

## TIMBER NOTICE OF SALE

**SALE NAME:** *DYNO VRH & VDT*

**AGREEMENT NO:** *30-092303*

**AUCTION:** April 27, 2016 starting at 10:00 a.m.,  
Northwest Region Office, Sedro Woolley, WA

**COUNTY:** Snohomish

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

**PRODUCTS SOLD  
AND SALE AREA:**

All timber bounded by white timber sale boundary tags and BPA powerline right of way, except trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags and cedar snags, preexisting dead and down cedar trees and cedar logs in the Unit #1 (collectively labeled 1A, 1B and 1C).

All timber bounded by white timber sale boundary tags, the MY-04 road, and adjacent young stands, except trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags, and cedar snags, preexisting dead and down cedar trees and cedar logs in Unit #2 (collectively labeled as 2A, 2B and 2C).

All timber as described for removal in Schedule B, bounded by white timber sale boundary tags, and blue special management tags, except forest products tagged out by yellow leave tree area tags, and cedar snags, preexisting dead and down cedar trees and cedar logs in Unit #3.

All timber bounded by white timber sale boundary tags, blue special management tags, and adjacent young forest stands, except forest products tagged out by yellow leave tree area tags and cedar snags, preexisting dead and down cedar trees and cedar logs in the Unit #4.

All timber (including those trees with orange paint demarcating the boundary), bounded by white timber sale boundary tags, adjacent young stand and trees marked with orange paint except trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags, and cedar snags, preexisting dead and down cedar trees and cedar logs in Unit #5 (collectively labeled as 5A and 5B).

All timber bounded by white timber sale boundary tags and BPA powerline right of way, except trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags, and cedar snags, preexisting dead and down cedar trees and cedar logs in Unit #6.

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 timber as described for removal in Schedule B.

The above described products on part(s) of Sections 2, 11 and 12 all in Township 27 North, Range 9 East, W.M., containing 116 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	Total \$/MBF	MBF by Grade								
					1P	2P	3P	SM	1S	2S	3S	4S	UT
Douglas fir	18	8	1,922	\$33.00				75		1,139	599	71	38
Hemlock	13	9	1,095	\$33.00						218	659	89	129
Red alder	14		415	\$97.00						89	139	162	25
Red cedar	14		325	\$671.00							279	46	
Cottonwood	22		64	\$20.00					26	33		4	1
Maple	22		59	\$20.00						47	2	5	5
Sale Total			3,880										

**MINIMUM BID:** \$33/MBF (est. value \$360,000.00)      **BID METHOD:** Sealed Bids

**PERFORMANCE SECURITY:** \$72,000.00      **SALE TYPE:** MBF Scale

**EXPIRATION DATE:** March 31, 2019      **ALLOCATION:** Export Restricted

**BIDDABLE SPECIES:** Hemlock, Douglas fir combined.

**BID DEPOSIT:** \$36,000.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

**HARVEST METHOD:** Cable; cable, tracked grapple skidder, or forwarder on sustained slopes 35% or less, however, tracked grapple skidders are limited only to Unit 3 with prior written permission of 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:** 43.23 stations of required construction. 109.70 stations of required reconstruction. 116.92 stations of optional construction. 19.70 stations of optional reconstruction. 35.90 stations of existing road to be abandoned. 108.52 stations of road to be abandoned if built.

Rock may be obtained from the following source(s) on State land at no charge to the Purchaser: DF-21 gravel pit at Station 111+80 of the DF-ML Road. MY-0417 proposed hard rock pit at Station 88+00 of the MY-04 Road. MY-0422-02 proposed hard rock pit at Station 8+40 of the MY-0422 Road. MY-0425-01 proposed hard rock pit at Station 6+85 of the MY-0425 Road.

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

An estimated total quantity of rock needed for this proposal: 434 cubic yards of riprap and 17,640 cubic yards of ballast rock.

Additional restrictions apply, see Remarks section below.

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

## TIMBER NOTICE OF SALE

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products will not be permitted from November 1 to March 31 unless authorized in writing by the Contract Administrator to reduce soil damage and siltation.

### ACREAGE DETERMINATION

**CRUISE METHOD:** Acres determined by GPS traverse. 126.2 acres gross. 3.3 acres deducted for green tree retention clumps, 2.5 acres deducted for existing road acres, and 4.9 acres deducted for exclusion area. 115.5 acres net. Cruised using variable plot method. Expansion factor used is 40.00 and 54.45 Sighting height is 4.5 feet. A total of 103 plots were taken.

Shapefiles of units are available upon request.

**FEES:** \$68,870.00 is due on day of sale. \$9.00 per MBF is due upon removal. These are in addition to the bid price.

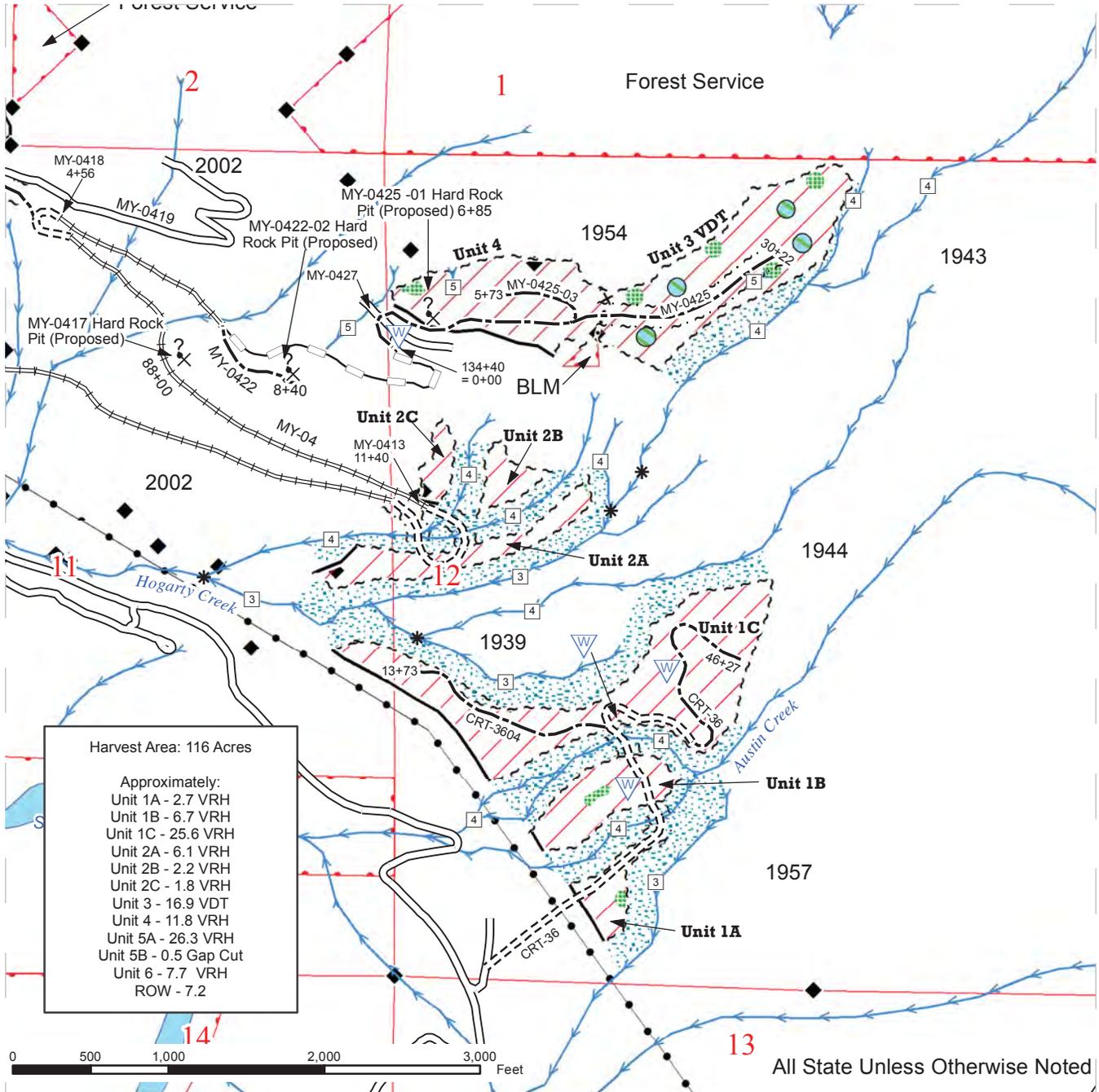
**SPECIAL REMARKS:**

1. HQ DF noted within the sale area. See cruise for further details (approximately 424 mbf of the above listed DF 2S is deemed high quality by the Department).
2. Outer boundary of Unit #5B Special Management Unit (SMU) is not marked on the ground. Gaps are located within the unit. Take all trees within gaps bounded by white timber sale boundary tags and orange painted trees.
3. An on-site pre-work meeting with the Purchaser and a BPA representative must be coordinated by the Contract Administrator and held prior to the commencement of any work to discuss safety and harvesting guidelines when working around BPA transmission lines. Purchaser is required to develop a safety plan for all operations (including road work) to occur in the proximity of the BPA powerlines, and must be approved in writing by the Contract Administrator, prior to commencement of any activities on site. Sample documents regarding work safety around powerlines are available at the Northwest Region office.
4. Cutting and yarding in Unit #3 will 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 will vary depending on weather conditions. If permission is granted to operate during the bark slippage season the Purchaser will be required to provide a plan outlining mitigation measure.
5. The historic trail marked with pink flagging located in the eastern portion of Unit #5A shall be protected to the maximum extent practicable. Ground-based equipment crossings shall be kept to a minimum, located by the Purchaser and approved by the Contract Administrator prior to use.
6. A steel gate and lockbox, supplied by the State, must be installed within 30 days of the commencement of road construction operations in accordance with the STEEL GATE DETAIL in the Road Plan.
7. Intermediate supports may be necessary for yarding the southeast portion of Unit 5A.

# TIMBER SALE MAP

**SALE NAME:** DYNO VRH & VDT  
**AGREEMENT#:** 92303  
**TOWNSHIP(S):** T27R09E  
**TRUST(S):** State Forest Transfer(1), Common School and Indemnity(3)

**REGION:** Northwest Region  
**COUNTY(S):** SNOHOMISH  
**ELEVATION RGE:** 541-1879



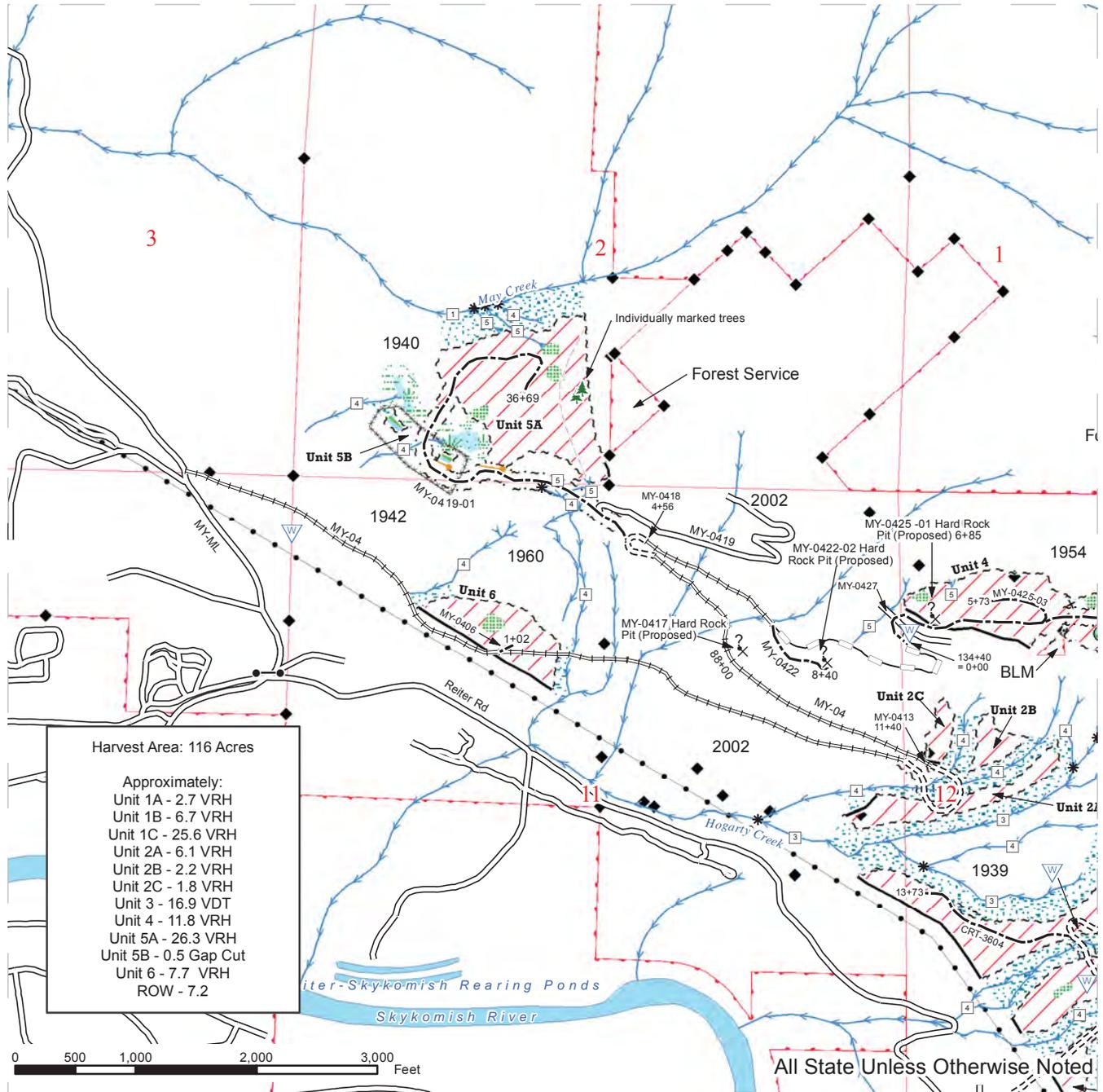
Harvest Area: 116 Acres  
 Approximately:  
 Unit 1A - 2.7 VRH  
 Unit 1B - 6.7 VRH  
 Unit 1C - 25.6 VRH  
 Unit 2A - 6.1 VRH  
 Unit 2B - 2.2 VRH  
 Unit 2C - 1.8 VRH  
 Unit 3 - 16.9 VDT  
 Unit 4 - 11.8 VRH  
 Unit 5A - 26.3 VRH  
 Unit 5B - 0.5 Gap Cut  
 Unit 6 - 7.7 VRH  
 ROW - 7.2

Sale Area	Required Construction	Streams
Sale Boundary Tags	Optional Construction	Stream Type
Sale Boundary (No Tags)	Required Reconstruction	Stream Type Break
Sale Boundary (Orange painted take trees)	Optional Reconstruction	Survey Corners
Special Management Unit Tags	Existing Roads	Waste Area
Special Management Unit (No Tags)	Wetlands	Potential Rock Source
Historic Trail	Wetland Management Zone	Gate
BPA Powerlines	Riparian Management Zone	Non-Tradable Leave Trees
Right of Way Tags	Leave Tree Area	
DNR Managed Lands	Gap Cuts	

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 Approximately:  
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 Unit 5A - 26.3 VRH  
 Unit 5B - 0.5 Gap Cut  
 Unit 6 - 7.7 VRH  
 ROW - 7.2

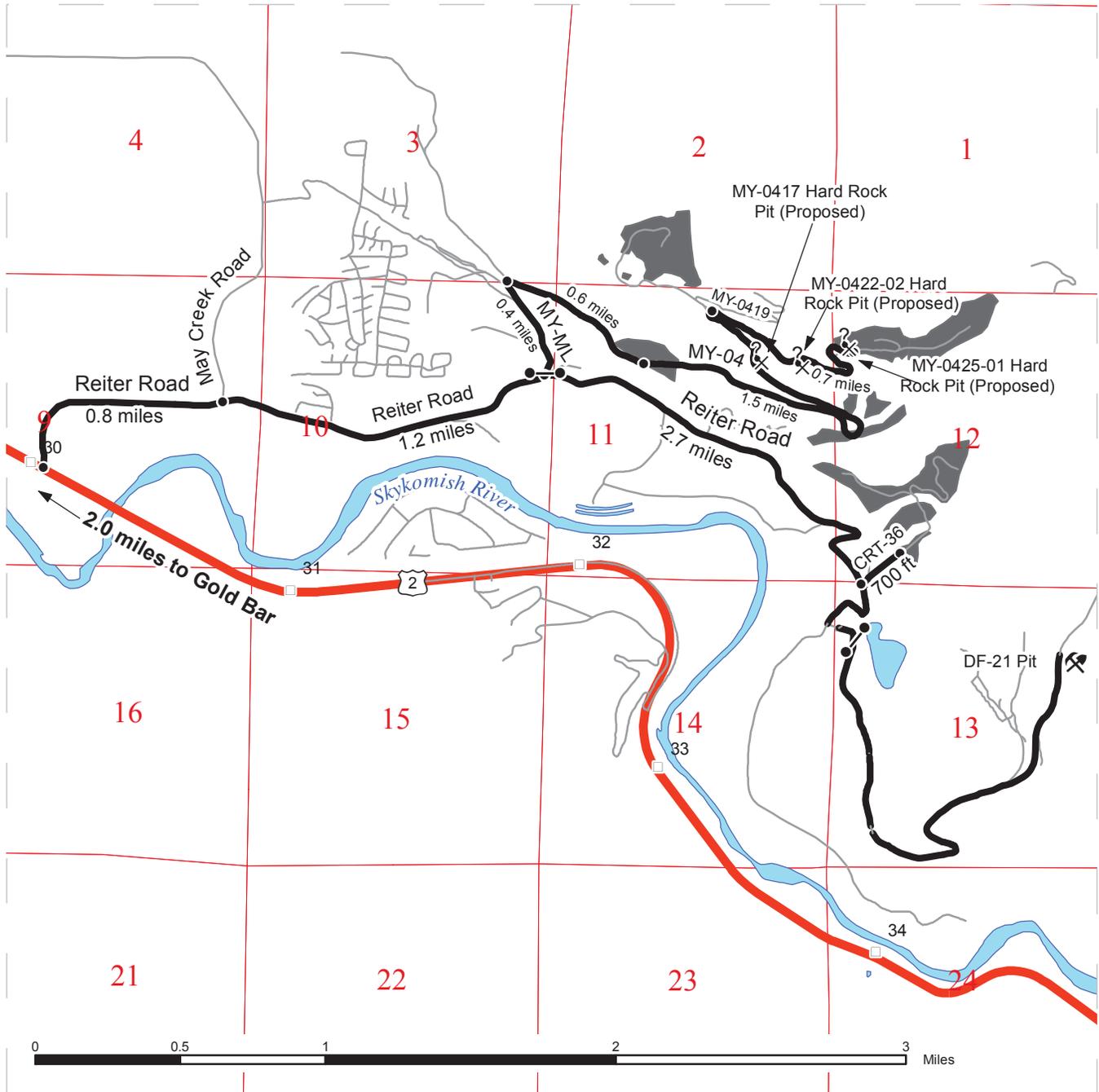
Sale Area	Required Construction	Streams
Sale Boundary Tags	Optional Construction	Stream Type
Sale Boundary (No Tags)	Required Reconstruction	Stream Type Break
Sale Boundary (Orange painted take trees)	Optional Reconstruction	Survey Corners
Special Management Unit Tags	Existing Roads	Waste Area
Special Management Unit (No Tags)	Wetlands	Potential Rock Source
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# DRIVING MAP

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**REGION:** Northwest Region  
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- Timber Sale Unit
- Highways
- Haul Route
- Other Route
- Gate
- Distance Indicator
- ? Potential Rock Source

**DRIVING DIRECTIONS:**

Directions to Units 1A-1C: Travel 2.0 miles east on U.S. Highway 2 from Gold Bar. Turn left onto Reiter Road. Follow Reiter Road for 0.8 miles to where it intersects with May Creek Road. Bear right to continue on Reiter Road. Continue 2.7 miles on Reiter Road to reach a parking area with the abandoned road CRT-36. Continue 200 feet on CRT-36 then bear right onto staked line. Proceed on the staked line for another 700 feet through the power line ROW until you arrive at Unit 1A.

Directions to Units 2A-6: Travel 2.0 miles east on U.S. Highway 2 from Gold Bar. Turn left onto Reiter Road. Follow Reiter Road for 0.8 miles to where it intersects with May Creek Road. Bear right to continue on Reiter Road. Continue 1.2 miles on Reiter Road to reach the May Creek Mainline gate (MY-ML) on the left (north) of the road. A F-1 key is needed to access the MY-ML. Continue on the MY-ML for 0.4 of a mile and you will arrive at an intersection, shortly after passing the power line ROW. At this intersection, turn right onto MY-04, and continue for another 0.6 miles until you arrive at Unit 6. From there, continue up MY-04 for 0.6 miles to Unit 2C, 1.4 miles to Unit 5B, and 2.1 miles to Unit 4.



**STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES**

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

**Export Restricted MBF Scale AGREEMENT NO. 30-092303**

**SALE NAME: DYN0 VRH & VDT**

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

Section G: General Terms

G-001 Definitions

The following definitions apply throughout this contract;

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

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

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

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

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

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

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

#### G-010 Products Sold and Sale Area

Purchaser was the successful bidder on April 27, 2016 and the sale was confirmed on \_\_\_\_\_. The State, as owner, agrees to sell to Purchaser, and Purchaser agrees to purchase, cut, and remove the following forest products: All timber bounded by white timber sale boundary tags and BPA powerline right of way, except trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags and cedar snags, preexisting dead and down cedar trees and cedar logs in the Unit #1 (collectively labeled 1A, 1B and 1C).

All timber bounded by white timber sale boundary tags, the MY-04 road, and adjacent young stands, except trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags, and cedar snags, preexisting dead and down cedar trees and cedar logs in Unit #2 (collectively labeled as 2A, 2B and 2C).

All timber as described for removal in Schedule B, bounded by white timber sale boundary tags, and blue special management tags, except forest products tagged out by yellow leave tree area tags, and cedar snags, preexisting dead and down cedar trees and cedar logs in Unit #3.

All timber bounded by white timber sale boundary tags, blue special management tags, and adjacent young forest stands, except forest products tagged out by yellow leave tree area tags and cedar snags, preexisting dead and down cedar trees and cedar logs in the Unit #4.

All timber (including those trees with orange paint demarcating the boundary), bounded by white timber sale boundary tags, adjacent young stand and trees marked with orange paint except trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags, and cedar snags, preexisting dead and down cedar trees and cedar logs in Unit #5 (collectively labeled as 5A and 5B).

All timber bounded by white timber sale boundary tags and BPA powerline right of way, except trees marked with blue paint on the bole and root collar,

forest products tagged out by yellow leave tree area tags, and cedar snags, preexisting dead and down cedar trees and cedar logs in Unit #6.

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 timber as described for removal in Schedule B.

The above described products, located on approximately 116 acres on part(s) of Sections 2, 11, and 12 all in Township 27 North, Range 9 East W.M. in Snohomish County(s) as shown on the attached timber sale map and as designated on the sale area.

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

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

G-020 Inspection By Purchaser

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

G-025 Schedules

The following attached schedules are hereby incorporated by reference:

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

G-030 Contract Term

Purchaser shall remove the forest products conveyed and complete all work required by this contract prior to March 31, 2019.

G-040 Contract Term Adjustment - No Payment

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

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

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

#### G-050 Contract Term Extension - Payment

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

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

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

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

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

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

- e. Payment of \$30.00 per acre per annum for the acres on which an operating release has not been issued in the Variable Retention Harvest areas. Payment

of \$3.00 per acre per annum for the acres on which an operating release has not been issued in Variable Density Thinning (VDT) area.

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

**G-053 Surveys - Sensitive, Threatened, Endangered Species**

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

**G-060 Exclusion of Warranties**

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

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

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

#### G-062 Habitat Conservation Plan

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

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

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

#### G-063 Incidental Take Permit Notification Requirements

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

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

G-064 Permits

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

G-065 Regulatory Disclaimer

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

G-066 Governmental Regulatory Actions

a. Risk

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

b. Sale Area

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

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

c. Adjustment of Price

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

G-070 Limitation on Damage

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

G-080 Scope of State Advice

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

G-090 Sale Area Adjustment

The Parties may agree to adjustments in the sale area boundary. The cumulative changes to the sale area during the term of the contract shall not exceed more than four percent of the original sale area. If the sale area is increased, added forest products

become a part of this contract and shall be paid for at the same rate and manner as other forest products under this contract.

G-100 Forest Products Not Designated

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

G-105 Adding Naturally Damaged Forest Products

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

G-110 Title and Risk of Loss

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

G-116 Sustainable Forestry Initiative® (SFI) Certification

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

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

G-120 Responsibility for Work

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

## G-121 Exceptions

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

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

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

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

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

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

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

## G-140 Indemnity

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

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

G-150 Insurance

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

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

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

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

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

Purchaser shall include all subcontractors as insured under all required insurance policies, or shall furnish separate certificates of insurance and endorsements for each subcontractor. Subcontractor(s) must comply fully with all insurance requirements

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

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

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

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

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

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

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

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

Workers' Compensation Coverage. Purchaser shall comply with all State of Washington workers' compensation statutes and regulations. Workers' compensation coverage shall be provided for all employees of Purchaser and employees of any subcontractor or sub-subcontractor. Coverage shall include bodily injury (including

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

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

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

#### G-160 Agents

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

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

#### G-170 Assignment and Delegation

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

G-180 Modifications

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

G-190 Contract Complete

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

G-200 Notice

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

G-210 Violation of Contract

G-220 State Suspends Operations

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

G-210 Violation of Contract

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

**G-220 State Suspends Operation**

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

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

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

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

**G-230 Unauthorized Activity**

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

**G-240 Dispute Resolution**

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

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

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

G-250 Compliance with All Laws

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

G-260 Venue

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

G-270 Equipment Left on State Land

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

G-280 Operating Release

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

G-310 Road Use Authorization

Purchaser is authorized to use the following State roads and roads for which the State has acquired easements and road use permits; MY-ML, MY-04, MY-0406, MY-0413, MY-0418, MY-0418-01, MY-0419, MY-0419-01, MY-0422, MY-0425, MY-0425-03, MY-0427, CRT-36, CRT-3604, and DF-ML. 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:

Dyno Cutting Line Agreement with U.S. Bureau of Land Management (BLM) dated July 8, 2015.

G-430 Open Fires

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

G-450 Encumbrances

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

DATA MISSING

Section P: Payments and Securities

P-010 Initial Deposit

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

to ensure full payment of the contract price, or not needed to complete any remaining obligations of the Purchaser existing after contract expiration, will be refunded to the Purchaser.

P-021 Payment for Forest Products

Purchaser agrees to pay the following rates per MBF Scribner net log scale for forest products conveyed and cut or removed from the sale area plus \$68,870.00 on day of sale and \$9.00 per MBF upon removal in fees. Fees collected shall be retained by the state unless the contract is adjusted via the G-066 clause.

DATA MISSING

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

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

P-027 Payment for Removal of Optional Forest Products

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

P-040 Weighing and Scaling Costs

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

P-045 Guarantee of Payment

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

P-050 Billing Procedure

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

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

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

P-080 Payment Account Refund

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

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

P-090 Performance Security

Purchaser agrees to furnish, within 30 days of the confirmation date, security acceptable to the State in the amount of \$72,000.00. The Security provided shall guarantee performance of all provisions of this contract and payment of any damages caused by operations under this contract or resulting from Purchaser's noncompliance with any rule or law. Acceptable performance security may be in the form of a performance bond, irrevocable letter of credit, cash, savings or certificate of deposit account assignments, and must name the State as the obligee or beneficiary. A letter of credit must comply with Title 62A RCW, Article 5. Performance security must remain in full force over the duration of the contract length. Surety bonds issued shall conform to the issuance and rating requirements in clause G-150. The State shall retain the performance security pursuant to RCW 79.15.100. Purchaser shall not operate unless the performance security has been accepted by the State. If at any time the State decides that the security document or amount has become unsatisfactory, Purchaser agrees to suspend operations and, within 30 days of notification, to replace the security with one acceptable to the State or to supplement the amount of the existing security.

P-100 Performance Security Reduction

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

Section L: Log Definitions and Accountability

L-010 Forest Products Conveyed

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

L-020 Short Logs - Peeler Blocks

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

L-060 Load Tickets

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

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

## L-071 Log and Load Reporting Service

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

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

## L-080 Scaling Rules

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

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

## L-110 State Approval of Log Scaling and Weighing Locations

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

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

## L-120 Long Log Taper Distribution

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

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

L-130 Conversion Factors

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

Section H: Harvesting Operations

H-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

Falling and Yarding will not be permitted from November 1 to March 31 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-015 Skid Trail Requirements

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

Purchaser shall comply with the following during the yarding operation:

- a. Skid trails will not exceed 14 feet in width, including rub trees.
- b. Skid trails shall not cover more than 15 percent of the total acreage on one unit.
- c. Skid trail location will be pre-approved by the Contract Administrator.

- d. Except for rub trees, skid trails shall be felled and yarded prior to the felling of adjacent timber.
- e. Rub trees shall be left standing until all timber tributary to the skid trail has been removed.
- f. Excessive soil damage is not permitted. Excessive soil damage is described in clause H-017.
- g. Skid trails will be water barred at the time of completion of yarding, if required by the Contract Administrator.

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

#### H-017 Preventing Excessive Soil Disturbance

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

#### H-030 Timber Falling

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

#### H-035 Fall Trees Into Sale Area

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

#### H-040 Purchaser Harvest Plan

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

#### H-050 Rub Trees

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

#### H-052 Branding and Painting

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

designated as export restricted shall also be painted in a manner that meets the requirements of WAC 240-15-030(2)(a)(ii).

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

H-080 Snags Not to be Felled

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

H-110 Stump Height

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

H-120 Harvesting Equipment

Forest products sold under this contract shall be felled by chainsaw and yarded by cable; felled by chainsaw, feller-buncher, or cut-to-length harvester and yarded by cable, tracked grapple skidder, or forwarder on sustained slopes 35% or less, however, tracked grapple skidders are limited only to Unit 3 with prior written permission of 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 over all streams.

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 prior to commencement of any activities on-site.
- B. A copy of the timber sale prospectus map and contract shall be present on-site during active operations.

- C. Intermediate supports may be necessary for the southeast portion of Unit 5A. 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.
- D. 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.
- E. Maintain a 30-foot equipment limitation zone on either side of all type-5 streams.
- F. When thinning in RMZs, heavy equipment must stay 25 feet back from the white timber sale boundary tags.
- G. Ground-based equipment crossings over type 5 streams shall be located by Purchaser and approved by Contract Administrator before use.
- H. Ground-based yarding shall not exceed 600 feet from any road unless authorized in writing by the Contract Administrator.
- I. Yarding Corridor Requirements for Unit 3 (in addition to those outlined in Schedule B).
- a. Location of the yarding corridors must be marked by Purchaser and approved by the Contract Administrator prior to use.
  - b. Ground-based corridors will be limited to 14 feet including rub trees and cable corridors will be limited to 12 feet. Ground-based corridors will be at least 70 feet apart when parallel as measured from the center of the corridors, and cable corridors will be at least 100 feet apart where the corridor leaves the unit as measured from the center of the corridors. Purchaser will not have more than two ground-based yarding corridors open to active yarding at any one time. All other ground-based yarding corridors used for yarding timber will not be active.
  - c. Once a yarding corridor is closed, which will include water bars if necessary; purchaser will not reopen a yarding corridor unless approved in writing by the Contract Administrator.
  - d. Where possible corridors should be located in a manner to minimize the damage to or removal of leave trees. Following completion of yarding of each corridor, rub trees that do not meet take tree specifications may be left standing.
- J. Cutting and yarding in Unit 3 will 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 will vary depending on

weather conditions. If permission is granted to operate during the bark slippage season the purchaser will be required to provide a plan outlining mitigation measure.

- K. Cable yarding corridors across Type 4 streams may be necessary to harvest Unit 2B. These shall be marked by the Purchaser and approved by the Contract Administrator, in writing, prior to the felling of any trees within the unit.
- L. A corridor/skid trail will be required to access the western gap cut in Unit 5B. This must be located by the Purchaser and approved by the Contract Administrator, in writing, prior to the felling of any trees within the unit.
- M. Equipment shall not deviate from authorized equipment trails/corridors in Unit 3. Specifically, no trekking of equipment off authorized trails to progress to another corridor or to return to haul road.
- N. No tops or limbs will be allowed to accumulate on any landings in Unit 3. Tops and limbs will be redistributed in the unit to the satisfaction of the Contract Administrator.
- O. Leave trees may be traded for unmarked trees of similar size and wildlife characteristics upon prior approval by the Contract Administrator except those shown on the timber sale map as non-tradeable.
- P. Trees with orange “Right-of-Way” tags in Unit 3 can be considered for thinning if the trees meet the prescriptions from Schedule B.
- Q. Trees with a white “Timber Sale Boundary” tag and/or trees with blue “Special Management Unit Boundary” tags in Unit 3 shall NOT be considered for thinning. (i.e. these tagged trees shall not be felled.)
- R. Signs indicating logging operations are in progress, shall be placed at both access points off of the Reiter Road and on the MY-04 Road at or just beyond Unit 2C. Wording and sign locations shall be approved, in writing, by the Contract Administrator prior to posting. Signs shall be provided and maintained at the Purchaser’s expense. Additional signs shall be placed at the beginning of the MY-0426 Road and at the end of the reconstruction of the MY-04 Road.
- S. Trees must be felled away from the Power line right-of-way.
- T. A steel gate and lockbox, supplied by the State, must be installed within 30 days of the commencement of road construction operations in accordance with the STEEL GATE DETAIL in the Road Plan.

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. An on-site pre-work meeting with the Purchaser and a BPA representative must be coordinated by the Contract Administrator and held prior to the commencement of any work to discuss safety and harvesting guidelines when working around BPA transmission lines. Purchaser is required to develop a safety plan for all operations (including road work) to occur in the proximity of the BPA powerlines, and must be approved in writing by the Contract Administrator, prior to commencement of any activities on site. Sample documents regarding work safety around powerlines are available at the State’s region office.
- B. The historic trail marked with pink flagging located in the eastern portion of Unit #5A shall be protected to the maximum extent practicable. Ground-based equipment crossings shall be kept to a minimum, located by the Purchaser and approved by the Contract Administrator prior to use.
- C. Purchaser shall notify the Contract Administrator one (1) month prior to commencement of cutting and yarding operations in Unit #5A.
- D. Tail-holding on US Forest Service land adjacent to Units 3 and 5A is not permitted.

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

H-150 Required Removal of Forest Products

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

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

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

**H-157 Optional Removal of Forest Products Not Designated**

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

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

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

**H-160 Mismatch**

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

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

**H-180 Removal of Specialized Forest Products or Firewood**

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

**H-190 Completion of Settings**

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

**H-220 Protection of Residual or Adjacent Trees**

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

**H-230 Tops and Limbs Outside the Sale Boundary**

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

**H-240 Lop and Scatter**

The tops of all felled trees shall be lopped and slash scattered away from leave trees .

**Section C: Construction and Maintenance****C-040 Road Plan**

Road construction and associated work provisions of the Road Plan for this sale, dated 9/14/2015 are hereby made a part of this contract.

**C-050 Purchaser Road Maintenance and Repair**

Purchaser shall perform work at their own expense on MY-04, MY-0406, MY-0413, MY-0418, MY-0418-01, MY-0419, MY-0419-01, MY-0422, MY-0425, MY-0425-03, MY-0427, CRT-36, and CRT-3604 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 MY-ML AND DF-ML roads. Purchaser shall furnish a statement in a form satisfactory to the State showing the costs incurred while performing this work. Costs shall be based on the rates set forth in the State current Equipment Rate Schedule on file at the region and Olympia offices. The State shall reimburse Purchaser for said costs within 30 days of receipt and approval of the statement.

**C-080 Landing Locations Approved Prior to Construction**

Landings shall be marked by Purchaser and approved by the Contract Administrator prior to construction.

**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-120 Stream Protection

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

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.

S-150 Recreation Trail Cleanout

At the completion of logging operations within Unit 5A, Purchaser shall repair any damage to and clean out all logging debris from recreational trail(s).

Section D: Damages

D-010 Liquidated Damages

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

D-020 Failure to Remove Forest Products

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

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

Where:

LD = Liquidated Damage value.

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

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

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

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

Where:

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

#### D-030 Inadequate Log Accountability

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

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

D-040 Leave Tree Excessive Damage

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

D-041 Reserve Tree Excessive Damage

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

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

STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

\_\_\_\_\_  
Purchaser

\_\_\_\_\_  
Jean Fike  
Northwest Region Manager

Date: \_\_\_\_\_

Date: \_\_\_\_\_

Address:

CORPORATE ACKNOWLEDGEMENT

STATE OF \_\_\_\_\_ )

COUNTY OF \_\_\_\_\_ )

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me personally appeared \_\_\_\_\_

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

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

\_\_\_\_\_  
Notary Public in and for the State of

\_\_\_\_\_  
My appointment expires \_\_\_\_\_

**Schedule A**  
**NW Ground-Based Equip Specifications (Rev11/05/14)**

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

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

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

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

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

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

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

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

**FOR ALL YARDING:**

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

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

**WHEN SHOVEL YARDING IS AUTHORIZED:**

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

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

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

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

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

**Schedule B**  
**Thinning Prescription**

Trees with orange right of way tags may be cut if they meet the prescription below.

Trees with a white “Timber Sale Boundary” tag and/or trees with blue “Special Management Unit Boundary” tags in Unit 3 shall NOT be considered for thinning. (i.e. these tagged trees shall not be felled.)

Unit 3 VDT

- Residual stand must average 215 square feet of basal area per acre. Calculation of basal area shall include corridor area acreage.
- A minimum of 115-125 trees per acre shall be maintained throughout the unit. Calculation of trees per acre shall include corridor area acreage.

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

- 1) Cut all hardwoods 8 inches DBH and larger
- 2) Western hemlock 8 to 14.5 inches DBH
- 3) Douglas-fir 8 to 14 inches DBH

In the riparian area within 25 feet of white “Timber Sale Boundary” tags 5 trees from the largest thinned DBH class shall be marked by the Purchaser for approval by the Contract Administrator and subsequently felled by the Purchaser towards nearest stream. Up to 2 of these 5 trees may 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 gap cuts, to facilitate yarding or road construction, or those which pose safety hazards, and must be approved by the Contract Administrator (CA).

Trees marked with orange bands indicate the perimeter of gap cuts. All trees within and including those marked with orange bands shall be cut.

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.

\*Only live conifer trees 8 inches or greater in DBH shall be used to calculate trees per acre and basal area. Conifer trees that are less than 8 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 orange painted gap cuts as identified on the timber sale map.

The Contract Administrator (CA) 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:** Northwest

**Timber Sale Name:** Dyno

**Application Number:** 30- 092303

#### EXCISE TAX APPLICABLE ACTIVITIES

**Construction:** 5,163 linear feet  
*Road to be constructed (optional and required) but not abandoned*

**Reconstruction:** 11030 linear feet  
*Road to be reconstructed (optional and required) but not abandoned*

**Abandonment:** 1680 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:** 10852 linear feet  
*Optional roads to be constructed and then abandoned*

**Temporary Optional Reconstruction:** 1910 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: <b>DYNO</b>	Region: <b>Northwest</b>
Agreement #: <b>30-092303</b>	District: <b>Cascade</b>
Contact Forester: John VanHollebeke Phone / Location: Granite Falls / (360) 691-7677	County(s): <b>Snohomish</b>
Alternate Contact: Jason Teller Phone / Location: Granite Falls / (360) 691-7677	Other information:

Type of Sale: <b>MBF Scale</b>	
Harvest System: <b>Ground-based</b>	80%
Harvest System: <b>Uphill Cable</b>	10%
Harvest System: <b>Downhill Cable</b>	10%

### UNIT ACREAGES AND METHOD OF DETERMINATION:

Unit # Harvest R/W or RMZ WMZ	Legal Description (Enter only one legal for each unit)  Sec/Twp/Rng	Grant or Trust	Gross Proposal Acres	Deductions from Gross Acres (No harvest acres)				Net Harvest Acres	Acreage Determination  (List method and error of closure if applicable)
				RMZ/ WMZ Acres	Leave Tree Acres	Existing Road Acres	Other Acres (describe)		
1A VRH	12/T27/R09E	3	3.1		0.2	0.2		2.7	GPS (Garmin)/GIS
1B VRH	12/T27/R09E	1, 3	6.9		0.2			6.7	GPS (Garmin)/GIS
1C VRH	12/T27/R09E	1	25.9			0.3		25.6	GPS (Garmin)/GIS
2A VRH	12/T27/R09E	1	6.3		0.1	0.1		6.1	GPS (Garmin)/GIS
2B VRH	12/T27/R09E	1	2.2					2.2	GPS (Garmin)/GIS
2C VRH	12/T27/R09E	1, 3	1.8					1.8	GPS (Garmin)/GIS
3 VDT	12/T27/R09E	1	19.9		1.0		2.0 (ROW4)	16.9	GPS (Garmin)/GIS
4 VRH	12/T27/R09E	1,3	13.0		0.3	0.9		11.8	GPS (Garmin)/GIS
5A VRH	2/T27/R09E	1	27.3		1.0			26.3	GPS (Garmin)/GIS
5B SMU*	2/T27/R09E	1	3.4				2.9*	0.5	GPS (Garmin)/GIS
6 VRH	11/T27/R09E	1	9.2		0.5	1.0		7.7	GPS (Garmin)/GIS
ROW1	12/T27/R09E	1,3	0.8					0.8	L x W
ROW2	12/T27/R09E	1	0.6					0.6	L x W
ROW3	2/T27/R09E	1	2.6					2.6	L x W
ROW4	12/T27/R09E	1	2.0					2.0	L x W
ROW5	12/T27/R09E	3	0.5					0.5	L x W
ROW6	12/T27/R09E	1	0.4					0.4	L x W
ROW7	12/T27/R09E	1	0.3					0.3	L x W
<b>TOTAL ACRES</b>			<b>126.2</b>		<b>3.3</b>	<b>2.5</b>	<b>4.9</b>	<b>115.5</b>	

### HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription: (Leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
1A VRH	Variable Retention Harvest (VRH): Take all trees bounded by white "Timber Sale Boundary" tags and the BPA powerline ROW. Leave tree areas are marked with yellow "Leave Tree Area" tags.		24 clumped leave trees Total: 24
1B VRH	Variable Retention Harvest (VRH): Take all trees bounded by white "Timber Sale Boundary" tags and the BPA powerline ROW. Leave tree areas are marked with yellow "Leave Tree Area" tags and/or individual trees with blue paint.		15 scattered leave trees 40 clumped leave trees Total: 55
1C VRH	Variable Retention Harvest (VRH): Take all trees bounded by white "Timber Sale Boundary" tags and the BPA powerline ROW. Leave tree areas are individual trees marked with blue paint.		205 scattered leave trees Total: 205
2A VRH	Variable Retention Harvest (VRH): Take all trees bounded by white "Timber Sale Boundary" tags and the adjacent young stand. Leave tree areas are marked with yellow "Leave Tree Area" tags and/or individual trees with blue paint.		25 scattered leave trees 25 clumped leave trees Total: 50
2B VRH	Variable Retention Harvest (VRH): Take all trees bounded by white "Timber Sale Boundary" tags. Leave tree areas are individual trees marked with blue paint.		18 scattered leave trees Total: 18
2C VRH	Variable Retention Harvest (VRH): Take all trees bounded by white "Timber Sale Boundary" tags, the adjacent young stand and MY-04 road. Leave tree areas are individual trees marked with blue paint.		14 scattered leave trees Total: 14
3 VDT	Variable Density Thinning (VDT): Thin to prescription all trees bounded by white "Timber Sale Boundary" tags and blue "Special Management Unit Boundary" tags. Leave tree areas (skips) are marked with yellow "Leave Tree Area" tags. Gaps are marked with orange painted trees around the perimeter. Take all trees within orange painted perimeter <u>including</u> the orange painted trees.	Blue "Special Management Unit Boundary" tags mark boundary between VRH and VDT. These tags face unit 4 VRH.	1 acre of gaps 1 acre of leave tree clumps (skips)  See thinning prescription for thinning detail.
4 VRH	Variable Retention Harvest (VRH): Take all trees bounded by white "Timber Sale Boundary" tags and the adjacent young stand. Leave tree areas are marked with yellow "Leave Tree Area" tags and/or individual trees with blue paint.		20 scattered leave trees 77 clumped leave trees Total: 97
5A VRH	Variable Retention Harvest (VRH): Take all trees bounded by white "Timber Sale Boundary" tags and orange painted trees. Leave tree areas are marked with yellow "Leave Tree Area" tags and/or individual trees with blue paint.		20 scattered leave trees 198 clumped leave trees Total: 218

5B SMU	Special Management Unit (SMU): Boundary is not marked on ground. Gaps are located within the SMU boundary. Take all trees within gaps bounded by white "Timber Sale Boundary" tags and orange painted trees.		No leave trees marked
6 VRH	Variable Retention Harvest (VRH): Take all trees bounded by white "Timber Sale Boundary" tags and the BPA powerline ROW. Leave tree areas are marked with yellow "Leave Tree Area" tags and/or individual trees with blue paint.		9 scattered leave trees 57 clumped leave trees Total: 66

**OTHER PRE-CRUISE INFORMATION:**

Unit #	Primary, secondary Species / Estimated Volume (MBF)	Access information (Gates, locks, etc.)	Photos, traverse maps required
1A VRH	WH/DF/WRC 90 MBF	Access from Reiter Rd. using CRT-36	See attached pre-cruise and vicinity map.
1B VRH	WH/DF/WRC 210 MBF	Same as above.	Same as above.
1C VRH	WH/DF/WRC 780 MBF	Same as above.	Same as above.
2A VRH	WH/DF/WRC 90 MBF	Access from Reiter Rd. F-1 key is needed for locked MY-ML gate.	Same as above.
2B VRH	WH/DF/WRC 60 MBF	Same as above.	Same as above.
2C VRH	WH/DF/WRC 50 MBF	Same as above.	Same as above.
3 VRH	WH/DF/WRC 190 MBF	Same as above.	Same as above.
3 Gaps	WH/DF/WRC 40 MBF	Same as above.	Same as above.
4 VRH	WH/DF/WRC 450 MBF	Same as above.	Same as above.
5A VRH	WH/DF/WRC 850 MBF	Same as above.	Same as above.
5B VRH	WH/DF/WRC 20 MBF	Same as above.	Same as above.
6 VRH	WH/DF/WRC 150 MBF	Same as above.	Same as above.
ROW1	WH/DF/WRC 8 MBF	Same as above.	Same as above.
ROW2	WH/DF/WRC 6 MBF	Same as above.	Same as above.
ROW3	WH/DF/WRC 90 MBF	Same as above.	Same as above.
ROW4	WH/DF/WRC 90 MBF	Same as above.	Same as above.
ROW5	WH/DF/WRC 9 MBF	Access off Reiter Rd. using CRT-36	Same as above.
ROW6	WH/DF/WRC 9 MBF	Same as above	Same as above.

ROW7	WH/DF/WRC 8 MBF	Same as above.	Same as above.
TOTAL MBF	3,200 MBF		

**REMARKS:**

\*SMU – Special Management Unit (Unit 5B), boundary not marked on ground. Only 0.5 acres is being treated in gap cuts (Two 1/4 acre harvest units). The remaining 2.9 acres are not being treated, therefore are deducted from unit acreage.

Unit 3 VDT has 4 leave tree areas (skips) and 4 gaps at ¼ acre each. The acreage was determined by locating a center point and spinning a 58-foot radius to establish their perimeter. The perimeter of the "skips" are marked with yellow "Leave Tree Area" tags and the perimeter of the gaps are marked with orange paint.

Corridor acreage for Unit 3 VDT was estimated at 2.5 acres.

See Schedule B for thinning prescription detail.

Right of Way (ROW) acreage determination for all units: 60 feet width multiplied by length of ROW

Corridor Acreage for Unit 5B SMU was estimated at 0.04 acres.

GPS points are marked with lime and pink flagging

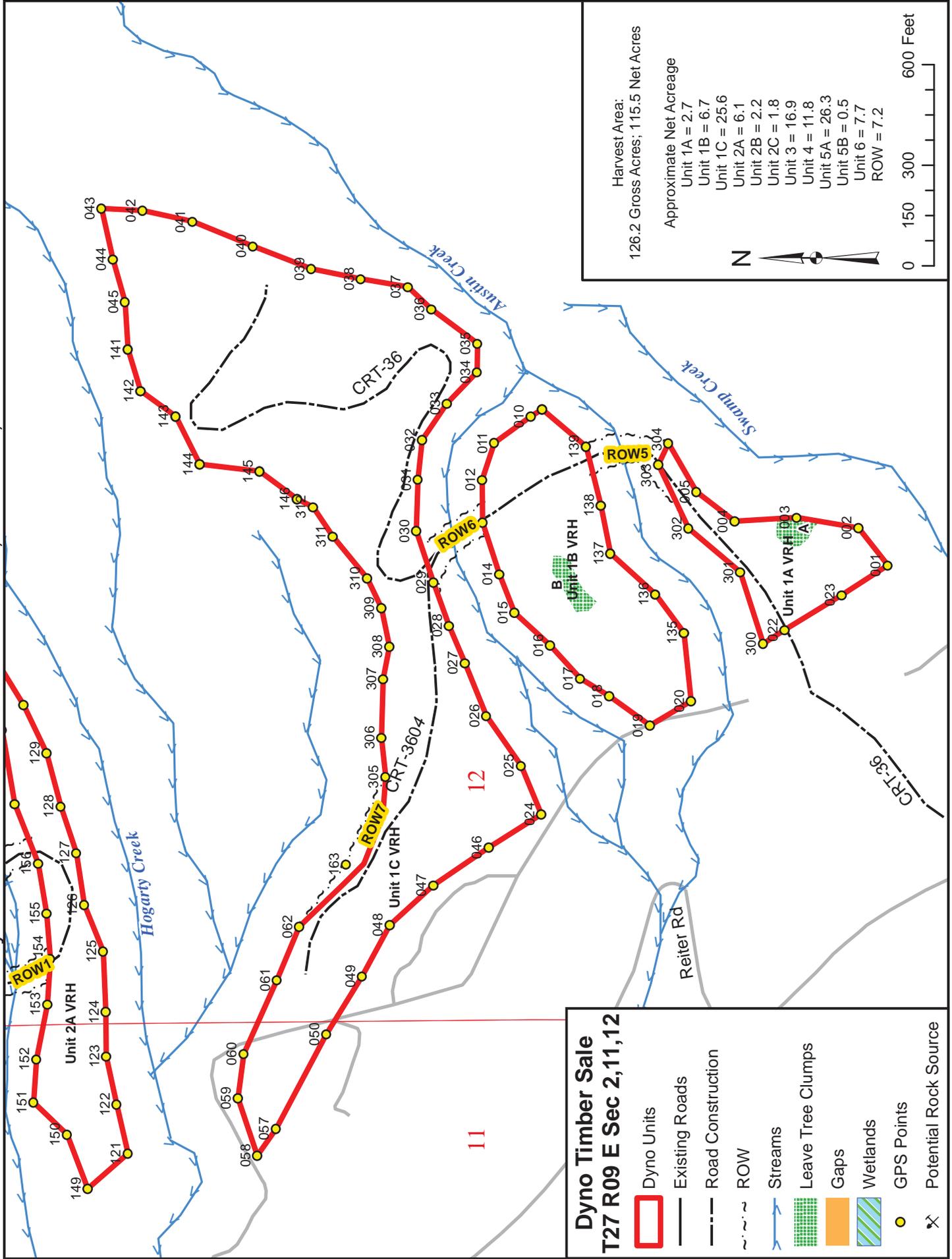
Directions to Units 1A-1C: Travel 2.0 miles east on U.S. Highway 2 from Gold Bar. Turn left onto Reiter Road. Follow Reiter Road for 0.8 miles to where it intersects with May Creek Road. Bear right to continue on Reiter Road. Continue 2.7 miles on Reiter Road to reach a parking lot with the abandoned road CRT-36. Continue 200 feet on CRT-36 then bear right onto staked line. Proceed on the staked line for another 700 feet through the power line ROW until you arrive at Unit 1A.

Directions to Units 2A-6: Travel 2.0 miles east on U.S. Highway 2 from Gold Bar. Turn left onto Reiter Road. Follow Reiter Road for 0.8 miles to where it intersects with May Creek Road. Bear right to continue on Reiter Road. Continue 1.2 miles on Reiter Road to reach the May Creek Mainline gate (MY-ML) on the left (north) of the road. A F-1 key is needed to access the MY-ML. Continue on the MY-ML for 0.4 miles. At an intersection, turn right onto MY-04, and continue for another 0.6 miles until you arrive at Unit 6. From there, continue up MY-04 for 0.6 miles to Unit 2C, 1.4 miles to Unit 5B, and 2.1 miles to Unit 4.

Prepared By: John VanHollebeke Date: 8/10/15	Title: NRS1	CC:
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# Dyno Timber Sale - Units 1A VRH, 1B VRH, 1C VRH, 1C VRH



### Dyno Timber Sale T27 R09 E Sec 2,11,12

- Dyno Units
- Existing Roads
- Road Construction
- ROW
- Streams
- Leave Tree Clumps
- Gaps
- Wetlands
- GPS Points
- ⊗ Potential Rock Source

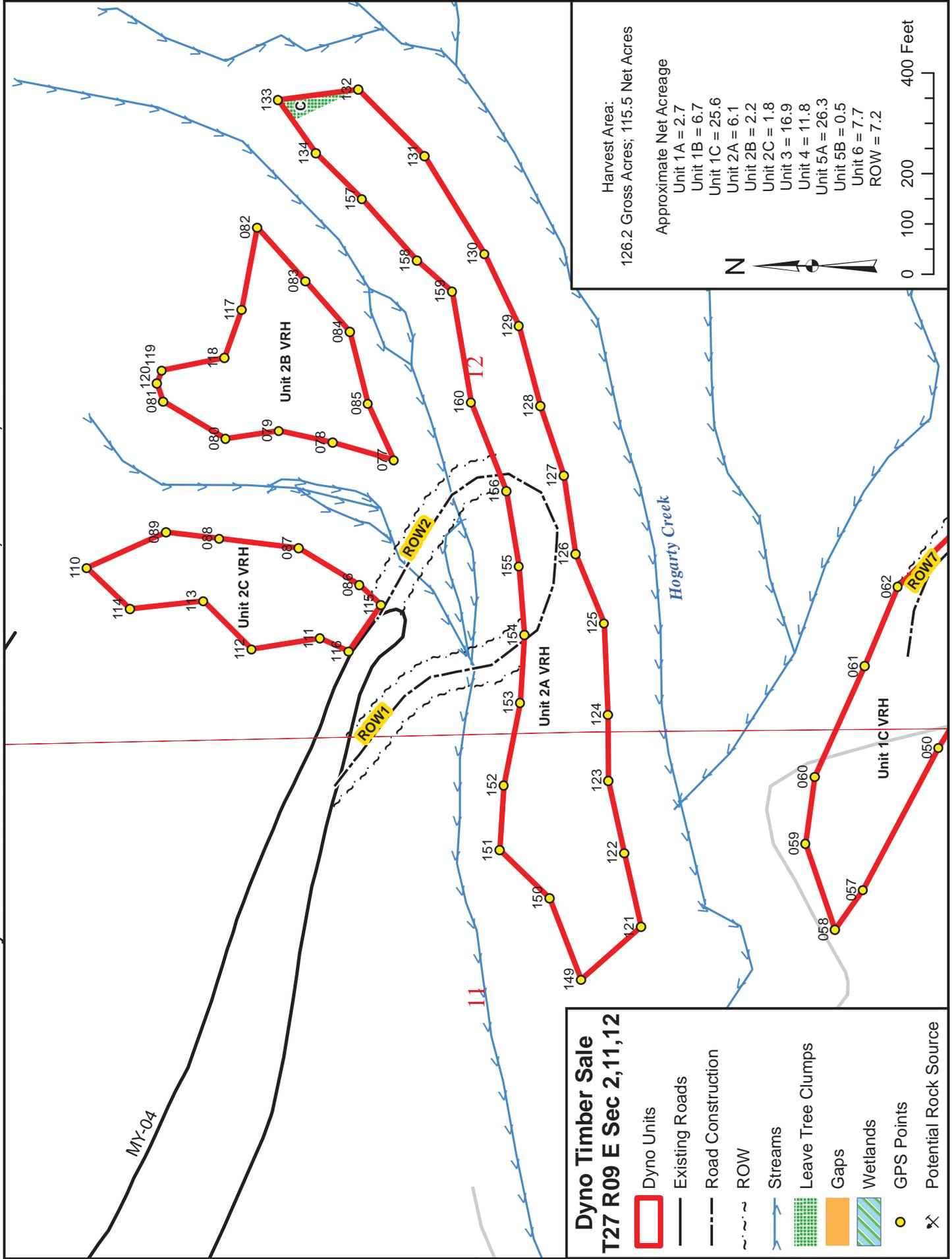
Harvest Area:  
126.2 Gross Acres; 115.5 Net Acres

Approximate Net Acreage

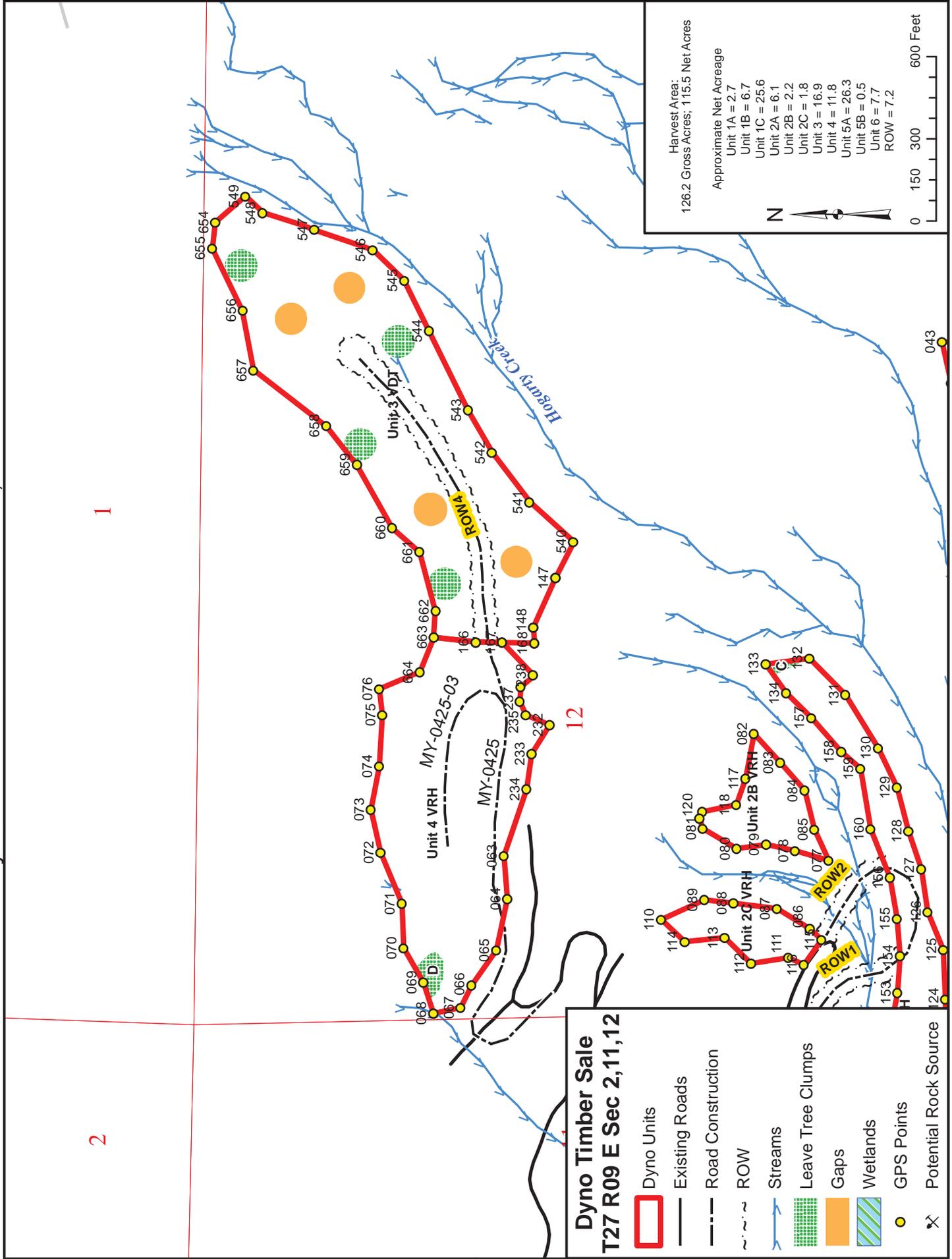
- Unit 1A = 2.7
- Unit 1B = 6.7
- Unit 1C = 25.6
- Unit 2A = 6.1
- Unit 2B = 2.2
- Unit 3 = 16.9
- Unit 4 = 11.8
- Unit 5A = 26.3
- Unit 5B = 0.5
- Unit 6 = 7.7
- ROW = 7.2

N

# Dyno Timber Sale - Units 2A VRH, 2B VRH, 2C VRH



# Dyno Timber Sale - Units 3 VDT, 4 VRH



1

2

## Dyno Timber Sale T27 R09 E Sec 2,11,12

- Dyno Units
- Existing Roads
- Road Construction
- ROW
- Streams
- Leave Tree Clumps
- Gaps
- Wetlands
- GPS Points
- ✕ Potential Rock Source

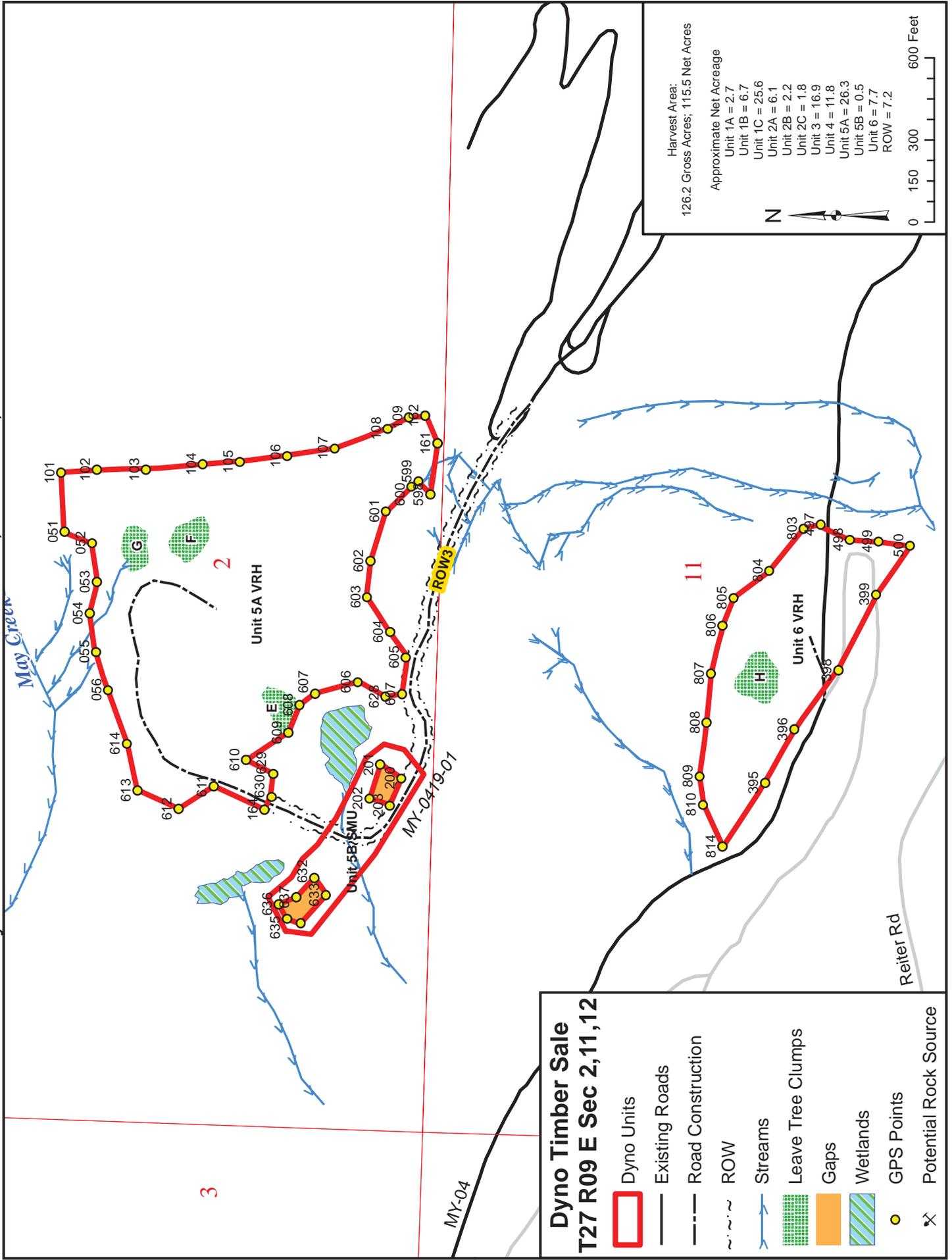
Harvest Area:  
126.2 Gross Acres; 115.5 Net Acres

Approximate Net Acreage

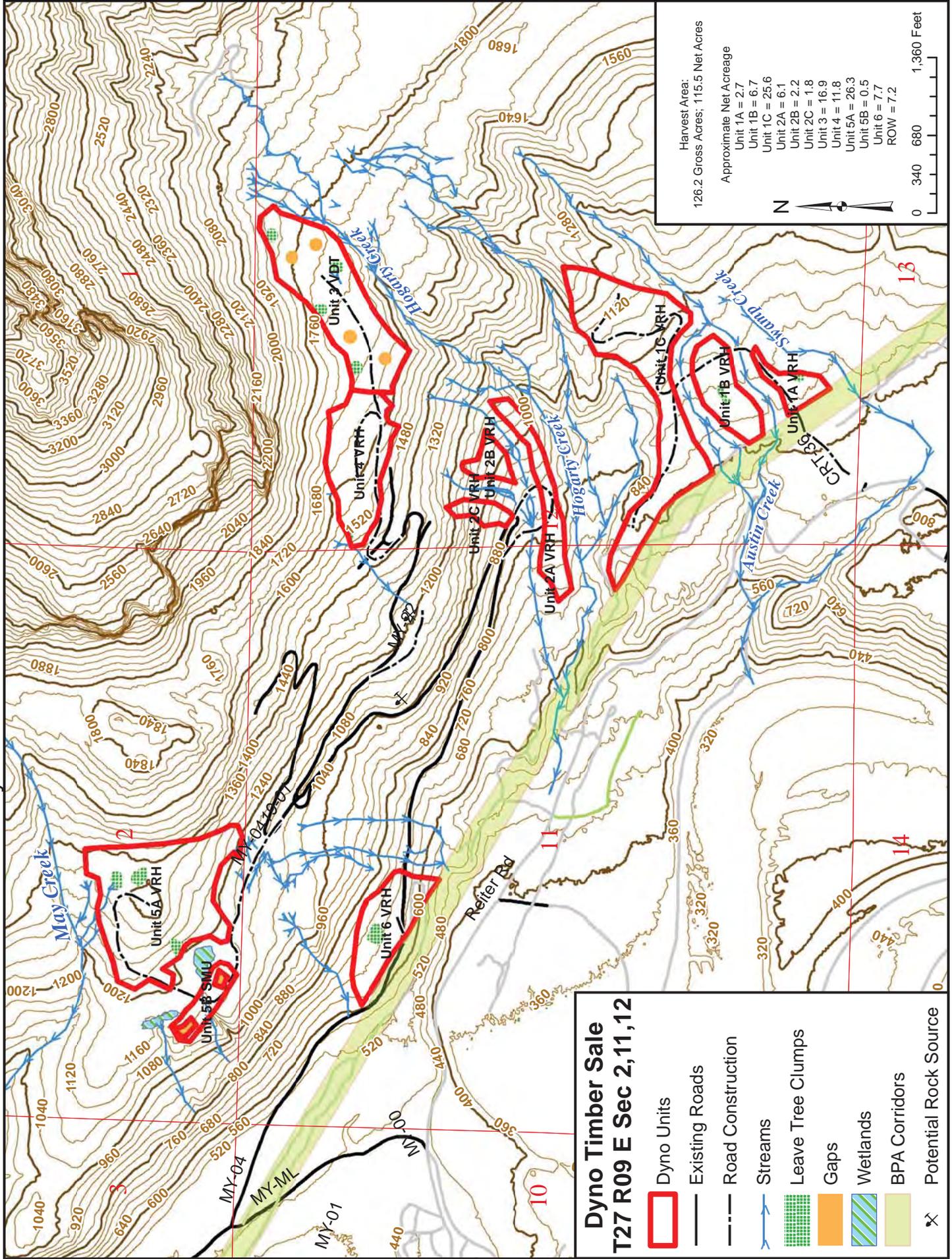
Unit 1A =	2.7
Unit 1B =	6.7
Unit 1C =	25.6
Unit 2A =	6.1
Unit 2B =	2.2
Unit 2C =	1.8
Unit 3 =	16.9
Unit 4 =	11.8
Unit 5A =	26.3
Unit 5B =	0.5
Unit 6 =	7.7
ROW =	7.2

0 150 300 600 Feet

# Dyno Timber Sale - Units 5A VRH, 5B SMU, 6 VRH



# Dyno Timber Sale - All Units



## Dyno Timber Sale T27 R09 E Sec 2,11,12

- Dyno Units
- Existing Roads
- Road Construction
- Streams
- Leave Tree Clumps
- Gaps
- Wetlands
- BPA Corridors
- Potential Rock Source

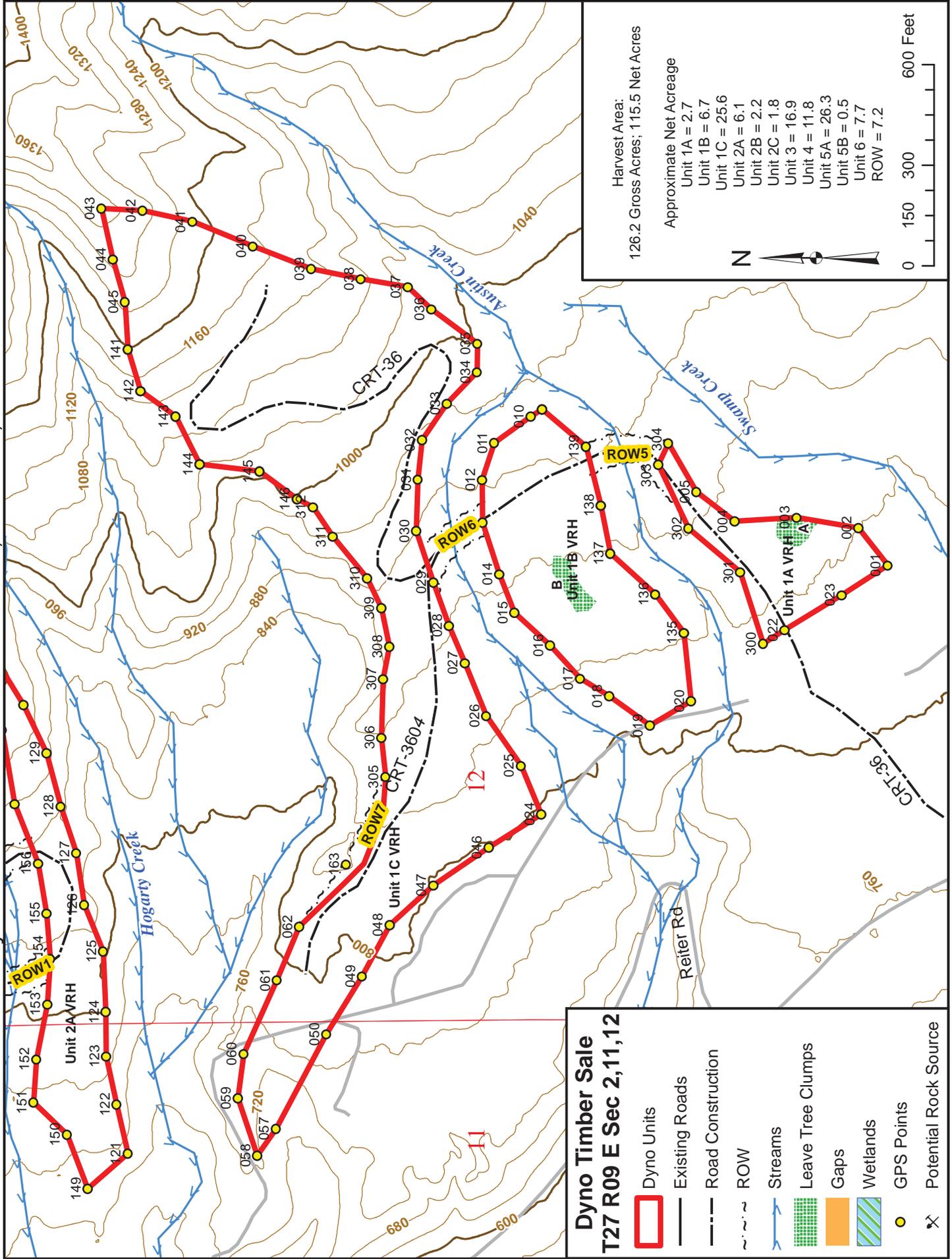
Harvest Area:  
126.2 Gross Acres; 115.5 Net Acres

Approximate Net Acreage

- Unit 1A = 2.7
- Unit 1B = 6.7
- Unit 1C = 25.6
- Unit 2A = 6.1
- Unit 2B = 2.2
- Unit 2C = 1.8
- Unit 3 = 16.9
- Unit 4 = 11.8
- Unit 5A = 26.3
- Unit 5B = 0.5
- Unit 6 = 7.7
- ROW = 7.2



# Dyno Timber Sale - Units 1A VRH, 1B VRH, 1C VRH, 1C VRH



**Dyno Timber Sale**  
**T27 R09 E Sec 2,11,12**

- Dyno Units
- Existing Roads
- Road Construction
- ROW
- Streams
- Leave Tree Clumps
- Gaps
- Wetlands
- GPS Points
- ✕ Potential Rock Source

Harvest Area:  
 126.2 Gross Acres; 115.5 Net Acres

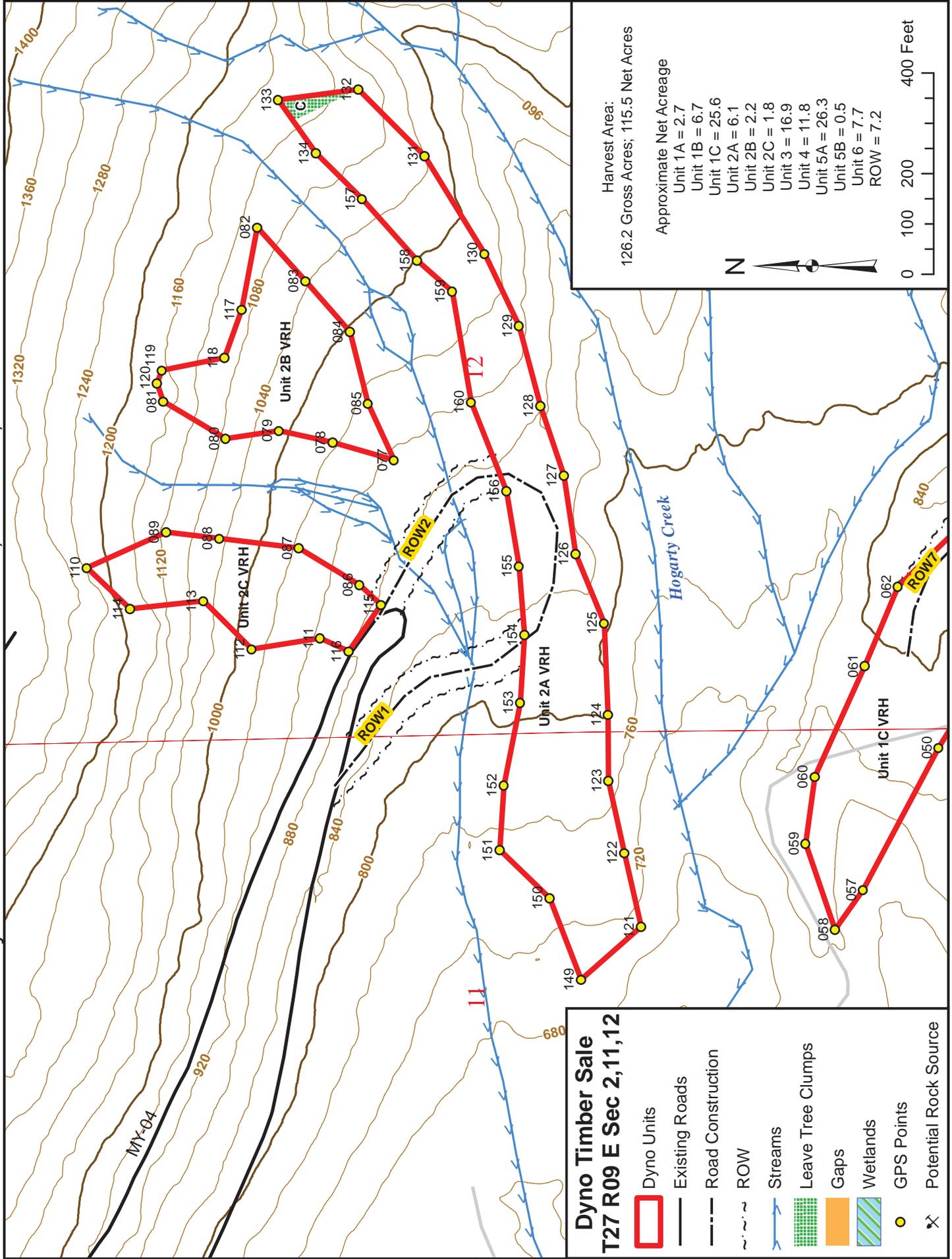
Approximate Net Acreage

- Unit 1A = 2.7
- Unit 1B = 6.7
- Unit 1C = 25.6
- Unit 2A = 6.1
- Unit 2B = 2.2
- Unit 3 = 16.9
- Unit 4 = 11.8
- Unit 5A = 26.3
- Unit 5B = 0.5
- Unit 6 = 7.7
- ROW = 7.2

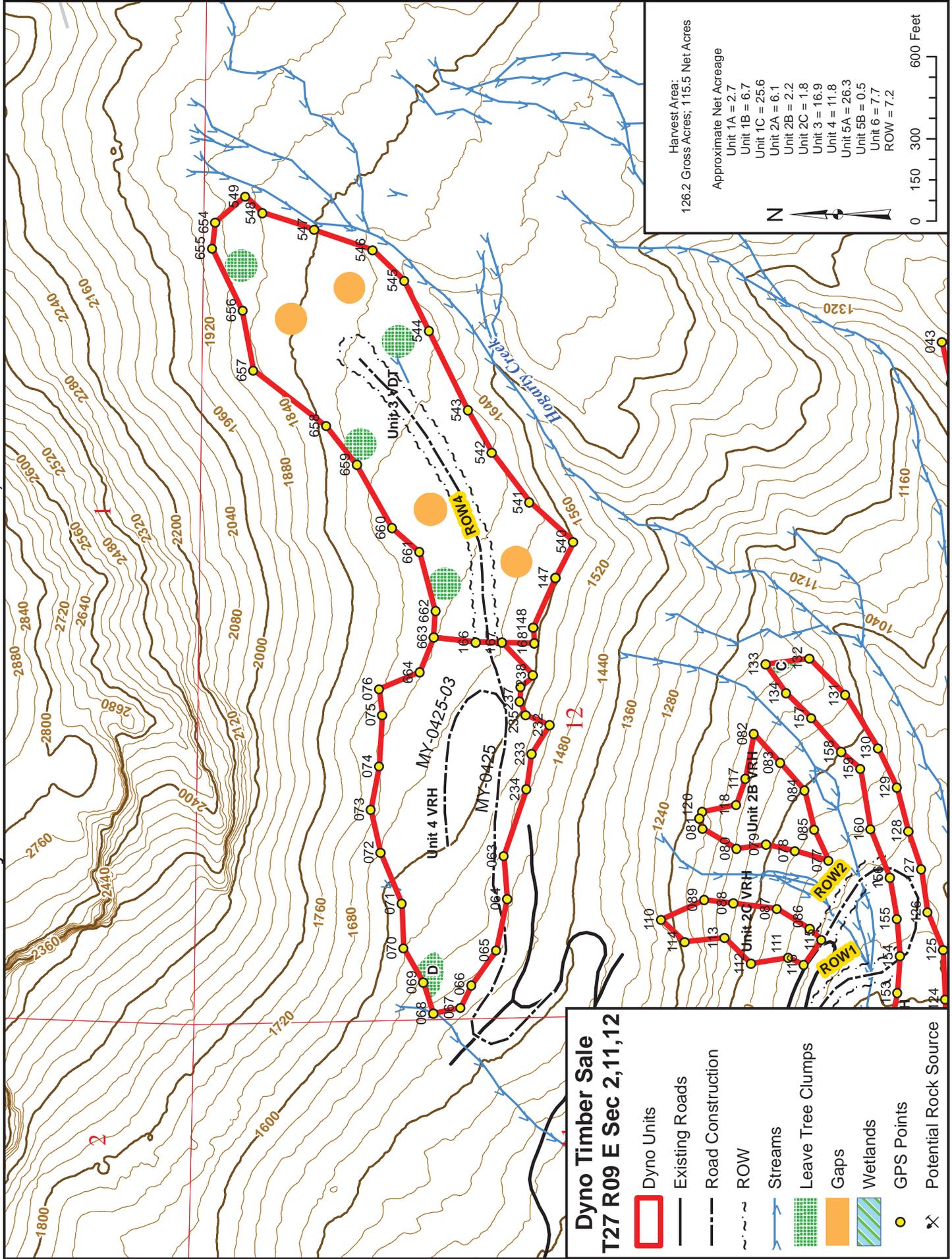
N

0 150 300 600 Feet

# Dyno Timber Sale - Units 2A VRH, 2B VRH, 2C VRH



# Dyno Timber Sale - Units 3 VDT, 4 VRH



## Dyno Timber Sale T27 R09 E Sec 2,11,12

- Dyno Units
- Existing Roads
- Road Construction
- ROW
- Streams
- Leave Tree Clumps
- Gaps
- Wetlands
- GPS Points
- ✕ Potential Rock Source

Harvest Area:  
126.2 Gross Acres; 115.5 Net Acres

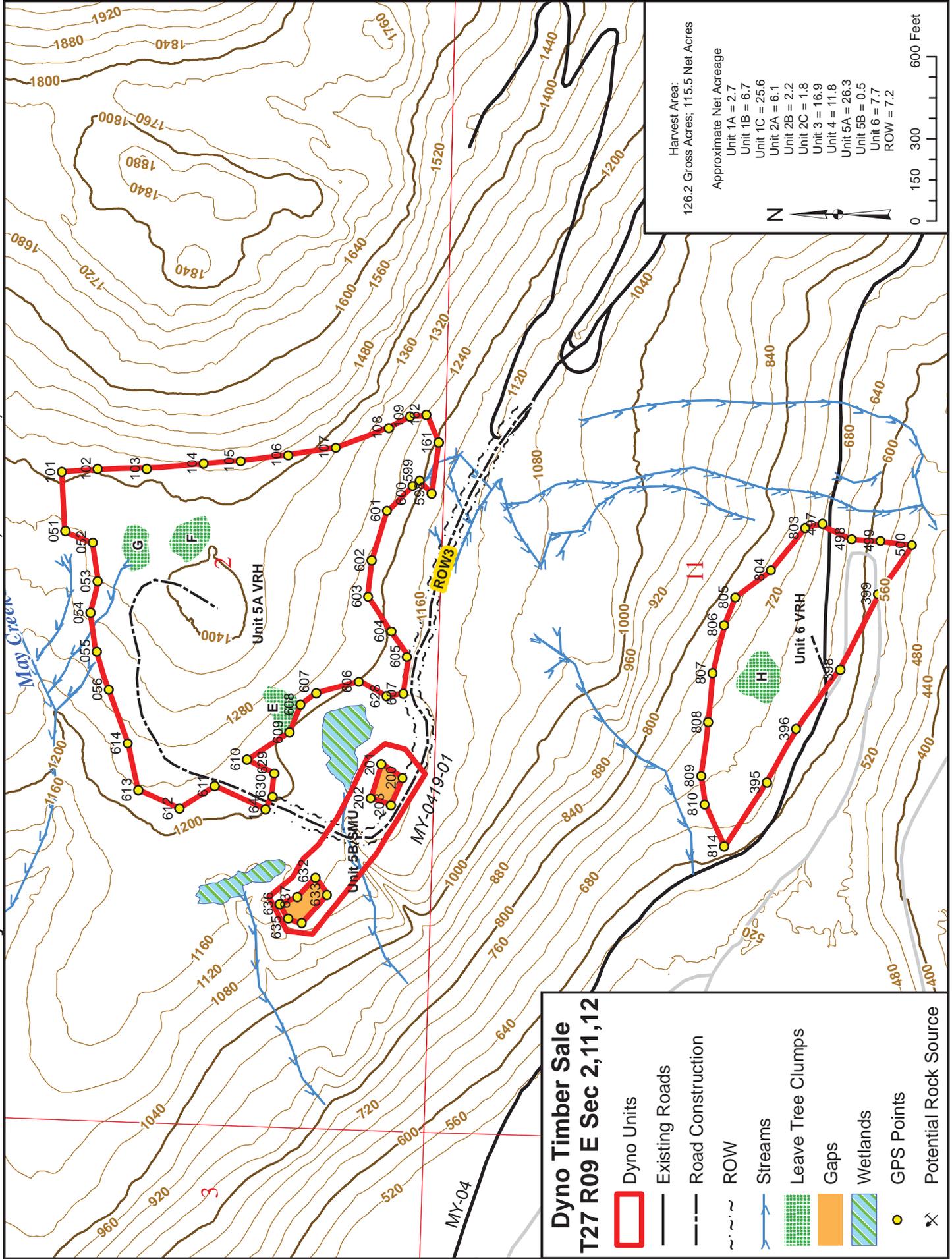
Approximate Net Acreage

- Unit 1A = 2.7
- Unit 1B = 6.7
- Unit 1C = 25.6
- Unit 2A = 6.1
- Unit 2B = 2.2
- Unit 2C = 1.8
- Unit 3 = 16.9
- Unit 4 = 11.8
- Unit 5A = 26.3
- Unit 5B = 0.5
- Unit 6 = 7.7
- ROW = 7.2

N

0 150 300 600 Feet

# Dyno Timber Sale - Units 5A VRH, 5B SMU, 6 VRH



### Dyno Timber Sale T27 R09 E Sec 2,11,12

- Dyno Units
- Existing Roads
- Road Construction
- ROW
- Streams
- Leave Tree Clumps
- Gaps
- Wetlands
- GPS Points
- ✕ Potential Rock Source

**Harvest Area:**  
126.2 Gross Acres; 115.5 Net Acres

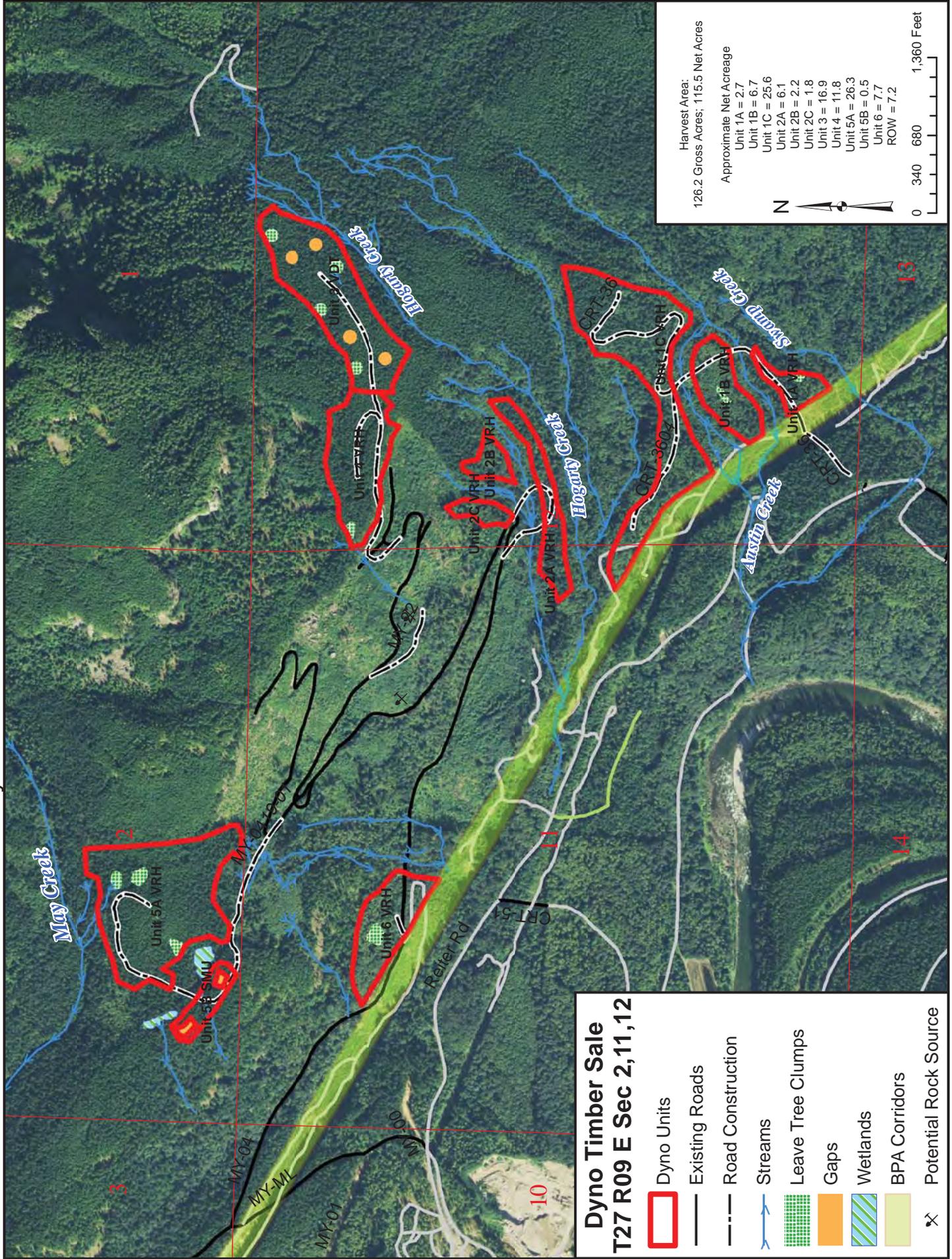
**Approximate Net Acreage**

- Unit 1A = 2.7
- Unit 1B = 6.7
- Unit 1C = 25.6
- Unit 2A = 6.1
- Unit 2B = 2.2
- Unit 2C = 1.8
- Unit 3 = 16.9
- Unit 4 = 11.8
- Unit 5A = 26.3
- Unit 5B = 0.5
- Unit 6 = 7.7
- ROW = 7.2

N

0 150 300 600 Feet

# Dyno Timber Sale - All Units



## Dyno Timber Sale T27 R09 E Sec 2,11,12

- Dyno Units
- Existing Roads
- Road Construction
- + Streams
- Leave Tree Clumps
- Gaps
- Wetlands
- BPA Corridors
- ✕ Potential Rock Source

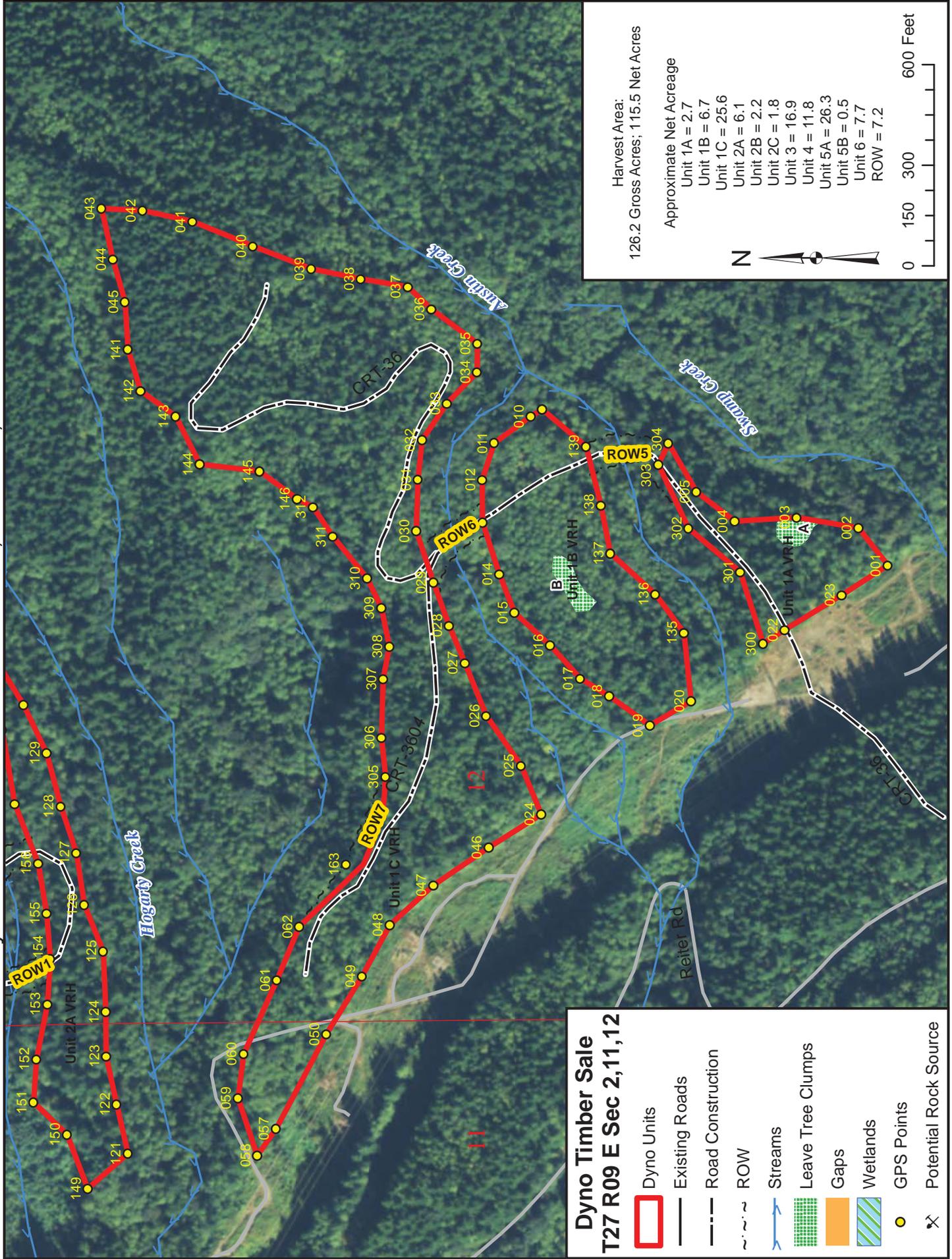
Harvest Area:  
126.2 Gross Acres; 115.5 Net Acres

Approximate Net Acreage

Unit 1A = 2.7
Unit 1B = 6.7
Unit 1C = 25.6
Unit 2A = 6.1
Unit 2B = 2.2
Unit 2C = 1.8
Unit 3 = 16.9
Unit 4 = 11.8
Unit 5A = 26.3
Unit 5B = 0.5
Unit 6 = 7.7
ROW = 7.2

0 340 680 1,360 Feet

# Dyno Timber Sale - Units 1A VRH, 1B VRH, 1C VRH, 1C VRH



**Dyno Timber Sale  
T27 R09 E Sec 2,11,12**

- Dyno Units
- Existing Roads
- Road Construction
- ROW
- Streams
- Leave Tree Clumps
- Gaps
- Wetlands
- GPS Points
- Potential Rock Source

Harvest Area:  
126.2 Gross Acres; 115.5 Net Acres

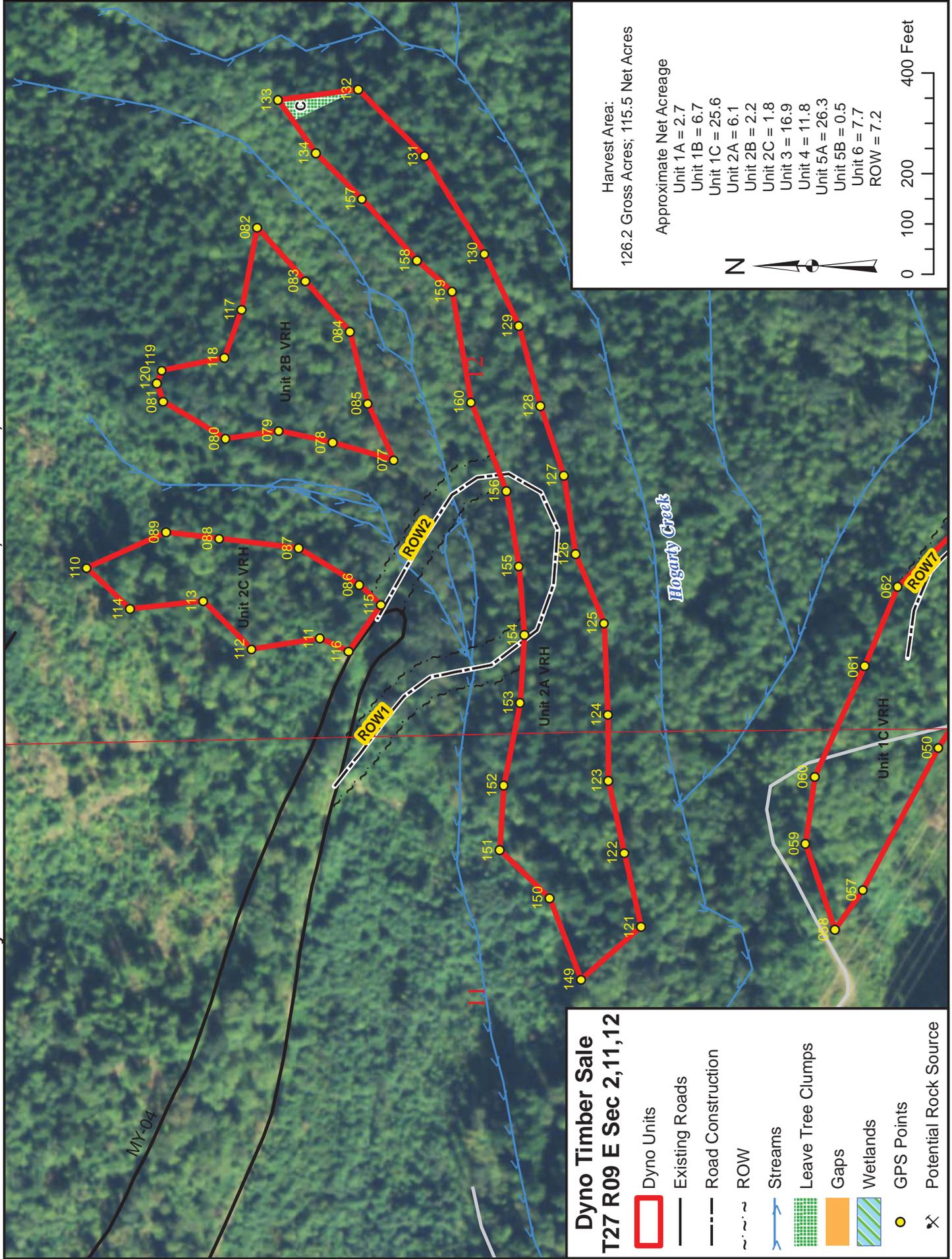
Approximate Net Acreage

- Unit 1A = 2.7
- Unit 1B = 6.7
- Unit 1C = 25.6
- Unit 2A = 6.1
- Unit 2B = 2.2
- Unit 2C = 1.8
- Unit 3 = 16.9
- Unit 4 = 11.8
- Unit 5A = 26.3
- Unit 5B = 0.5
- Unit 6 = 7.7
- ROW = 7.2

N

0 150 300 600 Feet

# Dyno Timber Sale - Units 2A VRH, 2B VRH, 2C VRH



**Dyno Timber Sale  
T27 R09 E Sec 2,11,12**

- Dyno Units
- Existing Roads
- Road Construction
- ROW
- Streams
- Leave Tree Clumps
- Gaps
- Wetlands
- GPS Points
- ✕ Potential Rock Source

**Harvest Area:**  
126.2 Gross Acres; 115.5 Net Acres

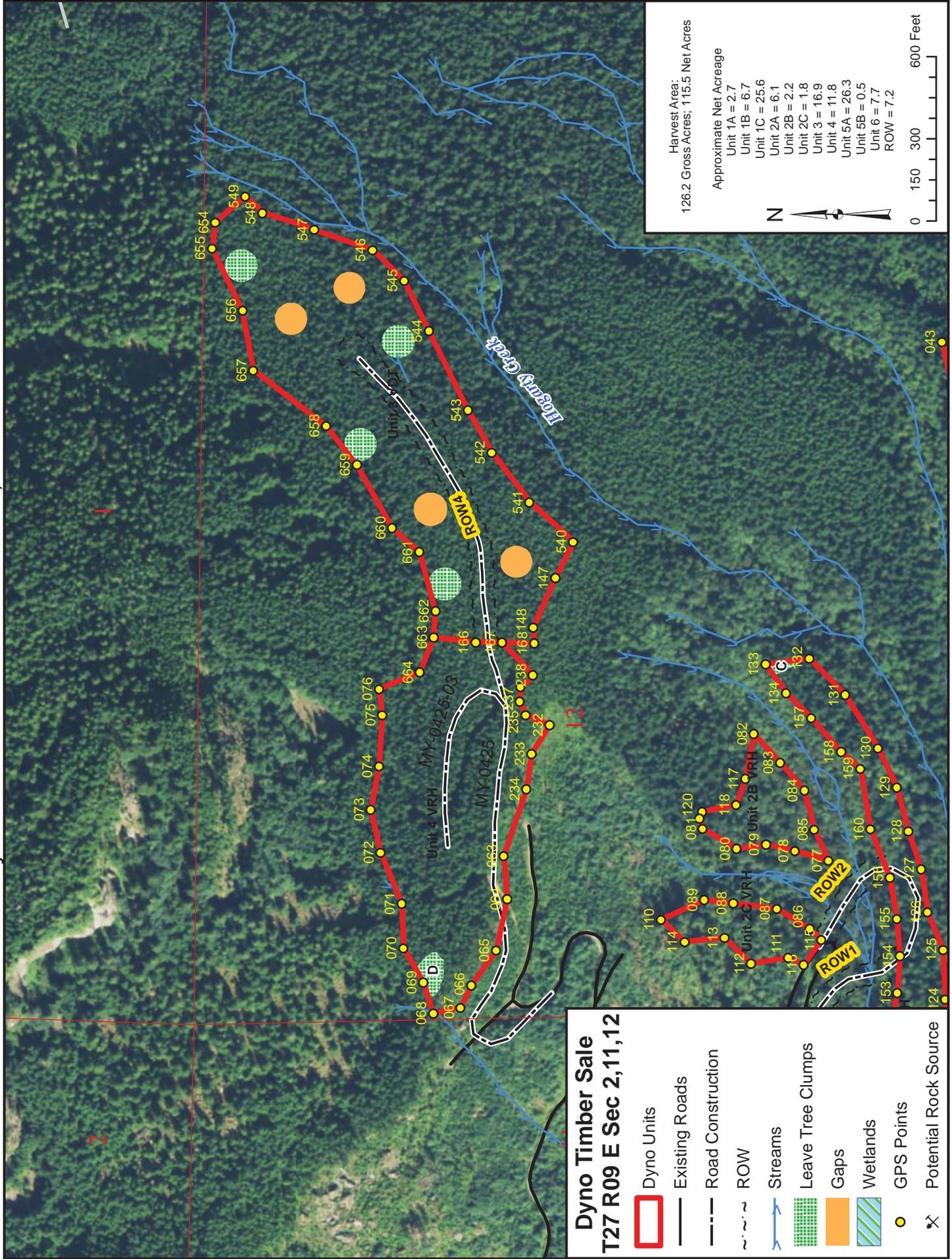
**Approximate Net Acreage**

- Unit 1A = 2.7
- Unit 1B = 6.7
- Unit 1C = 25.6
- Unit 2A = 6.1
- Unit 2B = 2.2
- Unit 2C = 1.8
- Unit 3 = 16.9
- Unit 4 = 11.8
- Unit 5A = 26.3
- Unit 5B = 0.5
- Unit 6 = 7.7
- ROW = 7.2

**N**

0 100 200 400 Feet

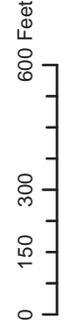
# Dyno Timber Sale - Units 3 VDT, 4 VRH



Harvest Area:  
126.2 Gross Acres; 115.5 Net Acres

Approximate Net Acreage

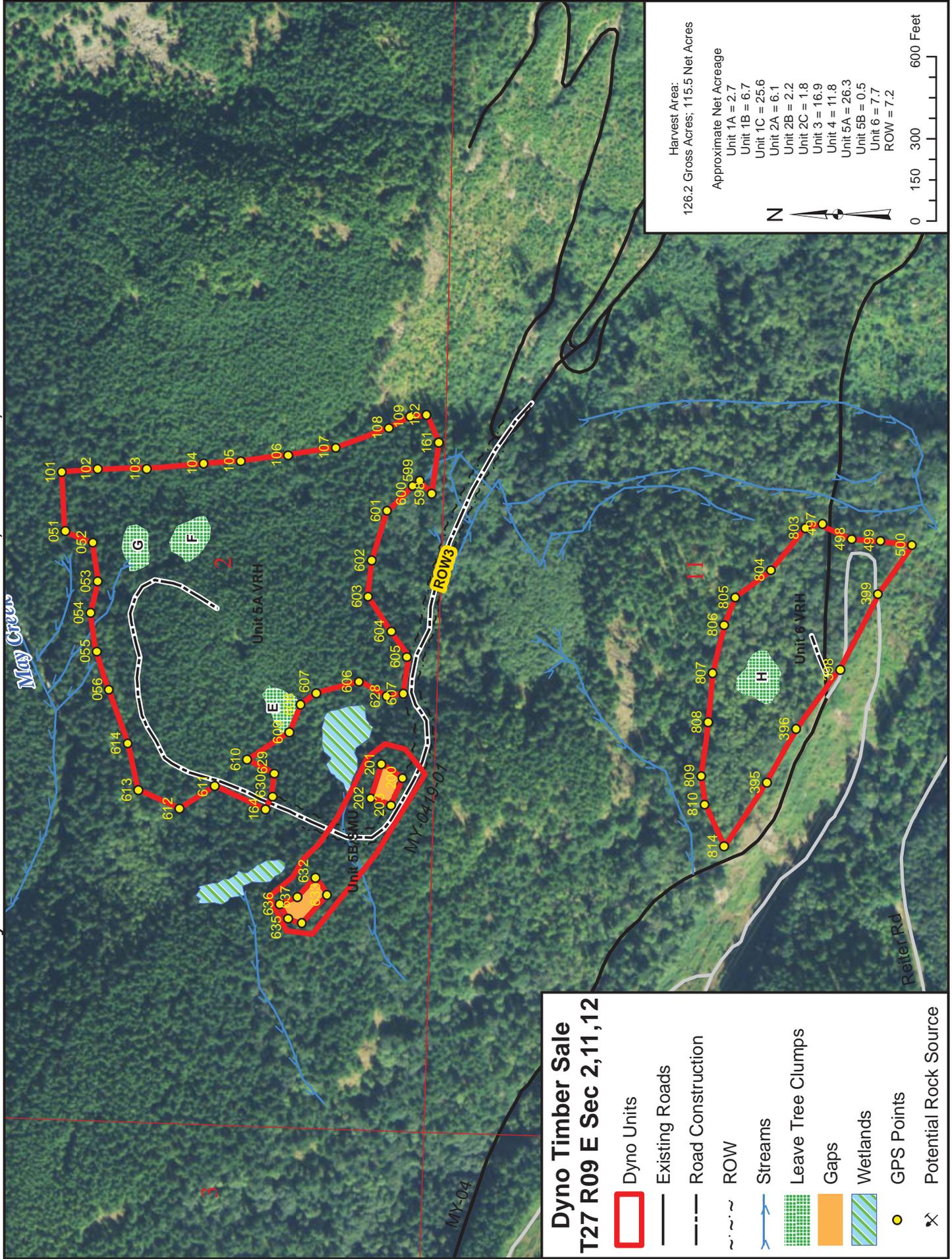
- Unit 1A = 2.7
- Unit 1B = 6.7
- Unit 1C = 25.6
- Unit 2A = 6.1
- Unit 2B = 2.2
- Unit 2C = 1.8
- Unit 3 = 16.9
- Unit 4 = 11.8
- Unit 5A = 26.3
- Unit 5B = 0.5
- Unit 6 = 7.7
- ROW = 7.2



## Dyno Timber Sale T27 R09 E Sec 2,11,12

- Dyno Units
- Existing Roads
- Road Construction
- ROW
- Streams
- Leave Tree Clumps
- Gaps
- Wetlands
- GPS Points
- Potential Rock Source

# Dyno Timber Sale - Units 5A VRH, 5B SMU, 6 VRH



Harvest Area:  
126.2 Gross Acres; 115.5 Net Acres

Approximate Net Acreage

- Unit 1A = 2.7
- Unit 1B = 6.7
- Unit 1C = 25.6
- Unit 2A = 6.1
- Unit 2B = 2.2
- Unit 2C = 1.8
- Unit 3 = 16.9
- Unit 4 = 11.8
- Unit 5A = 26.3
- Unit 5B = 0.5
- Unit 6 = 7.7
- ROW = 7.2



## Dyno Timber Sale T27 R09 E Sec 2,11,12

- Dyno Units
- Existing Roads
- Road Construction
- ROW
- Streams
- Leave Tree Clumps
- Gaps
- Wetlands
- GPS Points
- Potential Rock Source

## Cruise Narrative

<b>Sale Name: DYNO</b>	<b>Region: Northwest</b>
<b>App. Number: 30-092303</b>	<b>District: CASCADE</b>
<b>Lead cruiser: Ken McGee</b>	<b>Completion date: October 22, 2015</b>
<b>Other cruisers on sale: NONE</b>	

**Unit acreage specifications:**

Unit #	Cruised acres	Cruised acres agree with sale acres? Yes/No	If acres do not agree explain why.
1A	2.7	Yes	
1B	6.7	Yes	
1C	25.6	Yes	
2A	6.1	Yes	
2B	2.2	Yes	
2C	1.8	Yes	
3	16.9	Yes	
4	11.8	Yes	
5A	26.3	Yes	
5B	.5	Yes	
6	7.7	Yes	
RW1	0.8	Yes	
RW2	0.6	Yes	
RW3	2.6	Yes	
RW4	2.0	Yes	
RW5	0.5	Yes	
RW6	0.4	Yes	
RW7	0.3	Yes	
<b>Total</b>	<b>115.5</b>		<b>Gross Acres = 126.2</b>

**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
1A	VP	54.45	4.5	250 x 250	2:1	3
1B	VP	54.45	4.5	250 x 250	3:2	5
1C	VP	54.45	4.5	250 x 250	9:8	17
2A	VP	54.45	4.5	250x250	2:2	4
2B	VP	54.45	4.5	250x250	1:1	2
2C	VP	54.45	4.5	250 x 250	1:1	2
3	VP	40 all	4.5	250x250	14:0	14
4	VP	54.45	4.5	250x250	4:5	9
5A	VP	54.45	4.5	250 x 250	9:9	18
5B	VP	54.45	4.5	250 x 250	1:1	2
6	VP	54.45	4.5	250 x 250	4:3	7
RW1	VP	54.45	4.5	Every 282'	1:0	1
RW2	VP	54.45	4.5	Every 211'	1:0	1
RW3	VP	54.45	4.5	Every 952'	1:0	1
RW4	VP	40 all	4.5	Ave. Vol/Ac	14:0	14
RW5	VP	54.45	4.5	Every 172'	1:0	1
RW6	VP	54.45	4.5	Every 143	1:0	1
RW7	VP	54.45	4.5	Every 229'	1:0	1

**TOTAL PLOTS = 103**

**Sale/Cruise Description:**

<b>Minor species cruise intensity:</b>	Minor species are Red Cedar, Red Alder and Maple were cruised with a 40 factor prism utilizing the same plot centers.					
<b>Minimum cruise spec:</b>	5 inch top or 40% of form point. 8 inch DBH class minimum. Not less than 10 board feet. Pulp logs were 6 & 7 inch DBH holding 18ft. to a 3 inch top.					
<b>Avg ring count by sp:</b>	<b>DF =</b>	8.0	<b>WH =</b>	9.0	<b>SS =</b>	
<b>Leave/take tree description:</b>	Leave trees are banded with blue paint and are scattered through-out the sale area. Also clumped areas bounded by yellow, "Leave Tree Area" tags.					
<b>Other conditions</b>	GPS points are marked on the ground with white & red or white & pink flagging. The average volume per acre for unit #3VDT was applied to the interior right of way in that unit. Some sample points were dropped due to sale boundary and leave tree clumps.					

**SORT DESCRIPTIONS – High Quality Douglas-Fir**

**A**– Logs meeting the following criteria: Surface characteristics for a high quality A sort will have sound tight knots not to exceed 1 ½" in diameter, numbering not more than an average of one per foot of log length. May include logs with not more than two larger knots. Knots and knot indicators ½" in diameter and smaller shall not be a determining factor. Logs will have a growth ring count of 6 or more rings per inch in the outer third top end of the log. (min dia 8".)

**B** – Logs meeting the following criteria: Surface characteristics for a B sort will have sound tight knots not to exceed 1 ½" in diameter. May include logs with not more than two larger knots up to 2 ½" in diameter. Logs will have a growth ring count of 6 or more rings per inch in the outer third to end of the log. (min dia 8".)

**Field observations:**

<p>This MBF scale sale is located approximately four miles east of Gold Bar, Washington. Access is good from highway 2 and the Reiter road. The sale consists of six units and seven short right of ways. Unit #3 is a purchaser select thinning by prescription. This sale appears to be 80% ground base logging methods.</p> <p>The timber is excellent quality Douglas-Fir (49%),Western Hemlock(30%),Red Cedar (8%) and hardwoods.</p>
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**Grants: 01, 03 ----- 100%**

**Prepared by:** Ken McGee

**Title:** Special Products Forester

**CC:** Files

TC PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																					
Cascade District -- NW Region																							
T27N R09E S02 TyROW1 THRU T27N R09E S2 TyROW3				Project: <b>DYNO</b>				Page <b>1</b>															
				Acres <b>115.50</b>				Date <b>10/22/2015</b>				Time <b>1:27:09PM</b>											
S Spp	So T	Gr rt	ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre		
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf			
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99							
WH	T	D	2S	19	1.9	1,923	1,886	218			78	22			100	40	14	309	1.59	6.1			
WH	T	D	3S	61	1.3	5,783	5,708	659		100					100	40	8	99	0.62	57.7			
WH	T	D	4S	8		767	767	89	65	35			15	12	73	27	5	29	0.34	26.1			
WH	T	D	PU	12	.9	1,130	1,119	129	100				2	30	10	58	25	4	14	0.19	80.2		
<b>WH Totals</b>				25	1.3	9,603	9,480	1,095	17	63	16	4	1	5	1	93	31	6	56	0.46	170.1		
WH		D	2S	70	4.3	1,294	1,238	143			100				100	40	13	246	1.39	5.0			
WH		D	3S	28	1.7	488	480	55		100					100	39	8	88	0.65	5.5			
WH		D	4S	2		34	34	4	33	67			67		33	11	6	8	0.19	4.3			
WH		D	PU													3	6		0.00	.4			
<b>WH Totals</b>				5	3.5	1,816	1,752	202	1	29	71			1		99	30	9	114	0.92	15.3		
RA	T	D	2S	21	9.9	857	772	89		2	98			92	8	30	13	176	1.48	4.4			
RA	T	D	3S	33	5.4	1,268	1,200	139		100				100		30	10	94	0.83	12.7			
RA	T	D	4S	39	7.9	1,518	1,398	162	8	91	1		1	98	1	30	7	48	0.49	28.9			
RA	T	D	PU	7	2.8	234	227	26	99	1			30	54	16	18	4	10	0.20	23.2			
<b>RA Totals</b>				9	7.2	3,877	3,597	415	9	69	21			2	95	1	2	26	7	52	0.57	69.2	
BM	T	D	2S	79	25.6	549	408	47			68	32		92	8	30	14	172	2.06	2.4			
BM	T	D	3S	4	50.0	41	20	2			100			100		30	16	150	2.70	.1			
BM	T	D	4S	9	50.0	89	44	5		100				100		30	6	22	0.58	2.0			
BM	T	D	PU	8	47.7	73	38	4			2	79	19	100		30	13	94	1.42	.4			
<b>BM Totals</b>				1	31.9	751	511	59			9	64	27		94	6	30	11	105	1.43	4.9		
CW	T	D	1S	39	8.8	244	223	26			61	39			100	40	17	421	2.55	.5			
CW	T	D	2S	52	21.9	367	287	33			45	38	16		85	39	12	175	1.44	1.6			
CW	T	D	4S	6	6.4	34	32	4	59	41				100		37	6	46	0.45	.7			
CW	T	D	PU	3	40.0	27	16	2			100			100		14	10	43	1.10	.4			
<b>CW Totals</b>				1	17.1	673	558	64	3	26	47	24			11	89	36	11	172	1.41	3.2		
RC	T	D	3S	85	4.6	2,528	2,411	279	0	65	25	10			99	36	8	105	0.87	22.9			
RC	T	D	4S	15	6.6	427	399	46	96	4			22	22	5	52	22	4	15	0.24	26.9		
<b>RC Totals</b>				7	4.9	2,955	2,810	325	14	57	21	8			3	3	2	92	29	6	56	0.61	49.7
RC		D	3S	71	3.5	256	247	29			53	47			100	37	9	113	0.88	2.2			
RC		D	4S	29		97	97	11	91	9					38	27	4	14	0.23	6.9			
<b>RC Totals</b>				1	2.5	353	345	40	26	41	34				9	9	83	30	5	38	0.42	9.1	
DF	T		HASM	3		647	647	75			1	99			99	40	19	629	3.18	1.0			
DF	T		HA2S	9	.1	1,450	1,449	167			99	1			100	40	14	281	1.72	5.2			
DF	T		HB2S	13	.1	2,226	2,223	257			56	44			92	40	15	358	1.93	6.2			
DF	T	D	2S	38	2.5	6,346	6,187	715			59	41			100	40	15	373	2.17	16.6			
DF	T	D	3S	31	3.8	5,390	5,187	599	0	94	6		0	3	96	38	8	100	0.71	51.9			
DF	T	D	4S	4	2.3	632	617	71	56	44			30	9	60	19	6	21	0.35	30.1			
DF	T	D	PU	2		329	329	38	100				14	24	7	56	22	4	13	0.22	25.4		
<b>DF Totals</b>				43	2.2	17,020	16,639	1,922	4	31	40	25			2	2	1	95	31	8	122	0.97	136.4
DF			HASM	1		46	46	5			100				100	32	16	320	2.14	.1			

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

T27N R09E S02 TyROW1  
 THRU  
 T27N R09E S2 TyROW3

**Project: DYNO**  
**Acres 115.50**

**Page 2**  
**Date 10/22/2015**  
**Time 1:27:09PM**

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	HA	2S		22	1.9	653	640	74			82	18				100	40	14	319	1.77	2.0	
DF	HB	2S		25	3.0	776	753	87			70	30				100	40	14	282	1.71	2.7	
DF	D	2S		19	9.5	594	538	62			73	27				100	40	14	271	1.76	2.0	
DF	D	3S		30	.6	908	903	104	0	100				0	1	1	98	38	8	102	0.72	8.8
DF	D	4S		3	1.7	71	70	8	26	74				35	39		26	10	6	10	0.33	7.0
DF	D	PU																5	6		0.00	.4
<b>DF Totals</b>				8	3.3	3,049	2,950	341	1	32	51	17		1	1	2	96	30	9	128	1.09	23.0
<b>Totals</b>					3.6	40,098	38,642	4,463	8	44	33	14		2	12	1	85	30	7	80	0.70	481.0

**Take Vol. = 3880**  
**Leave Vol.=583MBF**

TC PSTATS		PROJECT STATISTICS							PAGE	1	
Cascade District -- NW Region		PROJECT		DYN0			DATE		10/22/2015		
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt	
27N	09E	02	DYNO	ROW	THR	115.50	103	671	S	W	
27N	09E	2	DYNO	ROW3							
		PLOTS		TREES	TREES	ESTIMATED TOTAL	PERCENT SAMPLE				
				PER PLOT		TREES	TREES				
TOTAL		103		671	6.5						
CRUISE		70		495	7.1	25,146	2.0				
DBH COUNT											
REFOREST											
COUNT		33		176	5.3						
BLANKS											
100 %											
STAND SUMMARY											
		SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR		43	7.7	20.7	93	3.9	18.0	3,049	2,950	743	743
DOUG FIR-T		151	57.1	18.4	82	24.5	104.9	17,020	16,639	4,141	4,139
WHEMLOCK		24	5.3	18.6	91	2.3	10.0	1,816	1,752	431	431
WHEMLOCK-T		152	83.1	12.5	66	20.1	71.0	9,603	9,480	2,425	2,427
R ALDER-T		46	29.2	14.2	66	8.5	32.0	3,877	3,597	1,013	1,014
WR CEDAR		10	6.1	11.2	47	1.2	4.2	353	345	113	113
WR CEDAR-T		52	25.2	14.3	60	7.4	27.9	2,955	2,810	864	863
COTWOOD-T		8	1.5	22.4	87	0.9	4.2	673	558	163	163
BL MAPLE-T		9	2.5	22.1	68	1.4	6.7	751	511	211	211
<b>TOTAL</b>		<b>495</b>	<b>217.7</b>	<b>15.3</b>	<b>71</b>	<b>71.2</b>	<b>278.9</b>	<b>40,098</b>	<b>38,642</b>	<b>10,102</b>	<b>10,104</b>
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	10	15		
DOUG FIR		51.5	7.9	412	447	482					
DOUG FIR-T		80.8	6.6	396	423	451					
WHEMLOCK		27.1	5.7	324	344	363					
WHEMLOCK-T		86.0	7.0	171	184	197					
R ALDER-T		60.7	8.9	139	152	166					
WR CEDAR		112.3	37.4	80	127	174					
WR CEDAR-T		103.9	14.4	142	165	189					
COTWOOD-T		56.2	21.2	367	466	565					
BL MAPLE-T		100.8	35.6	184	286	387					
<b>TOTAL</b>		<b>92.0</b>	<b>4.1</b>	<b>276</b>	<b>288</b>	<b>300</b>	<b>338</b>	<b>85</b>	<b>38</b>		
CL	68.1	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR		44.7	6.8	103	111	118					
DOUG FIR-T		71.5	5.8	97	103	109					
WHEMLOCK		22.4	4.7	80	84	88					
WHEMLOCK-T		75.0	6.1	43	46	49					
R ALDER-T		50.6	7.5	40	43	46					
WR CEDAR		107.1	35.6	25	39	53					
WR CEDAR-T		103.9	14.4	47	55	63					
COTWOOD-T		44.7	16.9	115	138	162					
BL MAPLE-T		81.9	28.9	76	107	137					
<b>TOTAL</b>		<b>82.0</b>	<b>3.7</b>	<b>71</b>	<b>74</b>	<b>77</b>	<b>269</b>	<b>67</b>	<b>30</b>		
CL	68.1	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR		280.4	27.6	6	8	10					
DOUG FIR-T		138.9	13.7	49	57	65					
WHEMLOCK		330.4	32.5	4	5	7					

TC PSTATS		PROJECT STATISTICS							PAGE	2
Cascade District -- NW Region				PROJECT		DYNO		DATE	10/22/2015	
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
27N	09E	02	DYNO	ROW	THR	115.50	103	671	S	W
27N	09E	2	DYNO	ROW3						
CL	68.1	COEFF		TREES/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.00	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK-T		143.1	14.1	71	83	95				
R ALDER-T		187.3	18.4	24	29	35				
WR CEDAR		525.8	51.8	3	6	9				
WR CEDAR-T		226.5	22.3	20	25	31				
COTWOOD-T		540.9	53.2	1	2	2				
BL MAPLE-T		429.3	42.3	1	3	4				
<b>TOTAL</b>		<b>80.3</b>	<b>7.9</b>	<b>201</b>	<b>218</b>	<b>235</b>	<b>257</b>	<b>64</b>	<b>29</b>	
CL	68.1	COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		287.6	28.3	13	18	23				
DOUG FIR-T		118.4	11.7	93	105	117				
WHEMLOCK		324.8	32.0	7	10	13				
WHEMLOCK-T		131.0	12.9	62	71	80				
R ALDER-T		188.4	18.5	26	32	38				
WR CEDAR		444.9	43.8	2	4	6				
WR CEDAR-T		211.2	20.8	22	28	34				
COTWOOD-T		490.2	48.3	2	4	6				
BL MAPLE-T		398.5	39.2	4	7	9				
<b>TOTAL</b>		<b>62.0</b>	<b>6.1</b>	<b>262</b>	<b>279</b>	<b>296</b>	<b>154</b>	<b>38</b>	<b>17</b>	
CL	68.1	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		292.3	28.8	2,101	2,950	3,799				
DOUG FIR-T		122.9	12.1	14,625	16,639	18,653				
WHEMLOCK		332.7	32.8	1,178	1,752	2,326				
WHEMLOCK-T		147.5	14.5	8,104	9,480	10,857				
R ALDER-T		200.8	19.8	2,886	3,597	4,308				
WR CEDAR		451.0	44.4	192	345	497				
WR CEDAR-T		232.3	22.9	2,168	2,810	3,453				
COTWOOD-T		505.5	49.8	280	558	835				
BL MAPLE-T		384.1	37.8	318	511	704				
<b>TOTAL</b>		<b>69.1</b>	<b>6.8</b>	<b>36,013</b>	<b>38,642</b>	<b>41,272</b>	<b>191</b>	<b>48</b>	<b>21</b>	
CL	68.1	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		290.3	28.6	530	743	955				
DOUG FIR-T		120.0	11.8	3,650	4,139	4,628				
WHEMLOCK		326.5	32.1	292	431	569				
WHEMLOCK-T		139.6	13.7	2,094	2,427	2,761				
R ALDER-T		192.7	19.0	822	1,014	1,207				
WR CEDAR		440.4	43.4	64	113	162				
WR CEDAR-T		219.1	21.6	677	863	1,049				
COTWOOD-T		488.6	48.1	85	163	241				
BL MAPLE-T		395.1	38.9	129	211	292				
<b>TOTAL</b>		<b>64.6</b>	<b>6.4</b>	<b>9,461</b>	<b>10,104</b>	<b>10,747</b>	<b>167</b>	<b>42</b>	<b>19</b>	
CL	68.1	COEFF		V BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		292.3	28.8	117	164	211				
DOUG FIR-T		16.3	1.6	139	159	178				
WHEMLOCK		332.7	32.8	117	175	232				
WHEMLOCK-T		110.0	10.8	114	134	153				
R ALDER-T		158.7	15.6	90	113	135				
WR CEDAR		451.0	44.4	46	82	119				
WR CEDAR-T		170.9	16.8	78	101	124				
COTWOOD-T		495.5	48.8	67	134	201				
BL MAPLE-T		185.5	18.3	47	76	105				
<b>TOTAL</b>		<b>68.2</b>	<b>6.7</b>	<b>129</b>	<b>139</b>	<b>148</b>	<b>186</b>	<b>46</b>	<b>21</b>	

**PROJECT STATISTICS**  
**PROJECT DYN0**

Cascade District -- NW Region

<b>TWP</b>	<b>RGE</b>	<b>SC</b>	<b>TRACT</b>	<b>TYPE</b>		<b>ACRES</b>	<b>PLOTS</b>	<b>TREES</b>	<b>CuFt</b>	<b>BdFt</b>
27N	09E	02	DYNO	ROW	THR	115.50	103	671	S	W
27N	09E	2	DYNO	ROW3						

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

T27N R09E S02 TyROW	.8
T27N R09E S02 TyROW	.6
T27N R09E S2 TyROW	2.6

**Project DYNO**  
**Acres 115.50**

**Page No 1**  
**Date: 10/22/2015**  
**Time 1:27:11PM**

Species	S T	Total	Total	Total	Net Cubic Ft/		CF/	Total CCF		Total MBF	
		Trees	Logs	Tons	Tree	Log	LF	Gross	Net	Gross	Net
DOUG FIR	T	6,598	15,754	13,630	72.45	30.34	0.98	4,782	4,780	1,966	1,922
WHEMLOCK	T	9,603	19,648	8,962	29.20	14.27	0.45	2,800	2,804	1,109	1,095
R ALDER	T	3,370	7,991	3,216	34.77	14.66	0.56	1,170	1,172	448	415
DOUG FIR		887	2,662	2,445	96.68	32.23	1.07	858	858	352	341
WR CEDAR	T	2,906	5,745	2,345	34.31	17.35	0.60	998	997	341	325
WHEMLOCK		615	1,769	1,592	80.91	28.13	0.91	498	498	210	202
COTWOOD	T	175	374	461	107.32	50.40	1.40	188	188	78	64
BL MAPLE	T	291	565	644	83.68	43.08	1.43	243	243	87	59
WR CEDAR		701	1,048	307	18.66	12.48	0.43	131	131	41	40
<b>Totals</b>		25,146	55,554	33,603	46.41	21.01	0.69	11,668	11,670	4,631	4,463

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	21,310	46,625	29,281	47.24	21.59	0.70	10,067	10,067	4,019	3,924
H	3,836	8,929	4,322	41.79	17.96	0.67	1,601	1,603	612	539
<b>Totals</b>	25,146	55,554	33,603	46.41	21.01	0.69	11,668	11,670	4,631	4,463



TC TSTATS				STATISTICS				PAGE	1	
Cascade District -- NW Region				PROJECT DYN0		DATE		10/22/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
27N	09E	12	DYNO	U1A	2.70	3	12	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES		PERCENT SAMPLE TREES			
TOTAL		3	12	4.0						
CRUISE		2	9	4.5	455		2.0			
DBH COUNT										
REFOREST										
COUNT		1	3	3.0						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR-T	8	164.1	12.7	39	40.7	145.2	17,572	17,013	4,660	4,655
R ALDER-T	1	4.6	23.0	53	2.8	13.3	1,248	647	285	287
<b>TOTAL</b>	<b>9</b>	<b>168.7</b>	<b>13.1</b>	<b>39</b>	<b>43.8</b>	<b>158.5</b>	<b>18,820</b>	<b>17,660</b>	<b>4,945</b>	<b>4,942</b>
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	10	15		
DOUG FIR-T	102.1	38.5	228	370	512					
R ALDER-T										
<b>TOTAL</b>	<b>105.0</b>	<b>37.0</b>	<b>217</b>	<b>344</b>	<b>472</b>	<b>494</b>	<b>124</b>	<b>55</b>		
CL: 68.1 %	COEFF	SAMPLE TREES - CF					# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR-T	85.7	32.3	61	91	120					
R ALDER-T										
<b>TOTAL</b>	<b>83.8</b>	<b>29.6</b>	<b>62</b>	<b>88</b>	<b>113</b>	<b>315</b>	<b>79</b>	<b>35</b>		
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR-T	135.7	93.9	10	164	318					
R ALDER-T	173.2	119.8		5	10					
<b>TOTAL</b>	<b>136.7</b>	<b>94.6</b>	<b>9</b>	<b>169</b>	<b>328</b>	<b>1,073</b>	<b>268</b>	<b>119</b>		
CL: 68.1 %	COEFF	BASAL AREA/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR-T	86.6	59.9	58	145	232					
R ALDER-T	173.2	119.8		13	29					
<b>TOTAL</b>	<b>87.5</b>	<b>60.5</b>	<b>63</b>	<b>159</b>	<b>255</b>	<b>440</b>	<b>110</b>	<b>49</b>		
CL: 68.1 %	COEFF	NET BF/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR-T	117.8	81.5	3,147	17,013	30,879					
R ALDER-T	173.2	119.8		647	1,422					
<b>TOTAL</b>	<b>112.3</b>	<b>77.7</b>	<b>3,943</b>	<b>17,660</b>	<b>31,376</b>	<b>724</b>	<b>181</b>	<b>80</b>		
CL: 68.1 %	COEFF	NET CUFT FT/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR-T	100.3	69.4	1,423	4,655	7,887					
R ALDER-T	173.2	119.8		287	630					
<b>TOTAL</b>	<b>95.0</b>	<b>65.7</b>	<b>1,694</b>	<b>4,942</b>	<b>8,189</b>	<b>518</b>	<b>130</b>	<b>58</b>		
CL: 68.1 %	COEFF	V-BAR/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR-T	117.8	81.5	22	117	213					
R ALDER-T	173.2	119.8		49	107					

TC TSTATS				<b>STATISTICS</b>			PAGE	2		
<b>Cascade District -- NW Region</b>				<b>PROJECT DYN0</b>			DATE	10/22/2015		
<b>TWP</b>	<b>RGE</b>	<b>SECT</b>	<b>TRACT</b>	<b>TYPE</b>	<b>ACRES</b>	<b>PLOTS</b>	<b>TREES</b>	<b>CuFt</b>	<b>BdFt</b>	
<b>27N</b>	<b>09E</b>	<b>12</b>	<b>DYNO</b>	<b>U1A</b>	2.70	3	12	S	W	
CL:	68.1 %	COEFF		<b>V-BAR/ACRE</b>			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E. %	LOW	AVG	HIGH	5	10	15	
<b>TOTAL</b>		<i>110.4</i>	<i>76.4</i>	<i>25</i>	<i>111</i>	<i>198</i>	<i>701</i>	<i>175</i>	<i>78</i>	

TC TSTATS				STATISTICS				PAGE	1	
Cascade District -- NW Region				PROJECT DYN0		DATE		10/22/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
27N	09E	12	DYNO	U1A	2.70	3	12	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES		PERCENT SAMPLE TREES			
TOTAL		3	12	4.0						
CRUISE		2	9	4.5	455		2.0			
DBH COUNT										
REFOREST										
COUNT		1	3	3.0						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR-T	8	164.1	12.7	39	40.7	145.2	17,572	17,013	4,660	4,655
R ALDER-T	1	4.6	23.0	53	2.8	13.3	1,248	647	285	287
<b>TOTAL</b>	<b>9</b>	<b>168.7</b>	<b>13.1</b>	<b>39</b>	<b>43.8</b>	<b>158.5</b>	<b>18,820</b>	<b>17,660</b>	<b>4,945</b>	<b>4,942</b>
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	10	15		
DOUG FIR-T	102.1	38.5	228	370	512					
R ALDER-T										
<b>TOTAL</b>	<b>105.0</b>	<b>37.0</b>	<b>217</b>	<b>344</b>	<b>472</b>	<b>494</b>	<b>124</b>	<b>55</b>		
CL: 68.1 %	COEFF	SAMPLE TREES - CF					# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR-T	85.7	32.3	61	91	120					
R ALDER-T										
<b>TOTAL</b>	<b>83.8</b>	<b>29.6</b>	<b>62</b>	<b>88</b>	<b>113</b>	<b>315</b>	<b>79</b>	<b>35</b>		
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR-T	135.7	93.9	10	164	318					
R ALDER-T	173.2	119.8		5	10					
<b>TOTAL</b>	<b>136.7</b>	<b>94.6</b>	<b>9</b>	<b>169</b>	<b>328</b>	<b>1,073</b>	<b>268</b>	<b>119</b>		
CL: 68.1 %	COEFF	BASAL AREA/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR-T	86.6	59.9	58	145	232					
R ALDER-T	173.2	119.8		13	29					
<b>TOTAL</b>	<b>87.5</b>	<b>60.5</b>	<b>63</b>	<b>159</b>	<b>255</b>	<b>440</b>	<b>110</b>	<b>49</b>		
CL: 68.1 %	COEFF	NET BF/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR-T	117.8	81.5	3,147	17,013	30,879					
R ALDER-T	173.2	119.8		647	1,422					
<b>TOTAL</b>	<b>112.3</b>	<b>77.7</b>	<b>3,943</b>	<b>17,660</b>	<b>31,376</b>	<b>724</b>	<b>181</b>	<b>80</b>		
CL: 68.1 %	COEFF	NET CUFT FT/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR-T	100.3	69.4	1,423	4,655	7,887					
R ALDER-T	173.2	119.8		287	630					
<b>TOTAL</b>	<b>95.0</b>	<b>65.7</b>	<b>1,694</b>	<b>4,942</b>	<b>8,189</b>	<b>518</b>	<b>130</b>	<b>58</b>		
CL: 68.1 %	COEFF	V-BAR/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR-T	117.8	81.5	22	117	213					
R ALDER-T	173.2	119.8		49	107					

TC TSTATS				<b>STATISTICS</b>				PAGE	2	
<b>Cascade District -- NW Region</b>				<b>PROJECT</b>		<b>DYNO</b>		DATE	10/22/2015	
<b>TWP</b>	<b>RGE</b>	<b>SECT</b>	<b>TRACT</b>	<b>TYPE</b>	<b>ACRES</b>	<b>PLOTS</b>	<b>TREES</b>	<b>CuFt</b>	<b>BdFt</b>	
<b>27N</b>	<b>09E</b>	<b>12</b>	<b>DYNO</b>	<b>U1A</b>	2.70	3	12	S	W	
CL:	68.1 %	COEFF		<b>V-BAR/ACRE</b>			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
<b>TOTAL</b>		<i>110.4</i>	<i>76.4</i>	<i>25</i>	<i>111</i>	<i>198</i>	<i>701</i>	<i>175</i>	<i>78</i>	

<b>T27N R09E S12 TU1B</b>	<b>T27N R09E S12 TU1B</b>
Twp <b>27N</b> Rge <b>09E</b> Sec <b>12</b> Tract <b>DYNO</b> Type <b>UIB</b> Acres <b>6.70</b> Plots <b>5</b> Sample Trees <b>19</b> CuFt <b>S</b>	BdFt <b>W</b>

Spp	S	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log			Logs Per /Acre						
									Net	Def%	Gross	Net	Net MBF	Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/Lf	
														4-5	6-11	12-16	17+	12-20	21-30		31-35					36-99
RA	T	D	2S	35	5.9	6,579	6,190	41	100				100				30	13	166	1.45	37.2					
RA	T	D	3S	44	4.3	8,037	7,694	52	100				100				30	9	91	0.74	84.3					
RA	T	D	4S	16	5.6	2,864	2,702	18	12	88			9	91			27	7	39	0.43	68.7					
RA	T	D	PU	5	9.6	870	787	5	100				52 48				12	5	10	0.21	81.7					
<b>RA T Totals</b>				60	5.3	18,350	17,373	116	6	58	36			4	96			24	8	64	0.69	271.9				
WH	T	D	2S	59	7.1	2,348	2,182	15	28 72				100				40	18	525	2.90	4.2					
WH	T	D	3S	28		1,036	1,036	7	100				100				40	10	150	1.06	6.9					
WH	T	D	4S	6		221	221	1	62	38			100				17	6	25	0.41	9.0					
WH	T	D	PU	7		221	221	1	100				100				23	3	10	0.26	22.1					
<b>WH T Totals</b>				13	4.3	3,827	3,660	25	10	31	16	43	6	6	88			26	6	87	0.88	42.2				
CW	T	D	1S	54		1,482	1,482	10	100				100				40	21	760	4.17	1.9					
CW	T	D	2S	37	38.9	1,660	1,015	7	100				100				40	14	177	1.97	5.7					
CW	T	D	4S	9	14.3	264	226	2	100				100				40	7	60	0.68	3.8					
<b>CW T Totals</b>				9	20.1	3,406	2,723	18	8	37	54			100				40	13	238	1.92	11.4				
DF	T	D	2S	94	10.0	4,145	3,731	25	30 70				100				40	19	540	3.20	6.9					
DF	T	D	3S	6		207	207	1	100				100				18	10	60	0.89	3.5					
<b>DF T Totals</b>				14	9.5	4,353	3,938	26	5	28	67	5			95			33	16	380	2.78	10.4				
BM	T	D	2S	52	39.6	924	558	4	100				100				40	18	320	3.50	1.7					
BM	T	D	3S	33	50.0	704	352	2	100				100				30	16	150	2.70	2.3					
BM	T	D	PU	15	50.0	314	157	1	100				100				30	13	90	1.33	1.7					
<b>BM T Totals</b>				4	45.1	1,942	1,067	7	48 52				48 52				33	16	183	2.62	5.8					
<b>Type Totals</b>					9.8	31,877	28,761	193	5	40	33	22	4	61	36			25	8	84	0.91	341.7				

TC TSTATS				STATISTICS				PAGE	1		
Cascade District -- NW Region				PROJECT		DYNO		DATE	10/22/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
27N	09E	12	DYNO	UIB	6.70	5	25	S	W		
				TREES	ESTIMATED	PERCENT					
				PER PLOT	TOTAL	SAMPLE					
				PLOTS	TREES	TREES	TREES				
TOTAL	5		25	5.0							
CRUISE	3		19	6.3	914	2.1					
DBH COUNT											
REFOREST											
COUNT	2		6	3.0							
BLANKS											
100 %											
STAND SUMMARY											
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET	
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC	
R ALDER-T	11	92.1	16.0	75	32.0	128.0	18,350	17,373	4,487	4,482	
WHEMLOCK-T	3	31.1	13.9	37	8.8	32.7	3,827	3,660	962	970	
COTWOOD-T	2	5.7	26.4	90	4.2	21.8	3,406	2,723	880	879	
DOUG FIR-T	1	3.5	34.0	101	3.7	21.8	4,353	3,938	940	939	
BL MAPLE-T	2	4.1	26.8	83	3.1	16.0	1,942	1,067	504	504	
<b>TOTAL</b>	<i>19</i>	<i>136.5</i>	<i>17.2</i>	<i>68</i>	<i>53.1</i>	<i>220.2</i>	<i>31,877</i>	<i>28,761</i>	<i>7,773</i>	<i>7,775</i>	
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL: 68.1 %	COEFF		SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15			
R ALDER-T	37.7	11.9	191	216	242						
WHEMLOCK-T	137.7	95.3	20	423	827						
COTWOOD-T	91.9	86.1	84	600	1,116						
DOUG FIR-T											
BL MAPLE-T	65.7	61.5	108	280	452						
<b>TOTAL</b>	<i>98.0</i>	<i>23.1</i>	<i>265</i>	<i>345</i>	<i>424</i>	<i>405</i>	<i>101</i>	<i>45</i>			
CL: 68.1 %	COEFF		SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15			
R ALDER-T	34.5	10.9	50	56	62						
WHEMLOCK-T	127.3	88.1	12	99	186						
COTWOOD-T	50.9	47.7	91	173	256						
DOUG FIR-T											
BL MAPLE-T	53.6	50.2	65	131	196						
<b>TOTAL</b>	<i>83.1</i>	<i>19.6</i>	<i>76</i>	<i>94</i>	<i>113</i>	<i>291</i>	<i>73</i>	<i>32</i>			
CL: 68.1 %	COEFF		TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15			
R ALDER-T	58.5	29.1	65	92	119						
WHEMLOCK-T	156.0	77.5	7	31	55						
COTWOOD-T	223.6	111.1		6	12						
DOUG FIR-T	136.9	68.0	1	3	6						
BL MAPLE-T	223.6	111.1		4	9						
<b>TOTAL</b>	<i>77.3</i>	<i>38.4</i>	<i>84</i>	<i>136</i>	<i>189</i>	<i>295</i>	<i>74</i>	<i>33</i>			
CL: 68.1 %	COEFF		BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15			
R ALDER-T	67.7	33.7	85	128	171						
WHEMLOCK-T	149.1	74.1	8	33	57						
COTWOOD-T	223.6	111.1		22	46						
DOUG FIR-T	136.9	68.0	7	22	37						
BL MAPLE-T	223.6	111.1		16	34						
<b>TOTAL</b>	<i>61.2</i>	<i>30.4</i>	<i>153</i>	<i>220</i>	<i>287</i>	<i>185</i>	<i>46</i>	<i>21</i>			

TC TSTATS				STATISTICS			PAGE	2		
Cascade District -- NW Region				PROJECT	DYNO		DATE	10/22/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
27N	09E	12	DYNO	UIB	6.70	5	25	S	W	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
R ALDER-T		62.6	31.1	11,966	17,373	22,780				
WHEMLOCK-T		207.1	102.9		3,660	7,428				
COTWOOD-T		223.6	111.1		2,723	5,749				
DOUG FIR-T		136.9	68.0	1,258	3,938	6,618				
BL MAPLE-T		223.6	111.1		1,067	2,253				
<b>TOTAL</b>		<b>50.5</b>	<b>25.1</b>	<b>21,550</b>	<b>28,761</b>	<b>35,972</b>	<b>126</b>	<b>31</b>	<b>14</b>	
CL:	68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
R ALDER-T		65.1	32.3	3,033	4,482	5,932				
WHEMLOCK-T		187.7	93.3	65	970	1,875				
COTWOOD-T		223.6	111.1		879	1,856				
DOUG FIR-T		136.9	68.0	300	939	1,579				
BL MAPLE-T		223.6	111.1		504	1,064				
<b>TOTAL</b>		<b>55.2</b>	<b>27.4</b>	<b>5,642</b>	<b>7,775</b>	<b>9,907</b>	<b>150</b>	<b>38</b>	<b>17</b>	
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
R ALDER-T		27.4	13.6	93	136	178				
WHEMLOCK-T		207.1	102.9		112	227				
COTWOOD-T		223.6	111.1		125	264				
DOUG FIR-T		55.9	27.8	58	181	304				
BL MAPLE-T		223.6	111.1		67	141				
<b>TOTAL</b>		<b>123.8</b>	<b>61.5</b>	<b>98</b>	<b>131</b>	<b>163</b>	<b>757</b>	<b>189</b>	<b>84</b>	

TC TSTATS				STATISTICS				PAGE	1	
Cascade District -- NW Region				PROJECT	DYNO		DATE	10/22/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
27N	09E	12	DYNO	U2B	2.20	2	7	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		2	7	3.5						
CRUISE		1	3	3.0	115		2.6			
DBH COUNT										
REFOREST										
COUNT		1	4	4.0						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
R ALDER-T	2	41.9	13.2	63	11.0	40.0	3,707	3,707	1,167	1,167
COTWOOD-T	1	10.3	22.0	90	5.8	27.2	4,641	3,403	1,123	1,124
<b>TOTAL</b>	<b>3</b>	<b>52.2</b>	<b>15.4</b>	<b>68</b>	<b>17.2</b>	<b>67.2</b>	<b>8,348</b>	<b>7,111</b>	<b>2,290</b>	<b>2,291</b>
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	10	15		
R ALDER-T	15.7	14.7	77	90	103					
COTWOOD-T										
<b>TOTAL</b>	<b>81.7</b>	<b>56.5</b>	<b>74</b>	<b>170</b>	<b>266</b>	<b>384</b>	<b>96</b>	<b>43</b>		
CL: 68.1 %	COEFF	SAMPLE TREES - CF					# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
R ALDER-T	25.1	23.5	22	29	35					
COTWOOD-T										
<b>TOTAL</b>	<b>84.2</b>	<b>58.3</b>	<b>23</b>	<b>55</b>	<b>88</b>	<b>407</b>	<b>102</b>	<b>45</b>		
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
R ALDER-T	141.4	132.4		42	97					
COTWOOD-T	141.4	132.4		10	24					
<b>TOTAL</b>	<b>141.4</b>	<b>132.4</b>		<b>52</b>	<b>121</b>	<b>1,403</b>	<b>351</b>	<b>156</b>		
CL: 68.1 %	COEFF	BASAL AREA/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
R ALDER-T	141.4	132.4		40	93					
COTWOOD-T	141.4	132.4		27	63					
<b>TOTAL</b>	<b>141.4</b>	<b>132.4</b>		<b>67</b>	<b>156</b>	<b>1,403</b>	<b>351</b>	<b>156</b>		
CL: 68.1 %	COEFF	NET BF/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
R ALDER-T	141.4	132.4		3,707	8,617					
COTWOOD-T	141.4	132.4		3,403	7,910					
<b>TOTAL</b>	<b>141.4</b>	<b>132.4</b>		<b>7,111</b>	<b>16,527</b>	<b>1,403</b>	<b>351</b>	<b>156</b>		
CL: 68.1 %	COEFF	NET CUFT FT/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
R ALDER-T	141.4	132.4		1,167	2,713					
COTWOOD-T	141.4	132.4		1,124	2,613					
<b>TOTAL</b>	<b>141.4</b>	<b>132.4</b>		<b>2,291</b>	<b>5,326</b>	<b>1,403</b>	<b>351</b>	<b>156</b>		
CL: 68.1 %	COEFF	V-BAR/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
R ALDER-T	141.4	132.4		93	215					
COTWOOD-T	141.4	132.4		125	291					

TC TSTATS				<b>STATISTICS</b>				PAGE	2	
<b>Cascade District -- NW Region</b>				PROJECT		DYNO		DATE	10/22/2015	
<b>TWP</b>	<b>RGE</b>	<b>SECT</b>	<b>TRACT</b>	<b>TYPE</b>	<b>ACRES</b>	<b>PLOTS</b>	<b>TREES</b>	<b>CuFt</b>	<b>BdFt</b>	
<b>27N</b>	<b>09E</b>	<b>12</b>	<b>DYNO</b>	<b>U2B</b>	2.20	2	7	S	W	
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E. %	LOW	AVG	HIGH	5	10	15	
<b>TOTAL</b>		<i>141.4</i>	<i>132.4</i>		<i>106</i>	<i>246</i>	<i>1,403</i>	<i>351</i>	<i>156</i>	



TC TSTATS				STATISTICS				PAGE	1	
Cascade District -- NW Region				PROJECT	DYNO		DATE	10/22/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
27N	09E	12	DYNO	UIC	25.60	17	83	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES		PERCENT SAMPLE TREES			
TOTAL		17	83	4.9						
CRUISE		9	48	5.3	3,597		1.3			
DBH COUNT										
REFOREST										
COUNT		8	35	4.4						
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-T	17	31.2	25.7	98	22.1	112.1	21,508	21,482	4,861	4,861
R ALDER-T	19	74.6	13.8	65	20.9	77.6	9,300	8,648	2,431	2,436
WHEMLOCK-T	6	26.8	12.4	45	6.4	22.4	2,550	2,509	671	671
BL MAPLE-T	2	3.3	22.7	73	2.0	9.4	1,169	836	301	302
WR CEDAR-T	3	3.8	18.4	56	1.6	7.1	448	394	161	161
COTWOOD-T	1	.8	23.0	88	0.5	2.4	367	269	79	79
<b>TOTAL</b>	<b>48</b>	<b>140.5</b>	<b>17.4</b>	<b>68</b>	<b>55.4</b>	<b>231.0</b>	<b>35,342</b>	<b>34,137</b>	<b>8,505</b>	<b>8,509</b>
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	10	15	
DOUG FIR-T		39.5	9.9	702	779	856				
R ALDER-T		64.5	15.2	118	139	161				
WHEMLOCK-T		109.5	48.8	108	210	312				
BL MAPLE-T		43.7	40.9	162	275	388				
WR CEDAR-T		119.3	82.5	31	177	323				
COTWOOD-T										
<b>TOTAL</b>		<b>93.5</b>	<b>13.5</b>	<b>335</b>	<b>387</b>	<b>439</b>	<b>349</b>	<b>87</b>	<b>39</b>	
CL:	68.1 %	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR-T		35.1	8.8	160	175	191				
R ALDER-T		52.7	12.4	35	39	44				
WHEMLOCK-T		98.0	43.6	30	54	77				
BL MAPLE-T		42.9	40.1	59	99	139				
WR CEDAR-T		113.8	78.7	16	77	138				
COTWOOD-T										
<b>TOTAL</b>		<b>80.7</b>	<b>11.6</b>	<b>84</b>	<b>95</b>	<b>106</b>	<b>260</b>	<b>65</b>	<b>29</b>	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR-T		99.7	24.9	23	31	39				
R ALDER-T		70.1	17.5	62	75	88				
WHEMLOCK-T		196.2	49.0	14	27	40				
BL MAPLE-T		243.0	60.7	1	3	5				
WR CEDAR-T		291.2	72.7	1	4	7				
COTWOOD-T		412.3	103.0		1	2				
<b>TOTAL</b>		<b>58.8</b>	<b>14.7</b>	<b>120</b>	<b>141</b>	<b>161</b>	<b>147</b>	<b>37</b>	<b>16</b>	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR-T		96.3	24.1	85	112	139				
R ALDER-T		64.3	16.1	65	78	90				
WHEMLOCK-T		150.2	37.5	14	22	31				

TC TSTATS				STATISTICS			PAGE	2		
Cascade District -- NW Region				PROJECT	DYNO		DATE	10/22/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
27N	09E	12	DYNO	U1C	25.60	17	83	S	W	
CL: 68.1 %		COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15		
BL MAPLE-T	239.0	59.7	4	9	15					
WR CEDAR-T	222.7	55.6	3	7	11					
COTWOOD-T	412.3	103.0		2	5					
<b>TOTAL</b>	<b>44.6</b>	<b>11.1</b>	<b>205</b>	<b>231</b>	<b>257</b>	<b>84</b>	<b>21</b>	<b>9</b>		
CL: 68.1 %		COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR. %	S.E. %	LOW	AVG	HIGH	5	10	15		
DOUG FIR-T	95.9	24.0	16,334	21,482	26,629					
R ALDER-T	67.9	17.0	7,181	8,648	10,116					
WHEMLOCK-T	154.1	38.5	1,543	2,509	3,474					
BL MAPLE-T	239.0	59.7	337	836	1,335					
WR CEDAR-T	258.9	64.7	139	394	648					
COTWOOD-T	412.3	103.0		269	546					
<b>TOTAL</b>	<b>54.7</b>	<b>13.7</b>	<b>29,475</b>	<b>34,137</b>	<b>38,800</b>	<b>127</b>	<b>32</b>	<b>14</b>		
CL: 68.1 %		COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR. %	S.E. %	LOW	AVG	HIGH	5	10	15		
DOUG FIR-T	96.7	24.2	3,687	4,861	6,035					
R ALDER-T	64.1	16.0	2,045	2,436	2,826					
WHEMLOCK-T	157.2	39.3	407	671	934					
BL MAPLE-T	239.0	59.7	122	302	481					
WR CEDAR-T	251.4	62.8	60	161	262					
COTWOOD-T	412.3	103.0		79	161					
<b>TOTAL</b>	<b>49.1</b>	<b>12.3</b>	<b>7,466</b>	<b>8,509</b>	<b>9,553</b>	<b>102</b>	<b>26</b>	<b>11</b>		
CL: 68.1 %		COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR. %	S.E. %	LOW	AVG	HIGH	5	10	15		
DOUG FIR-T			146	192	238					
R ALDER-T			92	111	130					
WHEMLOCK-T	141.6	35.4	69	112	155					
BL MAPLE-T	109.4	27.3	36	89	142					
WR CEDAR-T	258.9	64.7	20	56	92					
COTWOOD-T	412.3	103.0		114	232					
<b>TOTAL</b>	<b>178.9</b>	<b>44.7</b>	<b>128</b>	<b>148</b>	<b>168</b>	<b>1,358</b>	<b>340</b>	<b>151</b>		

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

Cascade District -- NW Region

T27N R09E S12 TyU2A      6.10	<b>Project:      DYNO</b> <b>Acres            6.10</b>	<b>Page            1</b> <b>Date        10/22/2015</b> <b>Time        2:16:55PM</b>
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S Spp	So T	Gr rt ad	% Net BdFt	Bd. Ft. per Acre Def%    Gross    Net			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre	
								Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf		
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99						
DF	T	HASM	11		3,704	3,704	23										40	26	1250	5.78	3.0
DF	T	D 2S	80	4.4	26,118	24,967	152			36	64						40	17	464	2.75	53.8
DF	T	D 3S	9	2.3	2,609	2,549	16		79	21			8	39		53	32	8	77	0.81	33.2
DF	T	D 4S															6			0.00	9.7
<b>DF</b>	<b>Totals</b>		87	3.7	32,430	31,220	190		6	30	63		1	3		96	33	13	313	2.25	99.7
RC	T	D 3S	94	10.4	1,623	1,454	9			43	57					100	36	9	116	1.34	12.5
RC	T	D 4S	6		81	81	0	100					100				9	5	8	0.18	10.3
<b>RC</b>	<b>Totals</b>		4	9.9	1,704	1,535	9		5	41	54		5			95	24	7	67	1.14	22.8
WH	T	D 4S	100		1,948	1,948	12	100								100	40	5	40	0.46	48.7
WH	T	D PU															5			0.00	48.7
<b>WH</b>	<b>Totals</b>		5		1,948	1,948	12	100								100	20	5	20	0.46	97.4
RA	T	D 2S	87	10.0	1,273	1,146	7			100						100	40	16	360	2.15	3.2
RA	T	D 4S	13	.0	159	159	1		100				100				25	8	50	0.87	3.2
<b>RA</b>	<b>Totals</b>		4	8.9	1,432	1,305	8		12	88			12			88	33	12	205	1.66	6.4
<b>Totals</b>				4.0	37,515	36,008	220		6	8	30	57	1	3		96	27	9	159	1.55	226.3

TC TSTATS				STATISTICS				PAGE	1		
Cascade District -- NW Region				PROJECT		DYNO		DATE	10/22/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
27N	09E	12	DYNO	U2A	6.10	4	18	S	W		
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES		PERCENT SAMPLE TREES				
TOTAL		4	18	4.5							
CRUISE		2	11	5.5	582		1.9				
DBH COUNT											
REFOREST											
COUNT		2	7	3.5							
BLANKS											
100 %											
STAND SUMMARY											
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC	
DOUG FIR-T	7	33.2	30.0	103	29.8	163.3	32,430	31,220	7,451	7,457	
WHEMLOCK-T	1	48.7	12.4	48	11.6	40.8	1,948	1,948	898	898	
WR CEDAR-T	2	10.3	18.8	56	4.6	20.0	1,704	1,535	622	622	
R ALDER-T	1	3.2	24.0	67	2.0	10.0	1,432	1,305	342	343	
<b>TOTAL</b>	<b>11</b>	<b>95.4</b>	<b>21.2</b>	<b>69</b>	<b>50.8</b>	<b>234.2</b>	<b>37,515</b>	<b>36,008</b>	<b>9,313</b>	<b>9,320</b>	
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	10	15			
DOUG FIR-T	52.5	21.3	882	1,121	1,361						
WHEMLOCK-T											
WR CEDAR-T	110.0	103.0		270	548						
R ALDER-T											
<b>TOTAL</b>	<b>80.4</b>	<b>25.4</b>	<b>599</b>	<b>804</b>	<b>1,008</b>	<b>284</b>	<b>71</b>	<b>32</b>			
CL: 68.1 %	COEFF		SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15			
DOUG FIR-T	40.0	16.3	223	266	309						
WHEMLOCK-T											
WR CEDAR-T	95.4	89.3	11	99	187						
R ALDER-T											
<b>TOTAL</b>	<b>65.4</b>	<b>20.7</b>	<b>157</b>	<b>199</b>	<b>240</b>	<b>188</b>	<b>47</b>	<b>21</b>			
CL: 68.1 %	COEFF		TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15			
DOUG FIR-T	74.4	42.5	19	33	47						
WHEMLOCK-T	66.7	38.1	30	49	67						
WR CEDAR-T	200.0	114.3		10	22						
R ALDER-T	200.0	114.3		3	7						
<b>TOTAL</b>	<b>25.1</b>	<b>14.3</b>	<b>82</b>	<b>95</b>	<b>109</b>	<b>33</b>	<b>8</b>	<b>4</b>			
CL: 68.1 %	COEFF		BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15			
DOUG FIR-T	72.0	41.1	96	163	231						
WHEMLOCK-T	66.7	38.1	25	41	56						
WR CEDAR-T	200.0	114.3		20	43						
R ALDER-T	200.0	114.3		10	21						
<b>TOTAL</b>	<b>52.6</b>	<b>30.0</b>	<b>164</b>	<b>234</b>	<b>305</b>	<b>144</b>	<b>36</b>	<b>16</b>			
CL: 68.1 %	COEFF		NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15			
DOUG FIR-T	71.1	40.6	18,540	31,220	43,900						
WHEMLOCK-T	66.7	38.1	1,206	1,948	2,690						
WR CEDAR-T	200.0	114.3		1,535	3,290						

TC TSTATS				STATISTICS			PAGE	2		
Cascade District -- NW Region				PROJECT	DYNO		DATE	10/22/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
27N	09E	12	DYNO	U2A	6.10	4	18	S	W	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.	INF. POP.		
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
R ALDER-T		200.0	114.3		1,305	2,796				
<b>TOTAL</b>		<i>64.1</i>	<i>36.6</i>	<i>22,818</i>	<i>36,008</i>	<i>49,198</i>	<i>215</i>	<i>54</i>	<i>24</i>	
CL:	68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.	INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR-T		71.1	40.6	4,429	7,457	10,485				
WHEMLOCK-T		66.7	38.1	556	898	1,240				
WR CEDAR-T		200.0	114.3		622	1,333				
R ALDER-T		200.0	114.3		343	735				
<b>TOTAL</b>		<i>59.6</i>	<i>34.0</i>	<i>6,147</i>	<i>9,320</i>	<i>12,494</i>	<i>185</i>	<i>46</i>	<i>21</i>	
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.	INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR-T				113	191	269				
WHEMLOCK-T				30	48	66				
WR CEDAR-T		200.0	114.3		77	164				
R ALDER-T		200.0	114.3		131	280				
<b>TOTAL</b>		<i>181.1</i>	<i>103.5</i>	<i>97</i>	<i>154</i>	<i>210</i>	<i>1,713</i>	<i>428</i>	<i>190</i>	

<b>T27N R09E S12 TU2B</b>										<b>T27N R09E S12 TU2B</b>			
<b>Twp</b>	<b>Rge</b>	<b>Sec</b>	<b>Tract</b>	<b>Type</b>	<b>Acres</b>	<b>Plots</b>	<b>Sample Trees</b>	<b>CuFt</b>	<b>BdFt</b>				
27N	09E	12	DYNO	U2B	2.20	2	3	S	W				

S Spp	So T	Gr rt ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre		
								Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft		CF/ Lf	
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99						
RA	T	D	3S	33	1,238	1,238	3	100				100				30	9	70	0.83	17.7	
RA	T	D	4S	53	1,985	1,985	4	27	73			100				30	7	47	0.45	41.9	
RA	T	D	PU	14	485	485	1	100				100				30	4	20	0.22	24.2	
<b>RA T Totals</b>				52	3,707	3,707	8	27	73			100				30	6	44	0.46	83.8	
CW	T	D	1S	75	30.6	3,713	2,578	6	100				100				40	15	250	1.92	10.3
CW	T	D	2S	25	11.1	928	825	2	100				100				40	8	80	0.80	10.3
CW	T	D	PU													8		0.00	10.3		
<b>CW T Totals</b>				48	26.7	4,641	3,403	7	24	76			100				27	10	110	1.36	30.9
<b>Type Totals</b>					14.8	8,348	7,111	16	14	49	36	52				48	29	7	62	0.69	114.8

TC TSTATS				STATISTICS				PAGE	1	
Cascade District -- NW Region				PROJECT		DYNO		DATE	10/22/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
27N	09E	12	DYNO	U2B	2.20	2	7	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	2		7	3.5						
CRUISE	1		3	3.0		115	2.6			
DBH COUNT										
REFOREST										
COUNT	1		4	4.0						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
R ALDER-T	2	41.9	13.2	63	11.0	40.0	3,707	3,707	1,167	1,167
COTWOOD-T	1	10.3	22.0	90	5.8	27.2	4,641	3,403	1,123	1,124
<b>TOTAL</b>	<b>3</b>	<b>52.2</b>	<b>15.4</b>	<b>68</b>	<b>17.2</b>	<b>67.2</b>	<b>8,348</b>	<b>7,111</b>	<b>2,290</b>	<b>2,291</b>
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	10	15		
R ALDER-T	15.7	14.7	77	90	103					
COTWOOD-T										
<b>TOTAL</b>	<b>81.7</b>	<b>56.5</b>	<b>74</b>	<b>170</b>	<b>266</b>	<b>384</b>	<b>96</b>	<b>43</b>		
CL: 68.1 %	COEFF	SAMPLE TREES - CF					# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
R ALDER-T	25.1	23.5	22	29	35					
COTWOOD-T										
<b>TOTAL</b>	<b>84.2</b>	<b>58.3</b>	<b>23</b>	<b>55</b>	<b>88</b>	<b>407</b>	<b>102</b>	<b>45</b>		
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
R ALDER-T	141.4	132.4		42	97					
COTWOOD-T	141.4	132.4		10	24					
<b>TOTAL</b>	<b>141.4</b>	<b>132.4</b>		<b>52</b>	<b>121</b>	<b>1,403</b>	<b>351</b>	<b>156</b>		
CL: 68.1 %	COEFF	BASAL AREA/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
R ALDER-T	141.4	132.4		40	93					
COTWOOD-T	141.4	132.4		27	63					
<b>TOTAL</b>	<b>141.4</b>	<b>132.4</b>		<b>67</b>	<b>156</b>	<b>1,403</b>	<b>351</b>	<b>156</b>		
CL: 68.1 %	COEFF	NET BF/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
R ALDER-T	141.4	132.4		3,707	8,617					
COTWOOD-T	141.4	132.4		3,403	7,910					
<b>TOTAL</b>	<b>141.4</b>	<b>132.4</b>		<b>7,111</b>	<b>16,527</b>	<b>1,403</b>	<b>351</b>	<b>156</b>		
CL: 68.1 %	COEFF	NET CUFT FT/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
R ALDER-T	141.4	132.4		1,167	2,713					
COTWOOD-T	141.4	132.4		1,124	2,613					
<b>TOTAL</b>	<b>141.4</b>	<b>132.4</b>		<b>2,291</b>	<b>5,326</b>	<b>1,403</b>	<b>351</b>	<b>156</b>		
CL: 68.1 %	COEFF	V-BAR/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
R ALDER-T	141.4	132.4		93	215					
COTWOOD-T	141.4	132.4		125	291					

TC TSTATS				<b>STATISTICS</b>				PAGE	2	
<b>Cascade District -- NW Region</b>				PROJECT		DYN0		DATE	10/22/2015	
<b>TWP</b>	<b>RGE</b>	<b>SECT</b>	<b>TRACT</b>	<b>TYPE</b>	<b>ACRES</b>	<b>PLOTS</b>	<b>TREES</b>	<b>CuFt</b>	<b>BdFt</b>	
<b>27N</b>	<b>09E</b>	<b>12</b>	<b>DYNO</b>	<b>U2B</b>	2.20	2	7	S	W	
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
<b>TOTAL</b>		<i>141.4</i>	<i>132.4</i>		<i>106</i>	<i>246</i>	<i>1,403</i>	<i>351</i>	<i>156</i>	

T27N R09E S12 TU2C	T27N R09E S12 TU2C
Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt	BdFt
27N 09E 12 DYNO U2C 1.80 2 4 S	W

Spp	T	D	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log			Logs							
									Net	Def%	Gross	Net	Net MBF	Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/	Per	
														BdFt	4-5	6-11	12-16	17+	12-20		21-30						31-35
RC	T	D	3S	96	11.0	5,797	5,158	9	33	33	35		5	6	90	34	9	136	1.93	37.9							
RC	T	D	4S	4		191	191	0	100						100	17	3	10	0.12	19.1							
<b>RC</b>	<b>T</b>	<b>Totals</b>		79	10.7	5,988	5,349	10	4	32	32	33	4	5	5	86	29	7	94	1.57	57.0						
WH	T	D	3S	100		1,454	1,454	3	100						100	40	7	70	0.83	20.8							
WH	T	D	PU													9	4		0.00	20.8							
<b>WH</b>	<b>T</b>	<b>Totals</b>		21		1,454	1,454	3	100						100	25	6	35	0.68	41.6							
<b>Type Totals</b>					8.6	7,442	6,804	12	3	46	25	26	3	4	4	89	27	6	69	1.23	98.5						

TC TSTATS				STATISTICS				PAGE	1	
Cascade District -- NW Region				PROJECT	DYNO		DATE	10/22/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
27N	09E	12	DYNO	U2C	1.80	2	12	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES		PERCENT SAMPLE TREES			
TOTAL		2	12	6.0						
CRUISE		1	4	4.0	89		4.5			
DBH COUNT										
REFOREST										
COUNT		1	8	8.0						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
WR CEDAR-T	3	28.5	22.7	59	16.8	80.0	5,988	5,349	2,559	2,557
WHEMLOCK-T	1	20.8	15.5	50	6.9	27.2	1,454	1,454	691	691
<b>TOTAL</b>	<b>4</b>	<b>49.3</b>	<b>20.0</b>	<b>55</b>	<b>24.0</b>	<b>107.2</b>	<b>7,442</b>	<b>6,804</b>	<b>3,250</b>	<b>3,248</b>
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	10	15		
WR CEDAR-T	76.6	53.0	154	327	500					
WHEMLOCK-T										
<b>TOTAL</b>	<b>91.9</b>	<b>52.5</b>	<b>125</b>	<b>263</b>	<b>400</b>	<b>441</b>	<b>110</b>	<b>49</b>		
CL: 68.1 %	COEFF	SAMPLE TREES - CF					# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WR CEDAR-T	70.5	48.8	75	147	219					
WHEMLOCK-T										
<b>TOTAL</b>	<b>86.0</b>	<b>49.2</b>	<b>60</b>	<b>119</b>	<b>177</b>	<b>387</b>	<b>97</b>	<b>43</b>		
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WR CEDAR-T	70.7	66.2	10	28	47					
WHEMLOCK-T	141.4	132.4		21	48					
<b>TOTAL</b>	<b>100.5</b>	<b>94.1</b>	<b>3</b>	<b>49</b>	<b>96</b>	<b>709</b>	<b>177</b>	<b>79</b>		
CL: 68.1 %	COEFF	BASAL AREA/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WR CEDAR-T	70.7	66.2	27	80	133					
WHEMLOCK-T	141.4	132.4		27	63					
<b>TOTAL</b>	<b>88.7</b>	<b>83.0</b>	<b>18</b>	<b>107</b>	<b>196</b>	<b>551</b>	<b>138</b>	<b>61</b>		
CL: 68.1 %	COEFF	NET BF/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WR CEDAR-T	70.7	66.2	1,807	5,349	8,891					
WHEMLOCK-T	141.4	132.4		1,454	3,380					
<b>TOTAL</b>	<b>85.8</b>	<b>80.4</b>	<b>1,336</b>	<b>6,804</b>	<b>12,271</b>	<b>517</b>	<b>129</b>	<b>57</b>		
CL: 68.1 %	COEFF	NET CUFT FT/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WR CEDAR-T	70.7	66.2	864	2,557	4,250					
WHEMLOCK-T	141.4	132.4		691	1,607					
<b>TOTAL</b>	<b>85.8</b>	<b>80.3</b>	<b>640</b>	<b>3,248</b>	<b>5,857</b>	<b>516</b>	<b>129</b>	<b>57</b>		
CL: 68.1 %	COEFF	V-BAR/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WR CEDAR-T	50.0	46.8	23	67	111					
WHEMLOCK-T	141.4	132.4		53	124					

TC TSTATS				<b>STATISTICS</b>				PAGE	2	
<b>Cascade District -- NW Region</b>				<b>PROJECT</b>		<b>DYNO</b>		DATE	10/22/2015	
<b>TWP</b>	<b>RGE</b>	<b>SECT</b>	<b>TRACT</b>	<b>TYPE</b>	<b>ACRES</b>	<b>PLOTS</b>	<b>TREES</b>	<b>CuFt</b>	<b>BdFt</b>	
<b>27N</b>	<b>09E</b>	<b>12</b>	<b>DYNO</b>	<b>U2C</b>	1.80	2	12	S	W	
CL:	68.1 %	COEFF		<b>V-BAR/ACRE</b>			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E. %	LOW	AVG	HIGH	5	10	15	
<b>TOTAL</b>		<i>150.9</i>	<i>141.3</i>	<i>12</i>	<i>63</i>	<i>114</i>	<i>1,597</i>	<i>399</i>	<i>177</i>	

T27N R09E S12 TU3 T27N R09E S12 TU3  
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt  
 27N 09E 12 DYNO U3 16.90 14 133 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 Ft	Dia In	Bd Ft	CF/Lf					
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99									
WH	T	D	3S	73	.7	10,369	10,300	174	100				100				40	8	104	0.59	99.0				
WH	T	D	4S	9		1,256	1,256	21	47	53					21	79	30	6	36	0.33	34.9				
WH	T	D	PU	18	2.5	2,586	2,521	43	100				4	15	15	66	27	4	16	0.20	159.3				
<b>WH</b>	<b>T</b>	<b>Totals</b>		26	.9	14,211	14,077	238	22	78					1	5	3	92	32	5	48	0.38	293.2		
WH		D	2S	70	4.3	8,842	8,461	143	100				100				40	13	246	1.39	34.5				
WH		D	3S	28	1.7	3,335	3,280	55	100				100				39	8	88	0.65	37.5				
WH		D	4S	2		233	233	4	33	67					67	33	11	6	8	0.19	29.7				
WH		D	PU														3	6		0.00	3.1				
<b>WH</b>	<b>T</b>	<b>Totals</b>		22	3.5	12,411	11,974	202	1	29	71					1		99	30	9	114	0.92	104.7		
DF		HA	SM	1		317	317	5	100				100				32	16	320	2.14	1.0				
DF		HA	2S	22	1.9	4,461	4,375	74					82	18	100				40	14	319	1.77	13.7		
DF		HB	2S	25	3.0	5,306	5,145	87					70	30	100				40	14	282	1.71	18.3		
DF		D	2S	19	9.5	4,060	3,675	62					73	27	100				40	14	271	1.76	13.6		
DF		D	3S	30	.6	6,207	6,170	104	0	100					0	1	1	98	38	8	102	0.72	60.3		
DF		D	4S	3	1.7	487	479	8	26	74					35	39	26		10	6	10	0.33	47.9		
DF		D	PU														5	6		0.00	2.7				
<b>DF</b>	<b>T</b>	<b>Totals</b>		37	3.3	20,839	20,161	341	1	32	51	17					1	1	2	96	30	9	128	1.09	157.5
DF	T	D	3S	81	2.1	4,898	4,792	81	100				100				40	8	106	0.64	45.3				
DF	T	D	4S	9	14.3	585	501	8	40	60					100				34	5	31	0.34	16.2		
DF	T	D	PU	10		566	566	10	100								23	77	24	4	14	0.22	41.3		
<b>DF</b>	<b>T</b>	<b>Totals</b>		11	3.1	6,049	5,860	99	13	87					2				98	33	6	57	0.47	102.8	
RC		D	3S	71	3.5	1,750	1,690	29	53				47				100				37	9	113	0.88	14.9
RC		D	4S	29		665	665	11	91	9					30	31	38	27	4	14	0.23	47.1			
<b>RC</b>	<b>T</b>	<b>Totals</b>		4	2.5	2,415	2,355	40	26	41	34					9	9	83	30	5	38	0.42	62.0		
RC	T	D	3S	40		271	271	5	100				100				40	8	90	0.64	3.0				
RC	T	D	4S	60		392	392	7	100					21	15	64	27	3	17	0.23	23.7				
<b>RC</b>	<b>T</b>	<b>Totals</b>		1		663	663	11	59	41					12	9	79	29	4	25	0.29	26.7			
BM	T	D	PU	100	27.3	6	4	0	100				100				30	10	80	0.97	.1				
<b>BM</b>	<b>T</b>	<b>Totals</b>		0	27.3	6	4	0	100				100				30	10	80	0.97	.1				
<b>Type Totals</b>					2.6	56,592	55,094	931	9	49	35	6					1	2	2	95	31	7	74	0.61	746.9

TC TSTATS				<b>STATISTICS</b>				PAGE	1	
Cascade District -- NW Region				PROJECT		DYNO		DATE	10/22/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
27N	09E	12	DYNO	U3	16.90	14	133	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES		PERCENT SAMPLE TREES			
TOTAL		14	133	9.5						
CRUISE		14	133	9.5	5,587		2.4			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
<b>STAND SUMMARY</b>										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
WHEMLOCK	24	36.4	18.6	91	15.9	68.6	12,411	11,974	2,944	2,944
WHEMLOCK-T	36	139.4	11.6	70	30.2	102.9	14,211	14,077	3,532	3,534
DOUG FIR	43	52.5	20.7	93	27.0	122.9	20,839	20,161	5,077	5,075
DOUG FIR-T	16	45.2	13.6	78	12.4	45.7	6,049	5,860	1,585	1,581
WR CEDAR	10	41.5	11.2	47	8.5	28.6	2,415	2,355	773	774
WR CEDAR-T	3	15.5	10.1	53	2.7	8.6	663	663	225	225
BL MAPLE-T	1	.1	16.0	55	0.0	.1	6	4	1	1
<b>TOTAL</b>	<i>133</i>	<i>330.6</i>	<i>14.5</i>	<i>73</i>	<i>99.2</i>	<i>377.2</i>	<i>56,592</i>	<i>55,094</i>	<i>14,138</i>	<i>14,135</i>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF		<b>SAMPLE TREES - BF</b>				# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK	27.1	5.7	324	344	363					
WHEMLOCK-T	49.6	8.3	115	125	135					
DOUG FIR	51.5	7.9	412	447	482					
DOUG FIR-T	37.6	9.7	128	141	155					
WR CEDAR	112.3	37.4	80	127	174					
WR CEDAR-T	92.5	64.0	19	53	87					
BL MAPLE-T										
<b>TOTAL</b>	<i>77.1</i>	<i>6.7</i>	<i>251</i>	<i>269</i>	<i>287</i>		<i>238</i>	<i>59</i>	<i>26</i>	
CL: 68.1 %	COEFF		<b>SAMPLE TREES - CF</b>				# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK	22.4	4.7	80	84	88					
WHEMLOCK-T	46.1	7.7	29	31	34					
DOUG FIR	44.7	6.8	103	111	118					
DOUG FIR-T	29.9	7.7	35	38	41					
WR CEDAR	107.1	35.6	25	39	53					
WR CEDAR-T	63.9	44.2	10	18	26					
BL MAPLE-T										
<b>TOTAL</b>	<i>70.9</i>	<i>6.1</i>	<i>63</i>	<i>68</i>	<i>72</i>		<i>201</i>	<i>50</i>	<i>22</i>	
CL: 68.1 %	COEFF		<b>TREES/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK	80.7	22.4	28	36	45					
WHEMLOCK-T	81.7	22.6	108	139	171					
DOUG FIR	45.7	12.7	46	52	59					
DOUG FIR-T	85.4	23.7	35	45	56					
WR CEDAR	175.4	48.6	21	41	62					
WR CEDAR-T	220.3	61.0	6	16	25					
BL MAPLE-T	374.2	103.6		0	0					
<b>TOTAL</b>	<i>45.5</i>	<i>12.6</i>	<i>289</i>	<i>331</i>	<i>372</i>		<i>89</i>	<i>22</i>	<i>10</i>	

TC TSTATS				STATISTICS			PAGE	2		
Cascade District -- NW Region				PROJECT	DYNO		DATE	10/22/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
27N	09E	12	DYNO	U3	16.90	14	133	S	W	
CL:	68.1 %	COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
CL:	68.1 %	COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		77.3	21.4	54	69	83				
WHEMLOCK-T		77.3	21.4	81	103	125				
DOUG FIR		51.8	14.4	105	123	140				
DOUG FIR-T		83.1	23.0	35	46	56				
WR CEDAR		139.2	38.6	18	29	40				
WR CEDAR-T		198.7	55.0	4	9	13				
BL MAPLE-T		374.2	103.6		0	0				
<b>TOTAL</b>		20.2	5.6	356	377	398	18	4	2	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		82.1	22.7	9,251	11,974	14,696				
WHEMLOCK-T		79.8	22.1	10,963	14,077	17,191				
DOUG FIR		55.5	15.4	17,061	20,161	23,262				
DOUG FIR-T		85.0	23.6	4,480	5,860	7,240				
WR CEDAR		142.0	39.3	1,428	2,355	3,281				
WR CEDAR-T		223.7	62.0	252	663	1,074				
BL MAPLE-T		374.2	103.6		4	8				
<b>TOTAL</b>		23.6	6.5	51,499	55,094	58,689	24	6	3	
CL:	68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		78.4	21.7	2,304	2,944	3,584				
WHEMLOCK-T		78.6	21.8	2,765	3,534	4,303				
DOUG FIR		53.9	14.9	4,317	5,075	5,833				
DOUG FIR-T		84.1	23.3	1,213	1,581	1,949				
WR CEDAR		137.2	38.0	480	774	1,068				
WR CEDAR-T		202.4	56.1	99	225	351				
BL MAPLE-T		374.2	103.6		1	3				
<b>TOTAL</b>		21.4	5.9	13,295	14,135	14,974	20	5	2	
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		82.1	22.7	135	175	214				
WHEMLOCK-T		79.8	22.1	107	137	167				
DOUG FIR		55.5	15.4	139	164	189				
DOUG FIR-T		85.0	23.6	98	128	158				
WR CEDAR		142.0	39.3	50	82	115				
WR CEDAR-T		223.7	62.0	29	77	125				
BL MAPLE-T		374.2	103.6		57	117				
<b>TOTAL</b>		23.4	6.5	137	146	156	24	6	3	



TC TSTATS				STATISTICS				PAGE	1	
Cascade District -- NW Region				PROJECT DYN0		DATE	10/22/2015			
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
27N	09E	12	DYNO	U4	11.80	9	58	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES		PERCENT SAMPLE TREES			
TOTAL		9	58	6.4						
CRUISE		4	24	6.0	3,234		.7			
DBH COUNT										
REFOREST										
COUNT		5	34	6.8						
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-T	14	177.9	15.8	82	60.9	242.0	33,152	31,447	8,567	8,554
WHEMLOCK-T	6	65.1	14.9	73	20.4	78.6	12,007	12,007	2,912	2,912
WR CEDAR-T	4	31.1	11.4	46	6.6	22.2	1,731	1,731	554	554
<b>TOTAL</b>	<b>24</b>	<b>274.1</b>	<b>15.1</b>	<b>76</b>	<b>88.1</b>	<b>342.9</b>	<b>46,890</b>	<b>45,184</b>	<b>12,033</b>	<b>12,020</b>
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	10	15		
DOUG FIR-T	77.8	21.5	197	251	305					
WHEMLOCK-T	42.4	18.9	172	212	252					
WR CEDAR-T	95.3	54.5	39	85	131					
<b>TOTAL</b>	<b>78.2</b>	<b>16.3</b>	<b>179</b>	<b>213</b>	<b>248</b>	<b>255</b>	<b>64</b>	<b>28</b>		
CL: 68.1 %	COEFF	SAMPLE TREES - CF					# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR-T	69.3	19.2	53	66	79					
WHEMLOCK-T	40.3	17.9	42	51	61					
WR CEDAR-T	74.1	42.3	15	26	37					
<b>TOTAL</b>	<b>70.5</b>	<b>14.7</b>	<b>47</b>	<b>56</b>	<b>64</b>	<b>207</b>	<b>52</b>	<b>23</b>		
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR-T	56.6	20.0	142	178	213					
WHEMLOCK-T	117.1	41.3	38	65	92					
WR CEDAR-T	205.8	72.6	9	31	54					
<b>TOTAL</b>	<b>20.1</b>	<b>7.1</b>	<b>255</b>	<b>274</b>	<b>293</b>	<b>18</b>	<b>5</b>	<b>2</b>		
CL: 68.1 %	COEFF	BASAL AREA/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR-T	54.1	19.1	196	242	288					
WHEMLOCK-T	115.4	40.7	47	79	111					
WR CEDAR-T	182.5	64.4	8	22	37					
<b>TOTAL</b>	<b>17.3</b>	<b>6.1</b>	<b>322</b>	<b>343</b>	<b>364</b>	<b>13</b>	<b>3</b>	<b>1</b>		
CL: 68.1 %	COEFF	NET BF/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR-T	53.2	18.8	25,542	31,447	37,352					
WHEMLOCK-T	116.7	41.2	7,063	12,007	16,951					
WR CEDAR-T	203.4	71.8	489	1,731	2,973					
<b>TOTAL</b>	<b>21.8</b>	<b>7.7</b>	<b>41,711</b>	<b>45,184</b>	<b>48,658</b>	<b>21</b>	<b>5</b>	<b>2</b>		
CL: 68.1 %	COEFF	NET CUFT FT/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR-T	53.1	18.7	6,950	8,554	10,158					
WHEMLOCK-T	116.3	41.0	1,717	2,912	4,108					

TC TSTATS				STATISTICS			PAGE	2		
Cascade District -- NW Region				PROJECT	DYNO		DATE	10/22/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
27N	09E	12	DYNO	U4	11.80	9	58	S	W	
CL:	68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.	INF. POP.		
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
WR CEDAR-T		186.3	65.7	190	554	918				
<b>TOTAL</b>		20.0	7.0	11,173	12,020	12,868	18	4	2	
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.	INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR-T				106	130	154				
WHEMLOCK-T				90	153	216				
WR CEDAR-T		193.1	68.2	22	78	134				
<b>TOTAL</b>		246.8	87.1	122	132	142	2,731	683	303	



TC TSTATS				STATISTICS				PAGE	1	
Cascade District -- NW Region				PROJECT		DYNO		DATE	10/22/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
27N	09E	02	DYNO	USA	26.30	18	121	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	18	121	6.7							
CRUISE	9	64	7.1	8,239			8			
DBH COUNT										
REFOREST										
COUNT	9	57	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
WHEMLOCK-T	24	167.1	11.8	70	37.0	127.1	18,489	18,214	4,537	4,545
DOUG FIR-T	18	71.0	17.9	84	29.3	124.0	19,812	19,736	4,924	4,924
WR CEDAR-T	19	68.8	14.4	66	20.5	77.8	9,639	9,199	2,587	2,584
COTWOOD-T	2	3.1	19.1	82	1.4	6.1	926	926	231	231
R ALDER-T	1	3.4	11.0	56	0.7	2.2	202	168	60	61
<b>TOTAL</b>	<b>64</b>	<b>313.3</b>	<b>14.0</b>	<b>72</b>	<b>90.0</b>	<b>337.1</b>	<b>49,068</b>	<b>48,243</b>	<b>12,338</b>	<b>12,345</b>
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	10	15	
WHEMLOCK-T	88.0	18.3		136	167	197				
DOUG FIR-T	55.5	13.4		319	368	418				
WR CEDAR-T	91.2	21.5		163	208	253				
COTWOOD-T	68.8	64.4		132	370	608				
R ALDER-T										
<b>TOTAL</b>	<b>81.8</b>	<b>10.2</b>		<b>216</b>	<b>240</b>	<b>265</b>	<b>267</b>	<b>67</b>	<b>30</b>	
CL:	68.1 %	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK-T	72.5	15.1		34	40	46				
DOUG FIR-T	47.6	11.5		79	90	100				
WR CEDAR-T	79.3	18.7		46	57	68				
COTWOOD-T	61.4	57.5		38	90	142				
R ALDER-T										
<b>TOTAL</b>	<b>72.4</b>	<b>9.0</b>		<b>55</b>	<b>60</b>	<b>66</b>	<b>209</b>	<b>52</b>	<b>23</b>	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK-T	78.0	18.9		136	167	199				
DOUG FIR-T	70.9	17.2		59	71	83				
WR CEDAR-T	106.7	25.9		51	69	87				
COTWOOD-T	424.3	102.8			3	6				
R ALDER-T	424.3	102.8			3	7				
<b>TOTAL</b>	<b>41.7</b>	<b>10.1</b>		<b>282</b>	<b>313</b>	<b>345</b>	<b>74</b>	<b>18</b>	<b>8</b>	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK-T	80.5	19.5		102	127	152				
DOUG FIR-T	59.9	14.5		106	124	142				
WR CEDAR-T	94.1	22.8		60	78	96				
COTWOOD-T	424.3	102.8			6	12				
R ALDER-T	424.3	102.8			2	5				
<b>TOTAL</b>	<b>25.9</b>	<b>6.3</b>		<b>316</b>	<b>337</b>	<b>358</b>	<b>28</b>	<b>7</b>	<b>3</b>	

TC TSTATS				STATISTICS			PAGE	2		
Cascade District -- NW Region				PROJECT	DYNO		DATE	10/22/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
27N	09E	02	DYNO	USA	26.30	18	121	S	W	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK-T		89.0	21.6	14,285	18,214	22,142				
DOUG FIR-T		63.3	15.3	16,708	19,736	22,764				
WR CEDAR-T		91.9	22.3	7,151	9,199	11,246				
COTWOOD-T		424.3	102.8		926	1,878				
R ALDER-T		424.3	102.8		168	341				
<b>TOTAL</b>		28.2	6.8	44,948	48,243	51,539	34	8	4	
CL:	68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK-T		84.6	20.5	3,613	4,545	5,477				
DOUG FIR-T		60.8	14.7	4,198	4,924	5,649				
WR CEDAR-T		91.9	22.3	2,008	2,584	3,159				
COTWOOD-T		424.3	102.8		231	469				
R ALDER-T		424.3	102.8		61	123				
<b>TOTAL</b>		25.4	6.2	11,584	12,345	13,105	27	7	3	
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK-T		35.0	8.5	112	143	174				
DOUG FIR-T				135	159	184				
WR CEDAR-T		18.6	4.5	92	118	145				
COTWOOD-T		424.3	102.8		153	310				
R ALDER-T		424.3	102.8		76	154				
<b>TOTAL</b>		175.1	42.4	133	143	153	1,296	324	144	

<b>T27N R09E S02 TU5B</b>	<b>T27N R09E S02 TU5B</b>
Twp <b>27N</b> Rge <b>09E</b> Sec <b>02</b> Tract <b>DYNO</b> Type <b>U5B</b> Acres <b>.50</b> Plots <b>2</b> Sample Trees <b>6</b> CuFt <b>S</b>	BdFt <b>W</b>

Spp	T	D	Gr	2S	3S	4S	%	Percent Net Board Foot Volume										Average Log				Logs Per /Acre				
								Bd. Ft. per Acre			Total Net MBF	Log Scale Dia.				Log Length				Ln Ft	Dia In		Bd Ft	CF/Lf		
								Def%	Gross	Net		4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99							
WH	T	D		2S			47	19.9	13,684	10,967	5			100				100			40	14	253	1.78	43.3	
WH	T	D		3S			49		11,276	11,276	6			100				100			40	9	120	0.77	94.0	
WH	T	D		4S			4		906	906	0			100				100			14	6	11	0.33	79.9	
<b>WH T Totals</b>							64	10.5	25,865	23,148	12		53	47				4	96		30	9	107	0.96	217.2	
RC	T	D		3S			69		2,455	2,455	1			100				100			40	8	90	0.71	27.3	
RC	T	D		4S			31		1,074	1,074	1	100						100			26	3	13	0.26	80.1	
<b>RC T Totals</b>							10		3,529	3,529	2	30	70					30	70		30	5	33	0.41	107.4	
DF	T	D		2S			66	10.0	6,933	6,240	3			100				100			40	16	360	2.15	17.3	
DF	T	D		3S			30	11.1	3,120	2,773	1			100				100			40	11	160	1.02	17.3	
DF	T	D		4S			4	33.3	520	347	0			100				100			17	7	20	0.47	17.3	
<b>DF T Totals</b>							26	11.5	10,573	9,359	5		33	67				4	96		32	11	180	1.39	52.0	
<b>Type Totals</b>								9.8	39,967	36,037	18	3	49	48				1	5	94		30	8	96	0.87	376.6

TC TSTATS				STATISTICS				PAGE	1	
Cascade District -- NW Region				PROJECT	DYNO		DATE	10/22/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
27N	09E	02	DYNO	USB	0.50	2	13	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	2	13	6.5							
CRUISE	1	6	6.0	89	6.8					
DBH COUNT										
REFOREST										
COUNT	1	7	7.0							
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK-T	3	79.9	19.4	85	37.1	163.4	25,865	23,148	6,332	6,343
WR CEDAR-T	2	80.1	11.7	41	17.5	60.0	3,529	3,529	1,333	1,310
DOUG FIR-T	1	17.3	24.0	100	11.1	54.5	10,573	9,359	2,334	2,340
<b>TOTAL</b>	<b>6</b>	<b>177.4</b>	<b>16.9</b>	<b>67</b>	<b>67.5</b>	<b>277.8</b>	<b>39,967</b>	<b>36,037</b>	<b>9,999</b>	<b>9,993</b>
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	10	15	
WHEMLOCK-T	61.6	42.6		176	307	437				
WR CEDAR-T	117.9	110.4			60	126				
DOUG FIR-T										
<b>TOTAL</b>	<b>83.4</b>	<b>37.1</b>		<b>166</b>	<b>263</b>	<b>361</b>	<b>331</b>	<b>83</b>	<b>37</b>	
CL:	68.1 %	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK-T	32.2	22.3		66	85	104				
WR CEDAR-T	93.7	87.7		3	21	39				
DOUG FIR-T										
<b>TOTAL</b>	<b>67.1</b>	<b>29.9</b>		<b>50</b>	<b>72</b>	<b>93</b>	<b>214</b>	<b>53</b>	<b>24</b>	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK-T				80	80	80				
WR CEDAR-T	47.1	44.1		45	80	116				
DOUG FIR-T	.0	.0		17	17	17				
<b>TOTAL</b>	<b>21.3</b>	<b>19.9</b>		<b>142</b>	<b>177</b>	<b>213</b>	<b>32</b>	<b>8</b>	<b>4</b>	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK-T	.0	.0		163	163	163				
WR CEDAR-T	47.1	44.1		34	60	86				
DOUG FIR-T				54	54	54				
<b>TOTAL</b>	<b>10.2</b>	<b>9.5</b>		<b>251</b>	<b>278</b>	<b>304</b>	<b>7</b>	<b>2</b>	<b>1</b>	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK-T	.0	.0		23,144	23,148	23,153				
WR CEDAR-T	47.1	44.1		1,971	3,529	5,087				
DOUG FIR-T	.0	.0		9,357	9,359	9,362				
<b>TOTAL</b>	<b>4.6</b>	<b>4.3</b>		<b>34,479</b>	<b>36,037</b>	<b>37,595</b>	<b>1</b>	<b>0</b>	<b>0</b>	
CL:	68.1 %	COEFF	NET CUFT FT/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK-T				6,343	6,343	6,343				
WR CEDAR-T	47.1	44.1		732	1,310	1,889				

TC TSTATS				STATISTICS			PAGE	2		
Cascade District -- NW Region				PROJECT	DYNO		DATE	10/22/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
27N	09E	02	DYNO	USB	0.50	2	13	S	W	
CL:	68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.	INF. POP.		
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR-T				2,340	2,340	2,340				
<b>TOTAL</b>		6.2	5.8	9,414	9,993	10,571	3	1	0	
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.	INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK-T				142	142	142				
WR CEDAR-T				33	59	85				
DOUG FIR-T				172	172	172				
<b>TOTAL</b>		231.7	217.0	124	130	135	3,766	941	418	

<b>T27N R09E S11 TU6</b>									<b>T27N R09E S11 TU6</b>					
<b>Twp</b>	<b>Rge</b>	<b>Sec</b>	<b>Tract</b>	<b>Type</b>	<b>Acres</b>	<b>Plots</b>	<b>Sample Trees</b>	<b>CuFt</b>	<b>BdFt</b>					
<b>27N</b>	<b>09E</b>	<b>11</b>	<b>DYNO</b>	<b>U6</b>	<b>7.70</b>	<b>7</b>	<b>16</b>	<b>S</b>	<b>W</b>					

Spp	S	So	Gr	% 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							
RA	T	D	3S	44	2.9	2,575	2,501	19	100				100				30	10	90	0.85	27.7		
RA	T	D	4S	53	11.4	3,355	2,971	23	23	77			94	6			30	6	36	0.41	83.3		
RA	T	D	PU	3		156	156	1	100				100				19	4	7	0.21	23.0		
<b>RA T Totals</b>				32	7.5	6,086	5,627	43	15	85			97	3			28	6	42	0.48	133.9		
BM	T	D	2S	87	25.1	4,046	3,029	23	100				100				30	13	135	1.78	22.5		
BM	T	D	4S	13	50.0	899	450	3	100				100				30	6	20	0.56	22.5		
<b>BM T Totals</b>				20	29.7	4,945	3,479	27	13	87			100				30	10	77	1.17	45.0		
WH	T	D	3S	89		3,413	3,413	26	100				100				40	9	112	0.99	30.5		
WH	T	D	4S	4		138	138	1	38	62			100				14	5	14	0.36	9.6		
WH	T	D	PU	7		263	263	2	100				26	74			17	4	13	0.20	20.9		
<b>WH T Totals</b>				22		3,814	3,814	29	8	92			5	5			89	28	7	63	0.77	60.9	
DF	T	HA	2S	30		1,435	1,435	11	100				100				40	12	200	1.18	7.2		
DF	T	D	2S	51	10.8	2,718	2,423	19	100				100				40	13	235	1.75	10.3		
DF	T	D	3S	12	14.7	667	569	4	100				100				40	6	55	0.61	10.3		
DF	T	D	4S	7		287	287	2	100				100				38	5	40	0.46	7.2		
<b>DF T Totals</b>				27	7.7	5,107	4,714	36	6	12	82			100				40	9	135	1.04	35.0	
<b>Type Totals</b>					11.6	19,952	17,635	136	8	53	39			1	52	1		46	30	7	64	0.75	274.8

TC TSTATS				STATISTICS				PAGE	1	
Cascade District -- NW Region				PROJECT DYN0		DATE		10/22/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
27N	09E	11	DYNO	U6	7.70	7	31	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		7	31	4.4						
CRUISE		4	16	4.0	1,081		1.5			
DBH COUNT										
REFOREST										
COUNT		3	15	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
R ALDER-T	6	69.9	12.8	60	17.5	62.9	6,086	5,627	1,809	1,820
BL MAPLE-T	2	22.5	20.5	63	11.4	51.4	4,945	3,479	1,570	1,570
WHEMLOCK-T	5	30.5	16.8	58	11.4	46.7	3,814	3,814	1,327	1,327
DOUG FIR-T	3	17.5	20.2	82	8.7	38.9	5,107	4,714	1,439	1,440
<b>TOTAL</b>	<b>16</b>	<b>140.3</b>	<b>16.2</b>	<b>63</b>	<b>49.7</b>	<b>199.9</b>	<b>19,952</b>	<b>17,635</b>	<b>6,145</b>	<b>6,157</b>
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	10	15		
R ALDER-T	49.3	22.0	69	88	108					
BL MAPLE-T	4.6	4.3	148	155	162					
WHEMLOCK-T	30.0	14.9	112	132	152					
DOUG FIR-T	11.2	7.7	252	273	294					
<b>TOTAL</b>	<b>52.6</b>	<b>13.6</b>	<b>125</b>	<b>145</b>	<b>165</b>	<b>118</b>	<b>30</b>	<b>13</b>		
CL: 68.1 %	COEFF	SAMPLE TREES - CF					# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
R ALDER-T	36.8	16.4	24	28	33					
BL MAPLE-T	6.1	5.7	66	70	74					
WHEMLOCK-T	30.4	15.1	40	47	54					
DOUG FIR-T	21.7	15.0	72	85	98					
<b>TOTAL</b>	<b>50.1</b>	<b>12.9</b>	<b>44</b>	<b>50</b>	<b>56</b>	<b>107</b>	<b>27</b>	<b>12</b>		
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
R ALDER-T	77.8	31.7	48	70	92					
BL MAPLE-T	147.0	59.8	9	22	36					
WHEMLOCK-T	165.4	67.3	10	30	51					
DOUG FIR-T	155.8	63.4	6	17	29					
<b>TOTAL</b>	<b>44.0</b>	<b>17.9</b>	<b>115</b>	<b>140</b>	<b>165</b>	<b>90</b>	<b>22</b>	<b>10</b>		
CL: 68.1 %	COEFF	BASAL AREA/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
R ALDER-T	81.0	32.9	42	63	84					
BL MAPLE-T	147.0	59.8	21	51	82					
WHEMLOCK-T	170.8	69.5	14	47	79					
DOUG FIR-T	155.8	63.4	14	39	64					
<b>TOTAL</b>	<b>39.2</b>	<b>15.9</b>	<b>168</b>	<b>200</b>	<b>232</b>	<b>71</b>	<b>18</b>	<b>8</b>		
CL: 68.1 %	COEFF	NET BF/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
R ALDER-T	93.1	37.9	3,496	5,627	7,759					
BL MAPLE-T	147.0	59.8	1,398	3,479	5,559					
WHEMLOCK-T	174.4	71.0	1,107	3,814	6,522					

TC TSTATS				STATISTICS			PAGE	2		
Cascade District -- NW Region				PROJECT	DYNO		DATE	10/22/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
27N	09E	11	DYNO	U6	7.70	7	31	S	W	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.	INF. POP.		
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR-T		155.8	63.4	1,726	4,714	7,703				
<b>TOTAL</b>		<b>34.3</b>	<b>13.9</b>	<b>15,175</b>	<b>17,635</b>	<b>20,094</b>	<b>54</b>	<b>14</b>	<b>6</b>	
CL:	68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.	INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
R ALDER-T		85.8	34.9	1,185	1,820	2,455				
BL MAPLE-T		147.0	59.8	631	1,570	2,509				
WHEMLOCK-T		171.5	69.8	401	1,327	2,253				
DOUG FIR-T		155.8	63.4	527	1,440	2,353				
<b>TOTAL</b>		<b>36.3</b>	<b>14.8</b>	<b>5,247</b>	<b>6,157</b>	<b>7,067</b>	<b>61</b>	<b>15</b>	<b>7</b>	
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.	INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
R ALDER-T				56	90	123				
BL MAPLE-T				27	68	108				
WHEMLOCK-T		167.8	68.3	24	82	140				
DOUG FIR-T		133.2	54.2	44	121	198				
<b>TOTAL</b>		<b>181.9</b>	<b>74.0</b>	<b>76</b>	<b>88</b>	<b>101</b>	<b>1,534</b>	<b>384</b>	<b>170</b>	



TC TSTATS				STATISTICS				PAGE	1	
Cascade District -- NW Region				PROJECT	DYNO			DATE	10/22/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
27N	09E	02	DYNO	ROW	0.80	1	4	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL	1	4	4.0							
CRUISE	1	4	4.0		87		4.6			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
<b>STAND SUMMARY</b>										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
R ALDER-T	2	58.9	15.8	66	20.1	80.0	9,698	7,344	2,466	2,467
WHEMLOCK-T	1	45.6	14.8	47	14.2	54.5	3,190	3,190	1,218	1,218
BL MAPLE-T	1	4.6	40.0	80	6.3	40.0	7,059	4,538	1,385	1,384
<b>TOTAL</b>	<b>4</b>	<b>109.0</b>	<b>17.1</b>	<b>59</b>	<b>42.2</b>	<b>174.4</b>	<b>19,948</b>	<b>15,072</b>	<b>5,069</b>	<b>5,069</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	<b>SAMPLE TREES - BF</b>				<b># OF TREES REQ.</b>		<b>INF. POP.</b>		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
R ALDER-T	5.7	5.3	118	125	132					
WHEMLOCK-T										
BL MAPLE-T										
<b>TOTAL</b>	<b>135.1</b>	<b>77.2</b>	<b>75</b>	<b>328</b>	<b>580</b>	<b>953</b>	<b>238</b>	<b>106</b>		
CL: 68.1 %	COEFF	<b>SAMPLE TREES - CF</b>				<b># OF TREES REQ.</b>		<b>INF. POP.</b>		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
R ALDER-T	6.7	6.3	39	42	45					
WHEMLOCK-T										
BL MAPLE-T										
<b>TOTAL</b>	<b>128.7</b>	<b>73.5</b>	<b>27</b>	<b>103</b>	<b>179</b>	<b>865</b>	<b>216</b>	<b>96</b>		

T27N R09E S02 TROW2	T27N R09E S02 TROW2
Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt	BdFt
27N 09E 02 DYNO ROW2 .60 1 4 S	W

Spp	T	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									
WH	T	D	3S	87	7,576	7,576	5	100				100				40	7	70	0.63	108.2					
WH	T	D	4S	13	1,082	1,082	1	100				100				13	4	10	0.18	108.2					
<b>WH T Totals</b>				39	8,658	8,658	5	13	87	13				87				26	6	40	0.52	216.5			
CW	T	D	2S	100	22.5	10,485	8,122	5	24	76	100				40	15	275	1.97	29.5						
<b>CW T Totals</b>				37	22.5	10,485	8,122	5	24	76	100				40	15	275	1.97	29.5						
RA	T	D	2S	66	7.7	3,724	3,438	2	100				100				30	11	120	1.03	28.6				
RA	T	D	3S	28		1,432	1,432	1	100				100				30	7	50	0.47	28.6				
RA	T	D	PU	6		286	286	0	100				100				13	5	10	0.20	28.6				
<b>RA T Totals</b>				24	5.3	5,443	5,157	3	6	94	6				94				24	8	60	0.65	85.9		
<b>Type Totals</b>					10.8	24,587	21,938	13	6	65	28				6	22	72				27	7	66	0.74	331.9

TC TSTATS				STATISTICS				PAGE	1	
Cascade District -- NW Region				PROJECT	DYNO			DATE	10/22/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
27N	09E	02	DYNO	ROW	0.60	1	4	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	1	4	4.0							
CRUISE	1	4	4.0		91		4.4			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK-T	2	108.2	13.6	55	29.5	108.9	8,658	8,658	2,972	2,972
COTWOOD-T	1	14.8	26.0	95	10.7	54.5	10,485	8,122	2,328	2,333
R ALDER-T	1	28.6	16.0	76	10.0	40.0	5,443	5,157	1,357	1,364
<b>TOTAL</b>	<b>4</b>	<b>151.6</b>	<b>15.7</b>	<b>63</b>	<b>51.4</b>	<b>203.3</b>	<b>24,587</b>	<b>21,938</b>	<b>6,657</b>	<b>6,670</b>
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	10	15	
WHEMLOCK-T				80	80	80				
COTWOOD-T										
R ALDER-T										
<b>TOTAL</b>	<b>100.4</b>	<b>57.4</b>		<b>95</b>	<b>223</b>	<b>350</b>	<b>526</b>	<b>132</b>	<b>58</b>	
CL:	68.1 %	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK-T	8.5	7.9		25	28	30				
COTWOOD-T										
R ALDER-T										
<b>TOTAL</b>	<b>96.1</b>	<b>54.9</b>		<b>29</b>	<b>65</b>	<b>101</b>	<b>482</b>	<b>120</b>	<b>54</b>	

<b>T27N R09E S2 TROW3</b>	<b>T27N R09E S2 TROW3</b>
Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt	BdFt
27N 09E 2 DYNO ROW3 2.60 1 3 S	W

Spp	T	D	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs						
									Net	Def%	Gross	Net	Net MBF	Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/	Per	
														BdFt	4-5	6-11	12-16	17+	12-20	21-30							31-35
RC	T	D	3S	94	9.9	5,429	4,890	13		53	47		7	93	35	9	117	1.50	41.8								
RC	T	D	4S	6		283	283	1	100					100	12	5	10	0.24	28.3								
<b>RC</b>	<b>T</b>	<b>Totals</b>		31	9.4	5,712	5,173	13	5	50	44	5	7	88	25	8	74	1.26	70.1								
WH	T	D	2S	100		11,460	11,460	30		22	78			100	40	16	450	2.28	25.5								
WH	T	D	PU												8	9		0.00	12.7								
<b>WH</b>	<b>T</b>	<b>Totals</b>		69		11,460	11,460	30		22	78			100	29	14	300	2.07	38.2								
<b>Type</b>	<b>Totals</b>				3.1	17,172	16,633	43	2	16	15	67	2	2	96	27	10	154	1.57	108.3							

TC TSTATS				<b>STATISTICS</b>				PAGE	1	
Cascade District -- NW Region				PROJECT	DYNO			DATE	10/22/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
27N	09E	2	DYNO	ROW	2.60	1	3	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		1	3	3.0						
CRUISE		1	3	3.0	124		2.4			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
<b>STAND SUMMARY</b>										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WR CEDAR-T	2	35.0	20.5	53	17.7	80.0	5,712	5,173	2,243	2,244
WHEMLOCK-T	1	12.7	28.0	90	10.3	54.5	11,460	11,460	2,324	2,324
<b>TOTAL</b>	<b>3</b>	<b>47.8</b>	<b>22.7</b>	<b>63</b>	<b>28.2</b>	<b>134.4</b>	<b>17,172</b>	<b>16,633</b>	<b>4,566</b>	<b>4,568</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	<b>SAMPLE TREES - BF</b>				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WR CEDAR-T		88.4	82.8	41	240	439				
WHEMLOCK-T										
<b>TOTAL</b>		<b>89.0</b>	<b>61.6</b>	<b>177</b>	<b>460</b>	<b>743</b>	<b>455</b>	<b>114</b>	<b>51</b>	
CL:	68.1 %	COEFF	<b>SAMPLE TREES - CF</b>				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WR CEDAR-T		97.9	91.7	9	112	214				
WHEMLOCK-T										
<b>TOTAL</b>		<b>64.7</b>	<b>44.7</b>	<b>75</b>	<b>135</b>	<b>196</b>	<b>240</b>	<b>60</b>	<b>27</b>	

<b>T27N R09E S02 TROW4</b>										<b>T27N R09E S02 TROW4</b>				
<b>Twp</b>	<b>Rge</b>	<b>Sec</b>	<b>Tract</b>	<b>Type</b>	<b>Acres</b>	<b>Plots</b>	<b>Sample Trees</b>	<b>CuFt</b>	<b>BdFt</b>					
<b>27N</b>	<b>09E</b>	<b>02</b>	<b>DYNO</b>	<b>ROW4</b>	<b>2.00</b>	<b>14</b>	<b>133</b>	<b>S</b>	<b>W</b>					

Spp	T	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
					4-5	6-11	12-16							17+	12-20	21-30	31-35	36-99					
WH	T	D	2S	32	4.3	8,842	8,461	17	100				100				40	13	246	1.39	34.5		
WH	T	D	3S	52	.9	13,704	13,580	27	100				100				40	8	100	0.61	136.5		
WH	T	D	4S	6		1,489	1,489	3	45	55			10	18		71	21	6	23	0.29	64.6		
WH	T	D	PU	10	2.5	2,586	2,521	5	100				4	15	15	66	26	4	16	0.20	162.4		
<b>WH T Totals</b>				<b>47</b>	<b>2.1</b>	<b>26,621</b>	<b>26,051</b>	<b>52</b>	<b>12</b>	<b>55</b>	<b>32</b>		<b>1</b>	<b>2</b>	<b>1</b>	<b>95</b>	<b>31</b>	<b>6</b>	<b>65</b>	<b>0.52</b>	<b>397.9</b>		
DF	T	HA	SM	1		317	317	1	100				100				32	16	320	2.14	1.0		
DF	T	HA	2S	17	1.9	4,461	4,375	9			82	18				100	40	14	319	1.77	13.7		
DF	T	HB	2S	19	3.0	5,306	5,145	10			70	30				100	40	14	282	1.71	18.3		
DF	T	D	2S	16	8.8	4,380	3,995	8			75	25				100	40	14	264	1.71	15.2		
DF	T	D	3S	41	1.3	10,817	10,675	21	0	100			0	1	0	99	39	8	103	0.68	104.0		
DF	T	D	4S	3	8.6	1,072	980	2	33	67			17	19		64	16	6	15	0.33	64.1		
DF	T	D	PU	3		566	566	1	100						23	77	23	4	13	0.22	44.0		
<b>DF T Totals</b>				<b>47</b>	<b>3.2</b>	<b>26,919</b>	<b>26,053</b>	<b>52</b>	<b>3</b>	<b>43</b>	<b>40</b>	<b>13</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>96</b>	<b>31</b>	<b>8</b>	<b>100</b>	<b>0.83</b>	<b>260.3</b>		
RC	T	D	3S	64	3.0	2,021	1,960	4		59	41				100	37	9	109	0.84	17.9			
RC	T	D	4S	36		1,057	1,057	2	94	6			8	25	20	48	27	4	15	0.23	70.8		
<b>RC T Totals</b>				<b>5</b>	<b>2.0</b>	<b>3,078</b>	<b>3,017</b>	<b>6</b>	<b>33</b>	<b>41</b>	<b>26</b>		<b>3</b>	<b>9</b>	<b>7</b>	<b>82</b>	<b>29</b>	<b>5</b>	<b>34</b>	<b>0.38</b>	<b>88.7</b>		
BM	T	D	PU	100	27.3	6	4	0	100				100				30	10	80	0.97	.1		
<b>BM T Totals</b>				<b>0</b>	<b>27.3</b>	<b>6</b>	<b>4</b>	<b>0</b>	<b>100</b>				<b>100</b>				<b>30</b>	<b>10</b>	<b>80</b>	<b>0.97</b>	<b>.1</b>		
<b>Type Totals</b>					<b>2.6</b>	<b>56,624</b>	<b>55,126</b>	<b>110</b>	<b>9</b>	<b>49</b>	<b>36</b>	<b>6</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>95</b>	<b>31</b>	<b>7</b>	<b>74</b>	<b>0.61</b>	<b>746.9</b>		

TC TSTATS				STATISTICS				PAGE	1	
Cascade District -- NW Region				PROJECT	DYNO		DATE	10/22/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
27N	09E	02	DYNO	ROW	2.00	14	133	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES		PERCENT SAMPLE TREES			
TOTAL		14	133	9.5						
CRUISE		14	133	9.5	661		20.1			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
WHEMLOCK-T	60	175.8	13.4	75	46.9	171.4	26,621	26,051	6,476	6,478
DOUG FIR-T	59	97.7	17.8	86	40.0	168.6	26,919	26,053	6,671	6,664
WR CEDAR-T	13	57.0	10.9	49	11.2	37.1	3,078	3,017	998	999
BL MAPLE-T	1	.1	16.0	55	0.0	.1	6	4	1	1
<b>TOTAL</b>	<i>133</i>	<i>330.6</i>	<i>14.5</i>	<i>73</i>	<i>99.2</i>	<i>377.2</i>	<i>56,624</i>	<i>55,126</i>	<i>14,146</i>	<i>14,143</i>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF		SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK-T	62.0	8.0	196	213	229					
DOUG FIR-T	66.0	8.6	333	364	396					
WR CEDAR-T	117.5	33.9	73	110	147					
BL MAPLE-T										
<b>TOTAL</b>	<i>77.1</i>	<i>6.7</i>	<i>251</i>	<i>269</i>	<i>287</i>	<i>237</i>	<i>59</i>	<i>26</i>		
CL: 68.1 %	COEFF		SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK-T	58.8	7.6	48	52	56					
DOUG FIR-T	59.0	7.7	84	91	98					
WR CEDAR-T	110.3	31.8	23	34	45					
BL MAPLE-T										
<b>TOTAL</b>	<i>70.8</i>	<i>6.1</i>	<i>63</i>	<i>68</i>	<i>72</i>	<i>200</i>	<i>50</i>	<i>22</i>		
CL: 68.1 %	COEFF		TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK-T	67.1	18.6	143	176	209					
DOUG FIR-T	47.7	13.2	85	98	111					
WR CEDAR-T	136.3	37.7	35	57	78					
BL MAPLE-T	374.2	103.6		0	0					
<b>TOTAL</b>	<i>45.5</i>	<i>12.6</i>	<i>289</i>	<i>331</i>	<i>372</i>	<i>89</i>	<i>22</i>	<i>10</i>		
CL: 68.1 %	COEFF		BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK-T	53.7	14.9	146	171	197					
DOUG FIR-T	47.6	13.2	146	169	191					
WR CEDAR-T	122.9	34.0	24	37	50					
BL MAPLE-T	374.2	103.6		0	0					
<b>TOTAL</b>	<i>20.2</i>	<i>5.6</i>	<i>356</i>	<i>377</i>	<i>398</i>	<i>18</i>	<i>4</i>	<i>2</i>		
CL: 68.1 %	COEFF		NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK-T	55.2	15.3	22,065	26,051	30,036					
DOUG FIR-T	47.3	13.1	22,638	26,053	29,469					
WR CEDAR-T	128.2	35.5	1,946	3,017	4,089					

TC TSTATS				STATISTICS			PAGE	2		
Cascade District -- NW Region				PROJECT	DYNO		DATE	10/22/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
27N	09E	02	DYNO	ROW	2.00	14	133	S	W	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.	INF. POP.		
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
BL MAPLE-T		374.2	103.6		4	8				
<b>TOTAL</b>		23.4	6.5	51,552	55,126	58,700	24	6	3	
CL:	68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.	INF. POP.		
SD:	1.0	VAR. %	S.E. %	LOW	AVG	HIGH	5	10	15	
WHEMLOCK-T		54.1	15.0	5,507	6,478	7,449				
DOUG FIR-T		47.8	13.3	5,781	6,664	7,547				
WR CEDAR-T		124.5	34.5	654	999	1,343				
BL MAPLE-T		374.2	103.6		1	3				
<b>TOTAL</b>		21.3	5.9	13,308	14,143	14,977	19	5	2	
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.	INF. POP.		
SD:	1.0	VAR. %	S.E. %	LOW	AVG	HIGH	5	10	15	
WHEMLOCK-T		55.2	15.3	129	152	175				
DOUG FIR-T		47.3	13.1	134	155	175				
WR CEDAR-T		128.2	35.5	52	81	110				
BL MAPLE-T		374.2	103.6		57	117				
<b>TOTAL</b>		23.3	6.5	137	146	156	23	6	3	

T27N R09E S02 TROW5										T27N R09E S02 TROW5				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
27N	09E	02	DYNO	ROW5	.50	1	6	S	W					

Spp	S	So	Gr	% 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	T	D	2S	58	3.6	20,908	20,153	10	100				100				40	15	334	1.85	60.4
DF	T	D	3S	37	5.0	13,250	12,583	6	100				100				40	10	134	0.90	93.7
DF	T	D	4S	5		1,605	1,605	1	62	38			38	62			19	6	21	0.38	74.9
DF	T	D	PU														8			0.00	18.9
<b>DF</b>	<b>T</b>	<b>Totals</b>		89	4.0	35,762	34,340	17	3	38	59		2	3	95	31	10	139	1.10	247.9	
WH	T	D	PU	100		705	705	0	100					100		29	3	10	0.34	70.5	
<b>WH</b>	<b>T</b>	<b>Totals</b>		2		705	705	0	100					100		29	3	10	0.34	70.5	
RA	T	D	3S	77		2,619	2,619	1		100				100		30	9	70	0.76	37.4	
RA	T	D	PU	23		748	748	0	100					100		28	4	20	0.26	37.4	
<b>RA</b>	<b>T</b>	<b>Totals</b>		9		3,368	3,368	2	22	78				100		29	7	45	0.52	74.8	
<b>Type Totals</b>					3.6	39,835	38,413	19	6	41	52		2	13	85	30	8	98	0.86	393.2	

TC TSTATS				<b>STATISTICS</b>				PAGE	1	
Cascade District -- NW Region				PROJECT	DYNO			DATE	10/22/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
27N	09E	02	DYNO	ROW	0.50	1	6	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL	1	6	6.0							
CRUISE	1	6	6.0		101		6.0			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
<b>STAND SUMMARY</b>										
	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-T	4	93.7	20.6	85	47.9	217.8	35,762	34,340	8,396	8,398
WHEMLOCK-T	1	70.5	11.9	30	15.8	54.5	705	705	725	705
R ALDER-T	1	37.4	14.0	60	10.7	40.0	3,368	3,368	1,125	1,125
<b>TOTAL</b>	<b>6</b>	<b>201.7</b>	<b>16.8</b>	<b>61</b>	<b>76.1</b>	<b>312.3</b>	<b>39,835</b>	<b>38,413</b>	<b>10,246</b>	<b>10,228</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	<b>SAMPLE TREES - BF</b>					# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR-T	36.7	21.0	314	398	481					
WHEMLOCK-T										
R ALDER-T										
<b>TOTAL</b>	<b>75.8</b>	<b>33.8</b>	<b>187</b>	<b>282</b>	<b>377</b>	<b>274</b>	<b>68</b>	<b>30</b>		
CL: 68.1 %	COEFF	<b>SAMPLE TREES - CF</b>					# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR-T	32.5	18.6	78	96	114					
WHEMLOCK-T										
R ALDER-T										
<b>TOTAL</b>	<b>65.9</b>	<b>29.3</b>	<b>50</b>	<b>71</b>	<b>92</b>	<b>207</b>	<b>52</b>	<b>23</b>		

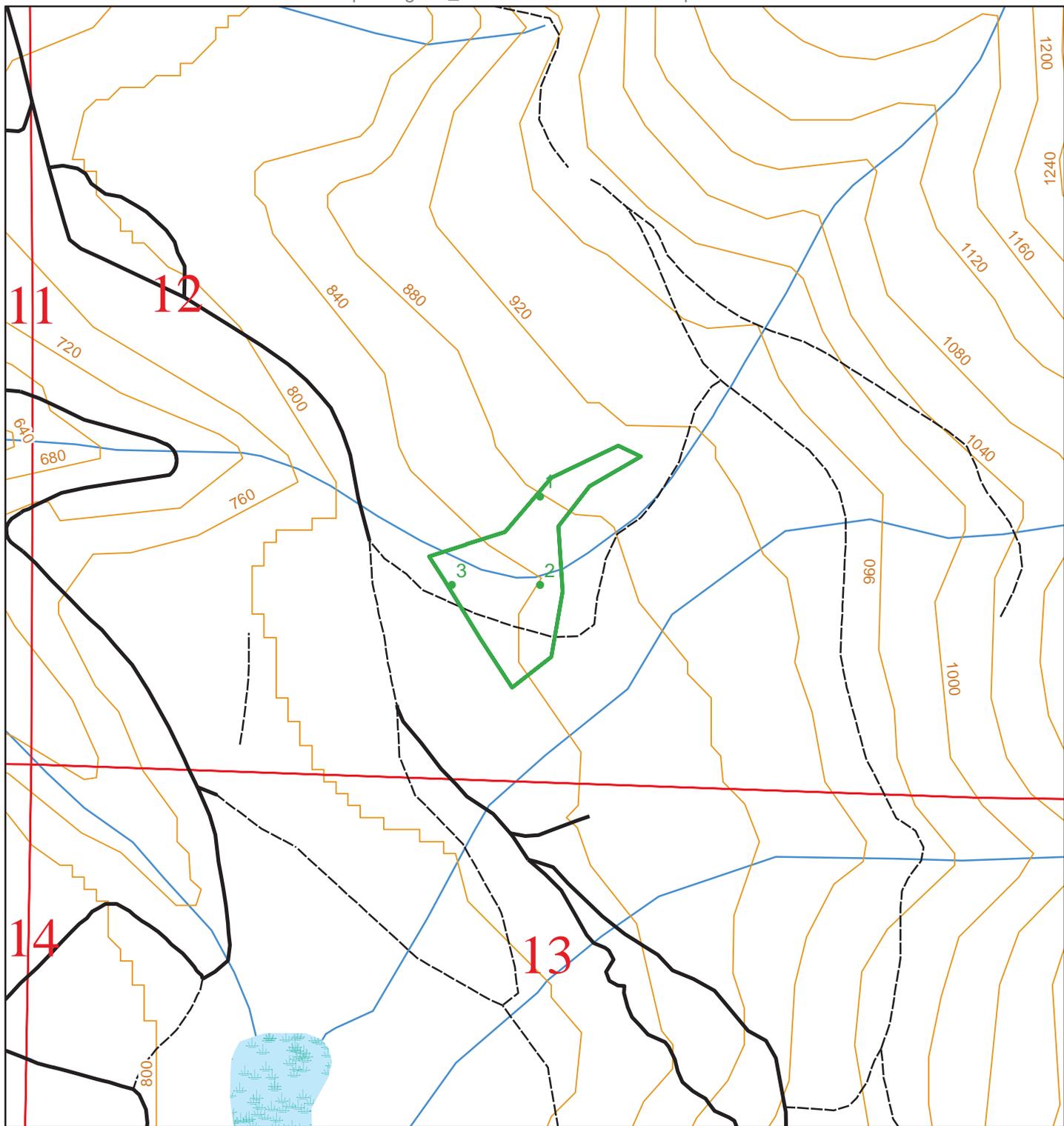
T27N R09E S02 TROW6	T27N R09E S02 TROW6
Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt	BdFt
27N 09E 02 DYNO ROW6 .40 1 4 S	W

Spp	T	D	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					
CW	T	D	2S	100	44.8	11,647	6,434	3		34	66			100	40	18	290	2.69	22.2		
<b>CW</b>	<b>T</b>	<b>Totals</b>		28	44.8	11,647	6,434	3		34	66			100	40	18	290	2.69	22.2		
DF	T	D	2S	69		7,348	7,348	3			100			100	40	17	460	2.36	16.0		
DF	T	D	3S	27		2,875	2,875	1	100					100	40	11	180	1.12	16.0		
DF	T	D	4S	4		319	319	0	100			100			13	8	20	0.50	16.0		
<b>DF</b>	<b>T</b>	<b>Totals</b>		45		10,542	10,542	4	30	70		3		97	31	12	220	1.57	47.9		
WH	T	D	3S	90		3,993	3,993	2	100					100	40	8	90	0.79	44.4		
WH	T	D	PU	10		444	444	0	100			100			20	4	10	0.22	44.4		
<b>WH</b>	<b>T</b>	<b>Totals</b>		19		4,437	4,437	2	10	90		10		90	30	6	50	0.60	88.7		
RC	T	D	3S	100	12.5	2,079	1,819	1	100					100	36	8	70	1.06	26.0		
RC	T	D	4S												11	4		0.00	26.0		
<b>RC</b>	<b>T</b>	<b>Totals</b>		8	12.5	2,079	1,819	1	100					100	24	6	35	0.81	52.0		
<b>Type Totals</b>					19.1	28,705	23,232	9	2	39	10	50	3	97	30	9	110	1.17	210.8		

TC TSTATS				<b>STATISTICS</b>				PAGE	1		
<b>Cascade District -- NW Region</b>				PROJECT	DYNO			DATE	10/22/2015		
<b>TWP</b>	<b>RGE</b>	<b>SECT</b>	<b>TRACT</b>	<b>TYPE</b>	<b>ACRES</b>	<b>PLOTS</b>	<b>TREES</b>	<b>CuFt</b>	<b>BdFt</b>		
<b>27N</b>	<b>09E</b>	<b>02</b>	<b>DYNO</b>	<b>ROW</b>	0.40	1	4	S	W		
				TREES	ESTIMATED	PERCENT					
				PER PLOT	TOTAL	SAMPLE					
				PLOTS	TREES	TREES	TREES				
TOTAL	1	4	4.0								
CRUISE	1	4	4.0	39	10.3						
DBH COUNT											
REFOREST											
COUNT											
BLANKS											
100 %											
<b>STAND SUMMARY</b>											
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET	
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC	
COTWOOD-T	1	11.1	30.0	99	9.9	54.5	11,647	6,434	2,393	2,385	
DOUG FIR-T	1	16.0	25.0	96	10.9	54.5	10,542	10,542	2,326	2,326	
WHEMLOCK-T	1	44.4	15.0	62	14.1	54.5	4,437	4,437	1,592	1,592	
WR CEDAR-T	1	26.0	16.8	48	9.8	40.0	2,079	1,819	990	987	
<b>TOTAL</b>	<b>4</b>	<b>97.4</b>	<b>19.6</b>	<b>68</b>	<b>46.0</b>	<b>203.3</b>	<b>28,705</b>	<b>23,232</b>	<b>7,302</b>	<b>7,291</b>	
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL: 68.1 %	COEFF	<b>SAMPLE TREES - BF</b>					# OF TREES REQ.				
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	0					
COTWOOD-T											
DOUG FIR-T											
WHEMLOCK-T											
WR CEDAR-T											
<b>TOTAL</b>	88.2	50.4	175	353	530	406	102	45			
CL: 68.1 %	COEFF	<b>SAMPLE TREES - CF</b>					# OF TREES REQ.				
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	0					
COTWOOD-T											
DOUG FIR-T											
WHEMLOCK-T											
WR CEDAR-T											
<b>TOTAL</b>	80.5	46.0	59	109	159	339	85	38			



TC TSTATS				STATISTICS				PAGE	1	
Cascade District -- NW Region				PROJECT	DYNO			DATE	10/22/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
27N	09E	02	DYNO	ROW	0.30	1	4	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL	1	4	4.0							
CRUISE	1	4	4.0	60			6.6			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
<b>STAND SUMMARY</b>										
	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-T	2	31.7	25.1	95	21.7	108.9	18,965	18,140	4,552	4,545
WHEMLOCK-T	1	138.2	8.5	28	18.7	54.5	1,382	1,382	715	715
R ALDER-T	1	31.3	15.3	69	10.2	40.0	5,326	4,699	1,289	1,294
<b>TOTAL</b>	<b>4</b>	<b>201.2</b>	<b>13.6</b>	<b>45</b>	<b>55.1</b>	<b>203.4</b>	<b>25,673</b>	<b>24,221</b>	<b>6,557</b>	<b>6,554</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	<b>SAMPLE TREES - BF</b>					<b># OF TREES REQ.</b>		<b>INF. POP.</b>	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR-T	36.5	34.2	408	620	832					
WHEMLOCK-T										
R ALDER-T										
<b>TOTAL</b>	<b>98.0</b>	<b>56.0</b>	<b>154</b>	<b>350</b>	<b>546</b>	<b>501</b>	<b>125</b>	<b>56</b>		
CL: 68.1 %	COEFF	<b>SAMPLE TREES - CF</b>					<b># OF TREES REQ.</b>		<b>INF. POP.</b>	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR-T	37.4	35.0	101	156	210					
WHEMLOCK-T										
R ALDER-T										
<b>TOTAL</b>	<b>94.8</b>	<b>54.2</b>	<b>41</b>	<b>89</b>	<b>138</b>	<b>469</b>	<b>117</b>	<b>52</b>		



**FMU POLYGON AND SAMPLE POINT INFORMATION**

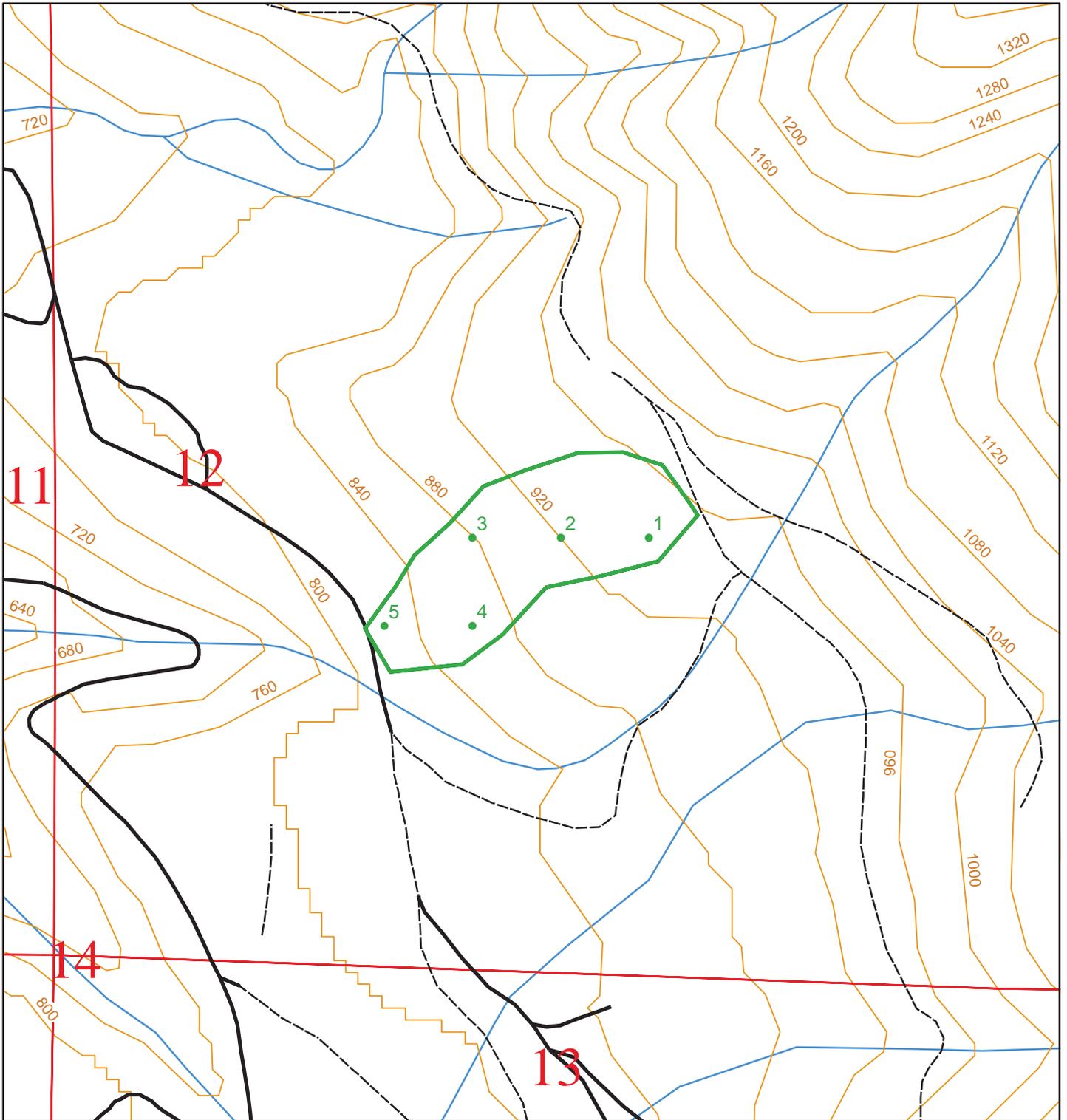
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FMU_ID:	83515	DNR Region:	NORTHWEST
Acres:	acres	Total Sample Points:	3
County:	KING	Spacing Between Points: Width:	250
		Point Rotation Degrees:	0



Scale 1:4,800

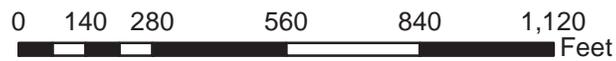
**Legend**

- Sample Points
- FMU polys
- Public Land Survey Sections
- Contours 40-foot



**FMU POLYGON AND SAMPLE POINT INFORMATION**

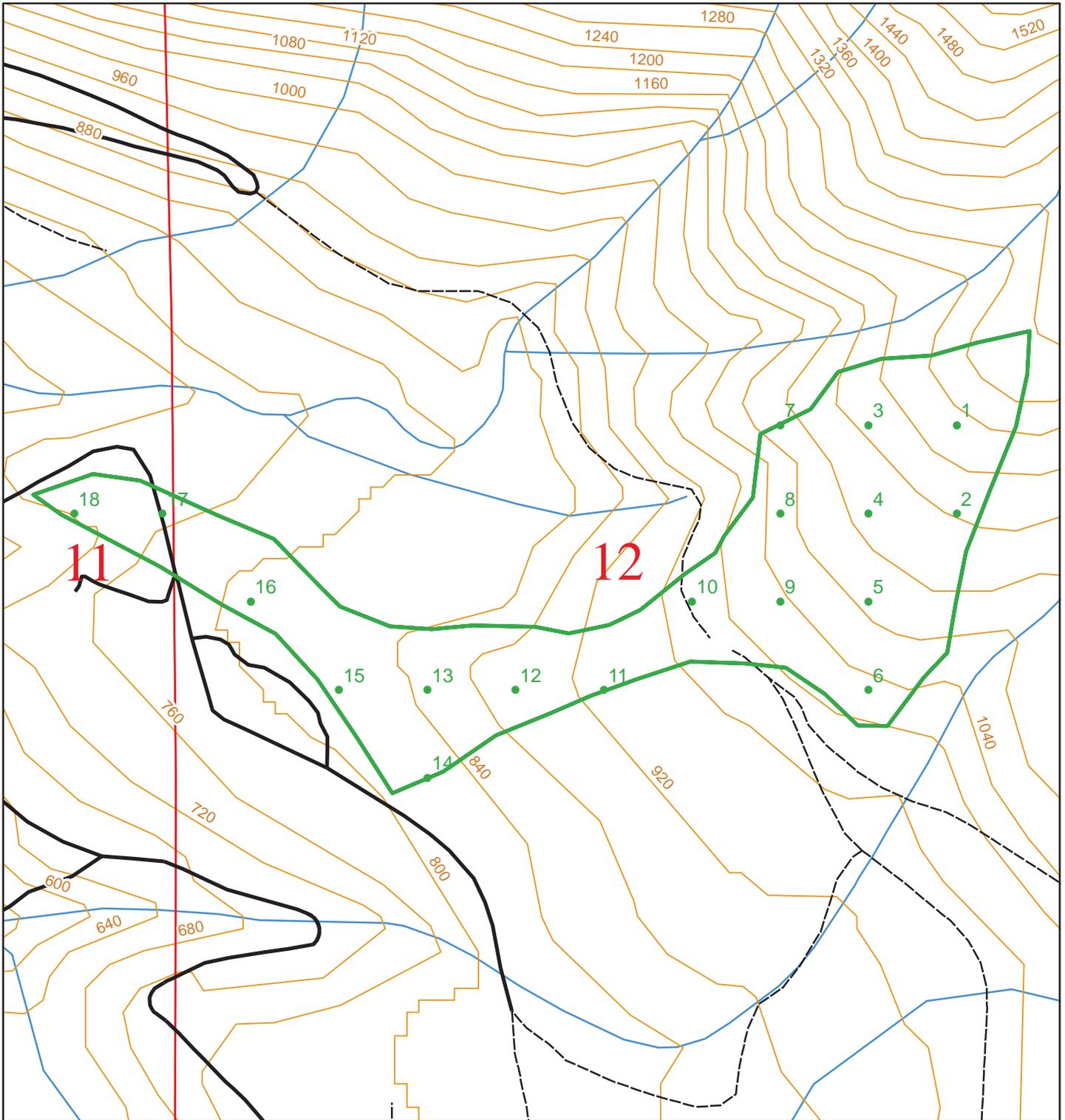
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Acres:	7	Total Sample Points:	5
County:	KING	Spacing Between Points:	Width: 250 Height: 250
		Point Rotation Degrees:	0



Scale 1:4,800

**Legend**

- Sample Points
- FMU polys
- Public Land Survey Sections
- Contours 40-foot



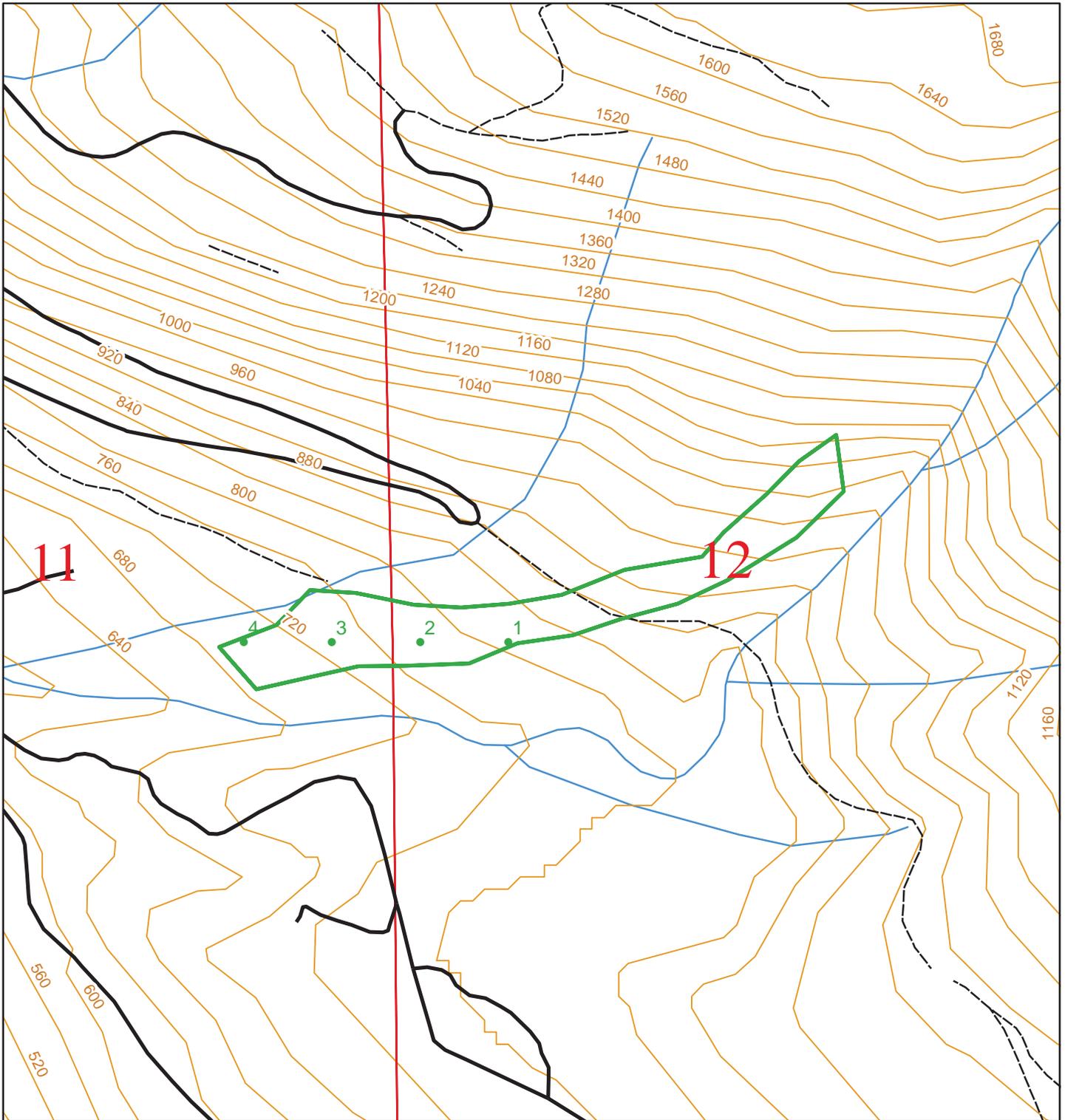
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FMU_NM:	DYNO U1C VRH	Township:	T27R09E
FMU_ID:	93176	DNR Region:	NORTHWEST
Acres:	26	Total Sample Points:	18
County:	KING	Spacing Between Points:	Width: 250 Height: 250
		Point Rotation Degrees:	0



**Legend**

- Sample Points
- FMU polys
- Public Land Survey Sections
- Contours 40-foot



**FMU POLYGON AND SAMPLE POINT INFORMATION**

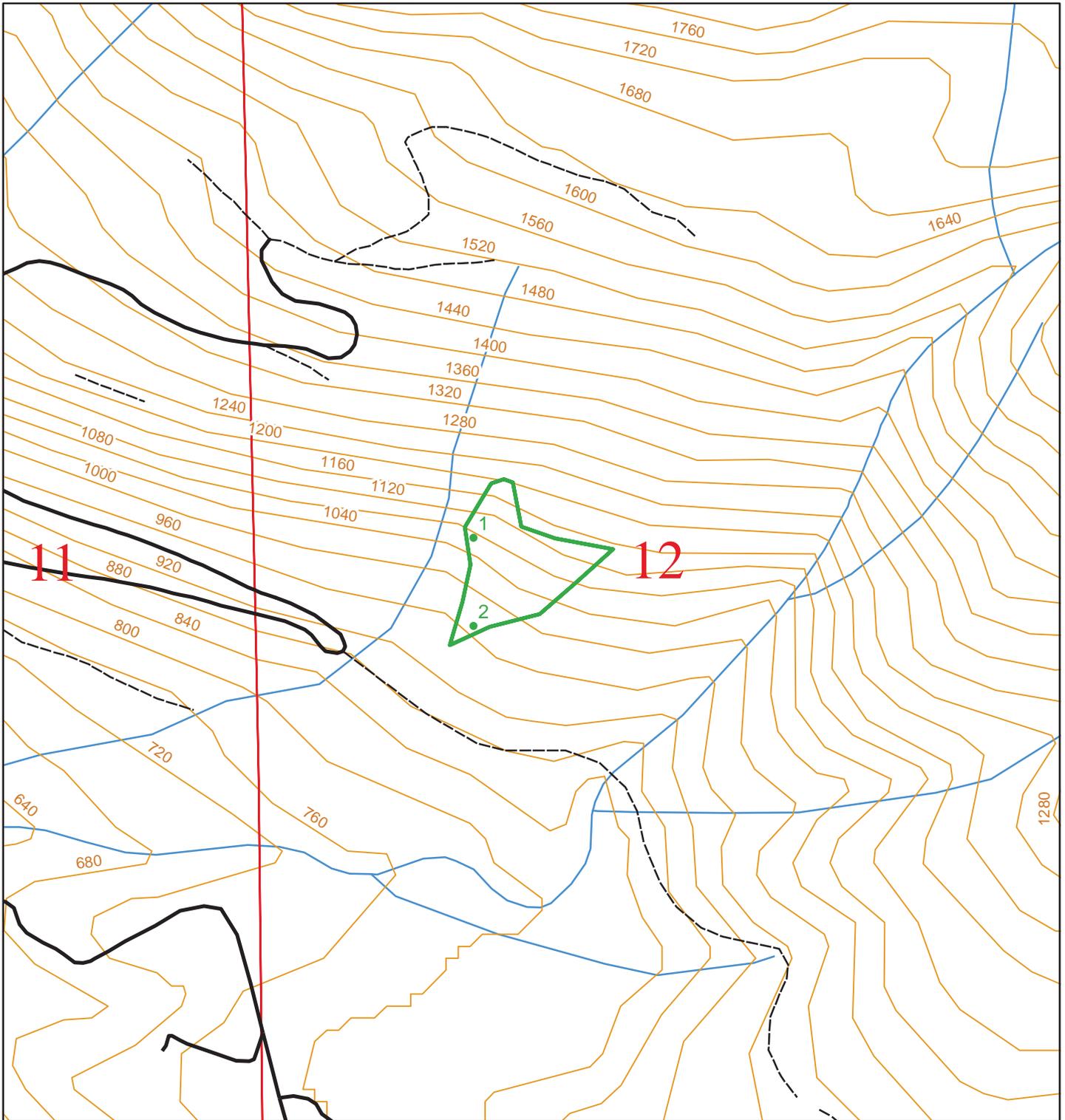
FMU_NM:	DYNO U2A VRH	Township:	T27R09E
FMU_ID:	93177	DNR Region:	NORTHWEST
Acres:	6	Total Sample Points:	4
County:	KING	Spacing Between Points:	Width: 250 Height: 250
		Point Rotation Degrees:	0



Scale 1:4,800

**Legend**

- Sample Points
- FMU polys
- Public Land Survey Sections
- Contours 40-foot



**FMU POLYGON AND SAMPLE POINT INFORMATION**

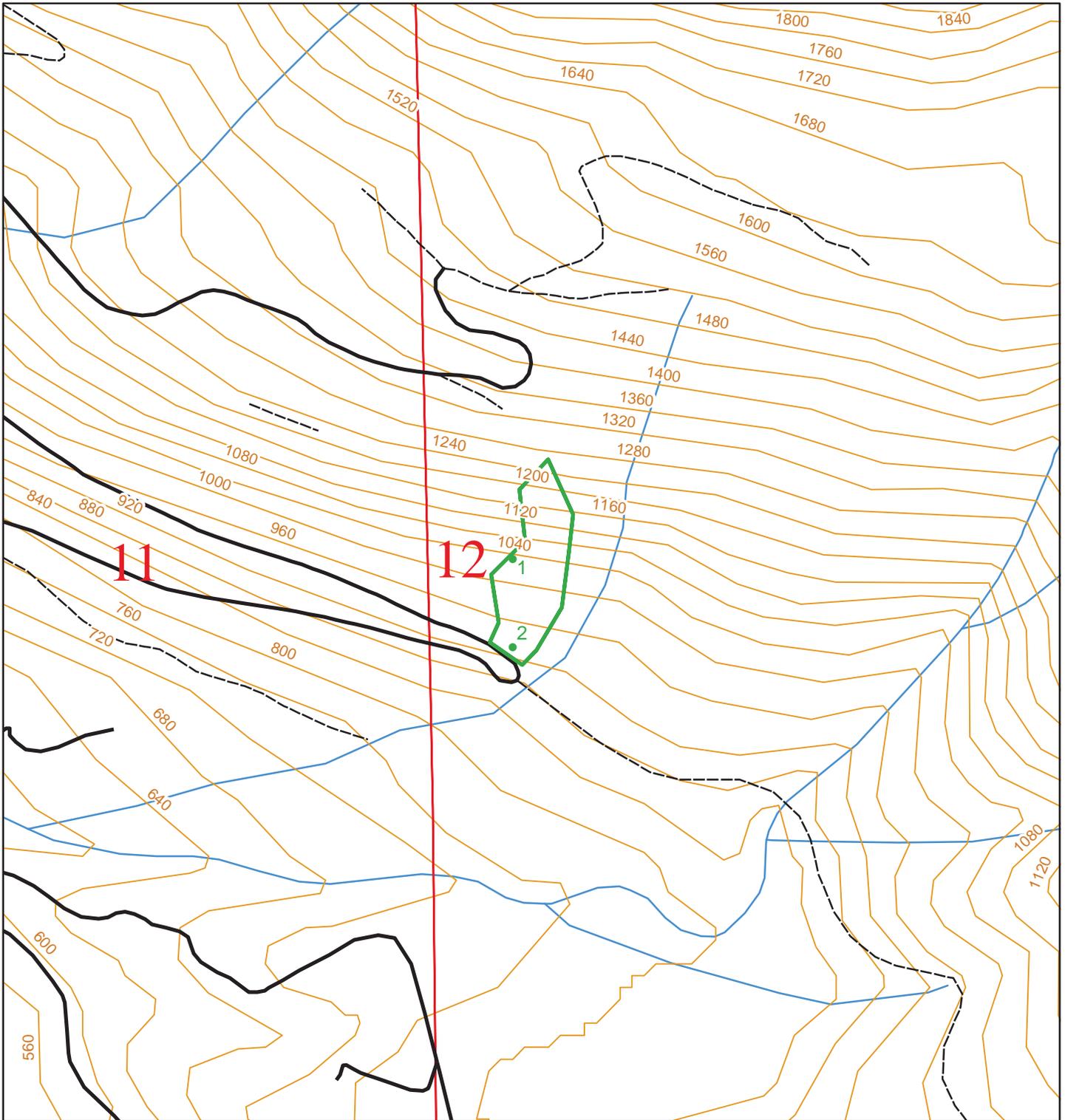
FMU_NM:	DYNO U2B VRH	Township:	T27R09E
FMU_ID:	93178	DNR Region:	NORTHWEST
Acres:	acres	Total Sample Points:	2
County:	KING	Spacing Between Points:	Width: 250 Height: 250
		Point Rotation Degrees:	0



Scale 1:4,800

**Legend**

- Sample Points
- FMU polys
- Public Land Survey Sections
- Contours 40-foot



**FMU POLYGON AND SAMPLE POINT INFORMATION**

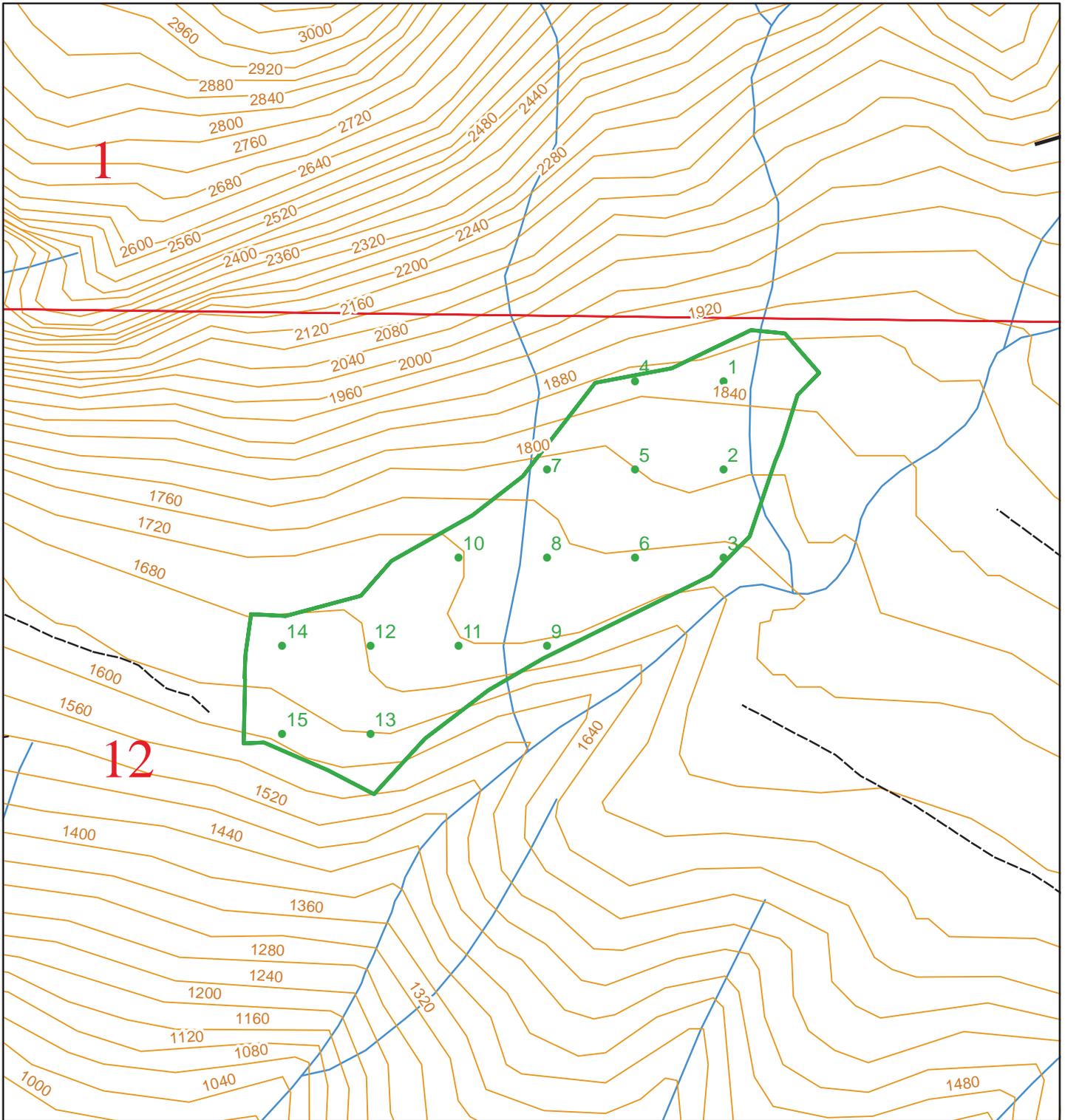
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FMU_ID:	93179	DNR Region:	NORTHWEST
Acres:	acres	Total Sample Points:	2
County:	KING	Spacing Between Points:	Width: 250 Height: 250
		Point Rotation Degrees:	0



Scale 1:4,800

**Legend**

- Sample Points
- FMU polys
- Public Land Survey Sections
- Contours 40-foot



**FMU POLYGON AND SAMPLE POINT INFORMATION**

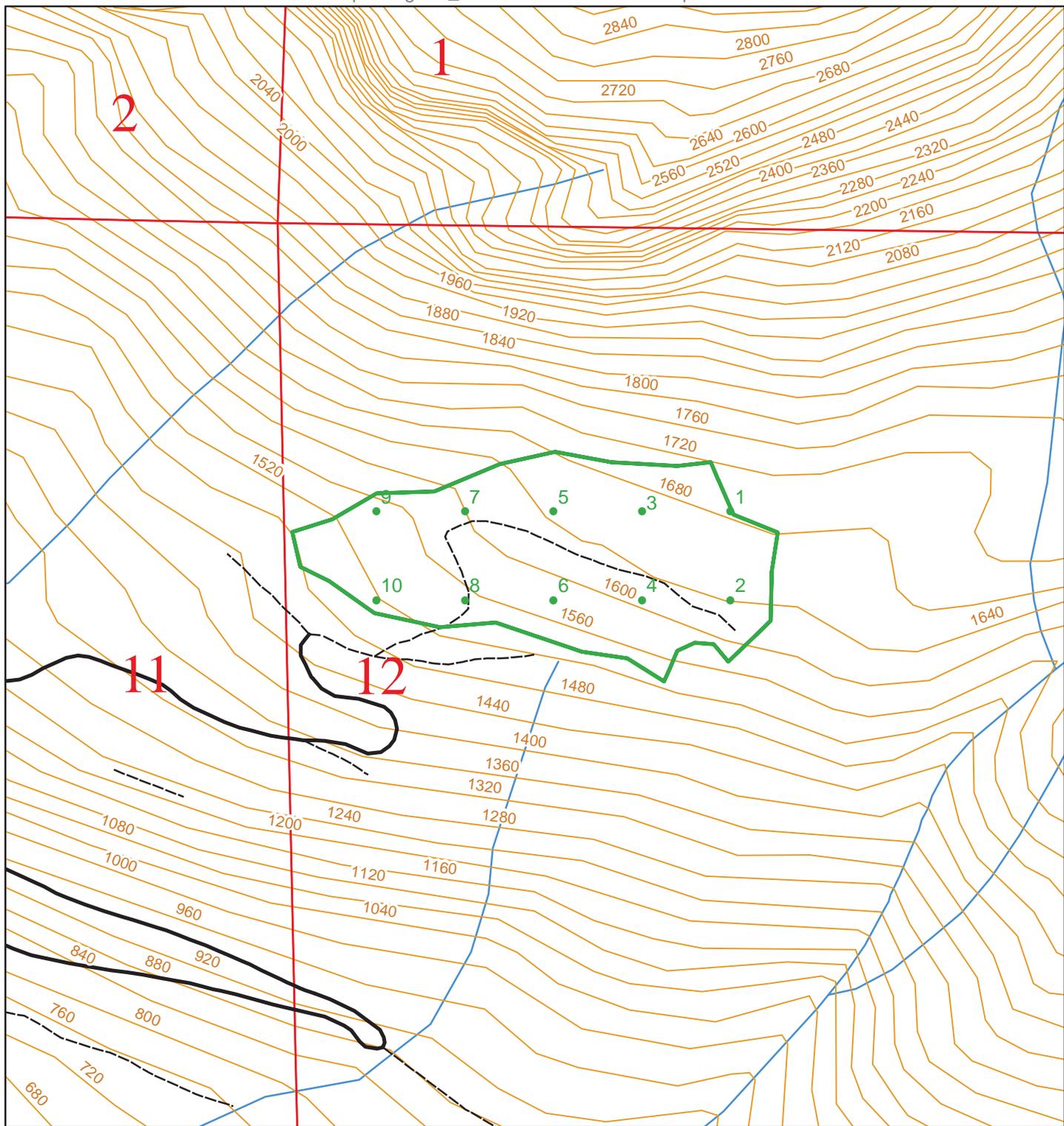
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Acres:	20	Total Sample Points:	15
County:	KING	Spacing Between Points:	Width: 250 Height: 250
		Point Rotation Degrees:	0



Scale 1:4,800

**Legend**

- Sample Points
- FMU polys
- Public Land Survey Sections
- Contours 40-foot



**FMU POLYGON AND SAMPLE POINT INFORMATION**

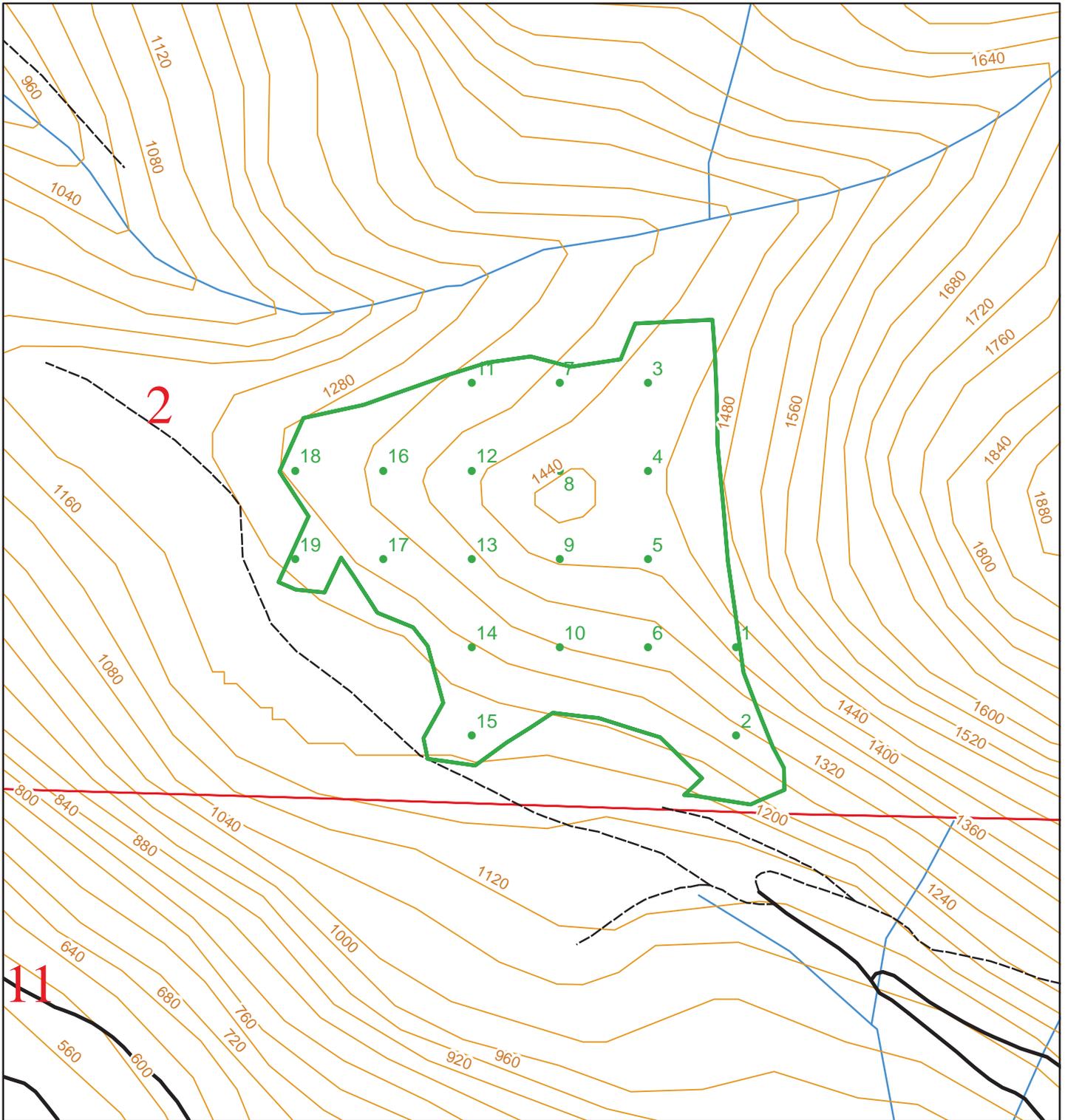
FMU_NM:	DYNO U4 VRH	Township:	T27R09E
FMU_ID:	93181	DNR Region:	NORTHWEST
Acres:	13	Total Sample Points:	10
County:	KING	Spacing Between Points:	Width: 250 Height: 250
		Point Rotation Degrees:	0



Scale 1:4,800

**Legend**

- Sample Points
- FMU polys
- Public Land Survey Sections
- Contours 40-foot



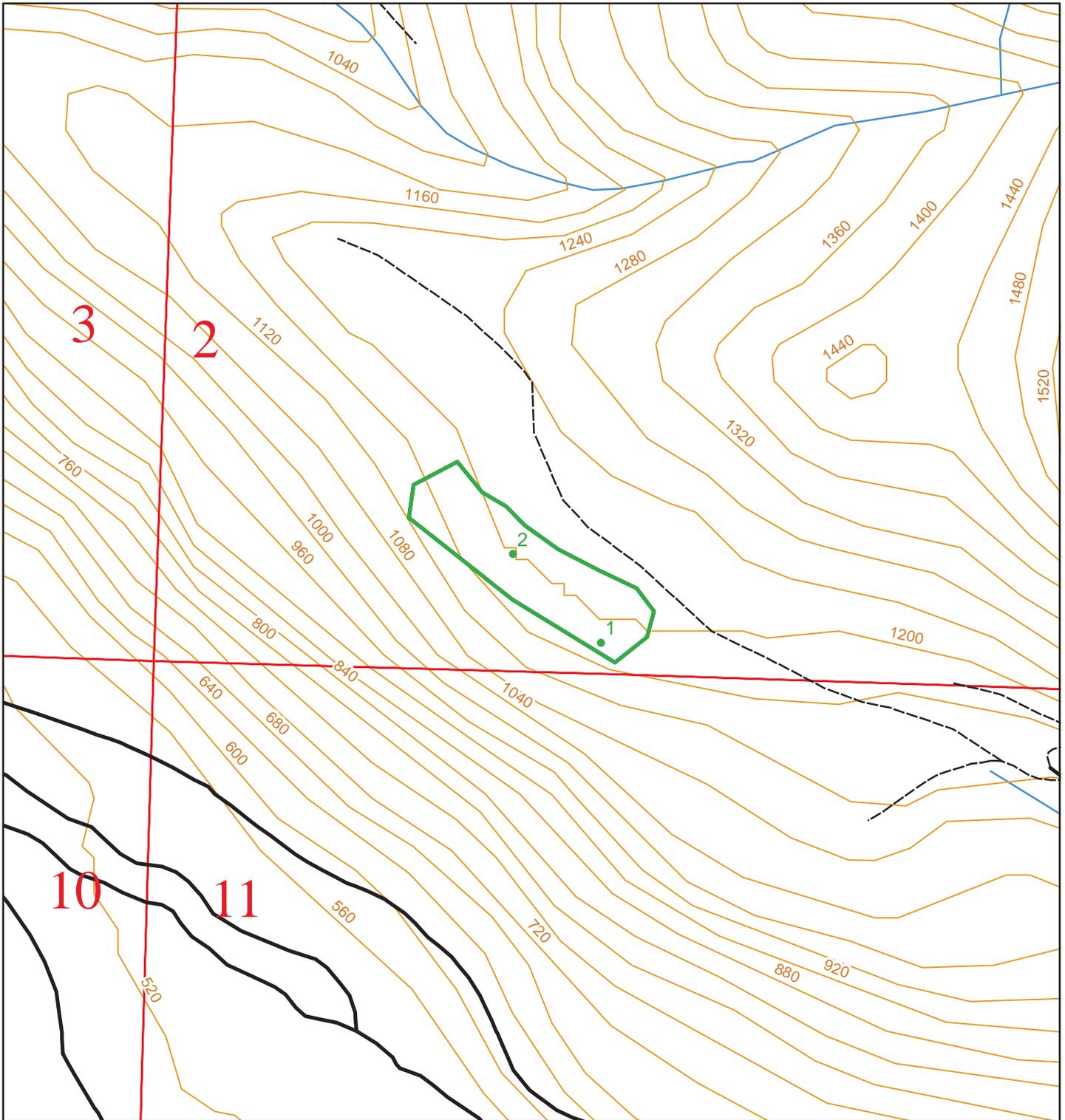
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FMU_NM:	DYNO U5A VRH	Township:	T27R09E
FMU_ID:	93182	DNR Region:	NORTHWEST
Acres:	27	Total Sample Points:	19
County:	KING	Spacing Between Points:	Width: 250 Height: 250
		Point Rotation Degrees:	0



**Legend**

- Sample Points
- FMU polys
- Public Land Survey Sections
- Contours 40-foot



**FMU POLYGON AND SAMPLE POINT INFORMATION**

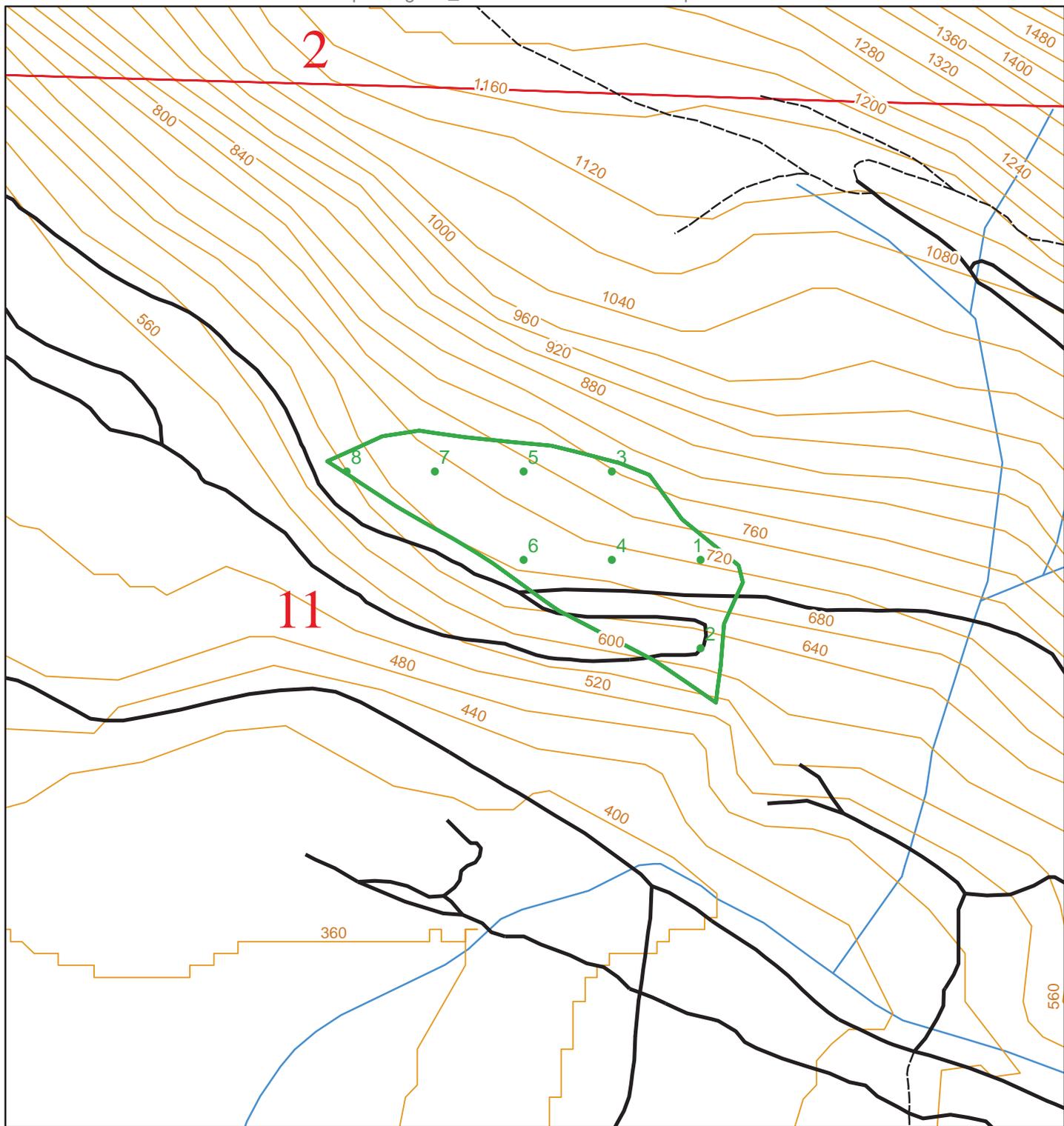
FMU_NM:	DYNO U5B SMU	Township:	T27R09E
FMU_ID:	93385	DNR Region:	NORTHWEST
Acres:	3	Total Sample Points:	2
County:	KING	Spacing Between Points:	Width: 250 Height: 250
		Point Rotation Degrees:	0



Scale 1:4,800

**Legend**

- Sample Points
- FMU polys
- Public Land Survey Sections
- Contours 40-foot



**FMU POLYGON AND SAMPLE POINT INFORMATION**

FMU_NM:	DYNO U6 VRH	Township:	T27R09E
FMU_ID:	93183	DNR Region:	NORTHWEST
Acres:	9	Total Sample Points:	8
County:	KING	Spacing Between Points:	Width: 250 Height: 250
		Point Rotation Degrees:	0



Scale 1:4,800

**Legend**

- Sample Points
- FMU polys
- Public Land Survey Sections
- Contours 40-foot



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

FPA/N No: 2814956

Effective Date: 1/29/2016

Expiration Date: 1/29/2019

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

Shut Down Zone: 658

EARR Tax Credit:  Eligible  Non-eligible

Reference: Dyno

**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 *S.H.*

Region: Northwest

Title: Skykomish Forest Practice Forester

Date: 1/29/2016

Copies to:  Landowner, Timber Owner and Operator

Issued in Person:  Landowner,  Timber Owner  Operator By: *L. Utzard*

**Appeal Information**

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

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

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

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

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

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

And

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

**Other Applicable Laws**

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

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

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

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

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

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

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

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

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

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

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

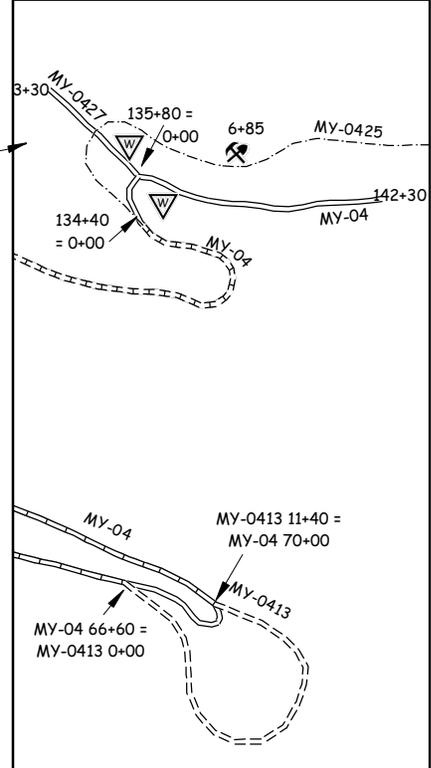
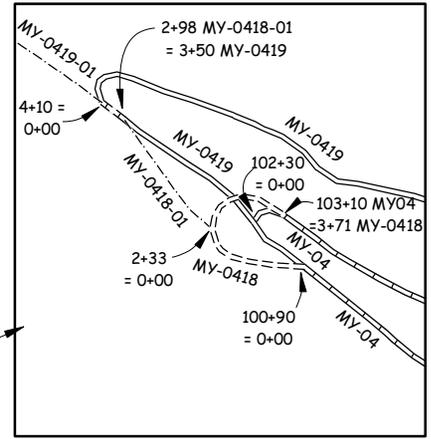
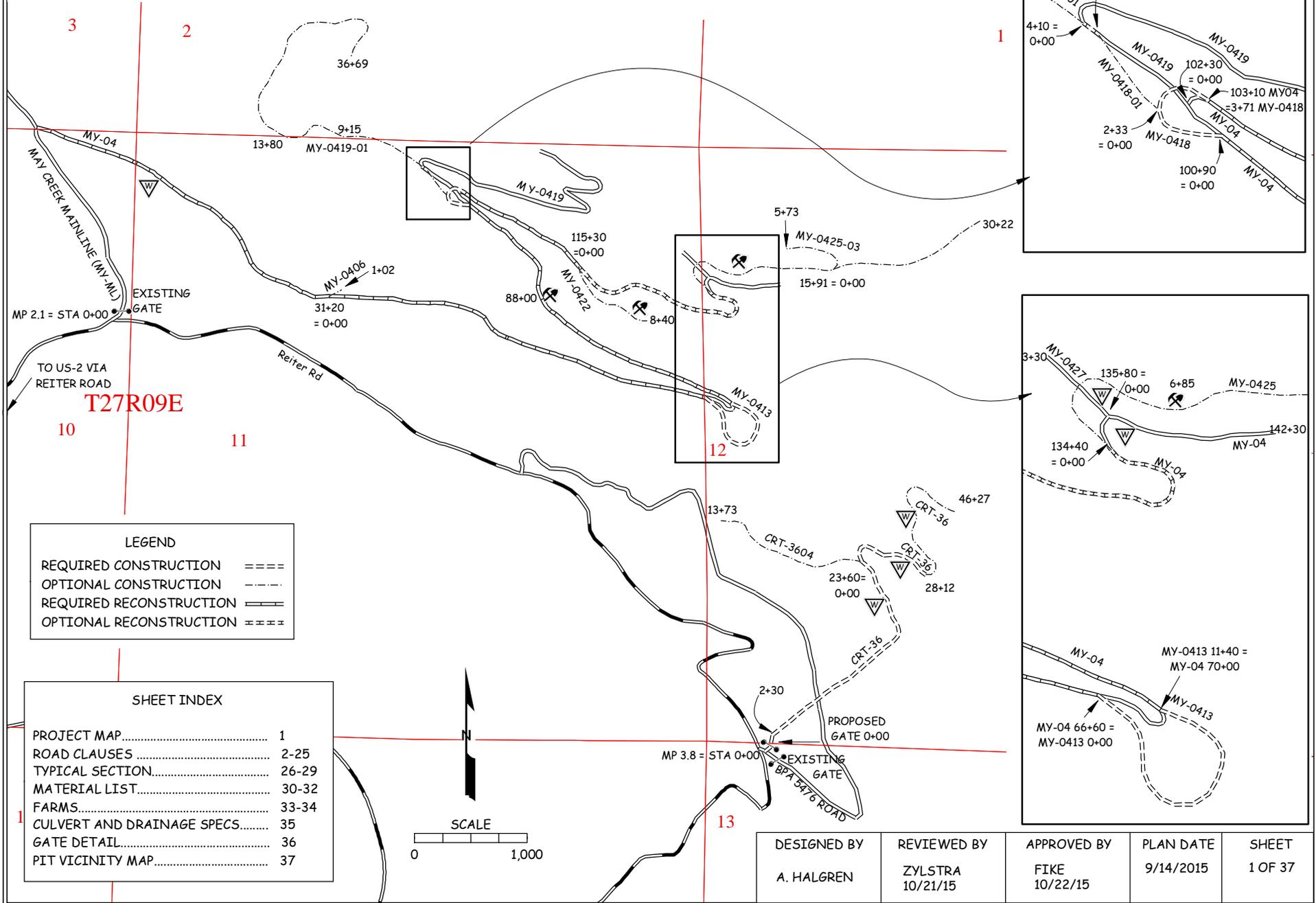
**DNR affidavit of mailing:**

On this day \_\_\_\_\_, I placed in the United States mail at Sedro-Woolley, WA, postage paid, a true and accurate copy of the attached document. Notice of Decision FPA #\_\_2814\_\_

\_\_\_\_\_ L Utgard \_\_\_\_\_  
(Printed name)

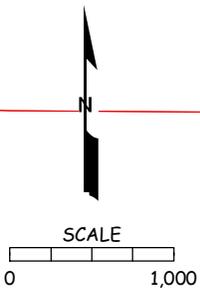
\_\_\_\_\_  
(Signature)

# ROAD PLAN AND SPECIFICATIONS #30-092303 DYNO TIMBER SALE



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

SHEET INDEX	
PROJECT MAP.....	1
ROAD CLAUSES.....	2-25
TYPICAL SECTION.....	26-29
MATERIAL LIST.....	30-32
FARMS.....	33-34
CULVERT AND DRAINAGE SPECS.....	35
GATE DETAIL.....	36
PIT VICINITY MAP.....	37



DESIGNED BY	REVIEWED BY	APPROVED BY	PLAN DATE	SHEET
A. HALGREN	ZYLSTRA 10/21/15	FIKE 10/22/15	9/14/2015	1 OF 37

STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

DYNO TIMBER SALE ROAD PLAN  
SNOHOMISH COUNTY  
CASCADE DISTRICT

AGREEMENT NO.: 30-092303

STAFF ENGINEER: A. HALGREN

DATE: SEPTEMBER 14, 2015

SECTION 0 – SCOPE OF PROJECT

**0-1 ROAD PLAN SCOPE**

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

**0-2 REQUIRED ROADS**

The specified work on the following roads is required.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
MY-04	0+00 to 66+60, 70+00 to 100+90, 103+10 to 115+30	RECONSTRUCTION
MY-0413	0+00 to 11+40	CONSTRUCTION
MY-0418	0+00 to 3+71	CONSTRUCTION
CRT-36	0+00 to 28+12	CONSTRUCTION

**0-3 OPTIONAL ROADS**

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

<u>Road</u>	<u>Stations</u>	<u>Type</u>
MY-04	115+30 to 134+40	RECONSTRUCTION
MY-0406	0+00 to 1+02	CONSTRUCTION
MY-0418-01	0+00 to 2+98	CONSTRUCTION
MY-0419	3+50 to 4+10	RECONSTRUCTION
MY-0419-01	0+00 to 36+69	CONSTRUCTION
MY-0422	0+00 to 8+40	CONSTRUCTION
MY-0425	0+00 to 30+22	CONSTRUCTION
MY-0425-03	0+00 to 5+73	CONSTRUCTION
CRT-36	28+12 to 46+27	CONSTRUCTION
CRT-3604	0+00 to 13+73	CONSTRUCTION

**0-4 CONSTRUCTION**

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

**0-5 RECONSTRUCTION**

Reconstruction includes, but is not limited to blading, shaping, and ditching the road surface, culvert installation, 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 new and existing rock sources. Rock source development will involve clearing, stripping, drilling, shooting, and processing rock to generate riprap, 3-inch-minus ballast and gravel ballast. Work for developing rock sources is listed in Section 6 ROCK AND SURFACING.

**0-13 STRUCTURES**

Purchaser shall provide and install a gate. Requirements for this structure are listed in Section 7 STRUCTURES.

SECTION 1 – GENERAL

**1-1 ROAD PLAN CHANGES**

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

**1-2 UNFORESEEN CONDITIONS**

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

**1-3 ROAD DIMENSIONS**

Purchaser shall perform road work in accordance with the dimensions shown on the TYPICAL SECTION SHEET and the specifications within this road plan, unless controlled by construction stakes or design data (plan, profile, and cross-sections).

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

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

**1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS**

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

**1-9 DAMAGED METALLIC COATING**

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

**1-18 REFERENCE POINT DAMAGE**

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

**1-21 HAUL APPROVAL**

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

**1-25 ACTIVITY TIMING RESTRICTION**

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

<u>Activity</u>	<u>Closure Period</u>
Rock hauling, construction, reconstruction, inactivation, 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 Contact Administrator upon request. If damage occurs while plowing, further permission to plow may be revoked by the Contract Administrator.

**1-42 UTILITY ACCESS ROAD**

The following road(s) intersect(s) existing utility access roads. Purchaser shall conduct road work on the intersecting roads so that the utility access roads are accessible at all times.

<u>Road</u>	<u>Stations</u>
CRT-36	4+46 to 9+39

**1-43 ROAD WORK AROUND UTILITIES**

Road work is in close proximity to a utility. Known utilities are listed, but it is the Purchaser’s responsibility to identify any utilities not listed. Purchaser shall work in accordance with all applicable laws or rules concerning utilities. Purchaser is responsible for all notification, including “call before you dig”, and liabilities associated with the utilities and their rights-of-way. Purchaser shall notify the Bonneville Power Administration (BPA) utility before starting road work.

<u>Road</u>	<u>Stations</u>	<u>Utility</u>	<u>Utility Contact</u>
CRT-36	4+46 to 9+39	Bonneville Power Administration	<b>1-800-282-3713</b>

## SECTION 2 – MAINTENANCE

### **2-1 GENERAL ROAD MAINTENANCE**

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

### **2-2 ROAD MAINTENANCE – PURCHASER MAINTENANCE**

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

### **2-3 ROAD MAINTENANCE – DESIGNATED MAINTAINER**

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

### **2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS**

Purchaser shall clean ditches, headwalls, and catchbasins. Work must be completed before application of rock and must be done in accordance with the TYPICAL SECTION.

## SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

### **3-5 CLEARING**

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

### **3-10 GRUBBING**

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

### **3-20 ORGANIC DEBRIS DEFINITION**

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

**3-21 DISPOSAL COMPLETION**

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

**3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS**

Waste areas for organic debris are located as listed below and within the cleared right-of-way or in natural openings as designated by the Contract Administrator.

<u>Road</u>	<u>Disposal Location</u>
MY-04	STA 13+20 to 25+70
MY-04	STA 134+40 to 135+75
MY-25	STA 5+30 to 6+65
CRT-36	STA 17+46 to 21+72
CRT-36	STA 28+12 to 30+68
CRT-36	STA 37+14 to 39+10

**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 embankments.
- On road subgrades, or excavation and embankment slopes.
- On slopes greater than 40%.
- Within the operational area for cable landings where debris may shift or roll.
- On locations where brush can fall into the ditch or onto the road surface.
- Against standing timber.

**3-24 BURYING ORGANIC DEBRIS RESTRICTED**

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

**3-25 SCATTERING ORGANIC DEBRIS**

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

**3-32 END HAULING ORGANIC DEBRIS**

On the following road(s), Purchaser shall end haul or push organic debris to the designated areas specified in Clause 3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS.

<u>Road</u>	<u>Stations</u>
MY-0413	0+00 to 1+94
MY-0418	0+00 to 0+80
MY-0425	7+13 to 15+03

**SECTION 4 – EXCAVATION**

**4-2 PIONEERING**

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

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

**4-3 ROAD GRADE AND ALIGNMENT STANDARDS**

Purchaser shall follow these standards for road grade and alignment:

- Grade and alignment must have smooth continuity, without abrupt changes in direction.
- Maximum grades may not exceed 18 percent favorable and 15 percent adverse.
- Minimum curve radius is 50 feet at centerline.
- Maximum grade change for sag vertical curves is 5% in 100 feet.
- Maximum grade change for crest vertical curves is 4% in 100 feet.

Grade limitations and alignment are modified as follows:

<u>Road</u>	<u>Stations</u>	<u>Minimum Curve Radius (ft.)</u>	<u>Maximum Grade (%)</u>		<u>Maximum Vertical Grade Change per 100 ft. (%)</u>
			<u>Favorable</u>	<u>Adverse</u>	
MY-0418	1+14 to 3+71	65	15%	-	-
MY-0425	1+72 to 3+99	65	15%	-	-
CRT-36	24+24 to 26+11	65	15%	-	-
CRT-36	31+39 to 34+38	65	15%	-	-
CRT-36	40+17 to 42+40	65	15%	-	-

**4-5 CUT SLOPE RATIO**

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

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

**4-6 EMBANKMENT SLOPE RATIO**

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

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

**4-7 SHAPING CUT AND FILL SLOPE**

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

**4-8 CURVE WIDENING**

The minimum widening placed on the inside of curves is:

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

**4-9 EMBANKMENT WIDENING**

The minimum embankment widening is:

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

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

**4-12 FULL BENCH CONSTRUCTION**

On the following road(s), and where side slopes exceed 50%, Purchaser shall use full bench construction for the entire subgrade width except as construction staked or designed. If designated, Purchaser shall end haul waste material to the location specified in Clause 4-37 WASTE AREA LOCATION.

<u>Road</u>	<u>Full Bench Location</u>
MY-0413	0+00 to 1+94
MY-0418	0+00 to 0+80
MY-0425	7+13 to 15+03

**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. 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. 0425

**4-37 WASTE AREA LOCATION**

Purchaser shall deposit waste material in the listed designated areas:

<u>Road</u>	<u>Waste Area Location</u>
MY-04	STA 13+20 to 25+70
MY-04	STA 134+40 to 135+75
MY-25	STA 5+30 to 6+65
CRT-36	STA 17+46 to 21+72
CRT-36	STA 28+12 to 30+68
CRT-36	STA 37+14 to 39+10

**4-38 PROHIBITED WASTE DISPOSAL AREAS**

Purchaser shall not deposit waste material in the following areas, except as otherwise specified in this plan:

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

**4-55 ROAD SHAPING**

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. Geotextile fabric must meet the specifications in Clause 10-3 GEOTEXTILE FOR STABILIZATION.

<u>Road</u>	<u>Stations</u>
MY-0413	7+95 to 10+65
CRT-36	17+47 to 23+60

**SECTION 5 – DRAINAGE**

**5-5 CULVERTS**

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

**5-11 UNUSED MATERIALS STATE PROPERTY**

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

**5-15 CULVERT INSTALLATION**

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

**5-16 APPROVAL FOR LARGER CULVERT INSTALLATION**

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

**5-17 CROSS DRAIN SKEW AND SLOPE**

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

**5-25 CATCH BASINS**

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

**5-26 HEADWALLS FOR CROSS DRAIN CULVERTS**

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

**SECTION 6 – ROCK AND SURFACING**

**6-2 ROCK SOURCE ON STATE LAND**

Rock used in accordance with the quantities on the TYPICAL SECTION and MATERIALS LIST may be obtained from the following source(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>
DF-21*	111+80 of DF-ML	Gravel Pit Run*

\*See section 11 for permissible uses of gravel.

**6-5 ROCK FROM COMMERCIAL SOURCE**

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

**6-11 ROCK SOURCE DEVELOPMENT PLAN BY PURCHASER**

Purchaser may 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>
MY-0417	3-inch-minus ballast, rip rap, shot rock
MY-0422-02	
MY-0425-01	
DF-21	Gravel pit run

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% upslope gradient.
- All operations must be carried out in compliance with all regulations of the Regulations and Standards Applicable to Metal and Nonmetal Mining and Milling Operations (30 CFR) U.S. Department of Labor, Mine Safety and Health Administration and Safety Standards for Construction Work (296-155 WAC), Washington Department of Labor and Industries.

**6-13 ROCK EXPLORATION**

Purchaser shall provide an excavator with operator for exploration of rock at the following site(s).

<u>Site</u>	<u>Location</u>
MY-04	STA 88+00 (MY-0417 proposed hard rock pit)
MY-0422	STA 8+40 (MY-0422-02 proposed hard rock pit)
MY-0425	STA 6+85 (MY-0425-01 proposed hard rock pit)

**6-20 ROCK GRADATION TYPES**

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

**6-34 3-INCH MINUS BALLAST ROCK**

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

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

**6-41 GRAVEL PIT RUN ROCK**

No more than 50 percent of the rock may be larger than 8 inches in any dimension and no rock may be larger than 12 inches in any dimension. Pit Run rock may not contain more than 5 percent by weight of organic debris, dirt, and trash. Rock may require processing to meet this specification.

**6-42 CLEAN ROCK, SHOT ROCK BALLAST**

No more than 10 percent of the rock by weight may exceed 8 inches in any dimension and no rock may be larger than 12 inches in any dimension. Shot Ballast rock may not contain more than 5 percent by weight of 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>
20% / 90%	300 lbs. to 1 ton
80% / --	50 lbs. to ½ ton
10% / 20%	50 lbs. max

**6-51 HEAVY LOOSE RIP RAP**

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

<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 7 – STRUCTURES

**7-76 GATE INSTALLATION**

Purchaser shall install the listed gate(s). Gate installations must be installed within 30 days of road construction operations.

<u>Road</u>	<u>Station</u>	<u>Type</u>	<u>Provided by</u>
CRT-36	STA 0+00	Steel Gate	State

Steel gate installation(s) must be in accordance with the STEEL GATE DETAIL.

The gate and lock box must be installed plumb and aligned to ensure all mating components match with precision. Each post must be set in a minimum of 4 cubic yards of poured-in-place concrete. The Contract Administrator will provide Purchaser with a padlock.

If Purchaser wishes to install an alternate design, detailed plans for the construction of the gate must be submitted to the Contract Administrator. Purchaser shall obtain written approval for the plans from the Contract Administrator or their designee, before gate installation begins.

**7-77 GATE SUPPLIED BY STATE**

A gate with lock box is located at the Northwest Region Headquarters. After making arrangements through the Contract Administrator, Purchaser shall transport the gate, tie-back post, and lock box to the installation site.

SECTION 8 – EROSION CONTROL

**8-15 REVEGETATION**

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

**8-17 REVEGETATION TIMING**

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

**8-18 PROTECTION FOR SEED**

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

**8-19 ASSURANCE FOR SEEDED AREA**

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

**8-25 GRASS SEED**

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

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

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

**8-27 FERTILIZER**

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

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

**SECTION 9 – POST-HAUL ROAD WORK**

**9-3 CULVERT MATERIAL REMOVED FROM STATE LAND**

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

**9-5 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.

**9-12 LANDING EMBANKMENT REMOVAL**

Purchaser shall reduce or relocate the landing embankment. Place excavated material in a waste area approved in writing by the Contract Administrator.

**9-21 ROAD ABANDONMENT**

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

<u>Road</u>	<u>Stations</u>
MY-04	66+60 to 70+00, 100+90 to 103+10, 115+30 to 142+30
MY-0406	0+00 to 1+02
MY-0418-01	0+00 to 2+98
MY-0419-01	0+00 to 36+69
MY-0425	0+00 to 30+22
MY-0425-03	0+00 to 5+73
MY-0427	0+00 to 3+30
CRT-36	28+12 to 46+27
CRT-3604	0+00 to 13+73

## 9-22 ABANDONMENT

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

## SECTION 10 MATERIALS

### 10-3 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 <sup>-1</sup>
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 <sup>2</sup> / <sub>3</sub> " X 1/2"
24" to 48"	14 (0.079")	2 <sup>2</sup> / <sub>3</sub> " X 1/2"
54" to 96"	14 (0.079")	3" X 1"

## SECTION 11 SPECIAL NOTES

**11-1 GATE INSTALLATION: ECOLOGY BLOCKS**

On the CRT-36 road the purchaser shall acquire 30 ecology blocks to be placed to prevent access around the proposed gate installation and tied into armoring with the existing BPA gate on the 5476 road. The placement shall be approved in writing by the Contract Administrator prior to haul.

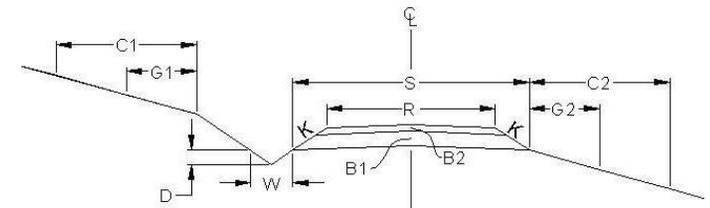
**11-2 GRAVEL PIT RUN RESTRICTION**

Use of gravel pit run from the existing DF-21 gravel pit is limited to the following locations:

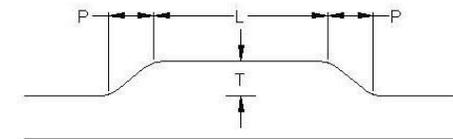
<u>Road</u>	<u>Location</u>	<u>Remarks</u>
MY-0419	0+00 to 8+40	Initial access to proposed hard rock pits. If used, these segments of road must be capped with a 12 inch lift of 3-inch-minus ballast from an approved hard rock source.
MY-0425	0+00 to 6+85	

ROAD #		MY-04	MY-04	MY-04	MY-04 <sup>1</sup>
REQUIRED / OPTIONAL		REQUIRED	REQUIRED	REQUIRED	REQUIRED
CONSTRUCT / RECONSTRUCT		RECONSTRUCT	RECONSTRUCT	RECONSTRUCT	RECONSTRUCT
TOLERANCE CLASS (A/B/C)		C	C	C	C
STATION / MP TO		0+00	11+80	70+00	90+20
STATION / MP		11+80	66+60	90+20	100+90
ROAD WIDTH	R	12	12	12	12
CROWN (INCHES @ C/L)		3	3	3	3
DITCH WIDTH	W	3	3	3	3
DITCH DEPTH	D	1	1	1	1
TURNOUT LENGTH	L	-	50	50	50
TURNOUT WIDTH	T	-	10	10	10
TURNOUT TAPER	P	-	25	25	25
GRUBBING	G1	-	-	-	-
	G2	-	-	-	-
CLEARING	C1	-	-	-	-
	C2	-	-	-	-
ROCK FILLSLOPE	K:1	-	1 ½	1 ½	1 ½
❖ BALLAST DEPTH	B1	-	6	6	-
CUBIC YARDS / STATION		-	34	34	-
➤ TOTAL CY BALLAST		-	1870	670	100
❖ SURFACING DEPTH	B2	-	-	-	-
CUBIC YARDS / STATION		-	-	-	-
➤ TOTAL CY SURFACING		-	-	-	-
➤ TOTAL CUBIC YARDS		-	1870	670	100
SUBGRADE WIDTH	S	-	13.5	13.5	-
BRUSHCUT (Y/N)		N	N	N	N
BLADE, SHAPE, & DITCH (Y/N)		Y	Y	Y	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.

- 1 Rock for spot patching as directed by the Contract Administrator.
- 2 Rock for adjusting road alignment to create smooth continuity with new construction of MY-0418-01 and MY-0419-01 roads
- 3 Construction of this proposed road segment is located on an existing grade.

ROAD #		MY-04 <sup>1</sup>	MY-04 <sup>1</sup>	MY-0406	MY-0413	MY-0418	MY-0418-01	MY-0419 <sup>2</sup>
REQUIRED / OPTIONAL		REQUIRED	OPTIONAL	OPTIONAL	REQUIRED	REQUIRED	OPTIONAL	OPTIONAL
CONSTRUCT / RECONSTRUCT		RECONSTRUCT	RECONSTRUCT	CONSTRUCT	CONSTRUCT	CONSTRUCT	CONSTRUCT	RECONSTRUCT
TOLERANCE CLASS (A/B/C)		C	C	C	C	C	C	C
STATION / MP TO		103+10	115+30	0+00	0+00	0+00	0+00	3+50
STATION / MP		115+30	134+40	1+02	11+40	3+71	2+98	4+10
ROAD WIDTH	R	12	12	12	12	12	12	12
CROWN (INCHES @ C/L)		3	3	3	3	3	3	3
DITCH WIDTH	W	3	2	2	3	3	2	2
DITCH DEPTH	D	1	1	1	1	1	1	1
TURNOUT LENGTH	L	50	50	-	50	50	50	50
TURNOUT WIDTH	T	10	10	-	10	10	10	10
TURNOUT TAPER	P	25	25	-	25	25	25	25
GRUBBING	G1	-	-	5	5	5	5	5
	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	1 ½	1 ½
❖ BALLAST DEPTH	B1	-	-	18	18	18	18	18
CUBIC YARDS / STATION		-	-	114	114	114	114	114
➤ TOTAL CY BALLAST		150	200	120	1300	430	340	70
❖ SURFACING DEPTH	B2	-	-	-	-	-	-	-
CUBIC YARDS / STATION		-	-	-	-	-	-	-
➤ TOTAL CY SURFACING		-	-	-	-	-	-	-
➤ TOTAL CUBIC YARDS		150	200	120	1300	430	340	70
SUBGRADE WIDTH	S	-	-	16.5	16.5	16.5	16.5	-
BRUSHCUT (Y/N)		N	N	N/A	N/A	N/A	N/A	N
BLADE, SHAPE, & DITCH (Y/N)		Y	Y	N/A	N/A	N/A	N/A	Y

<b>ROAD #</b>		MY-0419-01	MY-0419-01 <sup>3</sup>	MY-0419-01	MY-0422 <sup>3</sup>	MY-0425	MY-0425-03	CRT-36 <sup>1,3</sup>
<b>REQUIRED / OPTIONAL</b>		OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL	REQUIRED
<b>CONSTRUCT / RECONSTRUCT</b>		CONSTRUCT	CONSTRUCT	CONSTRUCT	CONSTRUCT	CONSTRUCT	CONSTRUCT	CONSTRUCT
<b>TOLERANCE CLASS (A/B/C)</b>		C	C	C	C	C	C	C
<b>STATION / MP TO</b>		0+00	9+15	13+80	0+00	0+00	0+00	0+00
<b>STATION / MP</b>		9+15	13+80	36+69	8+40	30+22	5+73	2+30
<b>ROAD WIDTH</b>	<b>R</b>	12	12	12	12	12	12	12
<b>CROWN (INCHES @ C/L)</b>		3	3	3	3	3	3	3
<b>DITCH WIDTH</b>	<b>W</b>	2	2	2	2	2	2	3
<b>DITCH DEPTH</b>	<b>D</b>	1	1	1	1	1	1	1
<b>TURNOUT LENGTH</b>	<b>L</b>	50	50	50	50	50	50	50
<b>TURNOUT WIDTH</b>	<b>T</b>	10	10	10	10	10	10	10
<b>TURNOUT TAPER</b>	<b>P</b>	25	25	25	25	25	25	25
<b>GRUBBING</b>	<b>G1</b>	5	5	5	5	5	5	5
	<b>G2</b>	5	5	5	5	5	5	5
<b>CLEARING</b>	<b>C1</b>	10	10	10	10	10	10	10
	<b>C2</b>	10	10	10	10	10	10	10
<b>ROCK FILLSLOPE</b>	<b>K:1</b>	1 ½	1 ½	1 ½	1 ½	1 ½	1 ½	1 ½
❖ <b>BALLAST DEPTH</b>	<b>B1</b>	18	12	18	12	12	12	-
<b>CUBIC YARDS / STATION</b>		114	72	114	72	72	72	-
➤ <b>TOTAL CY BALLAST</b>		1050	350	2610	610	2180	420	40
❖ <b>SURFACING DEPTH</b>	<b>B2</b>	-	-	-	-	-	-	-
<b>CUBIC YARDS / STATION</b>		-	-	-	-	-	-	-
➤ <b>TOTAL CY SURFACING</b>		-	-	-	-	-	-	-
➤ <b>TOTAL CUBIC YARDS</b>		1050	350	2610	610	1300	420	40
<b>SUBGRADE WIDTH</b>	<b>S</b>	16.5	15.0	16.5	15.0	16.5	15.0	-
<b>BRUSHCUT (Y/N)</b>		N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>BLADE, SHAPE, &amp; DITCH (Y/N)</b>		N/A	N/A	N/A	N/A	N/A	N/A	N/A

<b>ROAD #</b>		CRT-36	CRT-36	CRT-36	CRT-36	CRT-36 <sup>3</sup>	CRT-36	CRT-3604
<b>REQUIRED / OPTIONAL</b>		REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED	OPTIONAL	OPTIONAL
<b>CONSTRUCT / RECONSTRUCT</b>		CONSTRUCT	CONSTRUCT	CONSTRUCT	CONSTRUCT	CONSTRUCT	CONSTRUCT	CONSTRUCT
<b>TOLERANCE CLASS (A/B/C)</b>		C	C	C	C	C	C	C
<b>STATION / MP TO</b>		2+30	4+46	9+39	16+99	26+11	28+12	0+00
<b>STATION / MP</b>		4+46	9+39	16+99	26+11	28+12	46+27	13+73
<b>ROAD WIDTH</b>	<b>R</b>	12	12	12	12	12	12	12
<b>CROWN (INCHES @ C/L)</b>		3	3	3	3	3	3	3
<b>DITCH WIDTH</b>	<b>W</b>	3	3	3	3	3	2	2
<b>DITCH DEPTH</b>	<b>D</b>	1	1	1	1	1	1	1
<b>TURNOUT LENGTH</b>	<b>L</b>	50	50	50	50	50	50	50
<b>TURNOUT WIDTH</b>	<b>T</b>	10	10	10	10	10	10	10
<b>TURNOUT TAPER</b>	<b>P</b>	25	25	25	25	25	25	25
<b>GRUBBING</b>	<b>G1</b>	5	5	5	5	5	5	5
	<b>G2</b>	5	5	5	5	5	5	5
<b>CLEARING</b>	<b>C1</b>	10	10	10	10	10	10	10
	<b>C2</b>	10	10	10	10	10	10	10
<b>ROCK FILLSLOPE</b>	<b>K:1</b>	1 ½	1 ½	1 ½	1 ½	1 ½	1 ½	1 ½
❖ <b>BALLAST DEPTH</b>	<b>B1</b>	12	6	12	18	12	18	12
<b>CUBIC YARDS / STATION</b>		72	34	72	114	72	114	72
➤ <b>TOTAL CY BALLAST</b>		160	170	550	1040	150	2070	990
❖ <b>SURFACING DEPTH</b>	<b>B2</b>	-	-	-	-	-	-	-
<b>CUBIC YARDS / STATION</b>		-	-	-	-	-	-	-
➤ <b>TOTAL CY SURFACING</b>		-	-	-	-	-	-	-
➤ <b>TOTAL CUBIC YARDS</b>		160	170	550	1040	150	2070	990
<b>SUBGRADE WIDTH</b>	<b>S</b>	15.0	13.5	13.5	16.5	15.0	16.5	15.0
<b>BRUSHCUT (Y/N)</b>		N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>BLADE, SHAPE, &amp; DITCH (Y/N)</b>		N/A	N/A	N/A	N/A	N/A	N/A	N/A

## MATERIALS LIST

LOCATION		CULVERT			DWNSPT		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
MY-04	93+50	18	36	GM	-	-	3	5	L	NT	C			
MY-0413	1+53	18	36	XX	-	-	3	5	L	NT	C			
	2+54	54	40	GM	-	-	20	30	H/L	SR	C	Stream		
	4+29	18	32	XX	-	-	3	5	L	NT	C			
	7+95	-	-	-	-	-	-	-	-	-	-	Start geotextile.		
	8+42	36	40	GM	-	-	5	7	H/L	NT	C	Stream		
	9+62	36	40	GM	-	-	5	7	H/L	NT	C	Stream		
	10+08	24	36	GM	-	-	5	7	H/L	NT	C			
	10+65	-	-	-	-	-	-	-	-	-	-	End geotextile		
	11+40	18	32	XX	-	-	3	5	L	NT	C			
MY-0419-01	0+00	18	36	XX	-	-	2	3	L	NT	C			
	3+56	24	36	GM	-	-	5	7	H/L	NT	C	Stream		
	3+98	24	36	GM	-	-	5	7	H/L	NT	C	Stream		
	5+72	24	36	GM	-	-	5	7	H/L	NT	C	Stream		
	9+15	18	36	XX	-	-	2	3	L	NT	C			
	13+43	18	36	XX	-	-	2	3	L	NT	C			
	15+47	18	36	XX	-	-	2	3	L	NT	C			
	19+26	30	36	GM	-	-	10	15	L	NT	C	Stream		
	19+87	18	36	XX	-	-	2	3	L	NT	C			
	23+14	18	36	XX	-	-	2	3	L	NT	C			
	27+12	18	36	XX	-	-	2	3	L	NT	C			
	30+31	18	36	XX	-	-	2	3	L	NT	C			
	34+60	18	36	XX	-	-	2	3	L	NT	C			

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

### MATERIALS LIST

LOCATION		CULVERT			DWNSPT		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"
MY-0422	0+70	18	32	XX	-	-	2	3	L	NT	C			
	1+60	18	32	XX	-	-	2	3	L	NT	C			
	5+05	18	32	XX	-	-	2	3	L	NT	C			
MY-0425	1+21	18	32	XX	-	-	2	3	L	NT	C			
	3+08	-	-	-	-	-	-	-	-	-	-		Ditchout	
	4+82	18	32	XX	-	-	2	3	L	NT	C			
	8+78	18	32	XX	-	-	2	3	L	NT	C			
	13+42	18	36	XX	-	-	2	3	L	NT	C			
	15+91	18	36	XX	-	-	2	3	L	NT	C		Intercept ditch from MY-0425-03 road.	
	18+38	18	32	XX	-	-	2	3	L	NT	C			
	20+10	18	32	XX	-	-	2	3	L	NT	C			
	21+33	-	-	-	-	-	-	-	-	-	-		Ditchout the adjacent user-built trail to prevent water accumulation adjacent to road.	
	23+26	18	32	XX	-	-	2	3	L	NT	C			
	26+20	18	32	XX	-	-	2	3	L	NT	C			
MY-0425-03	3+60	18	32	XX	-	-	2	3	L	NT	C			

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

## 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:	
												<u>Diameter</u>	<u>Gage</u>
										18"	16	2 2/3" x 1/2"	
24" – 48"	14	2 2/3" x 1/2"											
54" – 96"	14	3" x 1"											
CRT-36	0+00	-	-	-	-	-	-	-	-	-	-	Install gate with 30 ecology blocks as directed in 11-1	
	2+30	18	32	XX	-	-	2	3	L	NT	C		
	10+86	18	32	XX	-	-	2	3	L	NT	C		
	14+74	18	32	XX	-	-	2	3	L	NT	C		
	16+98	48	36	GM	-	-	8	12	L/H	NT	C	Historic Austin Creek Channel	
	17+47	-	-	-	-	-	-	-	-	-	-	Start geotextile	
	18+61	18	32	XX	-	-	2	3	L	NT	C		
	19+43	18	32	XX	-	-	2	3	L	NT	C		
	21+11	18	32	XX	-	-	2	3	L	NT	C		
	22+21	18	32	XX	-	-	2	3	L	NT	C		
	22+62	48	36	GM	-	-	6	12	L/H	NT	C	Stream: Austin Creek	
	23+29	18	36	XX	-	-	3	5	L	NT	C		
	23+60	-	-	-	-	-	-	-	-	-	-	End geotextile	
	24+68	-	-	-	-	-	-	-	-	-	-	Ditchout	
	27+49	18	36	XX	-	-	3	5	L	NT	C		
	31+06	18	36	XX	-	-	3	5	L	NT	C		
	34+38	-	-	-	-	-	-	-	-	-	-	Ditchout	
	35+05	18	36	XX	-	-	3	5	L	NT	C		
	40+16	18	36	XX	-	-	3	5	L	NT	C		
	44+48	18	36	XX	-	-	3	5	L	NT	C		
CRT-3604	4+39	18	36	XX	-	-	3	5	L	NT	C		
	9+23	18	36	XX	-	-	3	5	L	NT	C		
	13+13	18	36	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

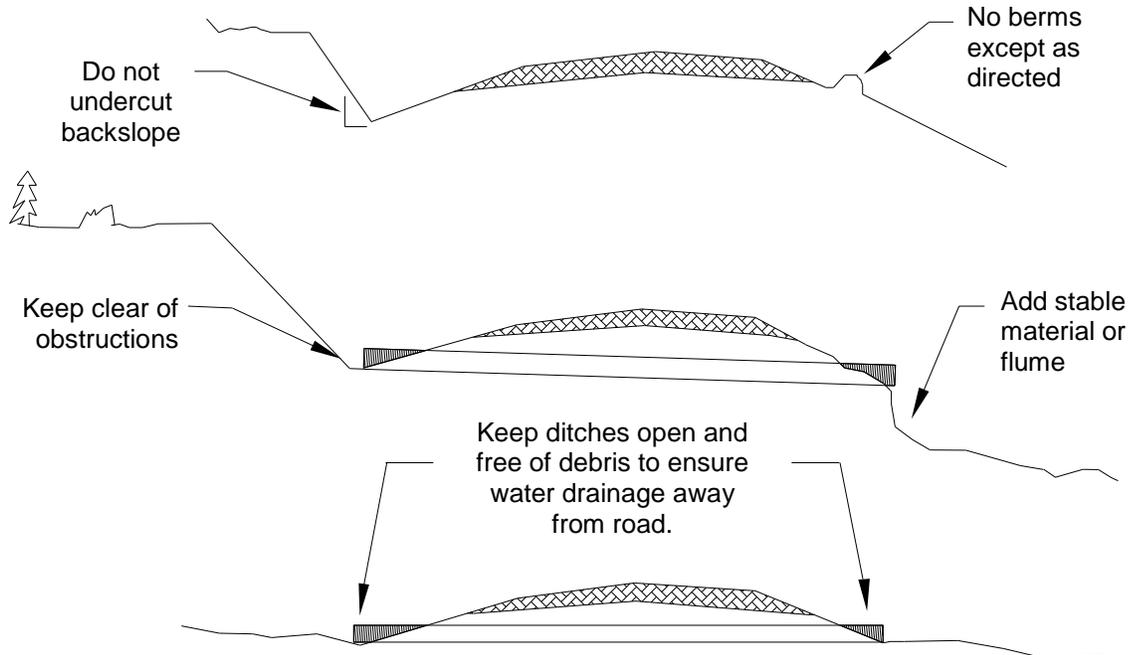
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

### Termination of Use or End of Season

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

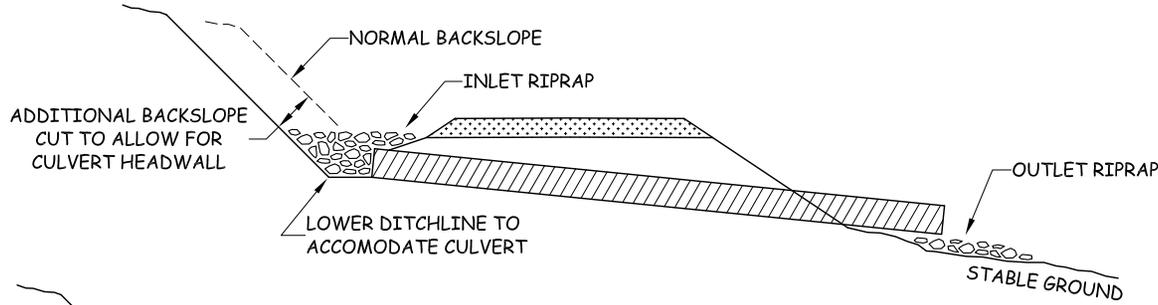
### Debris

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

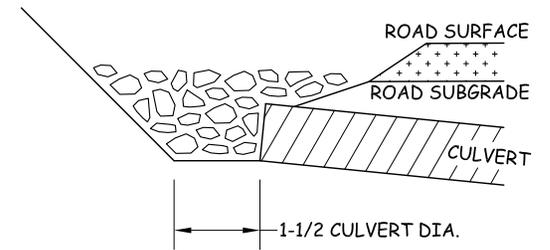


# CULVERT AND DRAINAGE SPECIFICATIONS

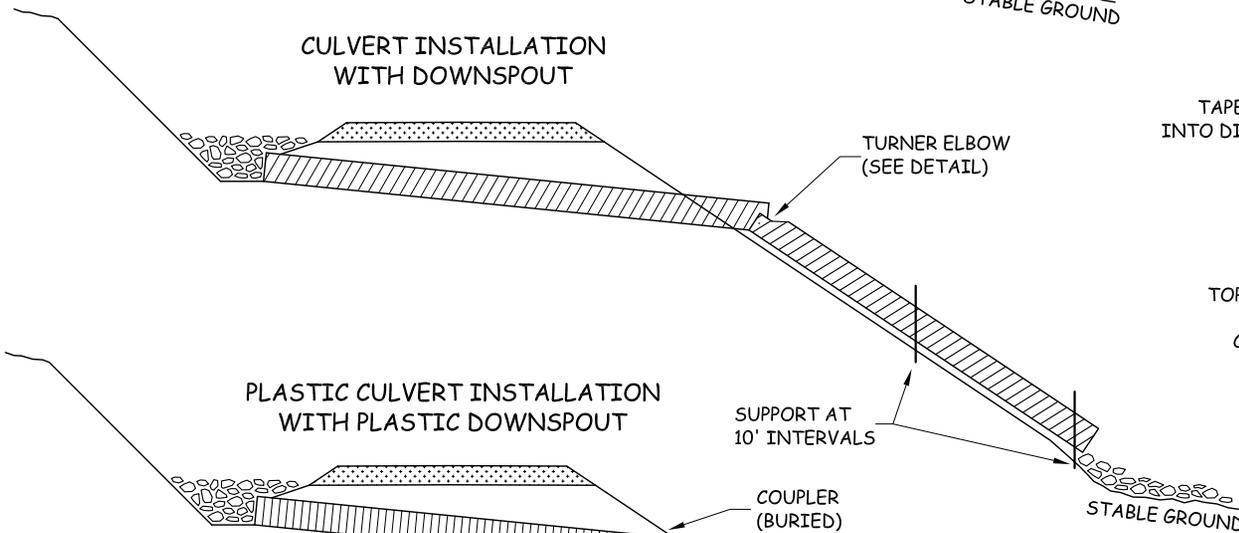
CULVERT INSTALLATION (TYPICAL)



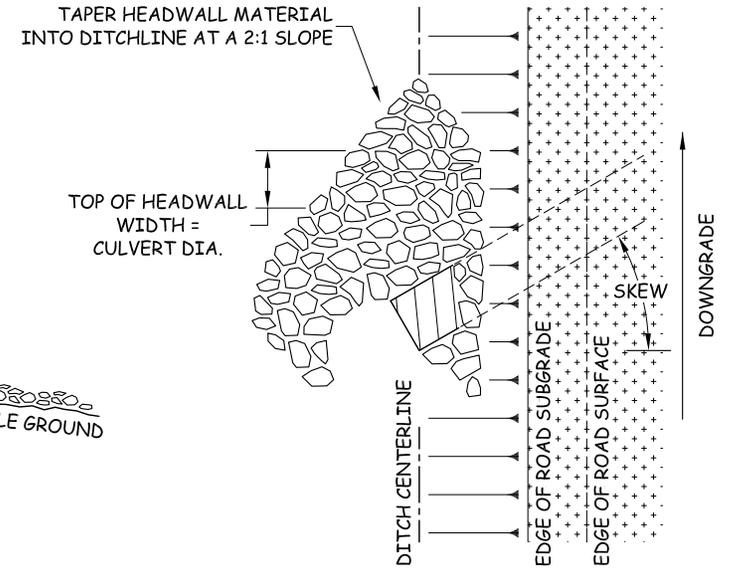
CULVERT HEADWALL - SECTION VIEW



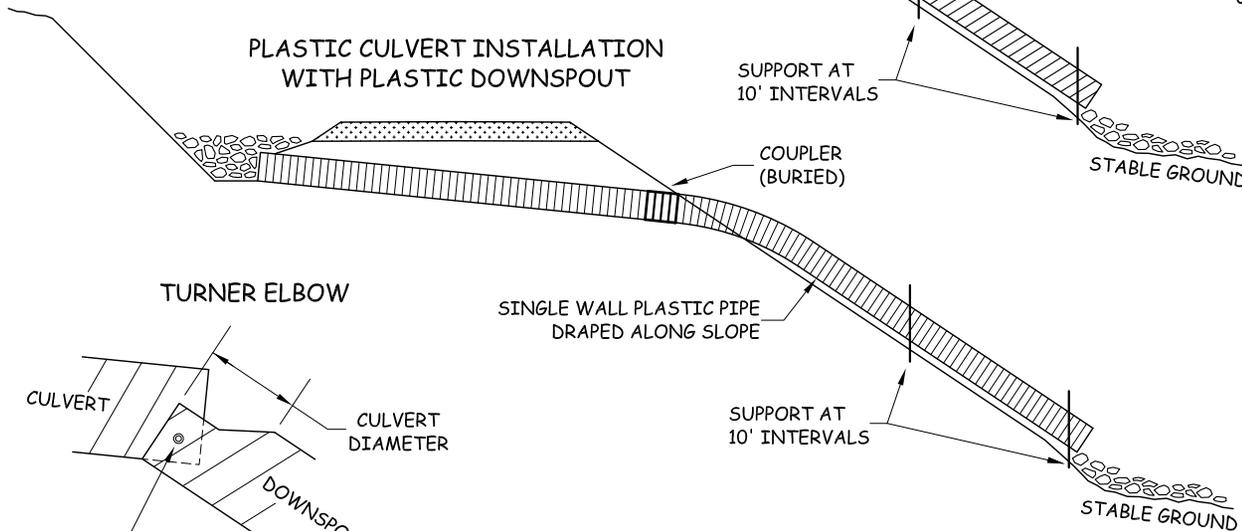
CULVERT INSTALLATION WITH DOWNSPOUT



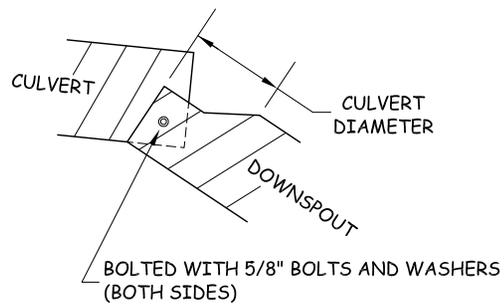
CULVERT HEADWALL - PLAN VIEW



PLASTIC CULVERT INSTALLATION WITH PLASTIC DOWNSPOUT



TURNER ELBOW

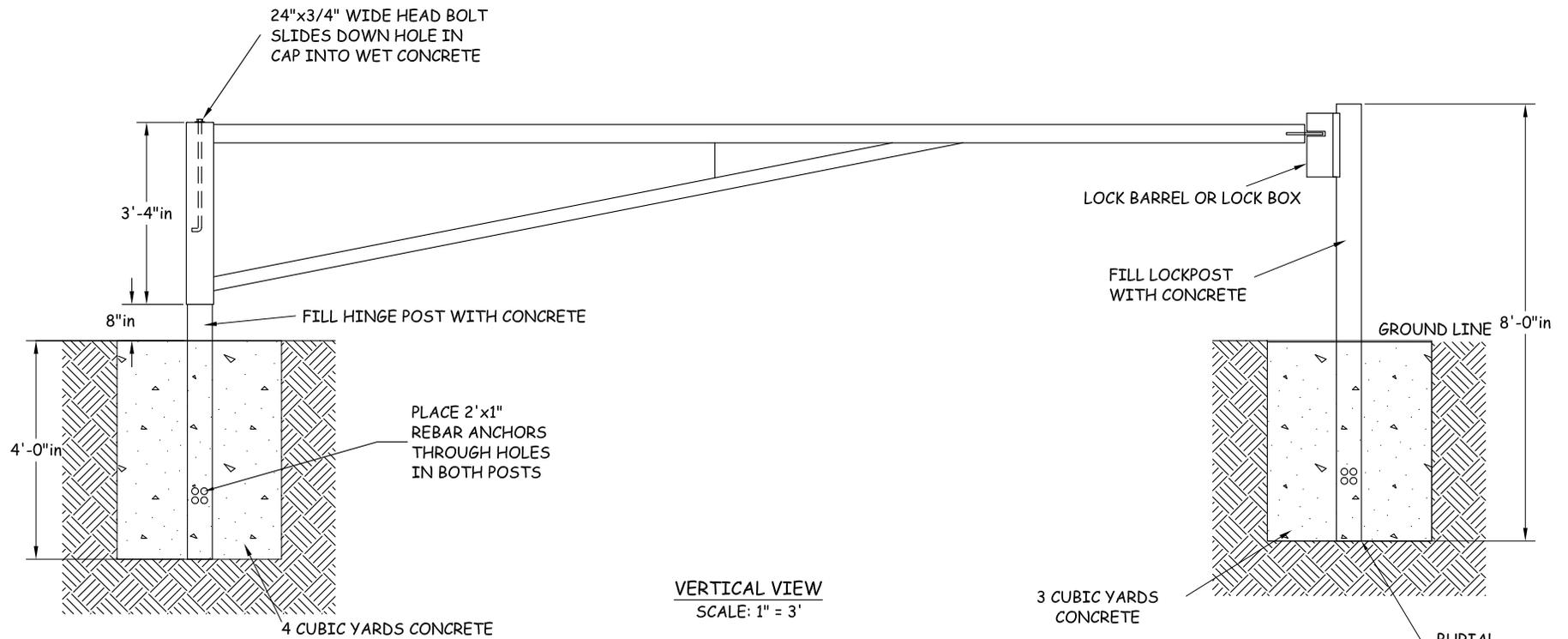


**HEADWALL NOTE:**  
 HEADWALL TO BE CONSTRUCTED OF IMPERVIOUS MATERIAL THAT WILL RESIST EROSION AND ARMORED WITH RIPRAP QUANTITY SPECIFIED IN ROAD PLAN.

CONTRACT #	PROJECT	SHEET
#30-092303	DYNO	35 OF 37

# STEEL GATE INSTALLATION

CRT-36 0+00



## CONSTRUCTION NOTES

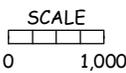
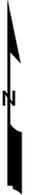
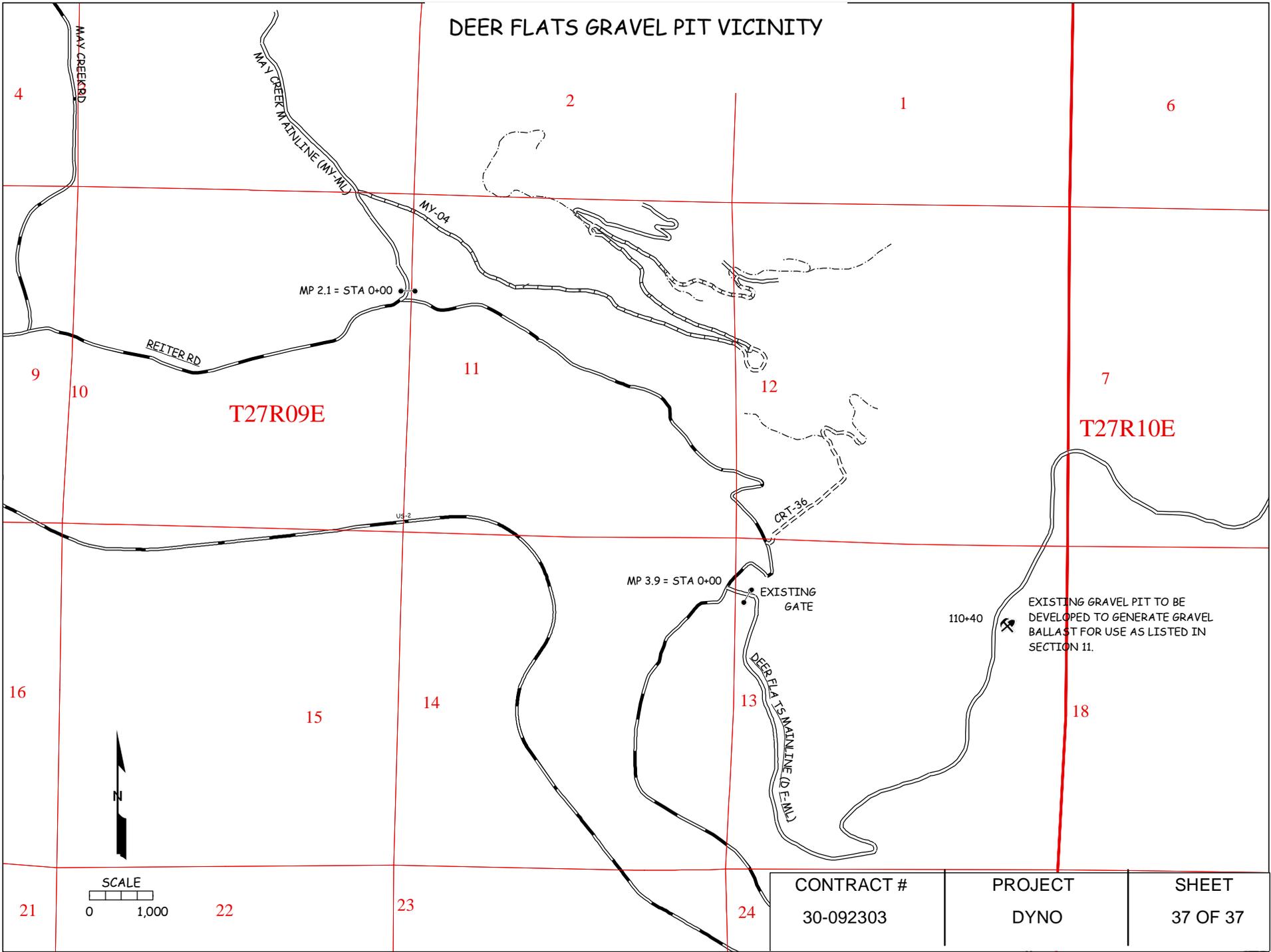
1. ALL WELDS ARE FILLET WELDS.
2. ACTUAL LOCATION SHALL BE DESIGNATED BY THE CONTRACT ADMINISTRATOR.
3. ALL CONCRETE SHALL MEET MINIMUM REQUIREMENTS FOR CLASS B CONCRETE.

CONTRACT #  
#30-092303

PROJECT  
DYNO

SHEET  
36 of 37

# DEER FLATS GRAVEL PIT VICINITY



EXISTING GRAVEL PIT TO BE DEVELOPED TO GENERATE GRAVEL BALLAST FOR USE AS LISTED IN SECTION 11.

CONTRACT #	PROJECT	SHEET
30-092303	DYNO	37 OF 37

## SUMMARY - Road Development Costs

REGION:  
DISTRICT:

SALE/PROJECT NAME: -

CONTRACT #: -

---

ROAD NUMBERS: MY-0406, MY0413, MY-0418, MY-04, MY-0419 -  
MY-0418-01, MY-0419-01, MY-

ROAD STANDARD:	Construction	Reconstruction	Maintenance
NUMBER OF STATIONS:	160.15	129.40	0.00
CLEARING & GRUBBING:	\$21,197	\$0	
EXCAVATION AND FILL:	\$20,749	\$0	-
MISC. MAINTENANCE:		\$7,971	-
ROAD ROCK:	\$186,918	\$38,647	-
ROCK STOCKPILE PROD:	-	-	-
CULVERTS AND FLUMES:	\$22,494	\$489	-
STRUCTURES:	-	-	-
MOBILIZATION:	\$8,905	-	-
TOTAL COSTS:	\$260,263	\$47,107	\$0
COST PER STATION:	\$1,625	\$364	#DIV/0!
ROAD DEACTIVATION & ABANDONMENT COSTS:		\$1,648	

**TOTAL (All Roads) = \$309,018**  
**SALE VOLUME MBF = 3200**  
**TOTAL \$/MBF = \$97**

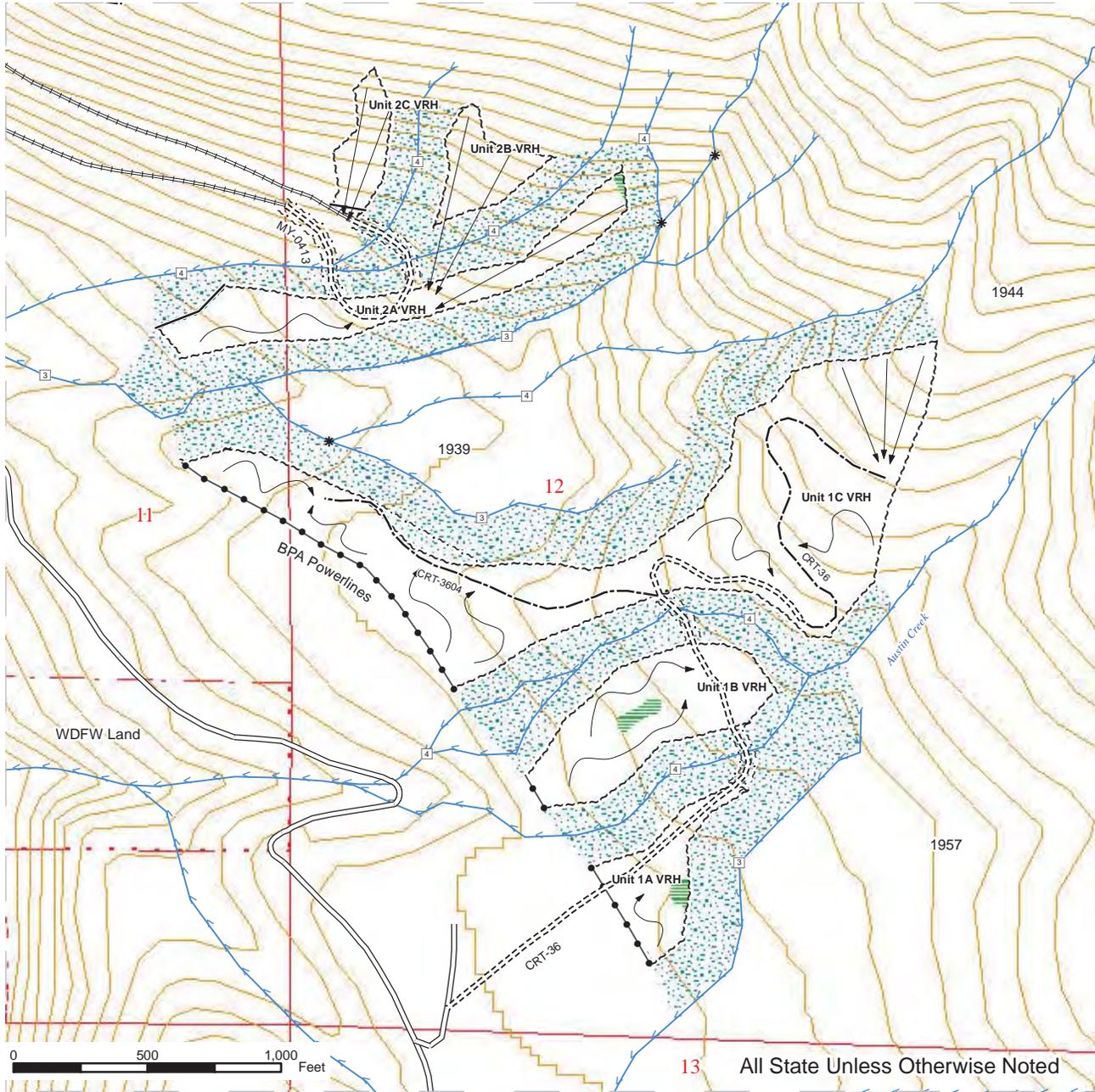
Compiled by: A. HALGREN

Date: 42297

# LOGGING PLAN MAP

SALE NAME: DYNO  
 AGREEMENT#: 92303  
 TOWNSHIP(S): T27R09E  
 TRUST(S): State Forest Transfer(1), Common School and Indemnity(3)

REGION: Northwest Region  
 COUNTY(S): SNOHOMISH  
 ELEVATION RGE: 541-1879



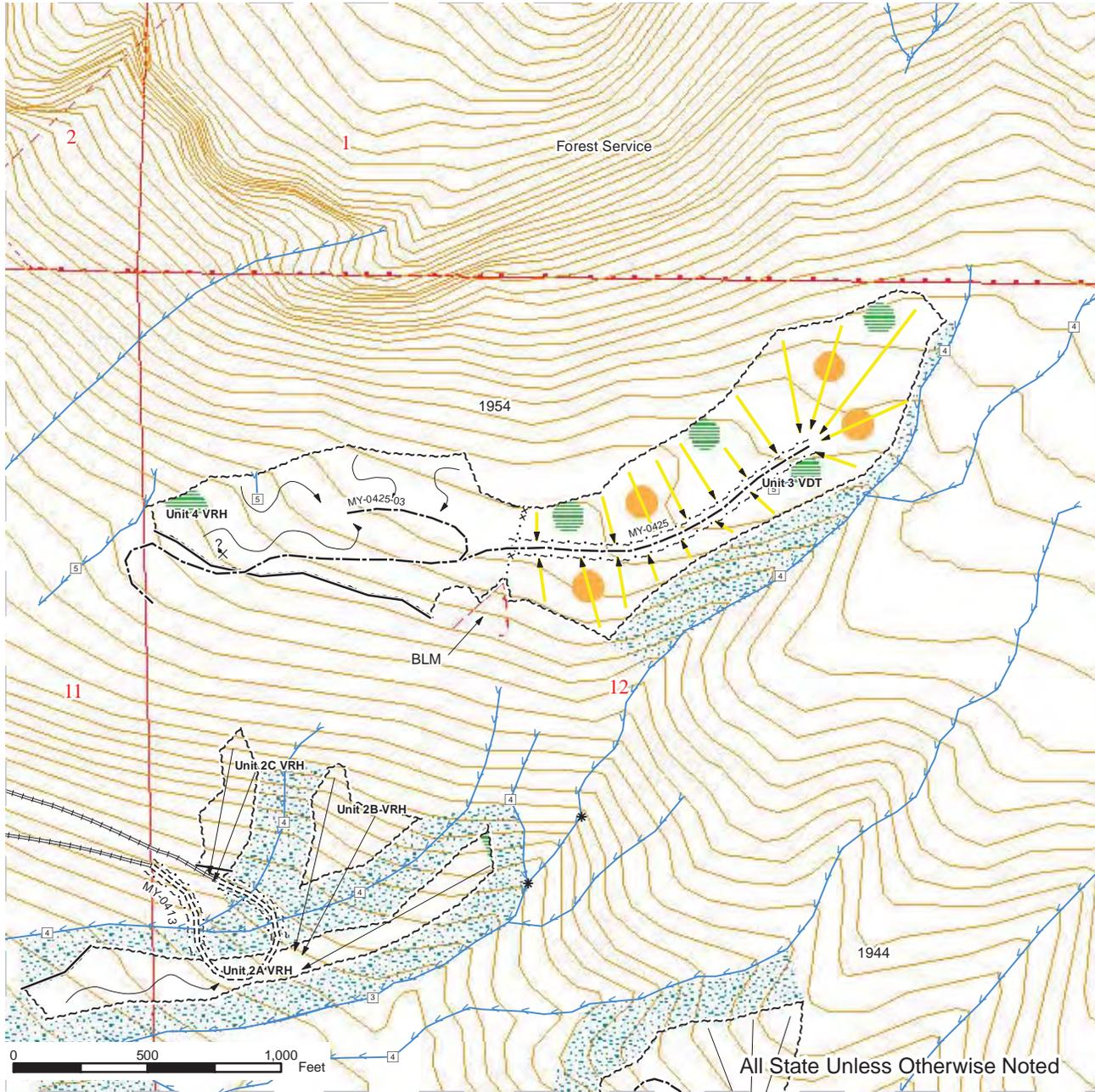
~ ~ ~ Sale Boundary Tags	— · — Optional Construction	🌲 Non-tradeable leave trees
— Sale Boundary (No tags)	— Existing Roads	⚠ Intermediate Support
· · · × Special Management Unit Tags	— · — Required Construction	⚡ Potential Rock Source
— · — Special Management Unit (No Tags)	▨ Wetlands	□ Stream Type
— · — Sale Boundary (Orange Take Trees)	▨ Riparian Management Zone	* Stream Type Break
— · — Sale Boundary (BPA Powerline)	▨ Wetland Management Zone	⤴ Ground Based Yarding
~ · ~ Right of Way Tags	▨ Leave Tree Area	→ Cable Yarding
— Trail	▨ Gap Cuts	→ Ground Based Thinning
— Streams		



# LOGGING PLAN MAP

**SALE NAME:** DYNO  
**AGREEMENT#:** 92303  
**TOWNSHIP(S):** T27R09E  
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**REGION:** Northwest Region  
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**ELEVATION RGE:** 541-1879



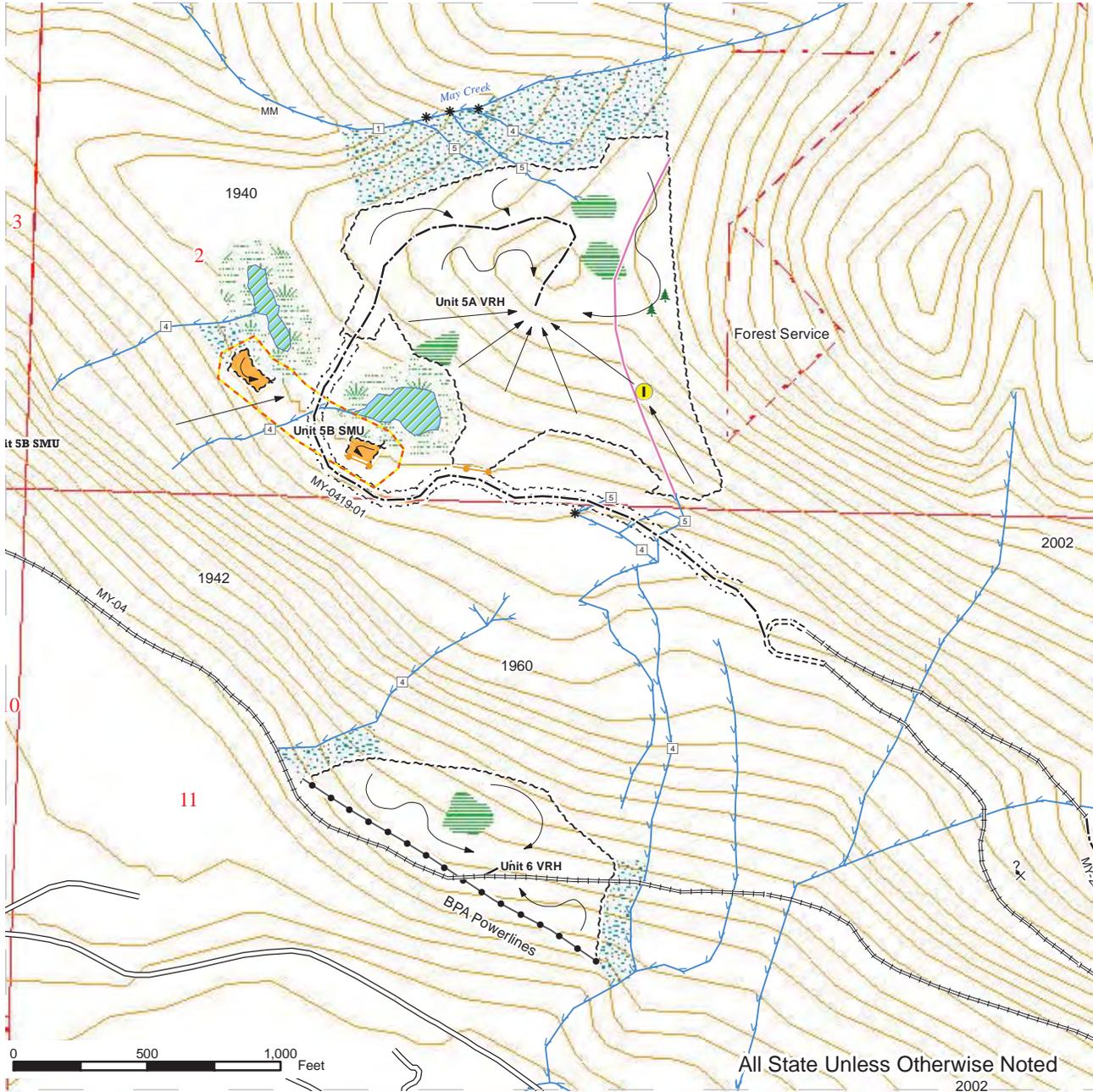
~ ~ ~ Sale Boundary Tags	— — — Optional Construction	🌲 Non-tradeable leave trees
— Sale Boundary (No tags)	— Existing Roads	⚠ Intermediate Support
· · · × Special Management Unit Tags	- - - Required Construction	? Potential Rock Source
— Special Management Unit (No Tags)	▨ Wetlands	□ Stream Type
● Sale Boundary (Orange Take Trees)	▨ Riparian Management Zone	* Stream Type Break
● Sale Boundary (BPA Powerline)	▨ Wetland Management Zone	⤴ Ground Based Yarding
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— Sale Boundary (No tags)	— Existing Roads	⚠️ Intermediate Support
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— Streams		