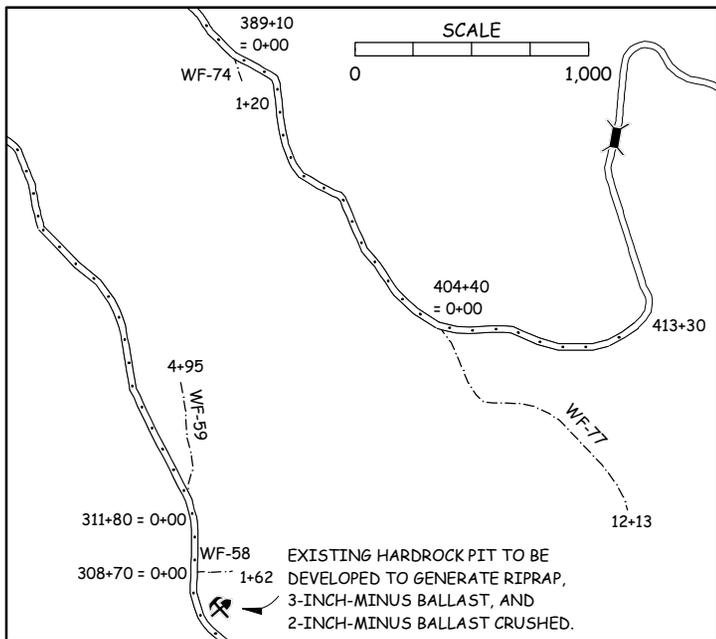
_____ L Utgard _____
(Printed name)

(Signature)



WASHINGTON STATE DEPT OF
**NATURAL
RESOURCES**

ROAD PLAN AND SPECIFICATIONS #30-35875 SUMMER BREEZE TIMBER SALE



T28R08E

T28R09E

SHEET INDEX	
PROJECT MAP.....	1
ROAD CLAUSES	2-22
TYPICAL SECTION.....	23-26
MATERIAL LIST.....	27
STANDARD DETAILS.....	28-30
SPECIAL DETAILS.....	31

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

DESIGNED BY	REVIEWED BY	APPROVED BY	PLAN DATE	SHEET
A. HALGREN	ZYLSTRA 7/7/2016	FIKE 7/11/2016	5/2/2016	1 OF 31

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

SUMMER BREEZE TIMBER SALE ROAD PLAN
SNOHOMISH COUNTY
CASCADE DISTRICT

AGREEMENT NO.: 30-35875

STAFF ENGINEER: A. HALGREN

DATE: MAY 2, 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>
WF-ML	0+00 to 544+30	MAINTENANCE
WF-36	0+00 to 20+10	ABANDONMENT

0-3 OPTIONAL ROADS

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

<u>Road</u>	<u>Stations</u>	<u>Type</u>
WF-36	0+00 to 20+10	MAINTENANCE
WF-3601	0+00 to 5+13	CONSTRUCTION
WF-41	0+00 to 20+91	CONSTRUCTION
WF-44	0+00 to 0+96	CONSTRUCTION
WF-45	0+00 to 0+99	CONSTRUCTION
WF-47	0+00 to 0+96	CONSTRUCTION
WF-58	0+00 to 1+62	CONSTRUCTION
WF-59	0+00 to 4+95	CONSTRUCTION
WF-74	0+00 to 1+20	CONSTRUCTION
WF-77	0+00 to 12+13	CONSTRUCTION

0-4 CONSTRUCTION

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

0-6 PRE-HAUL MAINTENANCE

Pre-haul maintenance includes, but is not limited to brushing, blading, shaping, and ditching the road surface, and application of 3-inch-minus ballast rock.

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

Purchaser shall develop an existing rock source. Rock source development will involve clearing, stripping, drilling, shooting, and processing rock to generate riprap, 3-inch-minus ballast and 2-inch-minus crushed surfacing. Work for developing rock sources is listed in Section 6 ROCK AND SURFACING.

SECTION 1 – GENERAL

1-1 ROAD PLAN CHANGES

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

1-2 UNFORESEEN CONDITIONS

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

1-3 ROAD DIMENSIONS

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

1-4 ROAD TOLERANCES

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

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

1-5 DESIGN DATA

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

1-6 ORDER OF PRECEDENCE

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

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

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

1-7 TEMPORARY ROAD CLOSURE

Purchaser shall notify the Contract Administrator a minimum of 5 business days before any closure of the Wallace Falls Mainline. Purchaser may not close this road over the weekend or for more than 5 calendar days without approval in writing from the Contract Administrator.

1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS

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

1-9 DAMAGED METALLIC COATING

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

1-18 REFERENCE POINT DAMAGE

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

1-20 COMPLETE BY DATE

Purchaser shall complete specified road work by contract termination.

<u>Road</u>	<u>Stations</u>	<u>Comments</u>
WF-ML	0+00 to 544+30	Brushing shall be completed as specified in clause 3-1 and as shown in the attached BRUSHING DETAIL. It is not necessary to complete brushing prior to haul but this work must be completed prior to contract termination.

1-21 HAUL APPROVAL

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

1-25 ACTIVITY TIMING RESTRICTION

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

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

1-29 SEDIMENT RESTRICTION

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

1-30 CLOSURE TO PREVENT DAMAGE

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

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

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

1-33 SNOW PLOWING RESTRICTION

Snowplowing will be allowed after the execution of a SNOW PLOWING AGREEMENT, which is available from the Contract Administrator upon request. If damage occurs while plowing, further permission to plow may be revoked by the Contract Administrator.

SECTION 2 – MAINTENANCE

2-1 GENERAL ROAD MAINTENANCE

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

2-2 ROAD MAINTENANCE – PURCHASER MAINTENANCE

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

2-3 ROAD MAINTENANCE – DESIGNATED MAINTAINER

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

2-5 MAINTENANCE GRADING – EXISTING ROAD

On the following road(s), Purchaser shall use a grader to shape the existing surface before timber haul.

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
WF-ML	86+00 to 91+50	Blade, shape, and ditch in accordance with the dimensions given in the Typical Section Sheet.
WF-ML	189+90 to 198+00	
WF-ML	213+00 to 268+30	
WF-ML	311+80 to 325+40	
WF-ML	381+80 to 397+40	

2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS

On the following road(s), Purchaser shall clean ditches, headwalls, and catchbasins. Work must be completed before timber haul and must be done in accordance with the Typical Section Sheet.

<u>Road</u>	<u>Stations</u>
WF-ML	86+00 to 91+50
WF-ML	189+90 to 198+00
WF-ML	213+00 to 268+30
WF-ML	311+80 to 325+40
WF-ML	381+80 to 397+40

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

3-1 BRUSHING

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

<u>Road</u>	<u>Stations</u>
WF-ML	0+00 to 544+30
WF-36	0+00 to 20+10

3-5 CLEARING

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

3-8 PROHIBITED DECKING AREAS

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

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

3-10 GRUBBING

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

3-20 ORGANIC DEBRIS DEFINITION

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

3-21 DISPOSAL COMPLETION

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

3-23 PROHIBITED DISPOSAL AREAS

Purchaser shall not place organic debris in the following areas:

- Within 50 feet of a cross drain culvert.
- Within 100 feet of a live stream, or wetland
- On road subgrades, or excavation and embankment slopes.
- On slopes greater than 50%.
- Within the operational area for cable landings where debris may shift or roll.
- On locations where brush can fall into the ditch or onto the road surface.
- Against standing timber.

3-24 BURYING ORGANIC DEBRIS RESTRICTED

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

3-25 SCATTERING ORGANIC DEBRIS

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

SECTION 4 – EXCAVATION

4-2 PIONEERING

Pioneering may not extend past construction that will be completed during the current construction season. Pioneering may not extend more than 500 feet beyond completed construction unless approved in writing by the Contract Administrator. In addition, the following actions must be taken as pioneering progresses:

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

4-3 ROAD GRADE AND ALIGNMENT STANDARDS

Purchaser shall follow these standards for road grade and alignment:

- Grade and alignment must have smooth continuity, without abrupt changes in direction.
- Maximum grades may not exceed 18 percent favorable and 15 percent adverse.
- Minimum curve radius is 60 feet at centerline.
- Maximum grade change for sag vertical curves is 5% in 100 feet.
- Maximum grade change for crest vertical curves is 4% in 100 feet.

4-4 SWITCHBACK STANDARDS

A switchback is defined as a curved segment of road between a beginning and end of the same curve, where the change of traffic travel direction is greater than 90 degrees.

Purchaser shall follow these standards for switchbacks:

- Maximum adverse grades for switchbacks is 12%.
- Maximum transition grades entering and leaving switchbacks is a 6% grade change.
- Transition grades required to meet switchback grade limitations must be constructed on the tangents preceding and departing from the switchbacks.

4-5 CUT SLOPE RATIO

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

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

4-6 EMBANKMENT SLOPE RATIO

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

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

4-7 SHAPING CUT AND FILL SLOPE

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

4-8 CURVE WIDENING

The minimum widening placed on the inside of curves is:

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

4-9 EMBANKMENT WIDENING

The minimum embankment widening is:

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

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

4-21 TURNOUTS

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

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

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

4-28 DITCH DRAINAGE

Ditches must drain to cross-drain culverts or ditchouts.

4-29 DITCHOUTS

Purchaser shall construct ditchouts at locations shown on the MATERIALS LIST and as needed or as directed by the Contract Administrator. Ditchouts must be constructed in a manner that diverts ditch water onto the forest floor and must have excavation backslopes no steeper than a 1:1 ratio.

4-35 WASTE MATERIAL DEFINITION

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

4-36 DISPOSAL OF WASTE MATERIAL

Purchaser may sidecast waste material on side slopes up to 50% if the waste material is compacted and free of organic debris. On side slopes greater than 50%, all waste material must be end hauled or pushed to the designated embankment sites and waste areas identified in Clause 4-37 WASTE AREA LOCATION.

4-37 WASTE AREA LOCATION

Purchaser shall deposit waste material in the listed designated areas. Additional waste areas may also be identified or approved by the Contract Administrator. The amount of material allowed in a waste area is as listed.

<u>Road</u>	<u>Waste Area Location</u>	<u>Maximum Quantity</u>
WF-41	STA 7+43 to 8+05	500 cy

4-38 PROHIBITED WASTE DISPOSAL AREAS

Purchaser shall not deposit waste material in the following areas:

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

4-55 ROAD SHAPING

Purchaser shall shape the subgrade and surface as shown on the TYPICAL SECTION SHEET. The subgrade and surface shape must ensure runoff in an even, un-concentrated manner, and must be uniform, firm, and rut-free.

4-60 FILL COMPACTION

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

4-61 SUBGRADE COMPACTION

Purchaser shall compact constructed and reconstructed subgrades by routing equipment over the entire width.

4-70 SUBGRADE REINFORCEMENT

On the following road(s), Purchaser shall provide and install geotextile fabric. Subgrade reinforcement must be installed to a width that is 2 feet more than the subgrade width, including turnouts. Geotextile fabric must overlap by a minimum of 2 feet at all joints. The geotextile fabric must be covered with a minimum of 12 inches of compacted 3-inch-minus ballast rock/gravel ballast. Geotextile fabric must meet the specifications in Clause 10-3 GEOTEXTILE FOR STABILIZATION.

<u>Road</u>	<u>Stations</u>
WF-41	10+28 to 11+75

SECTION 5 – DRAINAGE

5-5 CULVERTS

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

5-11 UNUSED MATERIALS STATE PROPERTY

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

5-15 CULVERT INSTALLATION

Culvert installation must be in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL and the National Corrugated Metal Pipe Association’s "Installation Manual for Corrugated Steel Drainage Structures" and the Corrugated Polyethylene Pipe Association’s "Recommended Installation Practices for Corrugated Polyethylene Pipe and Fittings".

5-16 APPROVAL FOR LARGER CULVERT INSTALLATION

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

5-17 CROSS DRAIN SKEW AND SLOPE

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

5-18 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.

5-20 ENERGY DISSIPATERS

Purchaser shall install energy dissipaters in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL. Energy dissipater installation is subject to approval by the Contract Administrator.

The type of energy dissipater and the amount of material must be consistent with the specifications listed on the CULVERT AND DRAINAGE SPECIFICATION DETAIL.

5-25 CATCH BASINS

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

5-26 HEADWALLS FOR CROSS DRAIN CULVERTS

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

5-27 ARMORING FOR STREAM CROSSING CULVERTS

At stream crossing culvert(s), Purchaser shall place 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 or as directed by the Contract Administrator. Rock may not restrict the flow of water into culvert inlets or catch basins. Placement must be by zero-drop-height method only. No placement by end dumping or dropping of rock is allowed.

SECTION 6 – ROCK AND SURFACING

6-2 ROCK SOURCE ON STATE LAND

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

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
WF-58 Hard Rock Pit	STA 308+70 of the WF-ML road	Riprap, 3-inch-minus ballast and 2-inch-minus crushed surfacing

6-3 ROCK SOURCE STATE LAND, EXISTING STOCKPILE

Rock used in accordance with the quantities on the TYPICAL SECTION and MATERIALS LIST may be obtained from the following existing stockpile(s) on state land at no charge to the Purchaser.

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
WF-58 Hard Rock Pit	STA 308+70 of the WF-ML road	Riprap and 3-inch-minus ballast

6-11 ROCK SOURCE DEVELOPMENT PLAN BY PURCHASER

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

<u>Source</u>	<u>Rock Type</u>
WF-58 Hard Rock Pit	Riprap, 3-inch-minus ballast and 2-inch-minus crushed surfacing

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

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

6-12 ROCK SOURCE SPECIFICATIONS

Rock sources must be in accordance with the following specifications:

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

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

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

6-20 ROCK GRADATION TYPES

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

6-30 2-INCH MINUS CRUSHED ROCK

% Passing 2" square sieve	100%
% Passing 1" square sieve	50 - 85%
% Passing U.S. #4 sieve	30 - 50%
% Passing U.S. #40 sieve	16% maximum
% Passing U.S. #200 sieve	5% maximum

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

6-34 3-INCH MINUS BALLAST ROCK

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

Rock may contain no more than 5 percent organic debris, dirt, and trash.

6-50 LIGHT LOOSE RIP RAP

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

<u>At Least/Not More Than</u>	<u>Weight Range</u>	<u>Size Range</u>
20% / 90%	300 lbs. to 1 ton	20" - 36"
80% / --	50 lbs. to ½ ton	12" - 30"
10% / 20%	50 lbs. max	3" - 8"

6-51 HEAVY LOOSE RIP RAP

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

<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.

6-70 APPROVAL BEFORE ROCK APPLICATION

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

6-71 ROCK APPLICATION

Purchaser shall apply rock in accordance with the specifications and quantities shown on the TYPICAL SECTION. Rock must be spread, shaped, and compacted full width concurrent with rock hauling operations. The Contract Administrator will direct locations for rock that is to be applied as spot patching. Road surfaces must be compacted in accordance with the TYPICAL SECTION by routing equipment over the entire width.

6-73 ROCK FOR WIDENED PORTIONS

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

SECTION 8 – EROSION CONTROL

8-2 PROTECTION FOR EXPOSED SOIL

Purchaser shall provide and evenly spread a 6-inch layer of straw to all exposed soils within 30 feet of a stream or wetland. Soils may not sit exposed during any rain event.

8-15 REVEGETATION

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

8-17 REVEGETATION TIMING

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

8-18 PROTECTION FOR SEED

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

8-19 ASSURANCE FOR SEEDED AREA

Purchaser shall ensure the growth of a uniform and dense crop (at least 50% coverage) of 3-inch tall grass. Purchaser shall reapply the grass seed and fertilizer in areas that have failed to germinate or have been damaged through any cause. Restore eroded or disturbed areas, clean up and properly dispose of eroded materials, and reapply the seed and fertilizer at no addition cost to the state.

8-25 GRASS SEED

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

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

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

8-27 FERTILIZER

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

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

SECTION 9 – POST-HAUL ROAD WORK

9-3 CULVERT MATERIAL REMOVED FROM STATE LAND

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

9-5 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.

9-21 ROAD ABANDONMENT

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

<u>Road</u>	<u>Stations</u>
WF-36	0+00 to 20+10
WF-3601	0+00 to 5+13
WF-41	0+00 to 20+91
WF-44	0+00 to 0+96
WF-45	0+00 to 0+99
WF-47	0+00 to 0+96
WF-58	0+00 to 1+62
WF-59	0+00 to 4+95
WF-74	0+00 to 1+20
WF-77	0+00 to 12+13

9-22 ABANDONMENT

- Remove all ditch relief culverts. The resulting slopes must be 1:1 or flatter. Place and compact the removed fill material in a location that will not erode into any Type 1 through 5 waters or wetlands.
- Remove all culverts in natural drainages. The resulting slopes must be 1 ½ :1 or flatter. Strive to match the existing native stream bank gradient. The natural streambed width must be re-established. Place and compact the removed fill material in a location that will not erode into any Type 1 through 5 waters or wetlands.
- Transport all removed culverts off site. All removed culverts are the property of the Purchaser.
- Construct non-drivable waterbars at natural drainage points and at a spacing that will produce a vertical drop of no more than 20 feet between waterbars and with a maximum horizontal spacing of 400 feet.
- Skew waterbars at least 30 degrees from perpendicular to the road centerline on roads in excess of 3 percent grade.
- Key waterbars into the cut-slope to intercept the ditch. Waterbars must be outsloped to provide positive drainage. Outlets must be on stable locations.
- Inslope or outslope the road as appropriate.
- Remove bridges and other structures.
- Pull back unstable fill that has potential of failing and entering any Type 1 through 5 waters or wetlands. Place and compact removed material in a stable location.
- Remove berms except as designed.
- Block the road by constructing an aggressive barrier of dense interlocked large woody debris (logs, stumps, root wads, etc.) so that four wheel highway vehicles cannot pass the point of abandonment. Typical barrier dimensions are 10 feet high by 20 feet deep, spanning the entire road prism from top of cutslope to toe of fillslope. Long term effectiveness is the primary objective. If necessary construct a vehicular turn-around near the point of abandonment.
- Apply grass seed to all exposed soils resulting from the abandonment work and in accordance with Section 8 EROSION CONTROL.>

SECTION 10 MATERIALS

10-3 GEOTEXTILE FOR STABILIZATION

Geotextiles must meet the following minimum requirements for strength and property qualities, and must be designed by the manufacturer to be used for stabilization or reinforcement, and filtration. Material must 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 must meet AASHTO M-36 (ASTM A-760) specifications. Culverts must be galvanized (zinc coated meeting AASHTO M-218).

10-16 CORRUGATED ALUMINUM CULVERT

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

10-17 CORRUGATED PLASTIC CULVERT

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

10-21 METAL BAND

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

10-22 PLASTIC BAND

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

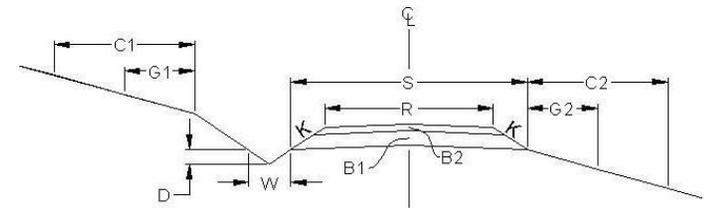
10-24 GAGE AND CORRUGATION

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

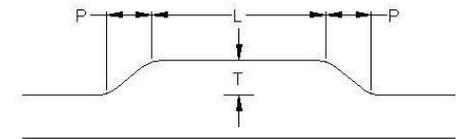
<u>Diameter</u>	<u>Gage</u>	<u>Corrugation</u>
18"	16 (0.064")	2 ² / ₃ " X 1/2"
24" to 48"	14 (0.079")	2 ² / ₃ " X 1/2"
54" to 96"	14 (0.079")	3" X 1"

ROAD #		WF-ML ^{A B}	WF-ML ^B	WF-ML ^{A B}	WF-ML ^B
REQUIRED / OPTIONAL		REQUIRED	REQUIRED	REQUIRED	REQUIRED
CONSTRUCT / RECONSTRUCT		MAINTENANCE	MAINTENANCE	MAINTENANCE	MAINTENANCE
TOLERANCE CLASS (A/B/C)		C	C	C	C
STATION / MP TO		0+00	86+00	91+50	189+90
STATION / MP		86+00	91+50	189+90	198+00
ROAD WIDTH	R	12	12	12	12
CROWN (INCHES @ C/L)		3	3	-	3
DITCH WIDTH	W	3	3	-	3
DITCH DEPTH	D	1	1	-	1
TURNOUT LENGTH	L	50	50	-	50
TURNOUT WIDTH	T	10	10	-	10
TURNOUT TAPER	P	25	25	-	25
GRUBBING	G1	-	5	-	5
	G2	-	5	-	5
CLEARING	C1	-	10	-	10
	C2	-	10	-	10
ROCK FILLSLOPE	K:1	1 ½	1 ½	-	1 ½
❖ BALLAST DEPTH	B1	-	-	-	-
CUBIC YARDS / STATION		-	-	-	-
➤ TOTAL CY BALLAST		-	-	-	-
❖ SURFACING DEPTH	B2	-	6 ^B	-	6 ^B
CUBIC YARDS / STATION		-	34	-	34
➤ TOTAL CY SURFACING		90 ^{A B}	190	120 ^{A B}	280
➤ TOTAL CUBIC YARDS		90	190	120	280
SUBGRADE WIDTH	S	-	13.5	-	13.5
BRUSHCUT (Y/N)		Y	Y	Y	Y
BLADE, SHAPE, & DITCH (Y/N)		N	Y	N	Y

TYPICAL SECTION



TURNOUT DETAIL (PLAN VIEW)



SYMBOL NOTES

- ❖ Specified Rock Depth is FINISHED COMPACTED DEPTH in inches.
- Specified Rock Quantity is LOOSE MEASURE (Truck Cubic Yards) needed to accomplish specified FINISHED COMPACTED DEPTH. Rock quantities include volume for turnouts, curve widening and landings.
- A Rock for spot patching as directed by the contract administrator.
- B Surfacing shall be 2-inch-minus as specified in clause 6-30
- C Proposed road segment is located on an existing abandoned grade (WF-41 from STA 0+00 to 5+99).

Rock Totals Summary

Type	Quantity (Cubic Yards)
Ballast	4150
Rip Rap	142
Surfacing	3680

ROAD #		WF-ML ^A ^B	WF-ML ^B	WF-ML ^A ^B	WF-ML ^B	WF-ML	WF-ML ^B	WF-ML
REQUIRED / OPTIONAL		REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED
CONSTRUCT / RECONSTRUCT		MAINTENANCE	MAINTENANCE	MAINTENANCE	MAINTENANCE	MAINTENANCE	MAINTENANCE	MAINTENANCE
TOLERANCE CLASS (A/B/C)		C	C	C	C	C	C	C
STATION / MP TO		198+00	213+00	268+30	311+80	325+40	381+80	397+40
STATION / MP		213+00	268+30	311+80	325+40	381+80	397+40	544+30
ROAD WIDTH	R	12	12	12	12	12	12	12
CROWN (INCHES @ C/L)		-	3	-	3	-	3	-
DITCH WIDTH	W	-	3	-	3	-	3	-
DITCH DEPTH	D	-	1	-	1	-	1	-
TURNOUT LENGTH	L	-	50	-	50	-	50	-
TURNOUT WIDTH	T	-	10	-	10	-	10	-
TURNOUT TAPER	P	-	25	-	25	-	25	-
GRUBBING	G1	-	5	-	5	-	5	-
	G2	-	5	-	5	-	5	-
CLEARING	C1	-	10	-	10	-	10	-
	C2	-	10	-	10	-	10	-
ROCK FILLSLOPE	K:1	-	1 ½	-	1 ½	-	1 ½	-
❖ BALLAST DEPTH	B1	-	-	-	-	-	-	-
CUBIC YARDS / STATION		-	-	-	-	-	-	-
➤ TOTAL CY BALLAST		-	-	-	-	-	-	-
❖ SURFACING DEPTH	B2	-	6 ^B	50 ^A ^B	6 ^B	-	6 ^B	-
CUBIC YARDS / STATION		-	34	-	34	-	34	-
➤ TOTAL CY SURFACING		50 ^A ^B	1890	50 ^A ^B	470	-	540	-
➤ TOTAL CUBIC YARDS		50	1890	50	470 ^B	-	540 ^B	-
SUBGRADE WIDTH	S	-	-	-	-	-	-	-
BRUSHCUT (Y/N)		Y	Y	Y	Y	Y	Y	Y
BLADE, SHAPE, & DITCH (Y/N)		N	Y	N	Y	N	Y	N

ROAD #		WF-36	WF-3601	WF-41 ^c	WF-41	WF-41	WF-44	WF-45
REQUIRED / OPTIONAL		OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL
CONSTRUCT / RECONSTRUCT		MAINTENANCE	CONSTRUCTION	CONSTRUCTION	CONSTRUCTION	CONSTRUCTION	CONSTRUCTION	CONSTRUCTION
TOLERANCE CLASS (A/B/C)		C	C	C	C	C	C	C
STATION / MP TO		0+00	0+00	0+00	10+28	11+75	0+00	0+00
STATION / MP		20+10	5+13	10+28	11+75	20+91	0+96	0+99
ROAD WIDTH	R	12	12	12	12	12	12	12
CROWN (INCHES @ C/L)		-	3	3	3	3	3	3
DITCH WIDTH	W	-	2	2	2	2	2	2
DITCH DEPTH	D	-	1	1	1	1	1	1
TURNOUT LENGTH	L	-	25	25	25	25	25	25
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 FILLSLOPE	K:1	-	1 ½	1 ½	1 ½	1 ½	1 ½	1 ½
❖ BALLAST DEPTH	B1	-	18	12	18	12	18	18
CUBIC YARDS / STATION		-	114	72	114	72	114	114
➤ TOTAL CY BALLAST		-	590	740	170	660	110	120
❖ SURFACING DEPTH	B2	-	-	-	-	-	-	-
CUBIC YARDS / STATION		-	-	-	-	-	-	-
➤ TOTAL CY SURFACING		-	-	-	-	-	-	-
➤ TOTAL CUBIC YARDS		-	590	740	170	660	110	120
SUBGRADE WIDTH	S	-	16.5	15.0	16.5	15.0	16.5	16.5
BRUSHCUT (Y/N)		Y	N/A	N/A	N/A	N/A	N/A	N/A
BLADE, SHAPE, & DITCH (Y/N)		N	N/A	N/A	N/A	N/A	N/A	N/A

ROAD #		WF-47	WF-58 ^c	WF-59	WF-74	WF-77		
REQUIRED / OPTIONAL		OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL		
CONSTRUCT / RECONSTRUCT		CONSTRUCTION	CONSTRUCTION	CONSTRUCTION	CONSTRUCTION	CONSTRUCTION		
TOLERANCE CLASS (A/B/C)		C	C	C	C	C		
STATION / MP TO		0+00	0+00	0+00	0+00	0+00		
STATION / MP		0+96	1+62	4+95	1+20	12+13		
ROAD WIDTH	R	12	12	12	12	12		
CROWN (INCHES @ C/L)		3	3	3	3	3		
DITCH WIDTH	W	2	2	2	2	2		
DITCH DEPTH	D	1	1	1	1	1		
TURNOUT LENGTH	L	25	25	25	25	25		
TURNOUT WIDTH	T	10	10	10	10	10		
TURNOUT TAPER	P	25	25	25	25	25		
GRUBBING	G1	5	5	5	5	5		
	G2	5	5	5	5	5		
CLEARING	C1	10	10	10	10	10		
	C2	10	10	10	10	10		
ROCK FILLSLOPE	K:1	1 ½	1 ½	1 ½	1 ½	1 ½		
❖ BALLAST DEPTH	B1	18	6	18	18	12		
CUBIC YARDS / STATION		114	34	114	114	72		
➤ TOTAL CY BALLAST		110	60	570	140	880		
❖ SURFACING DEPTH	B2	-	-	-	-	-		
CUBIC YARDS / STATION		-	-	-	-	-		
➤ TOTAL CY SURFACING		-	-	-	-	-		
➤ TOTAL CUBIC YARDS		110	60	570	140	880		
SUBGRADE WIDTH	S	16.5	13.5	16.5	16.5	15.0		
BRUSHCUT (Y/N)		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		

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"		
WF-3601	0+34	18	36	GM	-	-	2	3	L	NT	C			
	3+67	18	32	XX	-	-	3	5	L	NT	C			
WF-41	0+68	18	32	XX	-	-	3	5	L	NT	C	Intercept culvert runoff from WF-ML, above.		
	2+19	18	32	XX	-	-	3	5	L	NT	C			
	5+79	24	36	XX	-	-	5	7	L/H	NT	C			
	9+08	-	-	-	-	-	-	-	-	-	-	Ditchout		
	10+28	18	36	GM	-	-	3	5	L	NT	C			
	11+23	-	-	-	-	-	-	-	-	-	-	Ditchout		
	11+75	-	-	-	-	-	-	-	-	-	-	Ditchout		
	13+30	18	32	GM	-	-	3	5	L	NT	C			
	18+64	18	40	GM	-	-	5	7	L	NT	C			
WF-44	0+00	18	36	GM	-	-	3	5	L	NT	C			
WF-45	0+00	18	36	GM	-	-	3	5	L	NT	C			
WF-47	0+00	-	-	-	-	-	-	-	-	-	-	Ditchout into ditchline of WF-ML		
WF-59	0+00	18	36	GM	-	-	2	3	L	NT	C			
	0+48	18	36	GM	-	-	3	5	L	NT	C			
	3+36	18	36	XX	-	-	3	5	L	NT	C			
WF-77	1+11	36	32	XX	-	-	5	7	L/H	NT	C	Stream		
	1+80	18	36	XX	-	-	3	5	L	NT	C			
	6+76	18	36	XX	-	-	3	5	L	NT	C			
	9+89	18	32	XX	-	-	3	5	L	NT	C			

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

FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

Cuts and Fills

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

Surface

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

Drainage

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

Preventative Maintenance

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

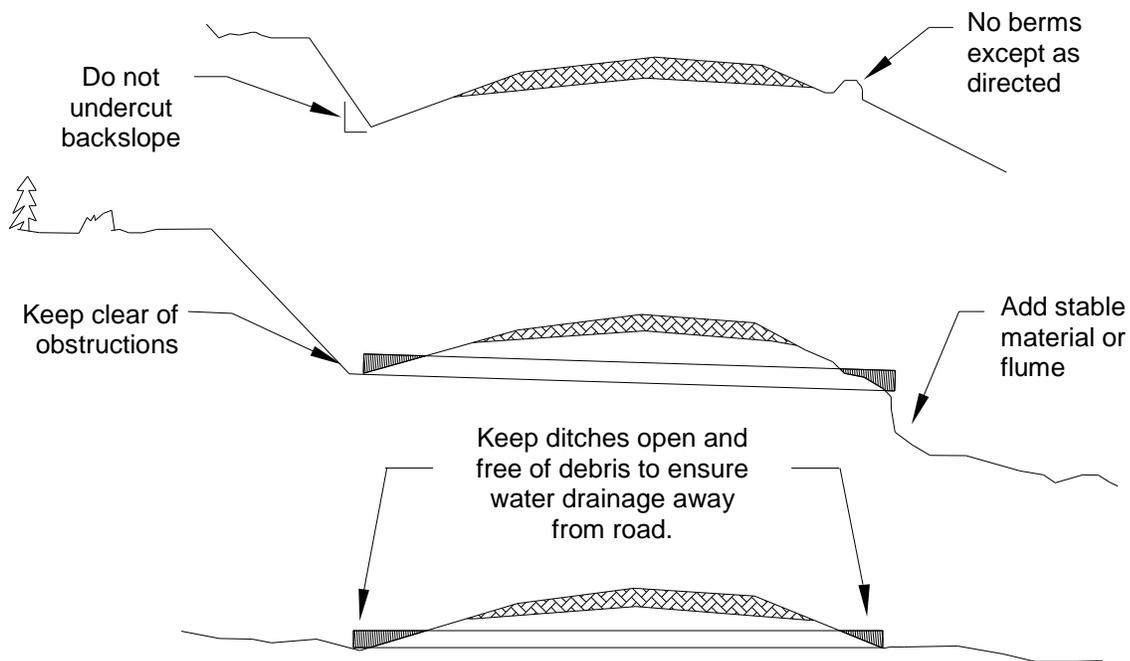
FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

Termination of Use or End of Season

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

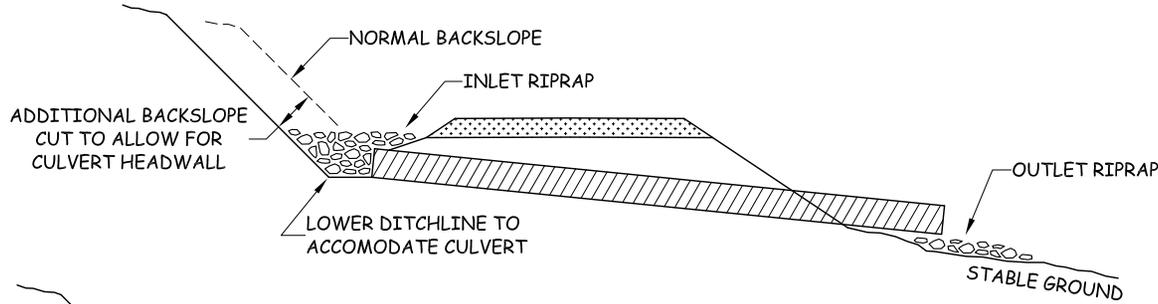
Debris

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

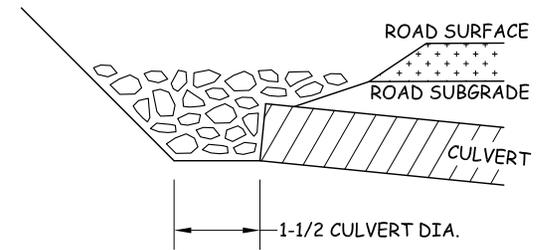


CULVERT AND DRAINAGE SPECIFICATIONS

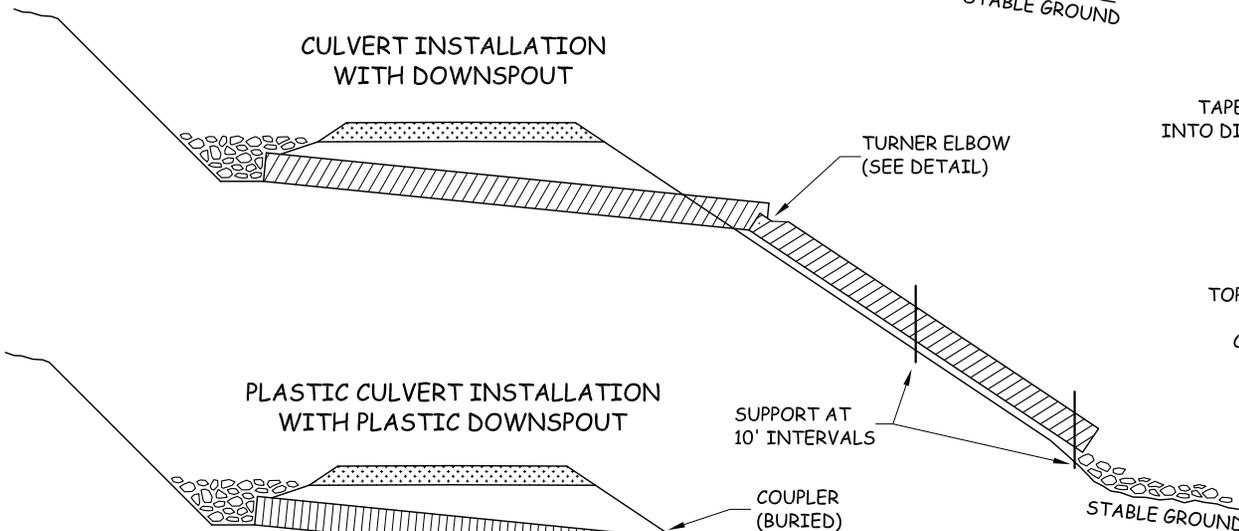
CULVERT INSTALLATION (TYPICAL)



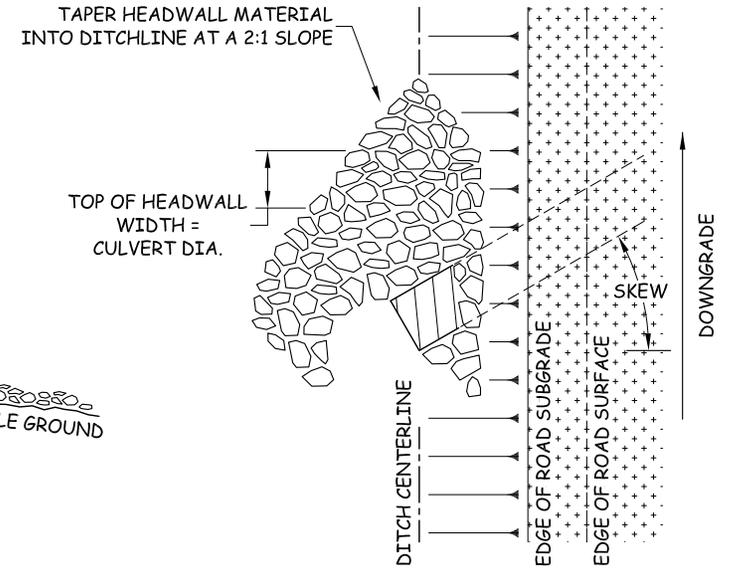
CULVERT HEADWALL - SECTION VIEW



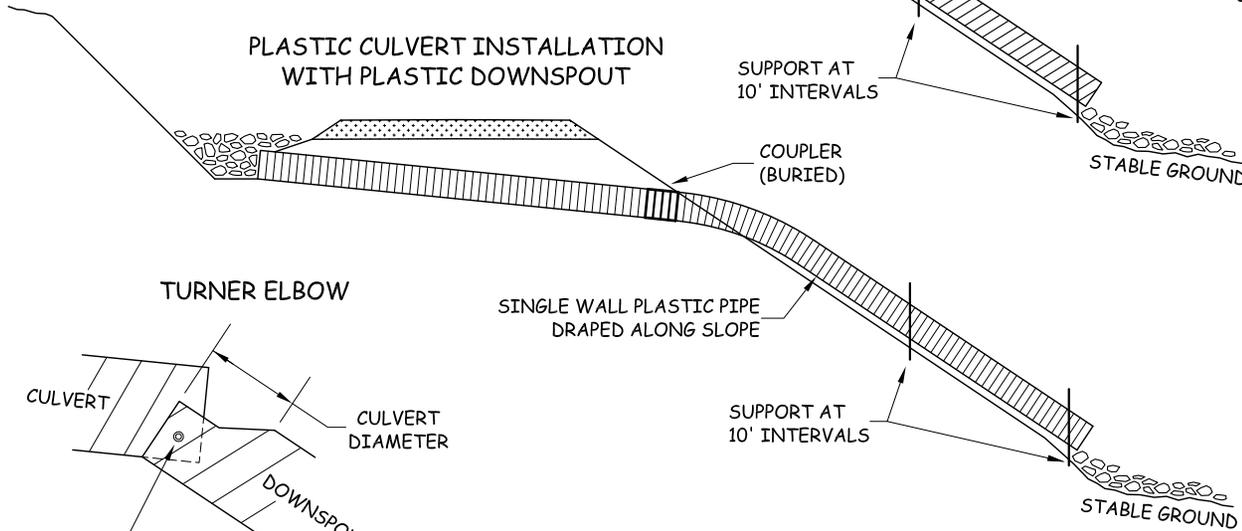
CULVERT INSTALLATION WITH DOWNSPOUT



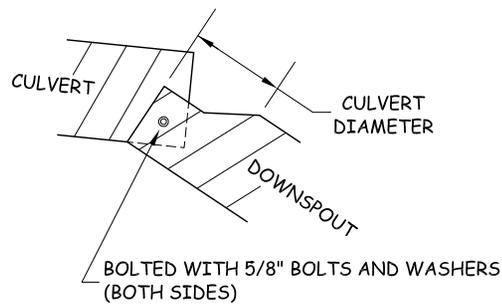
CULVERT HEADWALL - PLAN VIEW



PLASTIC CULVERT INSTALLATION WITH PLASTIC DOWNSPOUT



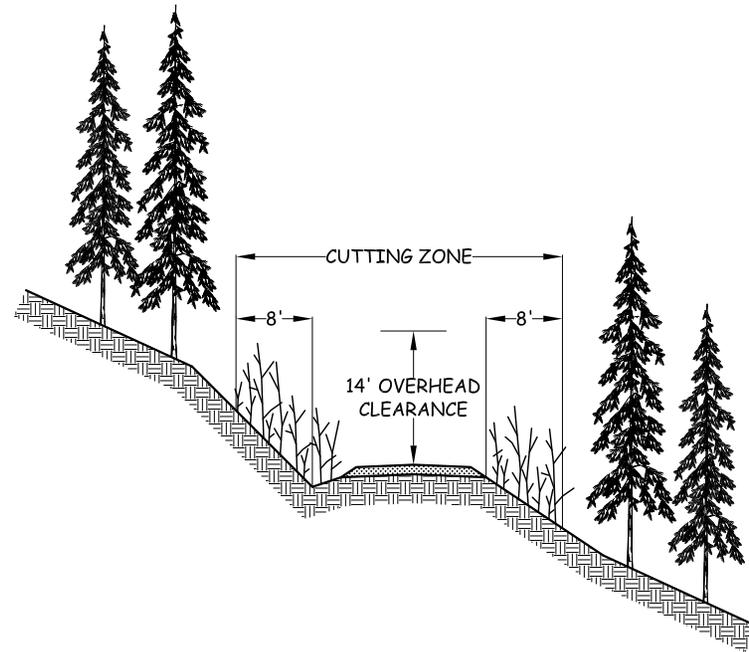
TURNER ELBOW



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
30-35875	SUMMER BREEZE	30 OF 31

ROAD BRUSHING DETAILS



SPECIFICATIONS

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

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

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

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

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

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

DITCHES SHALL BE CLEARED OF WOODY DEBRIS.

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

CONTRACT #	PROJECT	SHEET
30-35875	SUMMER BREEZE	31 OF 31

SUMMARY - Road Development Costs

REGION: NW
DISTRICT: Cascade

SALE/PROJECT NAME: Summer Breeze

CONTRACT #: 30-35875

ROAD NUMBERS: WF-3601, WF-41, WF-44, WF-45, WF-47, WF-58, WF-59, WF- - WF-ML, WF-36

ROAD STANDARD:	Construction	Reconstruction	Maintenance
NUMBER OF STATIONS:	48.85	0.00	564.40
CLEARING & GRUBBING:	\$6,637	\$0	
EXCAVATION AND FILL:	\$7,433	\$0	-
MISC. MAINTENANCE:			\$11,609
ROAD ROCK:	\$51,979	\$0	\$38,153
ROCK STOCKPILE PROD:	-	-	-
CULVERTS AND FLUMES:	\$11,230	\$0	-
STRUCTURES:	-	-	-
MOBILIZATION:	\$7,895	-	-
TOTAL COSTS:	\$85,174	\$0	\$49,762
COST PER STATION:	\$1,744		\$88
ROAD DEACTIVATION & ABANDONMENT COSTS:		\$11,511	

TOTAL (All Roads) = \$146,447
SALE VOLUME MBF = 3715
TOTAL \$/MBF = \$39

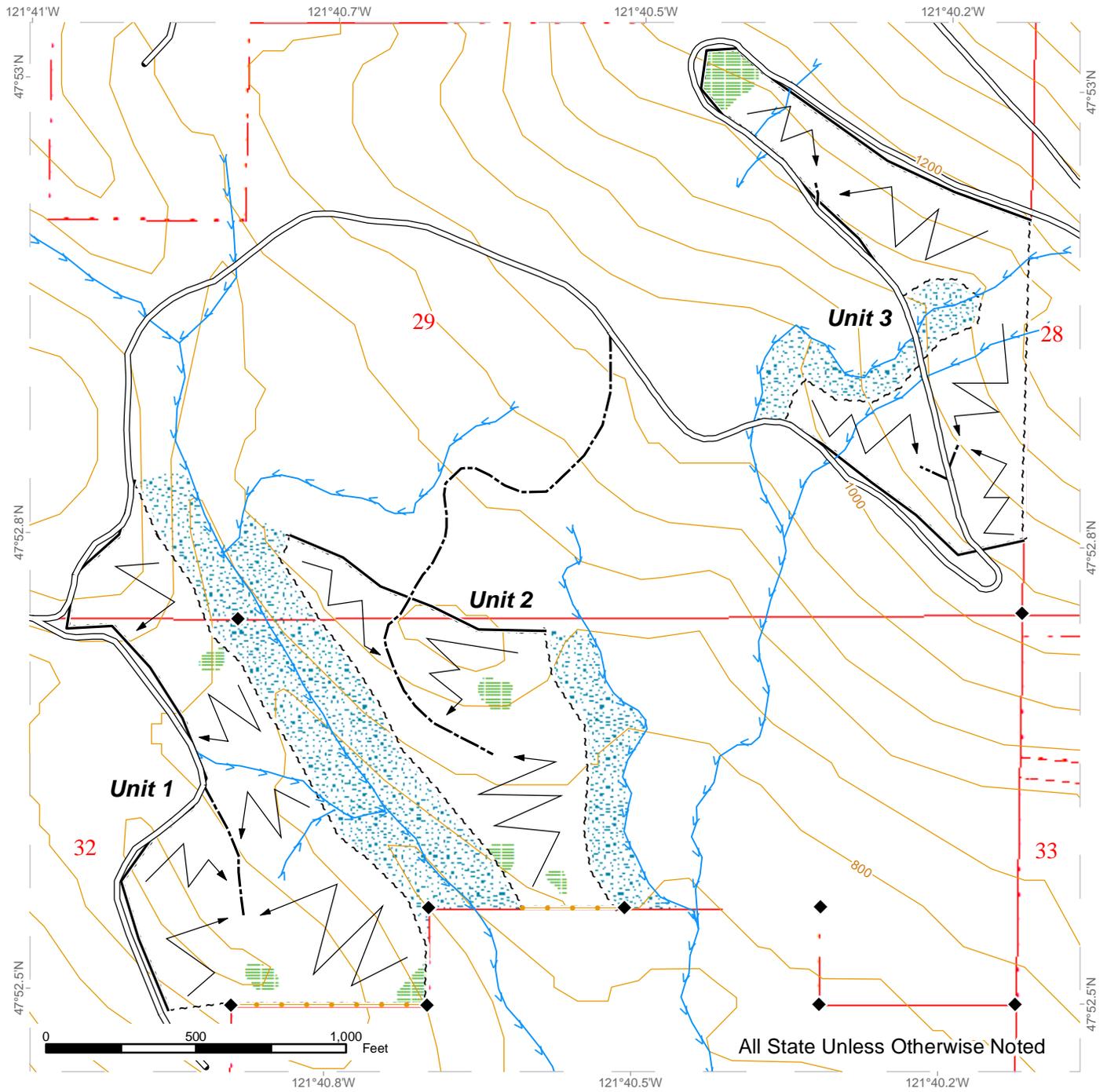
Compiled by: A. Halgren

Date: 42549

LOGGING PLAN MAP

SALE NAME: SUMMER BREEZE
 AGREEMENT#: 93731
 TOWNSHIP(S): T28R09E
 TRUST(S): State Forest Transfer(1)

REGION: Northwest Region
 COUNTY(S): SNOHOMISH
 ELEVATION RGE: 736-1854



All State Unless Otherwise Noted

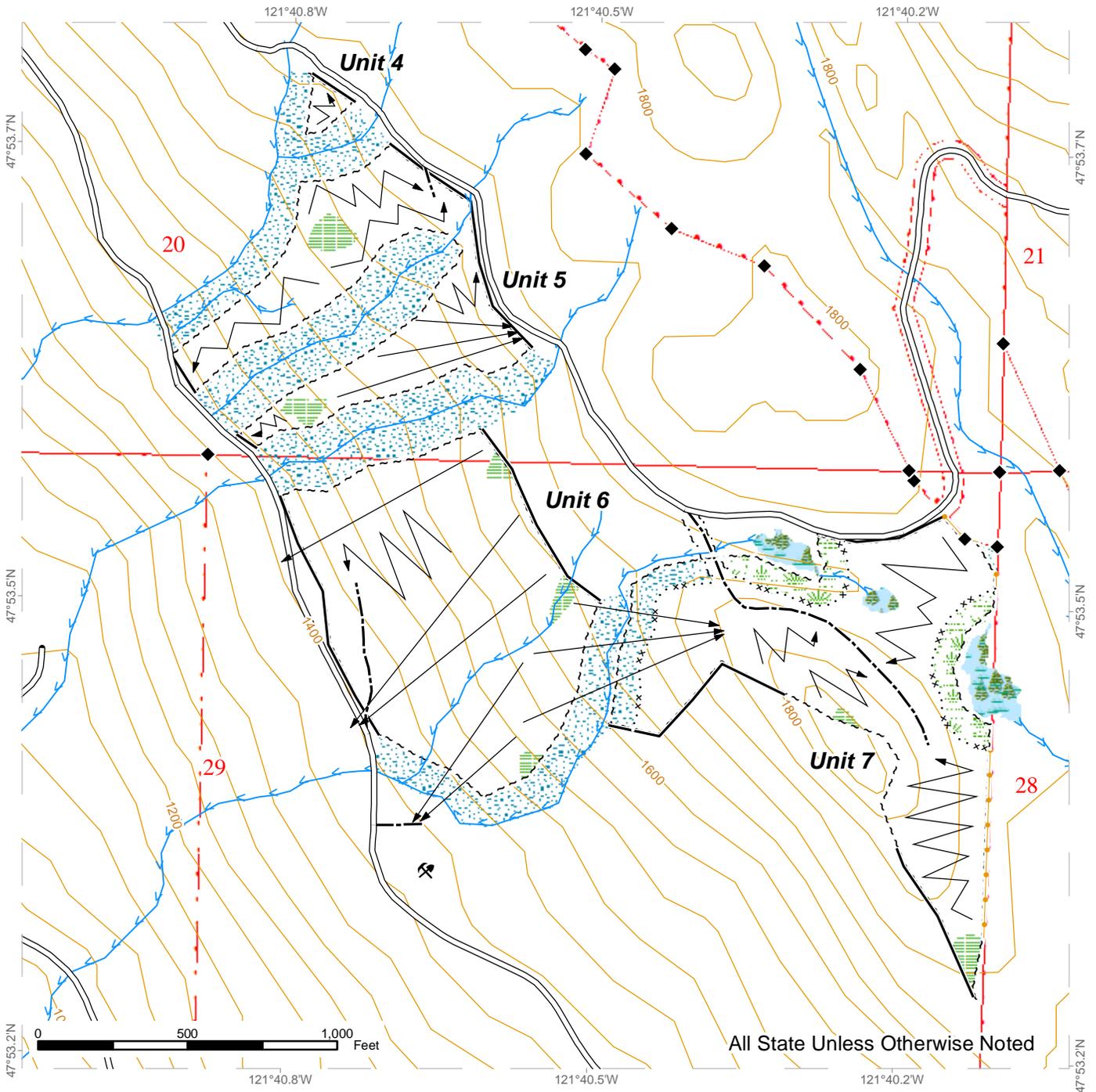
--- Sale Boundary Tags	Forested Wetland	Stream Type
— Sale Boundary (No Tags)	Leave Tree Area	* Stream Type Break
...xx Special Mgmt Area	Riparian Mgt Zone	◆ Monumented Corners
- - - Right of Way Tags	Wetland Mgt Zone	Existing Rock Pit
● Take / Removal Trees	Existing Roads	Ground Based Yarding
Proposed Construction	Streams	Cable Yarding



LOGGING PLAN MAP

SALE NAME: SUMMER BREEZE
 AGREEMENT#: 93731
 TOWNSHIP(S): T28R09E
 TRUST(S): State Forest Transfer(1)

REGION: Northwest Region
 COUNTY(S): SNOHOMISH
 ELEVATION RGE: 736-1854



All State Unless Otherwise Noted

--- Sale Boundary Tags	Forested Wetland	Stream Type
— Sale Boundary (No Tags)	Leave Tree Area	* Stream Type Break
...xx Special Mgmt Area	Riparian Mgt Zone	◆ Monumented Corners
- - - Right of Way Tags	Wetland Mgt Zone	⚡ Existing Rock Pit
●— Take / Removal Trees	Existing Roads	↗ Ground Based Yarding
	Proposed Construction	→ Cable Yarding
	Streams	

