



TIMBER NOTICE OF SALE

SALE NAME: SKY RIDER VDT VRH

AGREEMENT NO: 30-97430

AUCTION: February 26, 2020 starting at 10:00 a.m., COUNTY: Snohomish Northwest Region Office, Sedro Woolley, WA

SALE LOCATION: Sale located approximately 4 miles west of Index, WA.

PRODUCTS SOLD AND SALE AREA:

All timber as described for removal in Schedule B, bounded by white timber sale boundary tags, adjacent young stands and the DF-ML and DF-26 roads, in Unit #1.

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

All timber bounded by orange right of way tags in ROW #9.

The above described products on part(s) of Sections 7 and 18 all in Township 27 North, Range 10 East, Sections 12 all in Township 27 North, Range 9 East, W.M., containing 221 acres, more or less.

CERTIFICATION: This sale is certified under the Sustainable Forestry Initiative® program Standard (cert no: PwC-SFIFM-513)

ESTIMATED SALE VOLUMES AND QUALITY:

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

MINIMUM BID: \$67/MBF (est. value \$555,000.00) BID METHOD: Sealed Bids

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

EXPIRATION DATE: March 31, 2022 ALLOCATION: Export Restricted

BIDDABLE SPECIES: Hemlock

BID DEPOSIT: \$55,500.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: Cable OR tethered equipment (See H-141 for restrictions); shovel, feller-buncher or tracked skidder (See H-141 for restrictions) on sustained slopes 35% or less; self-leveling equipment on sustained slopes 55% or less; Falling and Yarding will not be permitted from November 1 to March 31 unless authorized in writing by the Contract Administrator



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(THIS PERTAINS TO GROUND-BASED EQUIPMENT ONLY) to reduce soil damage and erosion.

Additional restrictions apply, see Remarks section below.

### **ROADS:**

31.91 stations of required reconstruction. 96.92 stations of optional construction. 232.80 stations of required prehaul maintenance. 13.50 stations of optional prehaul maintenance. 61.56 stations of abandonment. 28.73 stations of abandonment, if built. Rock may be obtained from the following source(s) on State land at no charge to the Purchaser: DF-3002-0101 Pit at station 4+40 of the DF-3002-01 Road. DF-3002-07 Pit at station 39+00 of the DF-3002 Road.

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

An estimated total quantity of rock needed for this proposal: 167 cubic yards of riprap and 5,610 cubic yards of ballast rock.

Additional restrictions apply, see Remarks section below.

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

### **ACREAGE DETERMINATION**

**CRUISE METHOD:** Acres determined by GPS traverse. Cruise was conducted via variable and fixed plot sample type. See Cruise Narrative for further details. Shapefiles of units are available upon request.

**FEES:** \$79,628.00 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. Gap cuts are marked with a band of pink paint with pink butt dots.
2. There is a "Tailhold Restriction" area north of Unit 1. Up to 10 tail holds are permitted within the restricted area. There shall not be any tree removals in the restricted area, nor shall any tailholds be rigged on any old growth trees or marbled murrelet platform trees. All old growth trees and marbled murrelet platform trees within 300 feet of the timber sale boundary are marked with double bands of blue paint. All tailholds shall be approved by the Contract Administrator. Any tailholds located within the polygon will require daily timing restrictions if conducted during the critical nesting season (April 1 – September 23). Timing restrictions are from one hour before to two hours after official sunrise and one hour before to one hour after official sunset.
3. **BARK SLIPPAGE:** Cutting and yarding shall not be permitted during the bark slippage season, unless authorized in writing by the Contract Administrator. This season is estimated to run from April 1 to July 15, but shall vary dependent on weather conditions. If permission is granted to operate during the bark slippage season, the Purchaser shall be required to provide a plan outlining mitigation measures.
4. Intermediate supports may be necessary. Skyline XL profiles are available upon request.



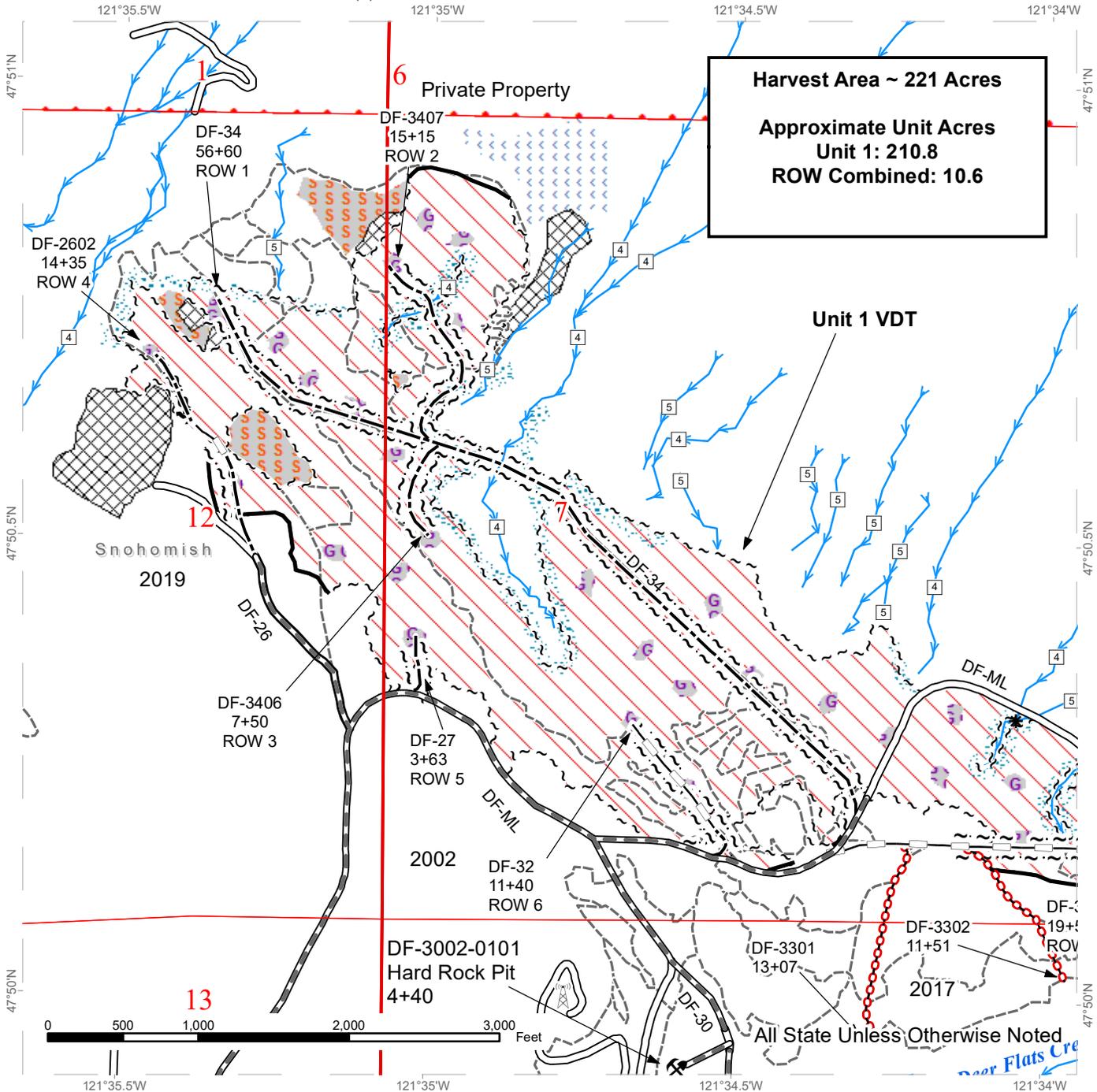
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5. The sale is located within the Reiter Foothills State Forest recreational area. The sale has a number of motorized trails within the unit. There are special requirements regarding equipment crossing over designated trails. See H-140 and H-141.
6. No operations are allowed during weekends and State recognized holidays.
7. HQ DF noted within the sale area. See cruise for further details (approximately 161 mbf of the above listed DF 2S is deemed high quality by the Department).
8. Douglas-fir poles were noted within the sale area.

# TIMBER SALE MAP

**SALE NAME:** SKY RIDER VDT  
**AGREEMENT #:** 30-097430  
**TOWNSHIP(S):** T27R10E, T27R9E  
**TRUST(S):** State Forest Transfer (1)

**REGION:** Northwest Region  
**COUNTY(S):** Snohomish  
**ELEVATION RGE:** 1640-2480



**Harvest Area ~ 221 Acres**  
**Approximate Unit Acres**  
**Unit 1: 210.8**  
**ROW Combined: 10.6**

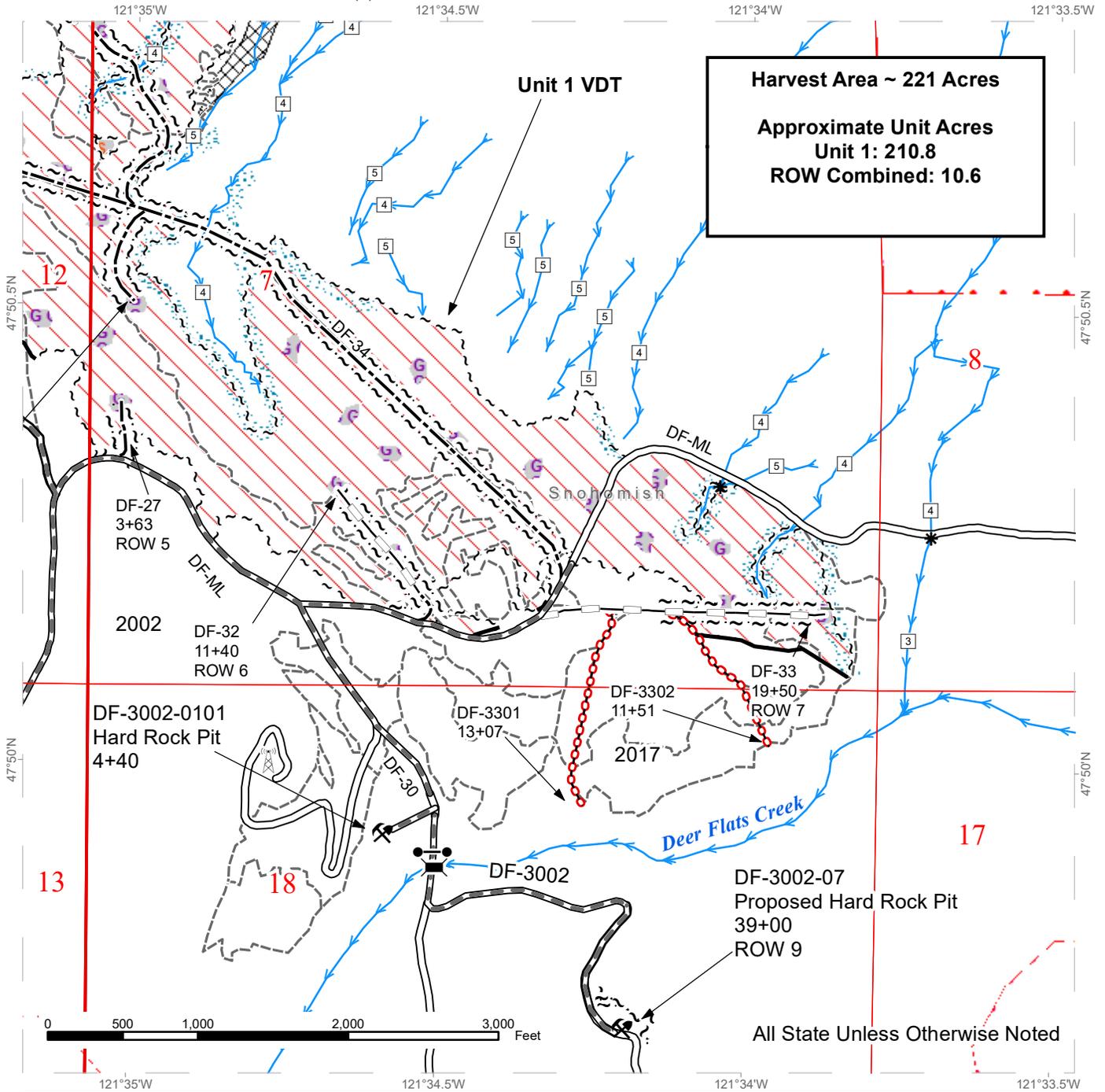
- Variable Density Thinning
- Public Land Survey Townships
- Public Land Survey Sections
- DNR Managed Lands
- Skip
- Gap
- Riparian Mgt Zone
- Tailhold Restriction (Equip Exclusion Zone)
- No Entry Zone
- Sale Boundary Tags
- Right of Way Tags
- Sale Boundary (No Tags)
- Existing Roads
- Required Pre-Haul Maintenance
- Optional Construction
- Optional Reconstruction
- Required Abandonment
- Streams
- Motorized Recreation Trails
- Stream Type
- Stream Type Break
- Communication Tower
- Rock Pit



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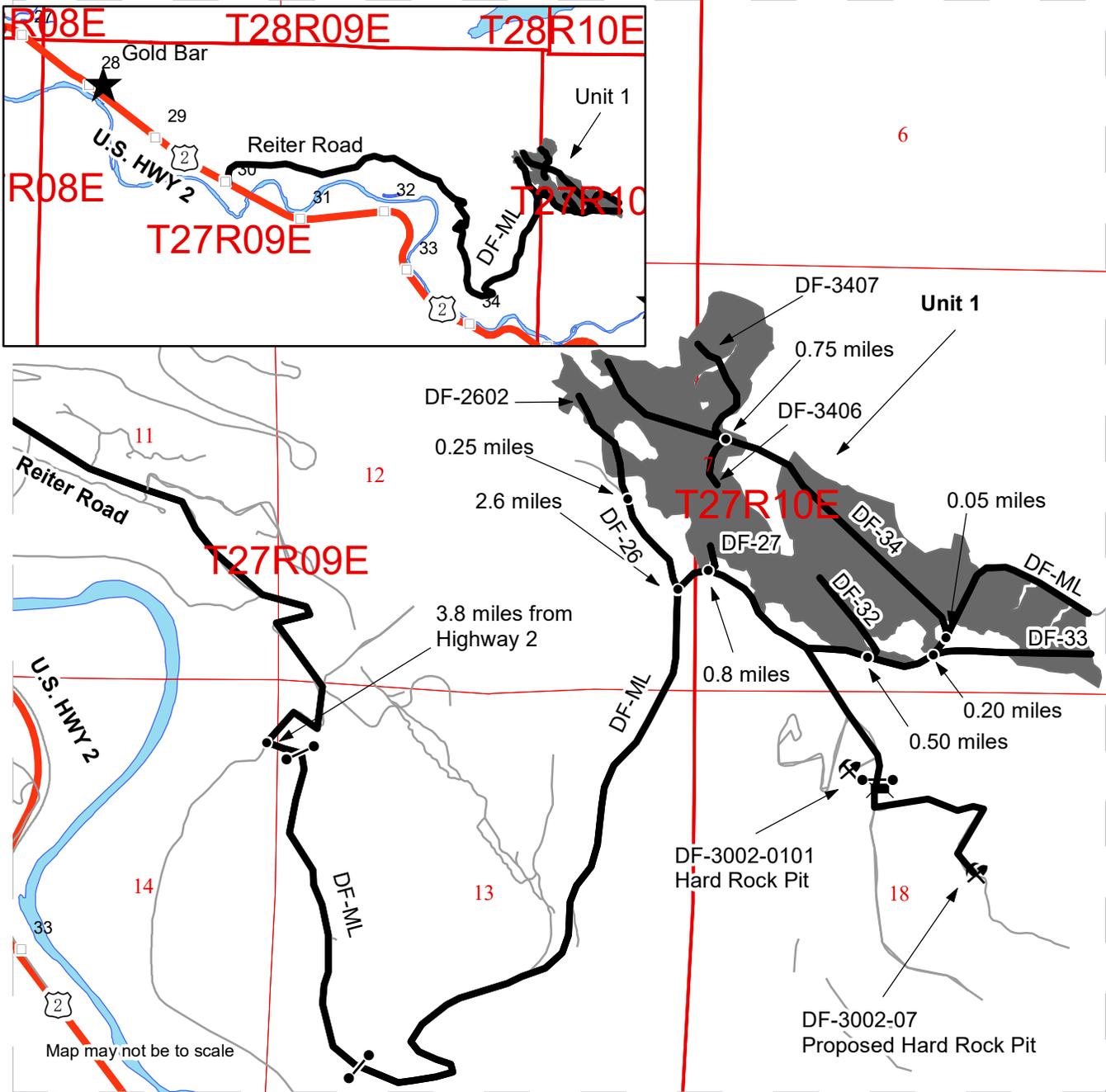
Variable Density Thinning	Sale Boundary Tags	Streams
Public Land Survey Townships	Right of Way Tags	Motorized Recreation Trails
Public Land Survey Sections	Sale Boundary (No Tags)	Stream Type
DNR Managed Lands	Existing Roads	Stream Type Break
Skip	Required Pre-Haul Maintenance	Bridge
Gap	Optional Construction	Communication Tower
Riparian Mgt Zone	Optional Reconstruction	Gate
No Entry Zone	Required Abandonment	Rock Pit



# DRIVING MAP

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	Timber Sale Unit		Haul Route
	Milepost Markers		Other Road
	Town		Highway
	Bridge		
	Distance Indicator		
	Gate		
	Rock Pit		

**DRIVING DIRECTIONS:**

Unit 1:  
 Travel 2 miles east on U.S. Highway 2 from Gold Bar. Turn left onto Reiter road. Follow Reiter road to where it intersects with May Creek road at 0.8 miles. Bear right to continue on Reiter road. Follow Reiter road for another 3.0 miles to the Deer Flats Mainline (DF-ML), turn left onto DF-ML. An F1 key is required to access the DF-ML gates. Continue on the DF-ML for 2.6 miles until the intersection of the DF-ML and the DF-26. Turn left onto the DF-26 and drive 0.25 miles until you get to the DF-2602 road to reach the lower portions of unit 1. From the intersection of the DF-ML and the DF-26, turn right and follow for 0.10 miles to reach the DF-27 road. Continue for another 0.50 miles to reach the DF-32 road. Continue for another 0.20 miles to reach the intersection of the DF-ML and the DF-33 road. Turn left onto the DF-33 road to reach the eastern portions of unit 1. Continue past the DF-ML and the DF-33 intersection for 0.05 miles to reach the DF-34 road. Turn left onto the DF-34 road and continue for 0.75 miles to reach the intersection of the DF-3406, DF-3407, and the DF-34 roads.

**STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES**

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

**Export Restricted MBF Scale AGREEMENT NO. 30-097430**

**SALE NAME: SKY RIDER VDT VRH**

**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 into 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 February 26, 2020 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 as described for removal in Schedule B, bounded by white timber sale boundary tags, adjacent young stands and the DF-ML and DF-26 roads, in Unit #1.

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

All timber bounded by orange right of way tags in ROW #9.

The above described products, located on approximately 221 acres on part(s) of Sections 7, and 18 all in Township 27 North, Range 10 East, Section 12 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
B	Thinning Prescription
D	Damage Compartment Map
Z	Pre-harvest Trail Condition Example Photo

G-030 Contract Term

Purchaser shall remove the forest products conveyed and complete all work required by this contract prior to March 31, 2022.

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 \$109.00 per acre per annum for the acres on which an operating release has not been issued in the Variable Density Thinning (VDT) area. Payment of \$761.00 per acre per annum for the acres on which an operating release has not been issued in the Variable Retention Harvest (VRH) 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. TE812521-1 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, ITP TE812521-1 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 via endorsement 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 address of record:

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; DF-ML, DF-26, DF-2602, DF-27, DF-30, DF-3002, DF-3002-01, DF-32, DF-33, DF-3301, DF-3302, DF-34, DF-3406, DF-3407. The State may authorize in writing the use of other roads subject to fees, restrictions, and prior rights.

G-330 Pre-work Conference

Purchaser shall arrange with the Contract Administrator to review this contract and to examine the sale area before beginning any operations. A plan of operations shall be developed and agreed upon by the Contract Administrator and Purchaser before beginning any operations. To the extent that the plan of operations is inconsistent with the contract, the terms of the contract shall prevail. State's acceptance and approval of Purchaser's plan of operations shall not be construed as any statement or warranty that the plan of operations is adequate for Purchaser's purposes or complies with applicable laws.

G-340 Preservation of Markers

Any legal land subdivision survey corners and witness objects are to be preserved. If such are destroyed or disturbed, the Purchaser shall, at the Purchaser's own expense, re-establish them through a licensed land surveyor in accordance with U.S. General Land Office standards. Corners and/or witness objects that must be disturbed or destroyed in the process of road construction or logging shall be adequately referenced and/or replaced in accordance with RCW 58.24.040(8). Such references must be approved by the Contract Administrator prior to removal of said corners and/or witness objects.

G-360 Road Use Reservation

The State shall have the right to use, without charge, all existing roads and any road constructed or reconstructed on State lands by Purchaser under this contract. The State may extend such rights to others. If the State grants such rights to others, the State shall require performance or payment, as directed by the State, for their proportionate share of maintenance based on their use.

G-370 Blocking Roads

Purchaser shall not block the DF-ML and DF-30 roads, unless authority is granted in writing by the Contract Administrator.

G-430 Open Fires

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

G-450 Encumbrances

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

Easement, including the terms and provisions thereof,  
For: Road  
In Favor of: U.S.A. – U.S.D.A. – Forest Service  
Disclosed by Application No.: 50-029486  
Granted: 5/25/1964  
Expires: Indefinite

Easement, including the terms and provisions thereof,  
For: Road  
In Favor of: U.S.A. –Forest Service  
Disclosed by Application No.: 50-035011  
Granted: 2/2/1971  
Expires: Indefinite

Easement, including the terms and provisions thereof,  
For: Buried Power Line  
In Favor of: Snohomish County P.U.D. #1  
Disclosed by Application No.: 50-048944  
Granted: 11/24/1987  
Expires: Indefinite

Lease, including the terms and provisions thereof,  
For: Land Use License  
In Favor of: Washington Department of Fish & Wildlife  
Disclosed by Application No.: 60-095576  
Granted: 5/2/2017  
Expires: 6/30/2022

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 \$79,628.00 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.

P-027 Payment for Removal of Optional Forest Products

Purchaser agrees to weigh all loads and 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-052 Payment Procedure

If a third party Log and Load Reporting Service (LLRS) is required by this contract the State will compute and forward to the Purchaser statements of charges provided for in the contract. Purchaser shall deliver payment to the Northwest region office on or before the date shown on the billing statement.

If a third party LLRS is not required by this contract, Purchaser shall pay for forest products removed on a monthly basis. Payments will be submitted to the Northwest region office on or before the fourteenth of the month following the month in which the timber was removed or, according to an alternate payment schedule as approved by the State with at least one payment each month for timber removed. The alternate payment

schedule, once approved by the State, shall become part of this contract and may be changed only with written approval of the State.

Payment will be based on the contract rate multiplied by the tons (tonnage contracts) or volume (mbf contracts) removed during the month or payment period. Included with the payment will be a summary report along with all related load tickets and the corresponding certified weight tickets for the payment period. The summary report will be generated using a computer spreadsheet and list the load tickets in ascending numerical order with the corresponding ticket number and weight or volume for each load.

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

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

P-080 Payment Account Refund

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

P-090 Performance Security

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

P-100 Performance Security Reduction

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

Section L: Log Definitions and Accountability

L-010 Forest Products Conveyed

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

L-020 Short Logs - Peeler Blocks

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

L-060 Load Tickets

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

Purchaser shall account for all load tickets issued by the Contract Administrator and return unused tickets at termination of the contract, or as otherwise required by the Contract Administrator. Unused tickets not returned shall be subject to liquidated damages per clause D-030.

The State may also treat load tickets either not accounted for or not returned as lost forest products per clause P-070. All costs associated with computing the billings for lost forest products 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 DATA MISSING of logs being measured or weighed. Purchaser agrees to pay the LLRS for log and load data supplied to the State.

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

L-080 Scaling Rules

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

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

L-110 State Approval of Log Scaling and Weighing Locations

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

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

L-120 Long Log Taper Distribution

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

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

L-130 Conversion Factors

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

Section H: Harvesting Operations

H-010 Cutting and Yarding Schedule

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

**H-011 Certification of Fallers and Yarder Operators**

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

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

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

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

**H-012 Leave Tree Damage Definition**

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

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

- a. A leave tree has one or more scars on its trunk exposing the cambium layer, which in total exceeds 200 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 unit containing the damaged leave tree, 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 10 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 8 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 harvested and removed using cable or tethered equipment (See H-141 for restrictions); shovel, feller-buncher or tracked skidder (See H-141 for restrictions) on sustained slopes 35% or less; self-leveling equipment on sustained slopes 55% or less. Authority to use other equipment or to operate outside the equipment specifications detailed above must be approved in writing by the State.

**H-125 Log Suspension Requirements**

Lead-end suspension is required for all yarding activities.

**H-126 Tailholds on State Land**

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

**H-130 Hauling Schedule**

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

**H-140 Special Harvest Requirements**

Purchaser shall accomplish the following during the harvest operations:

A. The following types of equipment are considered ground-based equipment:

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.

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.

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.

B. Equipment shall 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.

C. When yarding and loading operations are occurring simultaneously, an additional shovel shall be required for loading to avoid extra trips to the landing. Shovel yarding shall not be allowed to create ruts or soil puddling. Shovel routes should be dispersed to prevent creation of definable trails.

- D. Equipment crossings on designated recreation trails must be pre-marked by the Purchaser with three bands of yellow for review by the Contract Administrator for written approval prior to commencement of harvest operations.
- E. Purchaser is limited to 10 equipment crossings on designated recreation trails. Additional crossings must be approved in writing by the Contract Administrator.
- F. No operations are permitted on weekends or state recognized holidays, unless authorized by the Contract Administrator. A two week public notice must be observed before operating on weekends or state recognized holidays.
- G. Prior approval to commence harvest activities in a damage compartment is required in writing by the Contract Administrator. All harvest activities in Damage Compartment 1 in Unit 1 shall be completed first.
- H. Buried utility lines exist along Reiter Road, DF-ML, and DF-30 roads. Prior to road construction activities the contractor must contact the utility provider and determine an appropriate course of action. Purchaser shall provide written documentation to the Contract Administrator.
- I. Trees must be felled away from the Power line right-of-way.
- J. BARK SLIPPAGE: Cutting and yarding shall not be permitted during the bark slippage season, unless authorized in writing by the Contract Administrator. This season is estimated to run from April 1 to July 15, but shall vary dependent on weather conditions. If permission is granted to operate during the bark slippage season, the Purchaser shall be required to provide a plan outlining mitigation measures.
- K. Purchaser shall be required to mark tail holds prior to operation and have them approved by the Contract Administrator prior to cable yarding operations.
- L. No tops or limbs shall be allowed to accumulate on any landings. Tops and limbs shall be redistributed in the unit to the satisfaction of the Contract Administrator.
- M. Maintain a 30-foot equipment limitation zone on either side of all type-5 streams.
- N. Trees shall be felled away from stream channels and any standing water or wet swales when feasible.

- O. Intermediate supports, if necessary for yarding, shall be marked by the Purchaser and approved by the Contract Administrator prior to felling unit timber.
- P. Ground-based yarding shall not exceed 800 feet from any road unless authorized in writing by the Contract Administrator.
- Q. Both gates on the DF-ML and the gate on the DF-3002 must be closed and locked at the end of each day.
- R. Any signs or structures that are damaged or moved shall be repaired or replaced at the Purchaser's expense and must be approved by the Contract Administrator.
- S. Purchaser is responsible for all notification signage relating to logging or road construction activity at the Purchaser's expense.

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. A copy of the timber sale map and contract shall be present on site during active operations.
- B. Purchaser must obtain prior written approval from the Contract Administrator for areas as to where to utilize tracked skidder and self-leveling or tethered equipment prior to use. Trees may be felled and pre-bunched by the equipment but must be yarded by cable, if authorized by the Contract Administrator.
- C. There are multiple "No Entry Zones" in Unit 1 where no activity is allowed to occur. This is because they are protecting unstable slope features. No tailholding and/or suspension of cable, or any logging activity is allowed in these areas. Also, if any timber from the sale area accidentally falls into the "No Entry Zones", the tree must be left where it lands.
- D. There is a "Tailhold Restriction" area north of Unit 1. Up to 10 tail holds are permitted within the restricted area. There shall not be any tree removals in the restricted area, nor shall any tailholds be rigged on any old growth trees or marbled murrelet platform trees. All old growth trees and marbled murrelet platform trees within 300 feet of the timber sale boundary are marked with double bands of blue paint. All tailholds shall be approved by the Contract Administrator. Any tailholds located within the restriction area shall require daily timing restrictions if conducted during the critical nesting season (April 1 – August 31). Timing restrictions are from one hour before to two hours after official sunrise and one hour before to one hour after official sunset.

- E. An onsite pre-work meeting shall be conducted with the operator, Contract Administrator, and DNR recreation staff to determine trail repair thresholds. A slash abatement plan shall also be developed during this pre-work meeting.
- F. Trails shall not be used as yarding corridors.
- G. Trees adjacent to the trails shall be felled and yarded away from the trails unless there is prior approval from the Contract Administrator.
- H. Slash shall not be piled on trails, except to be used temporarily for equipment crossings on recreation trails. All slash on trails must be removed before demobilization to Contract Administrator’s satisfaction.
- I. Equipment trail crossings shall be perpendicular as possible to the recreation trail and log cribbing/slash shall be used on top of trail.
- J. Log cribbing/slash shall be put on top of trails where logs are yarded across a recreation trail.
- K. Trails shall be left in the condition that exist prior to commencement of operations (see photo in Schedule Z). The Contract Administrator shall take photos of each crossing when approved before crossing/cribbing is placed.

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 .

H-260 Fall Leaners

Trees that have been pushed over in falling or skidding operations shall be felled.

Section C: Construction and Maintenance

C-040 Road Plan

Road construction and associated work provisions of the Road Plan for this sale, dated 7/26/2019 are hereby made a part of this contract.

C-050 Purchaser Road Maintenance and Repair

Purchaser shall perform work at their own expense on the DF-26, DF-2602, DF-27, DF-30, DF-3002, DF-3002-01, DF-32, DF-33, DF-3301, DF-3302, DF-34, DF-3406, DF-3407 roads. All work shall be completed to the specifications detailed in the Road Plan.

C-060 Designated Road Maintainer

If required by the State, Purchaser shall perform maintenance and replacement work as directed by the Contract Administrator on the DF-ML Road. Purchaser shall furnish a statement in a form satisfactory to the State showing the costs incurred while performing this work. Costs shall be based on the rates set forth in the equipment rate schedule on file at the Region office or Engineering Division in Olympia. The State shall reimburse Purchaser for said costs within 30 days of receipt and approval of the statement.

Section S: Site Preparation and Protection

S-001 Emergency Response Plan

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

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

S-010 Fire Hazardous Conditions

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

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

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

S-030 Landing Debris Clean Up

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

S-035 Logging Debris Clean Up

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

S-050 Cessation of Operations for Low Humidity

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

S-130 Hazardous Materials

a. Hazardous Materials and Waste - Regulatory Compliance

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

b. Hazardous Materials Spill Prevention

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

c. Hazardous Materials Spill Containment, Control and Cleanup

If safe to do so, Purchaser shall take immediate action to contain and control all hazardous material spills. Purchaser shall ensure that enough quick response spill kits capable of absorbing 10 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 , 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 per clause L-071, and \$250 each unused ticket that is not returned to the State, for any reason.

#### 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 \$250.00 per tree for all damaged trees in 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 areas (Gaps).

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

STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

\_\_\_\_\_  
Purchaser

\_\_\_\_\_  
Tim Stapleton  
Northwest Region Manager

\_\_\_\_\_  
Print Name

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

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

Address:

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

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

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

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

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

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

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

\_\_\_\_\_

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

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

Thinning Prescription

Unit 1 – NRF Thinning and RMZs

- Thin from below, leaving a minimum of 110 to 120 trees per acre (19.5 x 19.5 foot spacing) throughout the unit.
- Residual stand must average 220 square feet of basal area per acre.
- Only live trees 8 inches or greater in DBH shall be used to calculate trees per acre and basal area.

To accomplish this prescription, fallers shall thin from below and harvest species in the following order:

1. Red Alder, any size
2. Western hemlock, (10 to 20 inches)
3. Douglas-fir, (10 to 20 inches)

All other tree species may only be cut to facilitate yarding and road construction, when located within gap cuts, or if they pose safety hazards. If felled, they shall be treated like all other harvested trees and be deducted from final standing trees per acre and residual basal area goals. If felled for safety reasons they shall be left where they lay and remain on site as down woody debris.

Twenty-nine gaps, each approximately 0.3 acres, are designated with a perimeter of trees that are marked with a single pink band and a pink butt dot. All trees within this perimeter including the pink marked trees shall be harvested.

Four skips, with a combined total of 10.1 acres, are bounded out with white “Timber Sale Boundary” tags. All trees within the skips are to be left standing.

When possible harvesters shall leave “best trees” as residual stocking throughout the unit. “Best tree” is defined as having the following characteristics:

- Largest diameter (must be greater than 8 inches DBH).
- Fullest and most vigorous crown.

Special Thinning Conditions and Corridors for All Units

- Hardwood patches shall be held to the same stocking criteria as the rest of the stand.

- In areas where thinning is not necessary, i.e., prescription is met, do not put in yarding corridors or skid trails. These areas must be identified and agreed upon in advance with the Contract Administrator.
- If other trees need to be selected, due to safety concerns, prior approval is needed from the Contract Administrator prior to falling
- Landings shall be located to provide for parallel yarding corridors whenever possible.
- Ground-based corridors shall be limited to 14 feet in width including rub trees. Cable corridors shall be limited to 12 feet in width including rub trees.
- Ground-based corridors shall be no closer than 75 feet apart from center of corridor.
- If radial yarding corridors are required from a central landing, the distance between yarding corridors must be no closer than 100 feet where the corridor leaves the unit as measured from the center of the corridors.

RMZ enhancement activities.

There are 17.0 acres of RMZ thinning in Unit 1. Three conifer trees per acre of RMZ, from the largest thinned DBH class, shall be felled towards the stream where feasible to remain as down woody debris. Two conifer trees per acre of RMZ, from the largest thinned DBH class, shall be double girdled, or topped, for snag recruitment. The Purchaser shall mark and fell/girdle upon review and approval of the Contract Administrator. These trees shall be marked within 25 feet of the white “timber sale boundary” tags along type 3 and 4 streams. Avoid snag recruitment within one and a half tree heights of recreation trails.

#### Thinning Conditions

Fallers and 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 and 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.

Orange tagged “Right-of-Way” trees may be harvested if they meet the specification under the prescription above.

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

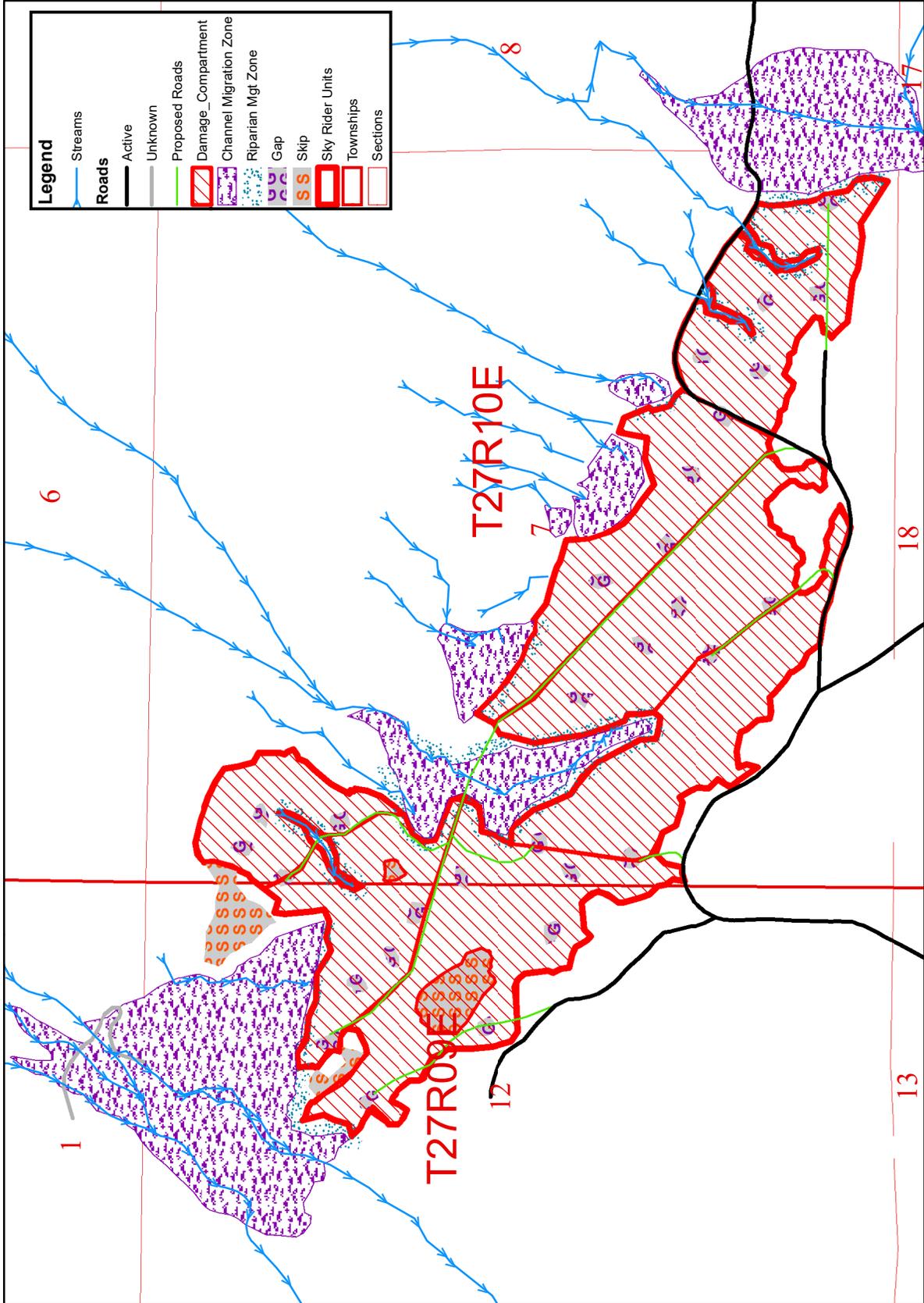
The Contract Administrator and Operator shall jointly review the take tree selection criteria as outlined in Schedule B of the contract. In conjunction with the Contract Administrator, the Faller

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

Schedule D  
Damage Compartment Map



Sky Rider VDT Unit 1 Timber Sale Damage Compartments



Author: Bryant Daugherty  
Date: 08/21/2019

Schedule Z  
Pre-Harvest Trail Condition Example Photo

Figure 1. Pre-harvest average trail conditions within unit 1 of the Sky Rider Timber sale.





**WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES**  
**FOREST EXCISE TAX ROAD SUMMARY SHEET**

**Region:**

**Timber Sale Name:**

**Application Number:**

**EXCISE TAX APPLICABLE ACTIVITIES**

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

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

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

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

**Pre-Haul Maintenance:** **linear feet**  
*Existing road to receive maintenance work (optional and required) prior to haul*

**EXCISE TAX EXEMPT ACTIVITIES**

**Temporary Construction:** **linear feet**  
*Roads to be constructed (optional and required) and then abandoned*

**Temporary Reconstruction:** **linear feet**  
*Roads to be reconstructed (optional and required) and then abandoned*

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 9/18)

## PRE-CRUISE NARRATIVE

Sale Name: <b>Sky Rider VDT</b>	Region: <b>Northwest</b>
Agreement #: <b>30-097430</b>	District: <b>Cascade</b>
Contact Forester: <b>Bryent Daugherty</b> Phone / Location: <b>360-386-3818</b>	County(s): <b>Snohomish, Choose a county</b>
Alternate Contact: <b>John Moon</b> Phone / Location: <b>360-386-3818</b>	Other information: <a href="#">Click here to enter text.</a>

Type of Sale: <b>Lump Sum</b>	Percent of Sale Acres
Harvest System: <b>Ground Based VDT</b>	90%
Harvest System: <b>Downhill Cable VDT</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 Determinati on  (List method and error of closure if applicable)
				RMZ/ WMZ Acres	Leave Tree Acres	Existing Road Acres	Other Acres (describe)		
Unit 1 VDT	12/T27/R09E 7/T27/R10E	1	235.2	2.7	10.1 (Skips)	3.4	8.2 ROW 9.3 GAPS 20.7 Corridors	180.8	GPS (Garmin)
Unit 1 GAPS	12/T27/R09E 7/T27/R10E	1	9.3					9.3	GPS (Garmin)
Unit 1 Corridors	12/T27/R09E 7/T27/R10E	1	20.7					20.7	GIS*
ROW 1	12/T27/R09E 7/T27/R10E	1	3.4					3.4	LXW
ROW 2	7/T27/R10E	1	2.0					2.0	LXW
ROW 3	7/T27/R10E	1	0.8					0.8	LXW
ROW 4	12/T27/R09E	1	1.4					1.4	LXW
ROW 5	7/T27/R10E	1	0.4					0.4	LXW
ROW 6	7/T27/R10E	1	0.8					0.8	LXW
ROW 7	7/T27/R10E	1	0.6					0.6	LXW
ROW 8	18/T27/R10E	1	1.2					1.2	GPS (Garmin)
<b>TOTAL ACRES</b>			275.8	2.7	10.1	3.4	38.2	221.4	

**HARVEST PLAN AND SPECIAL CONDITIONS:**

Unit #	Harvest Prescription: (Leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
Unit 1 VDT	Unit 1 is a Variable Density Thinning (VDT) in a Northern Spotted Owl Next Best Stand. Thin all timber bounded by white " <i>Timber Sale Boundary</i> " tags to the north, west, east, south, adjacent natural stand breaks to the south, the DF-ML road to the north and south, and the Sandhill motorized trail to the north following the prescription in Schedule B.	There is 17.5 acres of RMZ thinning using the VDT NRF Prescription. There are 10.1 acres of Skips and 9.3 acres of Gaps. See Unit 1 Gap section.	
Unit 1 GAPS	Unit 1 Gaps is a collection of 29 ~1/3 acre Gaps scattered around unit 1 VDT. Take all trees bounded by pink paint/pink flagging including the painted trees.		
ROW 1	Right of Way (ROW): Take all trees bounded by orange "Right of way tags". 20-foot average ROW width from centerline		
ROW 2	Right of Way (ROW): Take all trees bounded by orange "Right of way tags". 30-foot average ROW width from centerline		
ROW 3	Right of Way (ROW): Take all trees bounded by orange "Right of way tags". 25-foot average ROW width from centerline		
ROW 4	Right of Way (ROW): Take all trees bounded by orange "Right of way tags", natural stand break to the south. 25-foot average ROW width from centerline		
ROW 5	Right of Way (ROW): Take all trees bounded by orange "Right of way tags". 30-foot average ROW width from centerline		
ROW 6	Right of Way (ROW): Take all trees bounded by orange "Right of way tags". 20-foot average ROW width from centerline		
ROW 7	Right of Way (ROW): Take all trees bounded by orange "Right of way tags". 20-foot average ROW width from centerline		
ROW 8	Right of Way (ROW): Take all trees bounded by orange "Right of Way" tags to the east, road DF 3002 to the west and young stand boundary to the north and south.		

**OTHER PRE-CRUISE INFORMATION:**

Unit #	Primary, secondary Species / Estimated Volume (MBF)	Access information (Gates, locks, etc.)	Photos, traverse maps required
Unit 1 VDT	WH, DF/ 2,500	Access off Reiter Road on the Deer Flats Main Line (DF-ML). F1 Key is needed to open several gates along DF-ML	See attached pre-cruise and vicinity map
Unit 1 GAPS	WH, DF/ 400	Same as above.	Same as above
Unit 1 Corridors	WH, DF/ 800	Same as above.	Same as above
ROW 1	WH, DF/ 100	Same as above.	Same as above
ROW 2	WH, DF/ 80	Same as above.	Same as above
ROW 3	WH, DF/ 30	Same as above.	Same as above
ROW 4	WH, DF/ 60	Same as above.	Same as above
ROW 5	WH, DF/ 10	Same as above.	Same as above
ROW 6	WH, DF/ 25	Same as above.	Same as above
ROW 7	WH, DF/ 20	Same as above.	Same as above
ROW 8	WH/DF 25	Same as above.	Same as above
Total MBF	4,050 MBF		

**REMARKS:**

- GPS points are marked with lime and pink flagging
- Recreation trail system within unit 1
- Unit 1 is second growth timber. There are 29 ~1/3 acre gaps scattered in unit 1. Potential pole trees within gaps. Gap circumference is painted with pink paint.
- ROW 8 is an area where a proposed rock pit will be.

There are some gaps located along the ROWs. Where gaps meet the ROW, no orange tags were placed to mark the ROW edges. Do not exceed ROW past its allotted width as described in the Harvest Plan and Special conditions section. There are some gaps centers located at the end of ROWs to allow for landings. Do not exceed ROW past the gap boundary. ROW acreage located within gaps is excluded from total ROW acres and is counted as GAP acres.

\*Riparian Thinning Acres in Units 1 (Acreage not deducted from VDT Units)

Riparian Buffers for Unit 1 are not marked on the ground and have the same prescription as the rest of the NRF unit. They are tallied directly above in "Net Harvest Acres" as VDT acres  
 Unit 1 RMZ Acres – 17.5 acres in VDT

Unit 1 VDT Prescription

Thin from below and leave the best 110 to 120 trees per acre, uniformly distributed over the area. To accomplish this prescription, fallers shall harvest trees starting with the smallest diameter tree working up to the largest (thin from below), cutting:

- 1) Red Alder, any size
- 2) Western Hemlock, 10 in to 20 in
- 3) Douglas-Fir, 10 in to 20 in
- 4) No other species shall be cut, **except** if it falls within a Gap or in a ROW. All trees shall be removed within Gap and ROW boundaries. Tagged ROW trees shall not be harvested unless they meet the prescription criteria.

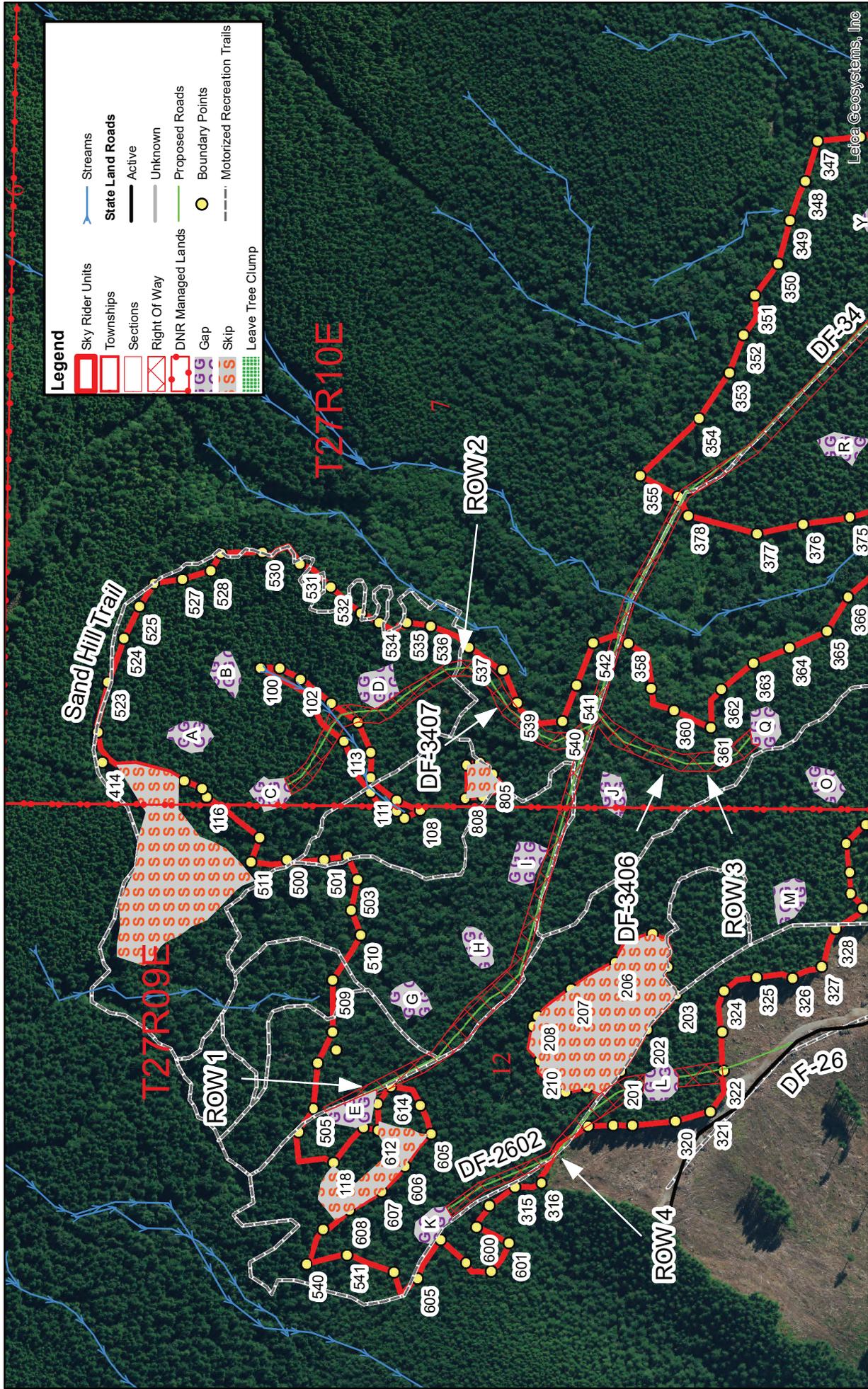
Directions

Unit 1:

Travel 2 miles east on U.S. Highway 2 from Gold Bar. Turn left onto Reiter road. Follow Reiter road to where it intersects with May Creek road at 0.8 miles. Bear right to continue on Reiter road. Follow Reiter road for another 3.0 miles to the Deer Flats Mainline (DF-ML), turn left onto DF-ML. An F1 key is required to access the DF-ML gates. Continue on the DF-ML for 2.6 miles until the intersection of the DF-ML and the DF-26. Turn left onto the DF-26 and drive 0.25 miles until you get to the DF-2602 road to reach the lower portions of unit 1. From the intersection of the DF-ML and the DF-26, turn right and follow for 0.10 miles to reach the DF-27 road. Continue for another 0.50 miles to reach the DF-32 road. Continue for another 0.20 miles to reach the intersection of the DF-ML and the DF-33 road. Turn left onto the DF-33 road to reach the eastern portions of unit 1. Continue past the DF-ML and the DF-33 intersection for 0.05 miles to reach the DF-34 road. Turn left onto the DF-34 road and continue for 0.75 miles to reach the intersection of the DF-3406, DF-3407, and the DF-34 roads.

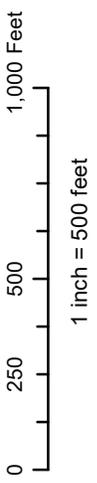
Prepared By: Bryant Daugherty Date: 8/29/2019	Title: Forester	CC:
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# Sky Rider VDT Unit 1 Timber Sale



**Legend**

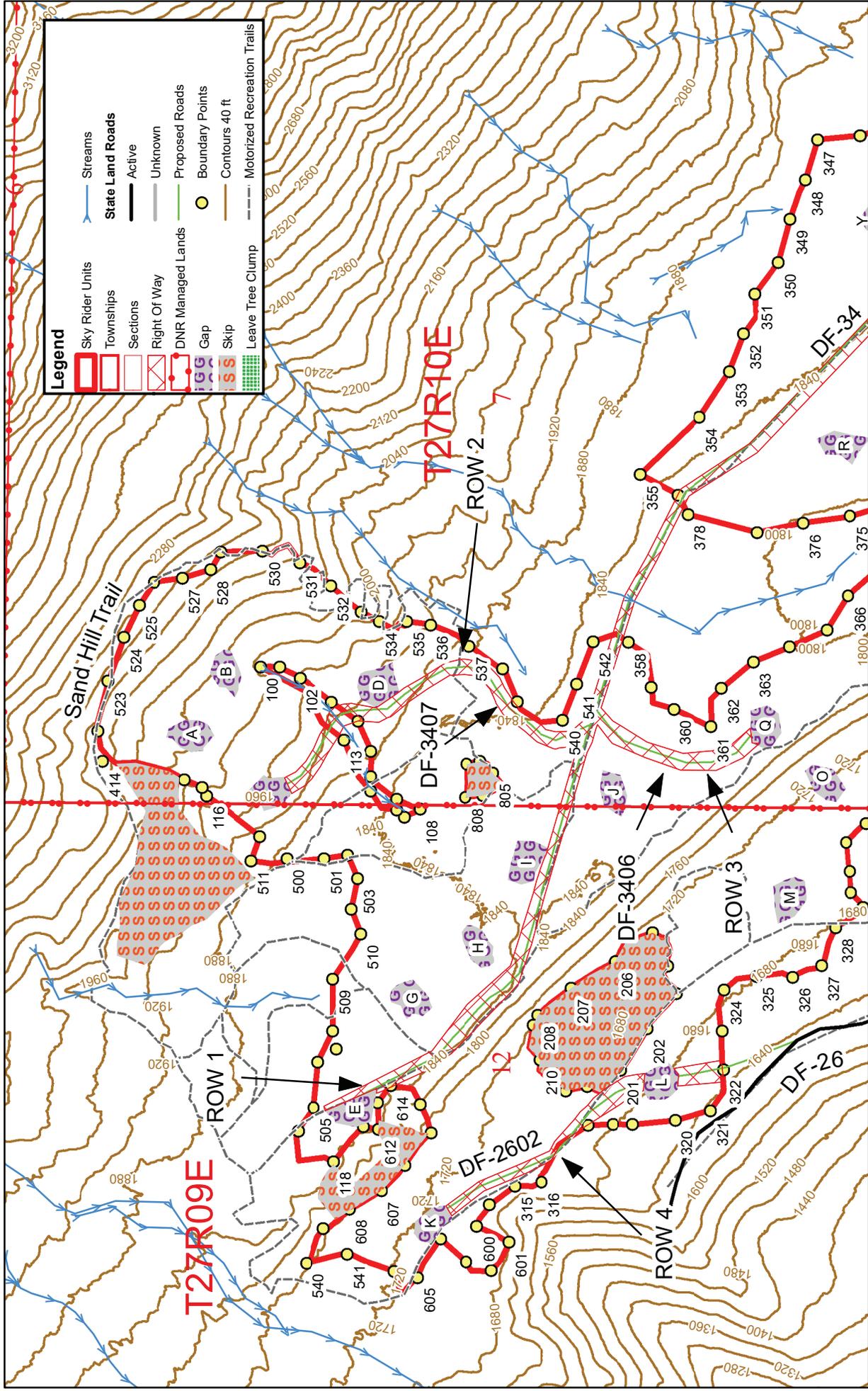
- Sky Rider Units
- Townships
- Sections
- Right Of Way
- DNR Managed Lands
- Gap
- Skip
- Leave Tree Clump
- Streams
- State Land Roads
- Active
- Unknown
- Proposed Roads
- Boundary Points
- Motorized Recreation Trails



Author: Bryant Daugherty  
Date: 9/4/2019

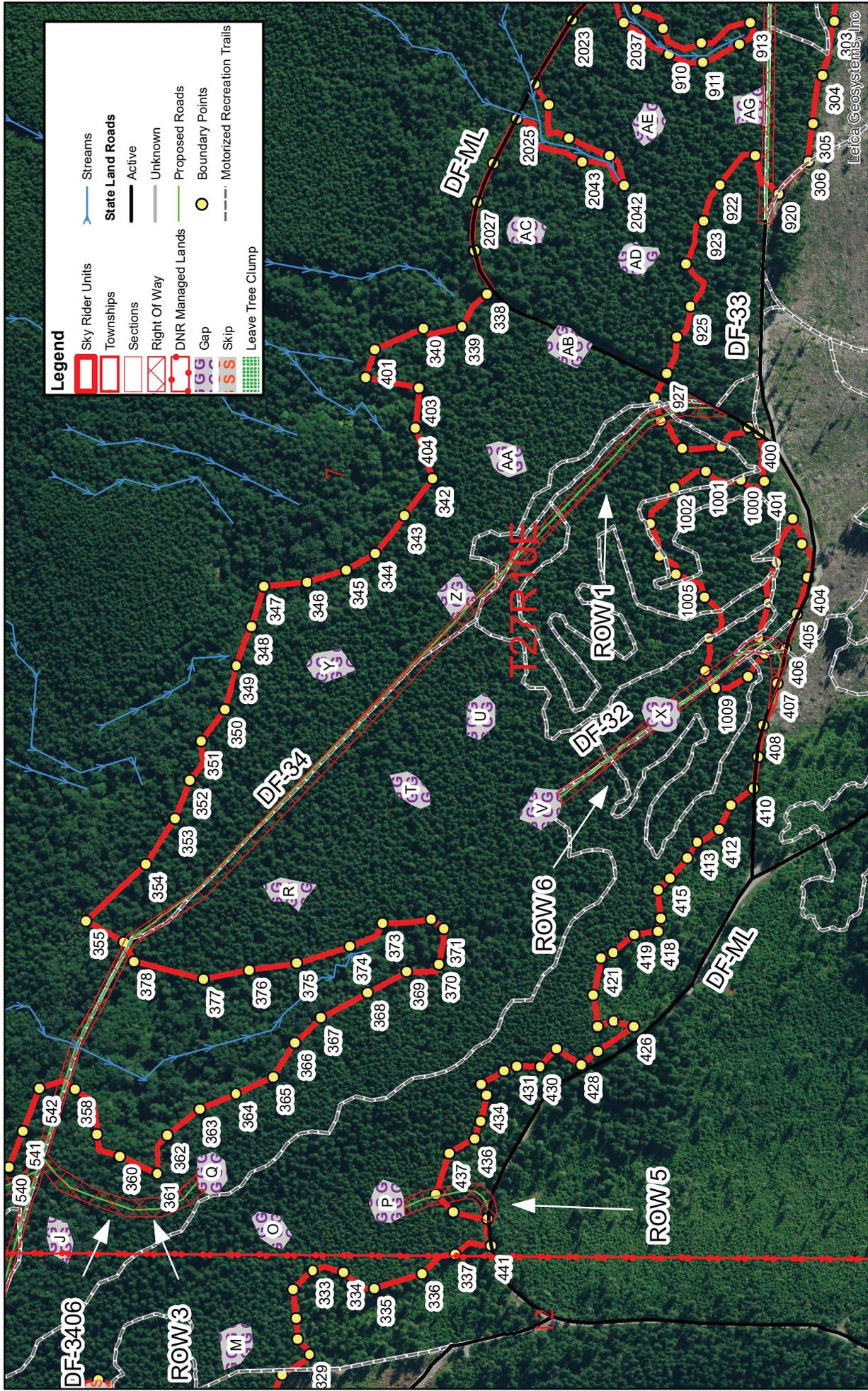
Leica Geosystems, Inc

# Sky Rider VDT Unit 1 Timber Sale

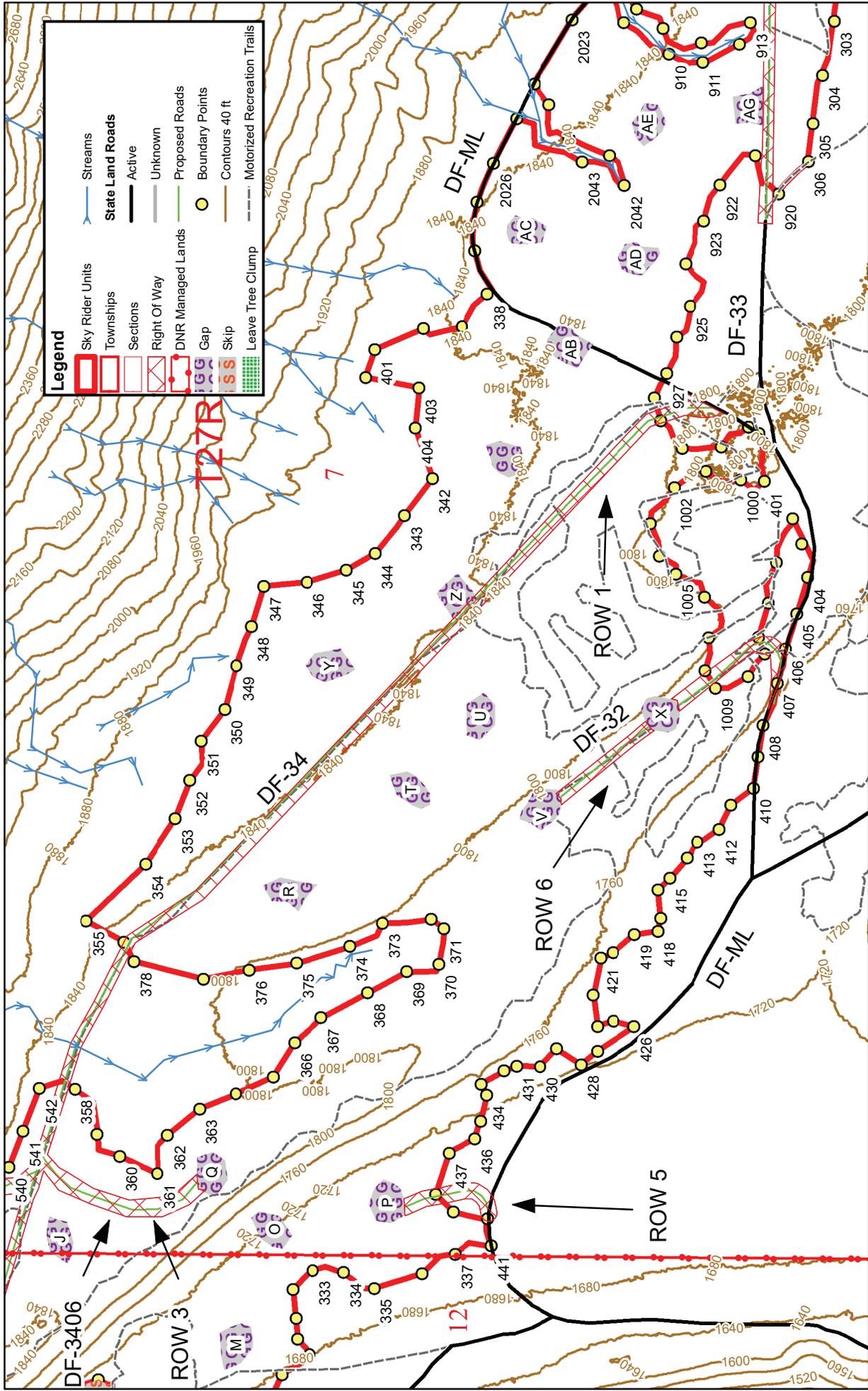


Author: Bryant Daugherty  
 Date: 9/4/2019

# Sky Rider VDT Unit 1 Timber Sale

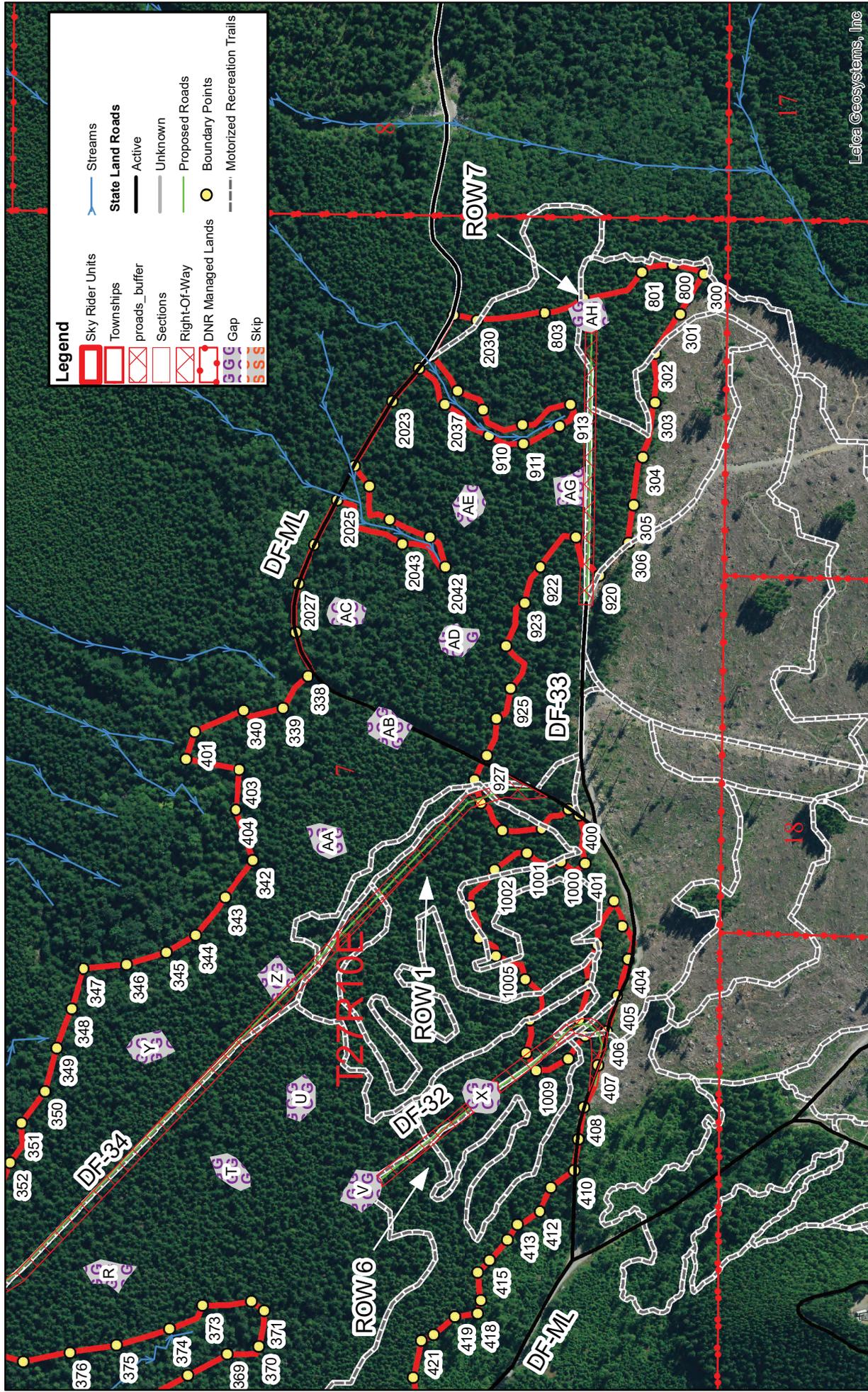


# Sky Rider VDT Unit 1 Timber Sale

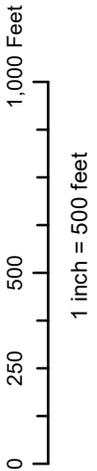


Author: Bryent Daugherty  
Date: 9/4/2019

# Sky Rider VDT Unit 1 Timber Sale

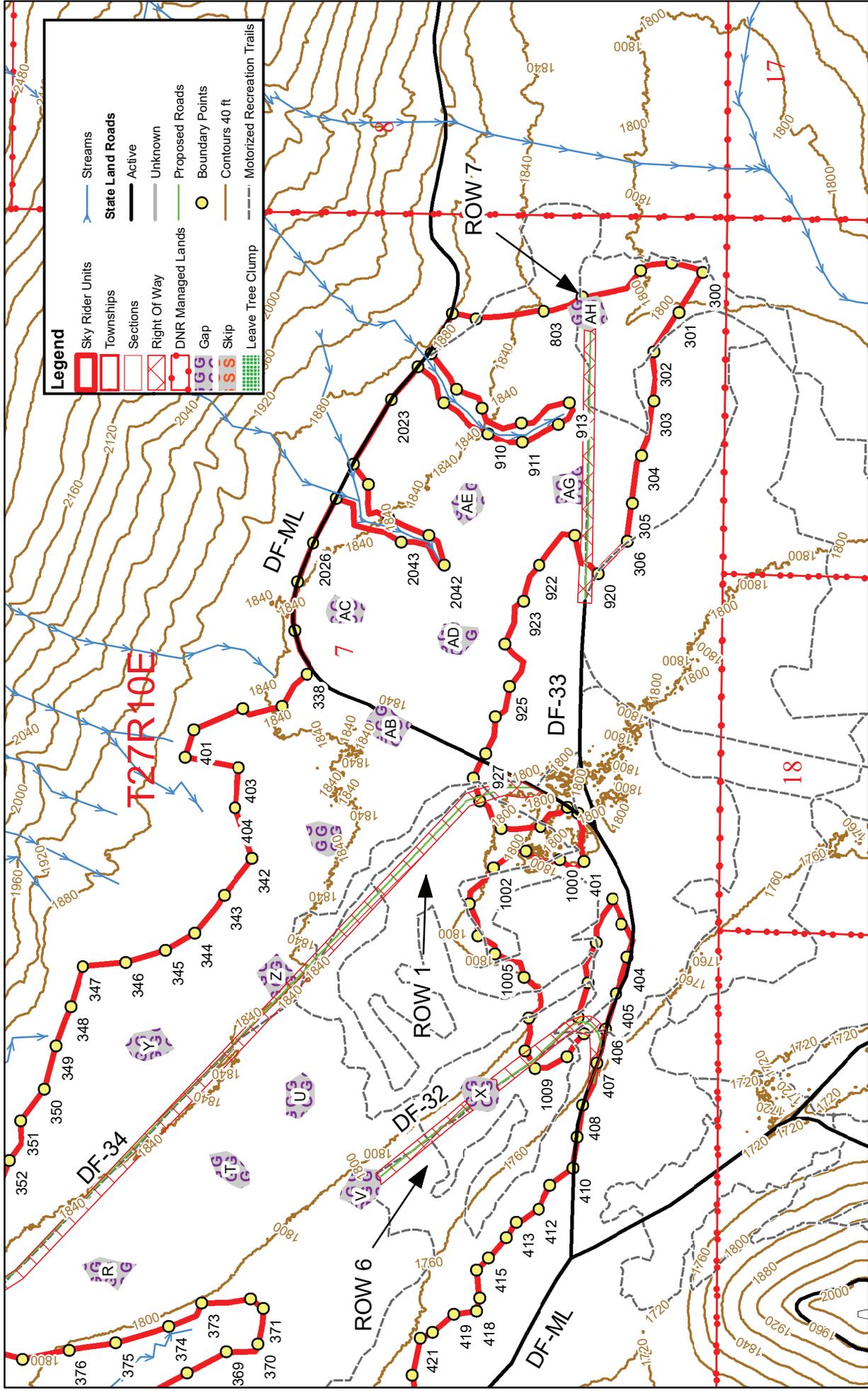


Author: Bryant Daugherty  
Date: 8/29/2019

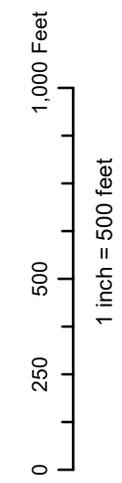


Leica Geosystems, Inc

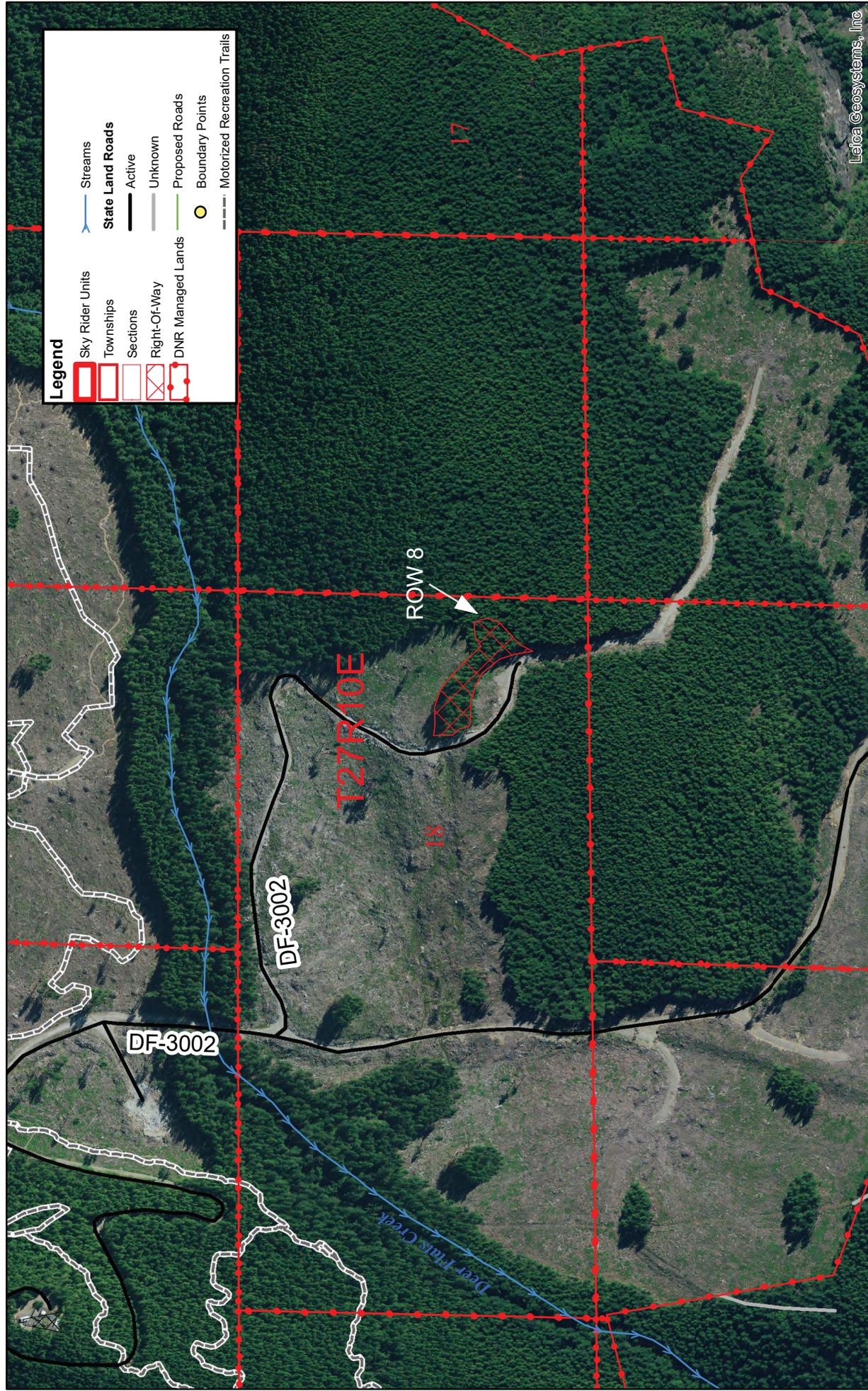
# Sky Rider VDT Unit 1 Timber Sale



Author: Bryant Daugherty  
Date: 9/4/2019



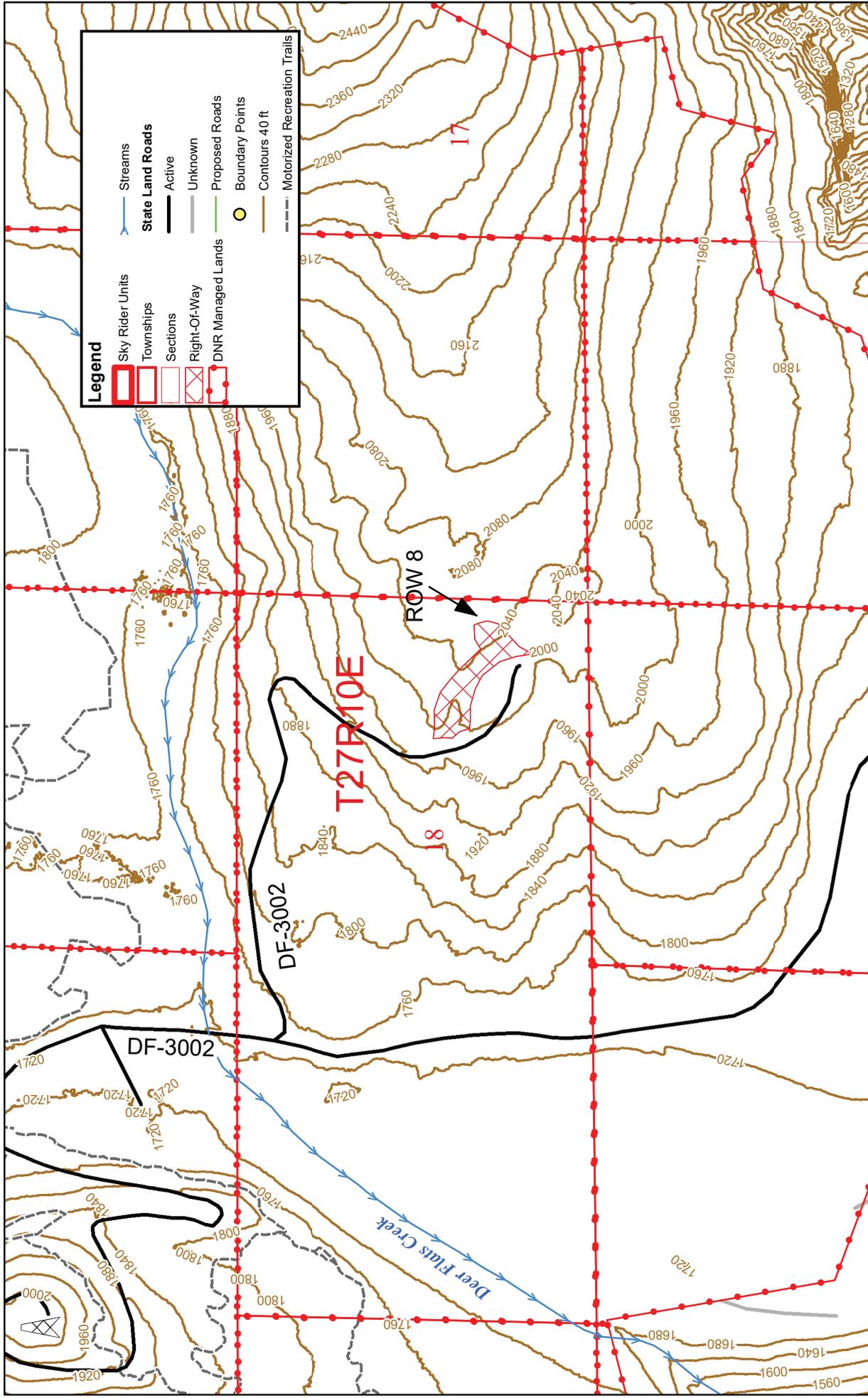
# Sky Rider VDT Timber Sale



Author: Bryant Daugherty  
 Date: 8/29/2019

Leica Geosystems, Inc

# Sky Rider VDT Timber Sale



Author: Bryent Daugherty  
Date: 8/29/2019

# CRUISE NARRATIVE

<b>Sale Name:</b> Sky Rider VDT	<b>Region:</b> Northwest
<b>Agree. #:</b> 30-097430	<b>District:</b> Cascade
<b>Lead cruiser:</b> Matt Llobet	<b>Completion date:</b> 9-18-19
<b>Other cruisers on sale: AH</b>	

**Unit acreage specifications:**

Unit #	Cruised acres	Cruised acres agree with sale acres? Yes/No	If acres do not agree explain why.
1	180.8	Yes	
Gaps	9.3	Yes	
Corr	20.7	Yes	
ROW1	9.4	Yes	
ROW2	1.2	Yes	
Total	221.4	Yes	

**Unit cruise specifications:**

Unit #	Sample type (VP, FP, ITS, 100%)	Expansion factor (BAF, full/ half)	Sighting height (4.5 ft, 16 ft.)	Grid size (Plot spacing or % of area)	Plot ratio (cruise: count)	Total number of plots
1	VP	54.4 BAF	4.5'	250' x 250'	1:1	154
Gap	FP	.0333	FP	1plot/ac	Cruise All	10
Corr	VP	54.4 BAF	4.5'	1plot/2.07ac	Cruise All	10
ROW1	FP	.0333	FP	1plot/.67ac	Cruise All	14
ROW2	FP	.0333	FP	1plot/.4ac	Cruise All	3
Total						191

**Sale/Cruise Description:**

<b>Minor species cruise intensity:</b>	Used a full prism and fix plot throughout the sale					
<b>Minimum cruise spec:</b>	<b>Minimum DBH 7 inches, 10 Net Board feet, Minimum Top Diameter 5 inches or 40% of 16-foot form point</b>					
<b>Avg ring count by sp:</b>	<b>DF=</b>	8	<b>WH =</b>	8	<b>RA =</b>	
<b>Leave/take tree description:</b>	<b>Unit 1 VDT-</b> See schedule B <b>Gap-</b> Remove all trees bounded by pink paint/pink flagging including the painted trees- See schedule B <b>ROW-</b> Remove all trees bounded by orange "Right of Way" tags					
<b>Other conditions:</b>						

<b>Sort Description:</b>	<p><b>HA</b>– 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.</p> <p><b>HB</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”.)</p> <p><b>PO</b>- Logs meeting pole specifications.</p>
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**Field observations:**

All timber was graded in variable log lengths with the Scaling Bureaus Westside/Northwest log rules. The utility wood was given a board ft. volume. Sky Rider timber sale was cruised using the Variable plot and fix plot sample method. Sky Rider is 90% ground base harvesting, 10% cable harvesting, and has good road access. The terrain throughout Sky Rider is gentle to rolling, making for great operator ground. Sky Rider timber sale has a variable timber type component, and ranges is elevation from 1640’-2480’. Observed throughout the sale was 28mbf of A sort high quality Douglas fir, and 146mbf of B sort high quality Douglas fir. Also observed throughout the sale, was 7-10 loads of Douglas fir pole volume, with a mix of distribution and transmission sizes. Defect observed includes: forked or multiple tops, heart rot, frost checking, spike knots, and sweep.

**Prepared By:** Matt Llobet

**Title:** Forest Check Cruiser



TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																		
T27N R09E S12 Ty0ROW THRU T27N R09E S12 TyROW2				Project: SKYRIDER										Page 1								
				Acres 221.40										Date 10/3/2019								
														Time 4:10:54PM								
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		
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99						
WH	T	D	2S	38	1.3	5,621	5,546	1,228				79	21	0	3	0	96	38	13	248	1.53	22.3
WH	T	D	3S	49	.5	7,236	7,199	1,594	27	73	0				1	2	97	38	8	98	0.68	73.3
WH	T	D	4S	10	.4	1,440	1,435	318	98	2				14	41	24	21	28	5	30	0.31	47.0
WH	T	D	UT	3		352	352	78	39	5	17	39		33	54	13		23	7	52	0.51	6.8
<b>WH Totals</b>				28	.8	14,649	14,532	3,217	24	36	31	9		2	7	4	87	34	8	97	0.72	149.5
WH	L	D	2S	64	2.1	7,179	7,027	1,556			49	51		1		0	99	39	15	353	2.02	19.9
WH	L	D	3S	26	.7	2,817	2,797	619	20	80				0	1	3	96	38	8	104	0.78	26.9
WH	L	D	4S	6		593	593	131	97	3				19	14	19	48	30	5	34	0.35	17.7
WH	L	D	UT	4		413	413	92	41	1		58		41	55	4		24	7	57	0.49	7.2
<b>WH Totals</b>				21	1.6	11,003	10,831	2,398	12	21	32	36		3	3	2	92	35	9	151	1.05	71.7
RC	L	D	3S	88	5.5	4,450	4,207	932	9	23	29	39		1	18	0	81	36	11	171	1.56	24.6
RC	L	D	4S	11	.2	510	509	113	95	5				20	46	16	17	25	5	29	0.37	17.3
RC	L	D	UT	1		28	28	6	100							100		22	5	20	0.29	1.4
<b>RC Totals</b>				9	4.9	4,989	4,745	1,050	19	21	26	35		3	22	2	73	31	8	109	1.14	43.3
RC	T	D	3S	88	3.4	557	538	119	7	18	39	36			25		75	35	11	191	1.63	2.8
RC	T	D	4S	12	1.8	70	69	15	94	6				9	52	13	26	27	5	30	0.44	2.3
<b>RC Totals</b>				1	3.2	627	607	134	17	16	35	32		1	28	2	69	32	9	118	1.17	5.2
DF	L	HB	2S	14	.9	2,066	2,048	453			29	71				3	97	39	16	427	2.29	4.8
DF	L	HB	3S	2		163	163	36		100							100	40	10	146	0.97	1.1
DF	L	D	2S	64	2.3	9,195	8,980	1,988			29	71			2	1	98	39	16	426	2.33	21.1
DF	L	D	3S	15	.7	1,991	1,977	438	6	94				1	11	9	79	35	9	105	0.83	18.9
DF	L	D	4S	3	1.0	451	446	99	74	26				32	35	11	22	25	6	34	0.41	13.3
DF	L	D	UT	1		140	140	31	35			65		85	15			18	8	54	0.54	2.6
DF	L	HA	2S	1		66	66	15				100					100	36	17	420	1.88	.2
<b>DF Totals</b>				27	1.8	14,073	13,821	3,060	4	15	23	58		2	4	2	92	34	11	223	1.48	61.9
DF	T	HB	2S	10	1.3	609	601	133			59	41					100	39	14	290	1.77	2.1
DF	T	HB	3S	2	1.5	59	58	13		100							100	40	11	169	1.11	.3
DF	T	D	2S	48	3.8	2,766	2,662	589			55	45			4	1	95	38	14	281	1.73	9.5
DF	T	D	3S	27	2.8	1,530	1,487	329	22	78					2	0	97	38	8	97	0.73	15.4
DF	T	D	4S	8	1.1	427	422	93	96	4				13	21	24	42	29	5	33	0.35	12.9
DF	T	D	UT	2		132	132	29	25	32	43			14	42		45	24	7	57	0.75	2.3
DF	T	HA	2S	3		127	127	28			100						100	36	12	180	1.18	.7
<b>DF Totals</b>				11	2.8	5,650	5,490	1,215	14	23	37	26		1	5	2	91	35	9	127	0.94	43.1
CW	L	D	2S	79	3.4	1,155	1,116	247			60	40			46		54	34	15	284	1.86	3.9
CW	L	D	4S	13	3.2	185	179	40	7	93					66		34	33	9	88	0.77	2.0
CW	L	D	UT	8		109	109	24	66	34				6	67		28	28	6	43	0.60	2.5
<b>CW Totals</b>				3	3.1	1,449	1,404	311	6	14	48	32		0	50		49	32	11	165	1.26	8.5
CW	T	D	2S	83	.5	179	178	39			58	42			33		67	35	14	274	1.76	.7
CW	T	D	4S	11	3.8	24	23	5	32	68					44	56		31	8	62	0.63	.4
CW	T	D	UT	6		12	12	3	38	62					62	38		31	7	56	0.52	.2
<b>CW Totals</b>				0	.8	215	213	47	6	11	48	35			36	8	56	33	11	173	1.24	1.2

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

T27N R09E S12 Ty0ROW THRU T27N R09E S12 TyROW2	<b>Project: SKYRIDER</b> <b>Acres 221.40</b>	<b>Page 2</b> <b>Date 10/3/2019</b> <b>Time 4:10:54PM</b>
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S Spp	So T	Gr rt	Ad 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			
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99							
RA	T	D	2S	58	2.4	193	189	42			66	34		100			30	14	205	1.71	.9		
RA	T	D	3S	5		16	16	4		100					100		40	11	180	1.21	.1		
RA	T	D	4S	8		25	25	5	100					100		27	6	40	0.58	.6			
RA	T	D	UT	29		92	92	20		9		91			4	5	91	23	11	214	2.04	.4	
<b>RA Totals</b>				1	1.4	326	322	71		10	5	39	46		1	68	26	5	28	11	156	1.41	2.1
SF	L	D	2S	87	7.5	165	153	34			45	55			100		40	15	373	2.07	.4		
SF	L	D	3S	9		14	14	3		100					100		40	8	90	0.64	.2		
SF	L	D	4S	2		3	3	1	100					100		17	6	20	0.27	.2			
SF	L	D	UT	2		3	3	1		100				100		19	9	50	0.76	.1			
<b>SF Totals</b>				0	6.6	186	174	39		2	10	39	49		4		96	34	12	218	1.48	.8	
<b>Totals</b>					1.9	53,168	52,139	11,544		14	24	30	33		2	8	3	87	34	9	135	1.00	387.3

Total Volume: 4,684

TC PSTATS		PROJECT STATISTICS							PAGE	1	
		PROJECT SKYRIDER							DATE	10/3/2019	
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt	
27N 27N	09E 09E	12 12	SKYRIDER SKYRIDER	0RO ROW2	THR	221.40	191	1,217	S	W	
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL			191	1217	6.4						
CRUISE			118	698	5.9	42,148	1.7				
DBH COUNT REFOREST COUNT			73	508	7.0						
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	
WHEMLOCK-L	124	38.8	17.9	70	16.0	67.8	11,003	10,831	2,645	2,644	
WHEMLOCK-T	222	76.3	15.6	73	25.5	100.8	14,649	14,532	3,718	3,718	
DOUG FIR-L	131	23.7	23.7	93	14.9	72.7	14,073	13,821	3,112	3,112	
DOUG FIR-T	82	19.5	18.6	83	8.5	36.8	5,650	5,490	1,415	1,414	
WR CEDAR-L	84	23.4	19.5	64	11.0	48.5	4,989	4,745	1,540	1,540	
WR CEDAR-T	28	2.8	20.1	64	1.4	6.2	627	607	190	190	
COTWOOD-L	13	4.0	20.6	75	2.0	9.2	1,449	1,404	346	346	
COTWOOD-T	6	.6	21.0	75	0.3	1.5	215	213	50	50	
R ALDER-T	5	.9	22.2	67	0.5	2.5	326	322	81	81	
PS FIR-L	3	.3	23.6	99	0.2	.9	186	174	40	40	
<b>TOTAL</b>	<i>698</i>	<i>190.4</i>	<i>18.3</i>	<i>75</i>	<i>81.2</i>	<i>347.0</i>	<i>53,168</i>	<i>52,139</i>	<i>13,137</i>	<i>13,137</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	7	10		
WHEMLOCK-L		55.9	5.0	419	441	463					
WHEMLOCK-T		71.1	4.8	232	243	255					
DOUG FIR-L		52.9	4.6	739	775	811					
DOUG FIR-T		78.6	8.7	344	377	410					
WR CEDAR-L		72.0	7.8	323	350	378					
WR CEDAR-T		94.8	18.2	176	216	255					
COTWOOD-L		42.5	12.2	367	418	469					
COTWOOD-T		71.0	31.6	222	325	428					
R ALDER-T		81.6	40.6	252	424	596					
PS FIR-L		46.5	32.2	502	740	978					
<b>TOTAL</b>		<i>80.1</i>	<i>3.0</i>	<i>401</i>	<i>413</i>	<i>426</i>	<i>256</i>	<i>131</i>	<i>64</i>		
CL	68.1	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK-L		132.9	9.6	35	39	42					
WHEMLOCK-T		104.3	7.5	71	76	82					
DOUG FIR-L		125.8	9.1	22	24	26					
DOUG FIR-T		151.9	11.0	17	20	22					
WR CEDAR-L		161.8	11.7	21	23	26					
WR CEDAR-T		499.8	36.1	2	3	4					
COTWOOD-L		392.5	28.4	3	4	5					
COTWOOD-T		804.1	58.1	0	1	1					
R ALDER-T		603.9	43.7	1	1	1					
PS FIR-L		981.8	71.0	0	0	0					
<b>TOTAL</b>		<i>51.5</i>	<i>3.7</i>	<i>183</i>	<i>190</i>	<i>197</i>	<i>106</i>	<i>54</i>	<i>27</i>		
CL	68.1	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		

**PROJECT STATISTICS**  
**PROJECT SKYRIDER**

TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt	
27N	09E	12	SKYRIDER	0RO	THR	221.40	191	1,217	S	W	
27N	09E	12	SKYRIDER	ROW2							
			WHEMLOCK-L	114.9	8.3	62	68	73			
			WHEMLOCK-T	108.5	7.8	93	101	109			
			DOUG FIR-L	110.5	8.0	67	73	79			
			DOUG FIR-T	167.2	12.1	32	37	41			
			WR CEDAR-L	129.4	9.4	44	48	53			
			WR CEDAR-T	396.9	28.7	4	6	8			
			COTWOOD-L	384.0	27.8	7	9	12			
			COTWOOD-T	870.6	62.9	1	1	2			
			R ALDER-T	603.4	43.6	1	2	4			
			PS FIR-L	1027.9	74.3	0	1	2			
			<b>TOTAL</b>	<b>37.3</b>	<b>2.7</b>	<b>338</b>	<b>347</b>	<b>356</b>	<b>55</b>	<b>28</b>	<b>14</b>
CL	68.1	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
			WHEMLOCK-L	114.6	8.3	9,933	10,831	11,729			
			WHEMLOCK-T	120.4	8.7	13,267	14,532	15,797			
			DOUG FIR-L	111.8	8.1	12,704	13,821	14,938			
			DOUG FIR-T	200.6	14.5	4,693	5,490	6,286			
			WR CEDAR-L	135.4	9.8	4,280	4,745	5,209			
			WR CEDAR-T	400.5	29.0	431	607	783			
			COTWOOD-L	389.8	28.2	1,008	1,404	1,800			
			COTWOOD-T	920.5	66.5	71	213	355			
			R ALDER-T	610.3	44.1	180	322	464			
			PS FIR-L	1035.7	74.9	44	174	304			
			<b>TOTAL</b>	<b>41.7</b>	<b>3.0</b>	<b>50,566</b>	<b>52,139</b>	<b>53,712</b>	<b>70</b>	<b>35</b>	<b>17</b>

T	TSPCSTGR	Species, Sort Grade - Board Foot Volumes (Type)										Page	1									
												Date	10/3/2019									
												Time	4:10:55PM									
T27N R09E S12 T0ROW										T27N R09E S12 T0ROW												
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt													
27N	09E	12	SKYRIDER	0ROW	9.40	14	71	S	W													
Spp	S	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log			Logs Per /Acre		
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln	Dia	Bd		CF/Lf	
	T	DM	2S	52	.9	11,441	11,333	107			64	36				100	40	14	311	1.79	36.4	
WH	T	DM	3S	42	.5	8,827	8,784	83	22	73	5				7	93	38	8	102	0.73	85.7	
WH	T	DM	4S	5		1,157	1,157	11	100				13	37	20	30	28	5	30	0.36	38.6	
WH	T	DM	UT	1		129	129	1	100				67	33			20	5	20	0.22	6.4	
<b>WH</b>	<b>T</b>	<b>Totals</b>		44	.7	21,553	21,403	201	15	30	36	19	1	2	4	93	35	9	128	0.91	167.1	
DF	T	HB	2S	16	1.3	3,321	3,278	31			70	30				100	40	14	306	1.81	10.7	
DF	T	HB	3S	1	6.7	321	300	3		100						100	40	10	140	0.81	2.1	
DF	T	DM	2S	62	2.6	12,962	12,619	119			21	79			13	87	38	17	453	2.52	27.9	
DF	T	DM	3S	17		3,406	3,406	32	4	96					16	84	36	9	114	0.83	30.0	
DF	T	DM	4S	3		664	664	6	87	13			48	13	39		25	6	31	0.40	21.4	
DF	T	DM	UT	1		43	43	0	100				100				20	5	20	0.20	2.1	
<b>DF</b>	<b>T</b>	<b>Totals</b>		42	2.0	20,717	20,310	191	4	18	24	54	2	11		87	34	11	215	1.43	94.3	
RC	T	DM	3S	86	.8	2,828	2,807	26	5	19		76				100	39	12	262	1.93	10.7	
RC	T	DM	4S	14		428	428	4	100				20	20		60	28	5	33	0.52	12.9	
<b>RC</b>	<b>T</b>	<b>Totals</b>		7	.7	3,256	3,235	30	18	17		66	3	3		95	33	8	137	1.28	23.6	
CW	T	DM	2S	67	1.6	1,371	1,350	13			100				22	78	37	13	210	1.34	6.4	
CW	T	DM	4S	27	3.8	557	536	5	32	68					44	56	31	8	62	0.63	8.6	
CW	T	DM	UT	6		107	107	1	100						100		33	6	50	0.37	2.1	
<b>CW</b>	<b>T</b>	<b>Totals</b>		4	2.1	2,035	1,992	19	14	18	68				27	20	53	33	9	116	0.89	17.1
RA	T	DM	2S	67	10.0	1,071	964	9			33	67				100	30	15	225	1.84	4.3	
RA	T	DM	3S	27		386	386	4		100						100	40	11	180	1.21	2.1	
RA	T	DM	UT	6		86	86	1	100				100				17	6	20	0.46	4.3	
<b>RA</b>	<b>T</b>	<b>Totals</b>		3	6.9	1,543	1,435	13	6	27	22	45	6	67		27	27	10	134	1.31	10.7	
<b>Type Totals</b>					1.5	49,104	48,376	455	10	23	29	37	2	9	3	87	34	10	155	1.11	312.8	

T27N R09E S12 T1VDT T27N R09E S12 T1VDT  
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt  
 27N 09E 12 SKYRIDER 1VDT 180.80 154 1,007 S W

S Sp	So T	Gr rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre	
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft		CF/ Lf
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99					
WH	L	DM	2S	64	2.1	8,791	8,605	1,556			49	51	1		0	99	39	15	353	2.02	24.4
WH	L	DM	3S	26	.7	3,450	3,425	619	20	80			0	1	3	96	38	8	104	0.78	32.9
WH	L	DM	4S	6		727	727	131	97	3			19	14	19	48	30	5	34	0.35	21.7
WH	L	DM	UT	4		506	506	92	41	1	58		41	55	4		24	7	57	0.49	8.8
<b>WH</b>	<b>L</b>	<b>Totals</b>		25	1.6	13,474	13,263	2,398	12	21	32	36	3	3	2	92	35	9	151	1.05	87.8
WH	T	DM	2S	29	1.7	3,504	3,445	623			100			4		96	38	13	209	1.35	16.5
WH	T	DM	3S	56	.6	6,520	6,480	1,172	29	71				1	1	97	38	8	97	0.67	66.8
WH	T	DM	4S	13		1,413	1,413	255	98	2			13	42	26	19	28	5	31	0.31	46.3
WH	T	DM	UT	2		229	229	41	47		32	21	31	47	22		24	7	44	0.49	5.2
<b>WH</b>	<b>T</b>	<b>Totals</b>		22	.8	11,666	11,567	2,091	29	40	30	0	2	8	4	86	34	8	86	0.66	134.8
DF	L	HB	2S	14	.9	2,530	2,508	453			29	71			3	97	39	16	427	2.29	5.9
DF	L	HB	3S	2		200	200	36		100					100		40	10	146	0.97	1.4
DF	L	DM	2S	64	2.3	11,260	10,996	1,988			29	71		2	1	98	39	16	426	2.33	25.8
DF	L	DM	3S	15	.7	2,439	2,421	438	6	94			1	11	9	79	35	9	105	0.83	23.1
DF	L	DM	4S	3	1.0	552	547	99	74	26			32	35	11	22	25	6	34	0.41	16.3
DF	L	DM	UT	1		171	171	31	35		65		85	15			18	8	54	0.54	3.2
DF	L	HA	2S	1		81	81	15			100				100		36	17	420	1.88	.2
<b>DF</b>	<b>L</b>	<b>Totals</b>		32	1.8	17,233	16,925	3,060	4	15	23	58	2	4	2	92	34	11	223	1.48	75.8
DF	T	HB	2S	10	2.2	320	313	57			100					100	38	13	215	1.45	1.5
DF	T	DM	2S	37	6.6	1,232	1,151	208			100					100	39	12	197	1.38	5.9
DF	T	DM	3S	35	4.0	1,133	1,088	197	29	71						100	39	8	90	0.71	12.1
DF	T	DM	4S	10	1.7	338	332	60	100				8	16	27	49	31	5	32	0.33	10.3
DF	T	DM	UT	5		138	138	25	18	38	44		3	44		53	28	8	75	0.88	1.8
DF	T	HA	2S	3	.0	86	86	16			100					100	36	12	180	1.18	.5
<b>DF</b>	<b>T</b>	<b>Totals</b>		6	4.3	3,247	3,108	562	22	27	52		1	4	3	92	35	8	97	0.79	31.9
RC	L	DM	3S	88	5.5	5,450	5,152	932	9	23	29	39	1	18	0	81	36	11	171	1.56	30.2
RC	L	DM	4S	11	.2	625	624	113	95	5			20	46	16	17	25	5	29	0.37	21.2
RC	L	DM	UT	1		34	34	6	100							100	22	5	20	0.29	1.7
<b>RC</b>	<b>L</b>	<b>Totals</b>		11	4.9	6,109	5,810	1,050	19	21	26	35	3	22	2	73	31	8	109	1.14	53.1
CW	L	DM	2S	79	3.4	1,414	1,366	247			60	40		46		54	34	15	284	1.86	4.8
CW	L	DM	4S	13	3.2	227	220	40	7	93				66		34	33	9	88	0.77	2.5
CW	L	DM	UT	8		133	133	24	66	34			6	67		28	28	6	43	0.60	3.1
<b>CW</b>	<b>L</b>	<b>Totals</b>		3	3.1	1,774	1,719	311	6	14	48	32	0	50		49	32	11	165	1.26	10.4
RA	T	DM	2S	56		181	181	33			75	25		100			30	14	200	1.68	.9
RA	T	DM	4S	10		30	30	5	100					100			27	6	40	0.58	.8
RA	T	DM	UT	34	.0	108	108	20	6		94			6	94		28	15	355	2.74	.3

T27N R09E S12 T1VDT	T27N R09E S12 T1VDT
Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt	BdFt
27N 09E 12 SKYRIDER 1VDT 180.80 154 1,007 S	W

S Spp	So T	Gr rt	ad	%	Bd. Ft. per Acre				Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
										Def%	Gross	Net	Log Scale Dia.				Log Length				Ln Ft	
					5-7	8-11	12-15	16+					12-20	21-30	31-35	36-99						
<b>RA T Totals</b>				1	319	319	58	11	42	46	68	32	28	11	163	1.44	2.0					
SF	L	DM	2S	87	7.5	203	187	34		45	55			100	40	15	373	2.07	.5			
SF	L	DM	3S	9		18	18	3	100					100	40	8	90	0.64	.2			
SF	L	DM	4S	2		4	4	1	100					100	17	6	20	0.27	.2			
SF	L	DM	UT	2		4	4	1	100					100	19	9	50	0.76	.1			
<b>SF L Totals</b>				0	6.6	228	213	39	2	10	39	49	4		96	34	12	218	1.48	1.0		
<b>Type Totals</b>					2.1	54,051	52,924	9,569	14	23	30	33	2	8	3	86	34	9	133	1.00	396.8	

<b>T27N R09E S12 TCORR</b>									<b>T27N R09E S12 TCORR</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>12</b>	<b>SKYRIDER</b>	<b>CORR</b>	<b>20.70</b>	<b>10</b>	<b>59</b>	<b>S</b>	<b>W</b>				

Spp	S	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log			Logs Per /Acre						
									Net BdFt	Def%	Gross	Net	Net MBF	Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/Lf	
														5-7	8-11	12-15	16+	12-20	21-30		31-35					36-99
WH	T	DM	2S	55	1.2	19,233	18,997	393				53	47		2	98	38	15	319	1.85	59.5					
WH	T	DM	3S	35	.1	11,974	11,963	248	21	79					1	1 98	38	8	103	0.73	116.4					
WH	T	DM	4S	5	.9	1,848	1,831	38	97	3				24	38 10 28	27	5	30	0.31	60.7						
WH	T	DM	UT	5		1,375	1,375	28	24	4		72		36	64		24	8	83	0.65	16.5					
<b>WH</b>	<b>T</b>	<b>Totals</b>		<b>64</b>	<b>.8</b>	<b>34,430</b>	<b>34,165</b>	<b>707</b>	<b>13</b>	<b>28</b>	<b>29</b>	<b>29</b>		<b>3</b>	<b>6</b>	<b>1</b>	<b>90</b>	<b>34</b>	<b>9</b>	<b>135</b>	<b>0.94</b>	<b>253.1</b>				
DF	T	HB	2S	12		2,210	2,210	46				100				100	40	17	482	2.57	4.6					
DF	T	DM	2S	57	2.1	9,927	9,721	201			39	61			2 98		38	15	346	1.95	28.1					
DF	T	DM	3S	21	1.1	3,713	3,673	76	11	89					4 96		37	9	108	0.74	34.0					
DF	T	DM	4S	5	.0	946	946	20	84	16				19	40 23 17		26	6	33	0.37	28.5					
DF	T	DM	UT	1		95	95	2	100					35	65		17	5	18	0.29	5.4					
DF	T	HA	2S	4		607	607	13			100					100	36	12	180	1.18	3.4					
<b>DF</b>	<b>T</b>	<b>Totals</b>		<b>32</b>	<b>1.4</b>	<b>17,497</b>	<b>17,252</b>	<b>357</b>	<b>7</b>	<b>20</b>	<b>25</b>	<b>47</b>		<b>1</b>	<b>3</b>	<b>3</b>	<b>93</b>	<b>34</b>	<b>10</b>	<b>166</b>	<b>1.14</b>	<b>104.0</b>				
RC	T	DM	3S	95	6.2	1,983	1,859	38	0	6	34	59		38	62		35	15	307	2.57	6.1					
RC	T	DM	4S	5	.0	87	87	2	51	49				100			25	6	34	0.64	2.5					
<b>RC</b>	<b>T</b>	<b>Totals</b>		<b>4</b>	<b>6.0</b>	<b>2,069</b>	<b>1,946</b>	<b>40</b>	<b>2</b>	<b>8</b>	<b>33</b>	<b>56</b>		<b>41</b>	<b>59</b>		<b>32</b>	<b>12</b>	<b>227</b>	<b>2.12</b>	<b>8.6</b>					
<b>Type Totals</b>						<b>1.2</b>	<b>53,996</b>	<b>53,363</b>	<b>1,105</b>	<b>11</b>	<b>25</b>	<b>28</b>	<b>36</b>	<b>2</b>	<b>6</b>	<b>1</b>	<b>90</b>	<b>34</b>	<b>9</b>	<b>146</b>	<b>1.02</b>	<b>365.6</b>				

T27N R09E S12 TGAPS	T27N R09E S12 TGAPS
Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt	BdFt
27N 09E 12 SKYRIDER GAPS 9.30 10 57 S	W

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	
														5-7	8-11	12-15	16+	12-20	21-30		31-35					36-99
WH	T	DM	2S	50		10,860	10,860	101				69	31		6	4		90	37	14	278	1.75	39.0			
WH	T	DM	3S	42		9,150	9,150	85	28	72							2	98	39	8	98	0.68	93.0			
WH	T	DM	4S	5	7.5	1,200	1,110	10	100					16	27	19	38	30	5	31	0.35	36.0				
WH	T	DM	UT	3		510	510	5	47	53							82	18	26	6	42	0.37	12.0			
<b>WH</b>	<b>T</b>	<b>Totals</b>		51	.4	21,720	21,630	201	18	32	35	16		4	5	2	89	36	9	120	0.85	180.0				
RC	T	DM	3S	86	2.6	5,760	5,610	52	10	26	64					29	71	34	10	144	1.31	39.0				
RC	T	DM	4S	14	3.2	930	900	8	100					3	63	20	13	27	5	27	0.37	33.0				
<b>RC</b>	<b>T</b>	<b>Totals</b>		15	2.7	6,690	6,510	61	23	22	55			0	34	3	63	31	8	90	0.93	72.0				
DF	T	HB	3S	9		1,080	1,080	10			100						100	40	11	180	1.22	6.0				
DF	T	DM	2S	61	1.3	6,690	6,600	61			25	75				15	85	36	15	314	1.93	21.0				
DF	T	DM	3S	22	2.4	2,460	2,400	22	15	85							100	39	9	114	0.80	21.0				
DF	T	DM	4S	6		660	660	6	100					14	18	14	55	31	6	37	0.41	18.0				
DF	T	DM	UT	2		180	180	2			100			100				12	12	60	1.09	3.0				
<b>DF</b>	<b>T</b>	<b>Totals</b>		26	1.4	11,070	10,920	102	9	29	17	45		2	10	1	87	35	10	158	1.11	69.0				
CW	T	DM	2S	94		2,880	2,880	27			37	63				37	63	33	15	320	2.09	9.0				
CW	T	DM	UT	6		180	180	2			100					100		30	8	60	0.64	3.0				
<b>CW</b>	<b>T</b>	<b>Totals</b>		7		3,060	3,060	28			6	35	59			41	59	33	13	255	1.75	12.0				
<b>Type Totals</b>					1.0	42,540	42,120	392	15	28	33	24		3	14	2	82	34	9	126	0.95	333.0				

<b>T27N R09E S12 TROW2</b>										<b>T27N R09E S12 TROW2</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>12</b>	<b>SKYRIDER</b>	<b>ROW2</b>	<b>1.20</b>	<b>3</b>	<b>23</b>	<b>S</b>	<b>W</b>				

Spp	S	So	Gr	T	rt	ad	%	Bd. Ft. per Acre		Total	Percent Net Board Foot Volume								Average Log				Logs Per /Acre				
											Def%	Gross	Net	Net MBF	Log Scale Dia.				Log Length					Ln	Dia	Bd	CF/Lf
															5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99					
WH	T	DM	2S				25	3,499	3,499	4	100				100				32	13	175	1.41	20.0				
WH	T	DM	3S				43	3.3 6,099	5,899	7	20	80					47	53	34	9	98	0.93	60.0				
WH	T	DM	4S				18	2,599	2,599	3	100					15	23	46	15	28	5	33	0.34	80.0			
WH	T	DM	UT				14	1,800	1,800	2	33	67		78	22					19	8	45	0.50	40.0			
<b>WH</b>	<b>T</b>	<b>Totals</b>					70	1.4 13,997	13,797	17	32	34	25	9	13	7	54	25	28	8	69	0.69	200.0				
RC	T	DM	3S				66	1,800	1,800	2	100					100				37	6	60	0.67	30.0			
RC	T	DM	4S				34	900	900	1	100					22	33	44	28	5	30	0.45	30.0				
<b>RC</b>	<b>T</b>	<b>Totals</b>					14	2,699	2,699	3	100					7	11	81	33	6	45	0.58	60.0				
DF	T	DM	3S				54	1,800	1,800	2	100					33	67	36	7	60	0.47	30.0					
DF	T	DM	4S				36	1,200	1,200	1	100					67	33	36	5	40	0.29	30.0					
DF	T	DM	UT				10	300	300	0	100					100					15	5	15	0.20	20.0		
<b>DF</b>	<b>T</b>	<b>Totals</b>					17	3,299	3,299	4	100					9	42	48	31	6	41	0.36	80.0				
<b>Type</b>	<b>Totals</b>							1.0 19,996	19,796	24	53	24	18	6	12	5	46	37	30	7	58	0.59	339.9				

TC TSTATS		STATISTICS							PAGE	1	
		PROJECT SKYRIDER							DATE	10/3/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
27N	09E	12	SKYRIDER	0RO	9.40	14	71	S	W		
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES					
TOTAL		14	71	5.1							
CRUISE		14	71	5.1	1,430	5.0					
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	42	90.0	17.2	71	34.9	144.5	21,553	21,403	5,388	5,388	
DOUG FIR-T	17	36.4	23.7	94	22.9	111.6	20,717	20,310	4,622	4,622	
WR CEDAR-T	6	12.9	21.0	67	6.8	31.0	3,256	3,235	999	999	
COTWOOD-T	4	8.6	18.8	72	3.8	16.5	2,035	1,992	509	509	
R ALDER-T	2	4.3	21.5	69	2.3	10.8	1,543	1,435	372	372	
<b>TOTAL</b>	<b>71</b>	<b>152.1</b>	<b>19.5</b>	<b>76</b>	<b>71.3</b>	<b>314.5</b>	<b>49,104</b>	<b>48,376</b>	<b>11,890</b>	<b>11,890</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	7	10			
WHEMLOCK-T	71.4	11.0	212	238	264						
DOUG FIR-T	69.9	17.5	460	558	655						
WR CEDAR-T	94.9	42.2	145	252	358						
COTWOOD-T	33.2	19.0	188	233	277						
R ALDER-T	57.0	53.4	156	335	514						
<b>TOTAL</b>	<b>86.2</b>	<b>10.2</b>	<b>286</b>	<b>318</b>	<b>351</b>	<b>296</b>	<b>151</b>	<b>74</b>			
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10			
WHEMLOCK-T	66.7	18.5	73	90	107						
DOUG FIR-T	121.6	33.7	24	36	49						
WR CEDAR-T	119.8	33.2	9	13	17						
COTWOOD-T	254.2	70.4	3	9	15						
R ALDER-T	254.2	70.4	1	4	7						
<b>TOTAL</b>	<b>38.3</b>	<b>10.6</b>	<b>136</b>	<b>152</b>	<b>168</b>	<b>63</b>	<b>32</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	7	10			
WHEMLOCK-T	71.5	19.8	116	145	173						
DOUG FIR-T	121.8	33.7	74	112	149						
WR CEDAR-T	155.0	42.9	18	31	44						
COTWOOD-T	268.4	74.4	4	17	29						
R ALDER-T	267.1	74.0	3	11	19						
<b>TOTAL</b>	<b>44.6</b>	<b>12.4</b>	<b>276</b>	<b>314</b>	<b>353</b>	<b>85</b>	<b>44</b>	<b>21</b>			
CL: 68.1 %	COEFF	NET BF/ACRE					# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10			
WHEMLOCK-T	86.2	23.9	16,294	21,403	26,512						
DOUG FIR-T	128.4	35.6	13,088	20,310	27,533						
WR CEDAR-T	182.2	50.5	1,602	3,235	4,868						
COTWOOD-T	261.6	72.5	548	1,992	3,437						
R ALDER-T	277.2	76.8	333	1,435	2,538						
<b>TOTAL</b>	<b>53.5</b>	<b>14.8</b>	<b>41,212</b>	<b>48,376</b>	<b>55,540</b>	<b>123</b>	<b>63</b>	<b>31</b>			

TC TSTATS				STATISTICS				PAGE	1	
PROJECT				SKYRIDER				DATE	10/3/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
27N	09E	12	SKYRIDER	1VDT	180.80	154	1,007	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		154	1007	6.5						
CRUISE		81	488	6.0	35,450	1.4				
DBH COUNT										
REFOREST										
COUNT		73	508	7.0						
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
WHEMLOCK-L	124	47.5	17.9	70	19.6	83.1	13,474	13,263	3,238	3,238
WHEMLOCK-T	98	69.2	14.9	72	21.7	83.8	11,666	11,567	3,029	3,029
DOUG FIR-L	131	29.0	23.7	93	18.3	89.1	17,233	16,925	3,810	3,810
DOUG FIR-T	32	15.5	17.1	79	6.0	24.7	3,247	3,108	895	895
WR CEDAR-L	84	28.7	19.5	64	13.5	59.4	6,109	5,810	1,886	1,886
COTWOOD-L	13	4.9	20.6	75	2.5	11.3	1,774	1,719	424	424
R ALDER-T	3	.9	22.4	67	0.5	2.5	319	319	80	80
PS FIR-L	3	.3	23.6	99	0.2	1.1	228	213	49	49
<b>TOTAL</b>	<b>488</b>	<b>196.1</b>	<b>18.2</b>	<b>74</b>	<b>83.2</b>	<b>354.9</b>	<b>54,051</b>	<b>52,924</b>	<b>13,412</b>	<b>13,411</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	7	10	
WHEMLOCK-L		55.9	5.0	419	441	463				
WHEMLOCK-T		43.4	4.4	190	199	208				
DOUG FIR-L		52.9	4.6	739	775	811				
DOUG FIR-T		36.9	6.5	216	231	246				
WR CEDAR-L		72.0	7.8	323	350	378				
COTWOOD-L		42.5	12.2	367	418	469				
R ALDER-T		94.4	65.3	168	483	799				
PS FIR-L		46.5	32.2	502	740	978				
<b>TOTAL</b>		<b>76.8</b>	<b>3.5</b>	<b>438</b>	<b>454</b>	<b>470</b>	<b>236</b>	<b>120</b>	<b>59</b>	
CL:	68.1 %	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK-L		111.0	8.9	43	47	52				
WHEMLOCK-T		100.1	8.1	64	69	75				
DOUG FIR-L		104.1	8.4	27	29	31				
DOUG FIR-T		154.0	12.4	14	16	17				
WR CEDAR-L		138.5	11.2	25	29	32				
COTWOOD-L		349.9	28.2	3	5	6				
R ALDER-T		642.5	51.7	0	1	1				
PS FIR-L		881.0	70.9	0	0	1				
<b>TOTAL</b>		<b>44.4</b>	<b>3.6</b>	<b>189</b>	<b>196</b>	<b>203</b>	<b>79</b>	<b>40</b>	<b>20</b>	
CL:	68.1 %	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK-L		93.3	7.5	77	83	89				
WHEMLOCK-T		98.0	7.9	77	84	90				
DOUG FIR-L		88.9	7.2	83	89	95				
DOUG FIR-T		149.0	12.0	22	25	28				
WR CEDAR-L		107.6	8.7	54	59	65				
COTWOOD-L		342.2	27.6	8	11	14				
R ALDER-T		633.4	51.0	1	2	4				
PS FIR-L		922.5	74.3	0	1	2				
<b>TOTAL</b>		<b>26.6</b>	<b>2.1</b>	<b>347</b>	<b>355</b>	<b>363</b>	<b>28</b>	<b>14</b>	<b>7</b>	

TC TSTATS				STATISTICS			PAGE	2		
				PROJECT	SKYRIDER		DATE	10/3/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
27N	09E	12	SKYRIDER	1VDT	180.80	154	1,007	S	W	
CL:	68.1%	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10	
CL:	68.1%	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK-L		93.1	7.5	12,269	13,263	14,257				
WHEMLOCK-T		100.2	8.1	10,634	11,567	12,500				
DOUG FIR-L		90.2	7.3	15,696	16,925	18,154				
DOUG FIR-T		151.0	12.2	2,730	3,108	3,485				
WR CEDAR-L		113.4	9.1	5,280	5,810	6,341				
COTWOOD-L		347.4	28.0	1,238	1,719	2,200				
R ALDER-T		640.8	51.6	155	319	484				
PS FIR-L		929.5	74.8	54	213	373				
<b>TOTAL</b>		27.8	2.2	51,739	52,924	54,110	31	16	8	

TC TSTATS				STATISTICS				PAGE	1	
PROJECT				SKYRIDER				DATE	10/3/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
27N	09E	12	SKYRIDER	CORR	20.70	10	59	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	10	59	5.9							
CRUISE	10	59	5.9		3,403		1.7			
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
WHEMLOCK-T	38	121.1	17.7	77	49.1	206.7	34,430	34,165	8,189	8,189
DOUG FIR-T	17	39.5	20.7	92	20.3	92.5	17,497	17,252	3,966	3,966
WR CEDAR-T	4	3.8	28.3	76	3.1	16.4	2,069	1,946	583	583
<b>TOTAL</b>	<b>59</b>	<b>164.4</b>	<b>18.8</b>	<b>81</b>	<b>72.9</b>	<b>315.6</b>	<b>53,996</b>	<b>53,363</b>	<b>12,739</b>	<b>12,739</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	7	10	
WHEMLOCK-T	61.1	9.9		371	412	453				
DOUG FIR-T	50.5	12.6		518	593	668				
WR CEDAR-T	31.9	18.2		427	523	618				
<b>TOTAL</b>	<b>57.5</b>	<b>7.5</b>		<b>436</b>	<b>472</b>	<b>507</b>	<b>132</b>	<b>67</b>	<b>33</b>	
CL:	68.1 %	COEFF	<b>TREES/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK-T	68.5	22.8		94	121	149				
DOUG FIR-T	88.6	29.5		28	40	51				
WR CEDAR-T	161.6	53.8		2	4	6				
<b>TOTAL</b>	<b>59.9</b>	<b>19.9</b>		<b>132</b>	<b>164</b>	<b>197</b>	<b>159</b>	<b>81</b>	<b>40</b>	
CL:	68.1 %	COEFF	<b>BASAL AREA/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK-T	52.3	17.4		171	207	243				
DOUG FIR-T	87.9	29.3		65	92	120				
WR CEDAR-T	159.6	53.1		8	16	25				
<b>TOTAL</b>	<b>38.8</b>	<b>12.9</b>		<b>275</b>	<b>316</b>	<b>356</b>	<b>67</b>	<b>34</b>	<b>17</b>	
CL:	68.1 %	COEFF	<b>NET BF/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK-T	57.3	19.1		27,646	34,165	40,685				
DOUG FIR-T	95.7	31.9		11,755	17,252	22,748				
WR CEDAR-T	163.7	54.5		886	1,946	3,005				
<b>TOTAL</b>	<b>41.7</b>	<b>13.9</b>		<b>45,966</b>	<b>53,363</b>	<b>60,759</b>	<b>77</b>	<b>39</b>	<b>19</b>	

TC TSTATS				STATISTICS				PAGE	1	
PROJECT				SKYRIDER				DATE	10/3/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
27N	09E	12	SKYRIDER	GAPS	9.30	10	57	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	10	57	5.7							
CRUISE	10	57	5.7	1,590		3.6				
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK-T	32	96.0	16.7	73	35.6	145.3	21,720	21,630	5,452	5,452
WR CEDAR-T	13	39.0	18.6	63	17.1	73.9	6,690	6,510	2,061	2,061
DOUG FIR-T	10	30.0	21.0	86	15.8	72.4	11,070	10,920	2,669	2,669
COTWOOD-T	2	6.0	23.8	80	3.8	18.5	3,060	3,060	683	683
<b>TOTAL</b>	<b>57</b>	<b>171.0</b>	<b>18.2</b>	<b>73</b>	<b>72.6</b>	<b>310.1</b>	<b>42,540</b>	<b>42,120</b>	<b>10,864</b>	<b>10,864</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	7	10		
WHEMLOCK-T	73.6	13.0	196	225	255					
WR CEDAR-T	80.1	23.1	128	167	205					
DOUG FIR-T	55.4	18.4	297	364	431					
COTWOOD-T	74.9	70.1	152	510	868					
<b>TOTAL</b>	<b>75.8</b>	<b>10.0</b>	<b>222</b>	<b>246</b>	<b>271</b>	<b>229</b>	<b>117</b>	<b>57</b>		
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK-T	65.6	21.8	75	96	117					
WR CEDAR-T	166.4	55.4	17	39	61					
DOUG FIR-T	94.3	31.4	21	30	39					
COTWOOD-T	316.2	105.2	6	6	12					
<b>TOTAL</b>	<b>33.1</b>	<b>11.0</b>	<b>152</b>	<b>171</b>	<b>190</b>	<b>49</b>	<b>25</b>	<b>12</b>		
CL: 68.1 %	COEFF	BASAL AREA/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK-T	66.4	22.1	113	145	177					
WR CEDAR-T	117.0	38.9	45	74	103					
DOUG FIR-T	105.6	35.1	47	72	98					
COTWOOD-T	316.2	105.2	19	19	38					
<b>TOTAL</b>	<b>37.6</b>	<b>12.5</b>	<b>271</b>	<b>310</b>	<b>349</b>	<b>62</b>	<b>32</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	7	10		
WHEMLOCK-T	69.3	23.1	16,640	21,630	26,620					
WR CEDAR-T	111.5	37.1	4,095	6,510	8,925					
DOUG FIR-T	109.2	36.4	6,950	10,920	14,890					
COTWOOD-T	316.2	105.2	3,060	3,060	6,280					
<b>TOTAL</b>	<b>46.6</b>	<b>15.5</b>	<b>35,584</b>	<b>42,120</b>	<b>48,656</b>	<b>96</b>	<b>49</b>	<b>24</b>		

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT SKYRIDER				DATE	10/3/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
27N	09E	12	SKYRIDER	ROW	1.20	3	23	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	3	23	7.7							
CRUISE	3	23	7.7	276		8.3				
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET	
TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC	
WHEMLOCK-T	12	120.0	14.9	52	37.6	145.0	13,997	13,797	3,937	3,936
WR CEDAR-T	5	50.0	13.0	45	12.7	45.8	2,699	2,699	1,129	1,129
DOUG FIR-T	6	60.0	10.8	47	11.6	38.3	3,299	3,299	882	882
<b>TOTAL</b>	<b>23</b>	<b>230.0</b>	<b>13.5</b>	<b>49</b>	<b>62.3</b>	<b>229.1</b>	<b>19,996</b>	<b>19,796</b>	<b>5,948</b>	<b>5,948</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	7	10		
WHEMLOCK-T	49.3	15.6	106	125	145					
WR CEDAR-T	36.1	17.9	44	54	64					
DOUG FIR-T	32.0	14.3	47	55	63					
<b>TOTAL</b>	<b>63.7</b>	<b>13.9</b>	<b>78</b>	<b>90</b>	<b>102</b>	<b>170</b>	<b>87</b>	<b>42</b>		
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK-T	43.3	30.0	84	120	156					
WR CEDAR-T	91.7	63.4	18	50	82					
DOUG FIR-T	50.0	34.6	39	60	81					
<b>TOTAL</b>	<b>27.2</b>	<b>18.8</b>	<b>187</b>	<b>230</b>	<b>273</b>	<b>42</b>	<b>22</b>	<b>11</b>		
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK-T	41.1	28.4	104	145	186					
WR CEDAR-T	100.1	69.3	14	46	78					
DOUG FIR-T	52.0	35.9	25	38	52					
<b>TOTAL</b>	<b>29.2</b>	<b>20.2</b>	<b>183</b>	<b>229</b>	<b>275</b>	<b>49</b>	<b>25</b>	<b>12</b>		
CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK-T	51.1	35.4	8,917	13,797	18,677					
WR CEDAR-T	100.0	69.2	832	2,699	4,567					
DOUG FIR-T	56.8	39.3	2,003	3,299	4,595					
<b>TOTAL</b>	<b>33.3</b>	<b>23.1</b>	<b>15,231</b>	<b>19,796</b>	<b>24,361</b>	<b>64</b>	<b>33</b>	<b>16</b>		

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

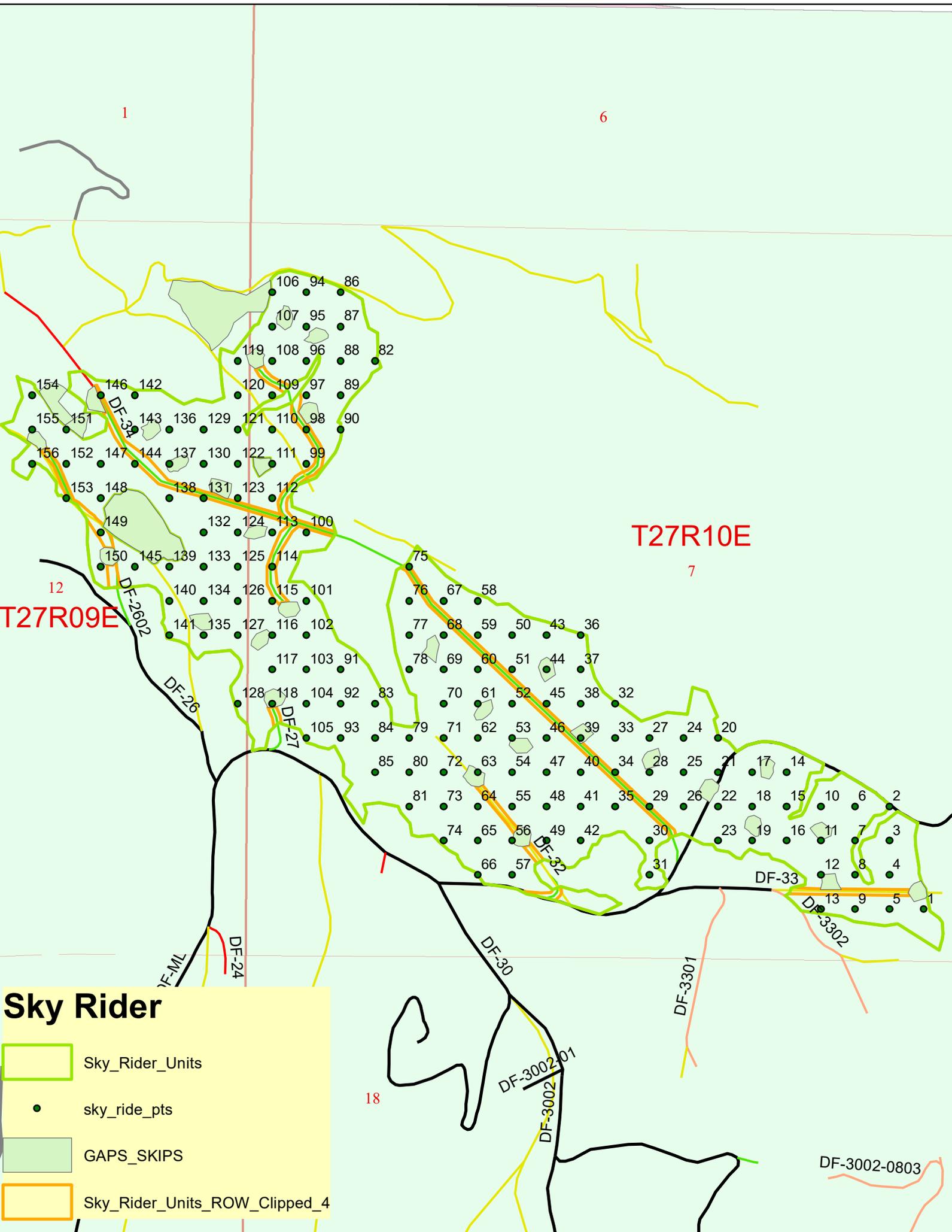
T27N R09E S12 Ty0RO	9.4
T27N R09E S12 Ty1VD	180.8
T27N R09E S12 TyROW	1.2

**Project SKYRIDER**  
**Acres 221.40**

**Page No 1**  
**Date: 10/3/2019**  
**Time 4:10:56PM**

Species	s T	Total	Total	Total	Net Cubic Ft/		CF/	Total CCF		Total MBF	
		Trees	Logs	Tons	Tree	Log	LF	Gross	Net	Gross	Net
WHEMLOCK	T	16,902	33,091	26,342	48.71	24.88	0.75	8,232	8,233	3,243	3,217
DOUG FIR	L	5,251	13,706	19,635	131.21	50.26	1.44	6,889	6,889	3,116	3,060
WHEMLOCK	L	8,582	15,876	18,737	68.22	36.88	1.05	5,855	5,855	2,436	2,398
DOUG FIR	T	4,319	9,550	8,926	72.51	32.79	0.94	3,132	3,132	1,251	1,215
WR CEDAR	L	5,189	9,596	8,013	65.71	35.54	1.11	3,410	3,410	1,104	1,050
COTWOOD	L	881	1,884	1,879	87.04	40.70	1.27	767	767	321	311
WR CEDAR	T	621	1,141	987	67.57	36.80	1.16	420	420	139	134
R ALDER	T	204	455	495	88.32	39.54	1.42	180	180	72	71
COTWOOD	T	136	273	273	81.68	40.84	1.23	111	111	48	47
PS FIR	L	63	177	252	139.40	49.75	1.46	88	88	41	39
<b>Totals</b>		42,148	85,750	85,538	69.00	33.92	1.00	29,085	29,084	11,771	11,544

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	40,927	83,138	82,891	68.48	33.71	0.99	28,026	28,026	11,331	11,114
H	1,221	2,612	2,647	86.66	40.51	1.29	1,058	1,058	441	429
<b>Totals</b>	42,148	85,750	85,538	69.00	33.92	1.00	29,085	29,084	11,771	11,544



# Sky Rider

- Sky\_Rider\_Units
- sky\_ride\_pts
- GAPS\_SKIPS
- Sky\_Rider\_Units\_ROW\_Clipped\_4



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

FPA/N No: 2817265  
Effective Date: 12/6/2019  
Expiration Date: 12/6/2022  
Shut Down Zone: 658  
EARR Tax Credit:  Eligible  Non-eligible  
Reference: Sky Rider

**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  4 years  5 years

**Conditions on Approval / Reasons for Disapproval**

No additional conditions.

FOR YOUR INFORMATION:

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

Issued By: Steven Huang *[Signature]* Region: Northwest  
Title: Skykomish Forest Practice Forester Date: 12/6/2019

Copies to:  Landowner, Timber Owner and Operator.

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

**Appeal Information**

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

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

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

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

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

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

And

Department Of Natural Resources  
Northwest Region  
919 N Township St  
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.

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

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

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

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

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

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

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

**DNR affidavit of mailing:**

On this day _____,	I placed in the United States mail at _____, WA,
(date)	(post office location)
postage paid, a true and accurate copy of this document. Notice of Decision FPA # _____	
_____	_____
(Printed name)	(Signature)



WASHINGTON STATE  
DEPT. OF NATURAL RESOURCES  
NORTHWEST REGION

# ROAD PLAN AND SPECIFICATIONS

## #30-097430 SKYRIDER VDT VRH TIMBER

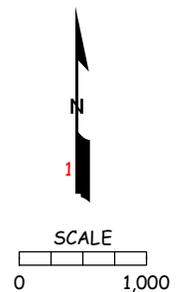
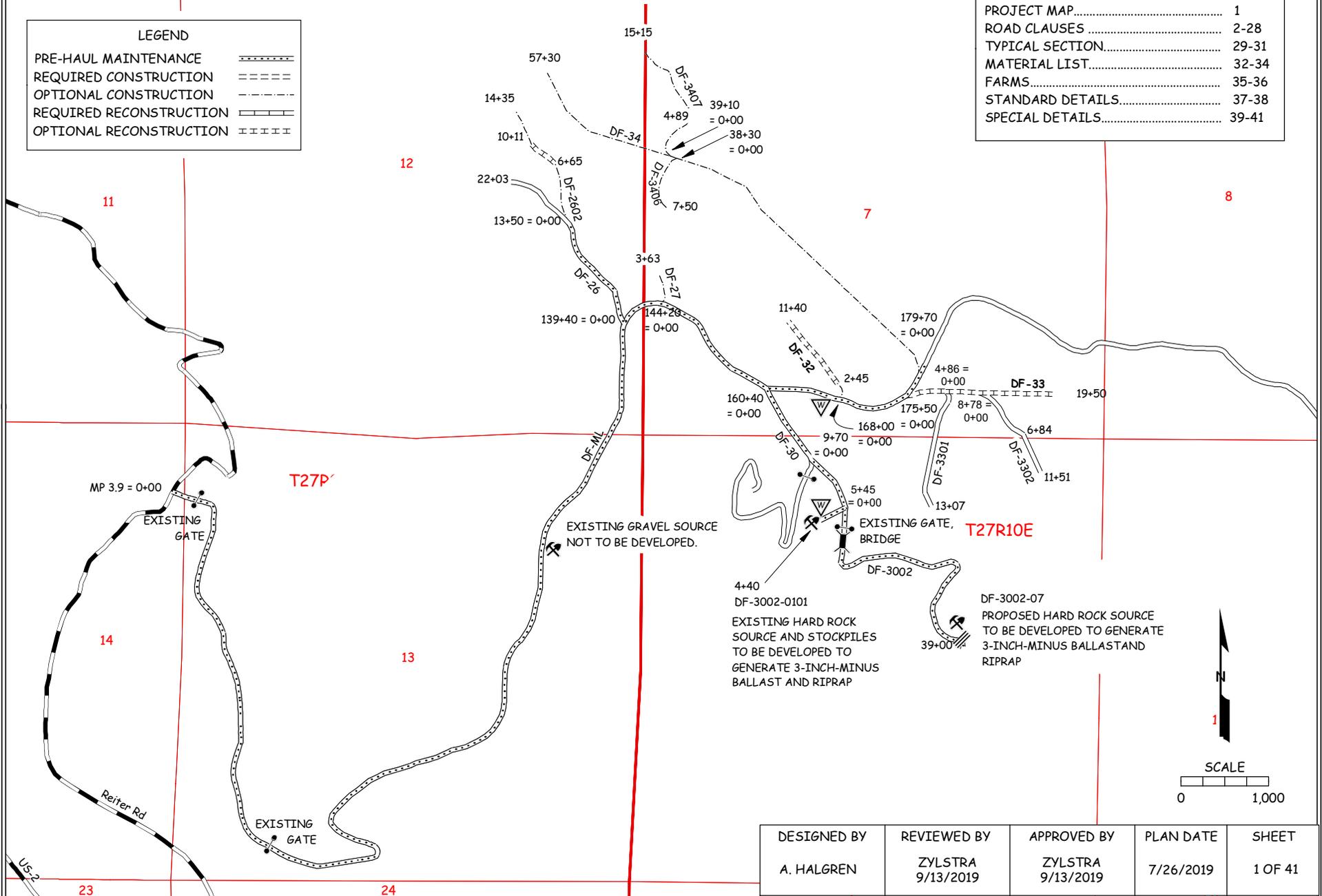
5

### SHEET INDEX

PROJECT MAP.....	1
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TYPICAL SECTION.....	29-31
MATERIAL LIST.....	32-34
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SPECIAL DETAILS.....	39-41

### LEGEND

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



DESIGNED BY A. HALGREN	REVIEWED BY ZYLSTRA 9/13/2019	APPROVED BY ZYLSTRA 9/13/2019	PLAN DATE 7/26/2019	SHEET 1 OF 41
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STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

SKY RIDER VDT VRH TIMBER SALE ROAD PLAN  
SNOHOMISH COUNTY  
CASCADE DISTRICT  
NORTHWEST REGION

AGREEMENT NO.: 30-097430

STAFF ENGINEER: A. HALGREN

DATE: JULY 26, 2019

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>
DF-ML	0+00 TO 179+70	MAINTENANCE
DF-30	0+00 TO 9+70	MAINTENANCE
DF-3002	0+00 TO 39+00	MAINTENANCE
DF-3002-01	0+00 TO 4+40	MAINTENANCE

**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>
DF-26	0+00 TO 13+50	MAINTENANCE
DF-2602	0+00 TO 6+65	CONSTRUCTION
DF-2602	6+65 TO 10+11	RECONSTRUCTION
DF-2602	10+11 TO 14+35	CONSTRUCTION
DF-27	0+00 TO 3+63	CONSTRUCTION
DF-32	0+00 TO 2+45	CONSTRUCTION
DF-32	2+45 TO 11+40	RECONSTRUCTION
DF-33	0+00 TO 19+50	RECONSTRUCTION
DF-34	0+00 TO 57+30	CONSTRUCTION
DF-3406	0+00 TO 7+50	CONSTRUCTION
DF-3407	0+00 TO 15+15	CONSTRUCTION

**0-4 CONSTRUCTION**

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

**0-5 RECONSTRUCTION**

Reconstruction includes, but is not limited to blading, shaping, and ditching the road surface, brushing, clearing, grubbing, culvert installation, and application of 3-inch-minus ballast rock.

**0-6 PRE-HAUL MAINTENANCE**

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
DF-ML	0+00 TO 179+70	Application of 3-inch-minus ballast rock, brushing
DF-26	0+00 TO 22+03	Brushing
DF-30	0+00 TO 9+70	Brushing
DF-3002	0+00 TO 39+00	Brushing

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

SECTION 1 – GENERAL

**1-1 ROAD PLAN CHANGES**

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

**1-2 UNFORESEEN CONDITIONS**

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

**1-3 ROAD DIMENSIONS**

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

**1-4 ROAD TOLERANCES**

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

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

**1-5 DESIGN DATA**

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

**1-6 ORDER OF PRECEDENCE**

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

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

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, and may not begin without written approval from the Contract Administrator.

**1-9 DAMAGED METALLIC COATING**

Any cut ends, or 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 or cold galvanizing compound.

**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**

On the following road(s), the operation of road construction equipment is not allowed on weekends or state recognized holidays, unless authorized in writing by the Contract Administrator.

<u>Road</u>	<u>Stations</u>
DF-ML	0+00 to 179+70
DF-26	0+00 TO 22+03
DF-2602	0+00 TO 14+35
DF-27	0+00 TO 3+63
DF-30	0+00 TO 9+70
DF-3002	0+00 TO 71+65
DF-32	0+00 TO 11+45
DF-33	0+00 TO 16+99
DF-34	0+00 to 57+30
DF-3406	0+00 TO 7+50
DF-3407	0+00 TO 15+15

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

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

**1-26 OPERATING DURING CLOSURE PERIOD**

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

- Wheel track rutting exceeds 4 inches on crushed rock roads.
- 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.

**1-43 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 before starting road work.

<u>Road</u>	<u>Stations</u>	<u>Utility</u>
DF-ML	ALL	Buried Power Lines

## 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.

## SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

### 3-1 BRUSHING

Purchaser shall cut vegetative material up to 6 inches in diameter, including limbs, as shown on the BRUSHING DETAIL. Brushing must be achieved by mechanical cutting of brush, trees, and branches. Root systems and stumps of cut vegetation may not be disturbed unless directed by the Contract Administrator. Purchaser shall remove brushing debris from the road surface, ditchlines, and culvert inlets and outlets.

### 3-5 CLEARING

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

### 3-8 PROHIBITED DECKING AREAS

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

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

**3-10 GRUBBING**

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

**3-12 STUMP PLACEMENT**

On the following road(s), Purchaser shall place grubbed stumps adjacent to the road shoulder or as directed by the Contract Administrator and in compliance with all other clauses in this road plan. Stumps must be positioned on stable locations. Purchaser shall place stumps in two rows on both sides of the road.

<u>Road</u>	<u>Stations</u>	<u>Comments</u>
DF-2602	0+00 to 14+35	Do not place stumps on existing trails, or in a manner that stumps could plug culverts or fall on the road or trails.
DF-33	0+00 to 16+99	
DF-34	0+00 to 57+30	
DF-3407	0+00 to 4+89	

**3-20 ORGANIC DEBRIS DEFINITION**

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

**3-21 DISPOSAL COMPLETION**

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

**3-23 PROHIBITED DISPOSAL AREAS**

Purchaser shall not place organic debris in the following areas:

- Within 50 feet of a cross drain culvert, except where stump placement is required (see clause 3-12 STUMP PLACEMENT).
- Within 100 feet of a live stream, or wetland (except as otherwise specified in this plan).
- On road subgrades, or excavation and embankment slopes.
- On slopes greater than 50%.
- Within the operational area for cable landings where debris may shift or roll.
- On locations where brush can fall into the ditch or onto the road surface.
- Against standing timber.

**3-24 BURYING ORGANIC DEBRIS RESTRICTED**

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

### **3-25 SCATTERING ORGANIC DEBRIS**

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

## **SECTION 4 – EXCAVATION**

### **4-2 PIONEERING**

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

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

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

Purchaser shall follow these standards for road grade and alignment:

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

### **4-4 SWITCHBACK STANDARDS**

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

Purchaser shall follow these standards for switchbacks:

- Maximum adverse grades for switchbacks is 10%.
- Maximum favorable grades for switchbacks is 12%.
- Maximum transition grades entering and leaving switchbacks is a 6% grade change.
- Transition grades required to meet switchback grade limitations must be constructed on the tangents preceding and departing from the switchbacks.

**4-5 CUT SLOPE RATIO**

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

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

**4-6 EMBANKMENT SLOPE RATIO**

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

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

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

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

**4-8 CURVE WIDENING**

The minimum widening placed on the inside of curves is:

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

**4-9 EMBANKMENT WIDENING**

The minimum embankment widening is:

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

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

**4-12 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. If designated, Purchaser shall end haul waste material to the location specified in Clause 4-37 WASTE AREA LOCATION. Material which meets the specification for Oversized Riprap (see Clause 11-4 OVERSIZED RIPRAP FOR ABANDONMENT) may be stockpiled at a location specified in Clause 6-65 ROCK STOCKPILE LOCATION.

<u>Road</u>	<u>Full Bench Location</u>	<u>Comments</u>
DF-34	48+90 TO 52+40	The proposed construction is located on a narrow, abandoned grade, between a steep slope (below) and a rock face (above) that may require drilling and shooting to meet the dimensions shown on the TYPICAL SECTION SHEET.

**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 as identified on the MATERIALS LIST and as directed by the Contract Administrator. Ditchouts must be constructed in a manner that diverts ditch water onto the forest floor and must have excavation backslopes no steeper than a 1:1 ratio.

**4-35 WASTE MATERIAL DEFINITION**

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

**4-36 DISPOSAL OF WASTE MATERIAL**

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

**4-37 WASTE AREA LOCATION**

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

<u>Road</u>	<u>Waste Area Location</u>	<u>Comments</u>	<u>Volume</u>
DF-ML	167+00	-	500cy
DF-3002-01	4+40	Rock Pit	-

**4-38 PROHIBITED WASTE DISPOSAL AREAS**

Purchaser shall not deposit waste material in the following areas:

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

**4-55 ROAD SHAPING**

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

**4-60 FILL COMPACTION**

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

**4-61 SUBGRADE COMPACTION**

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

SECTION 5 – DRAINAGE

**5-5 CULVERTS**

Purchaser shall install culverts as part of this contract. Culverts must be installed concurrently with subgrade work and must be installed before subgrade compaction and rock application. Culvert locations and the minimum requirements for culvert length and diameter are designated on the MATERIALS LIST. Culvert, downspout, and flume lengths may be adjusted to fit as-built conditions and may not terminate directly on unprotected soil. Culverts may be new or used material and must meet the specifications in Clauses 10-15 through 10-24.

**5-7 USED CULVERT MATERIAL**

On temporary roads, Purchaser may install used culverts. All other roads must have new culverts installed. Purchaser shall obtain approval from the Contract Administrator for the quality of the used culverts before installation. Culverts must meet the specifications in Clauses 10-15 through 10-24.

**5-12 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.

**5-13 CONTINGENCY CULVERTS**

The following culverts will be supplied by the Purchaser and are available for installation as directed by the Contract Administrator.

<u>Road</u>	<u>Size</u>	<u>Qty</u>	<u>Type</u>
On any portion of road used for timber or rock haul.	18" x 32'	5	Polyethylene Pipe Dual Wall or Galvanized Metal

**5-15 CULVERT INSTALLATION**

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

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

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

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

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

**5-18 CULVERT DEPTH OF COVER**

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

**5-20 ENERGY DISSIPATERS**

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

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

**5-25 CATCH BASINS**

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

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

Purchaser shall construct headwalls in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all cross drain culverts. Rock used for headwalls must weigh at least 50 pounds. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets. Minimum specifications require that rock be placed at a width of one culvert diameter on each side of the culvert opening, and to a height of one culvert diameter above the top of the culvert. Rock may not restrict the flow of water into culvert inlets or catch basins. No placement by end dumping or dropping of rock is allowed.

**5-27 ARMORING FOR STREAM CROSSING CULVERTS**

At the following culvert(s), Purchaser shall place rip rap in conjunction with construction of the embankment. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets as designated on the MATERIALS LIST and CULVERT AND DRAINAGE SPECIFICATIONS or as directed by the Contract Administrator. Rock may not restrict the flow of water into culvert inlets or catch basins. Rock must be set in place by machine. Placement must be with a zero-drop-height only. No placement by end dumping or dropping of rock is allowed. Rip rap must meet the specifications in Clause 6-50 LIGHT LOOSE RIP RAP and 6-50 HEAVY LOOSE RIP RAP

<u>Road</u>	<u>Stations</u>
DF-34	34+20
DF-3407	11+67

SECTION 6 – ROCK AND SURFACING

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

Rock used in accordance with the quantities on the TYPICAL SECTION, MATERIALS LIST, and as required for road closure and abandonment (see clauses 9-16 CLOSURE and 9-23 ABANDONMENT FOR TRAIL CONVERSION), 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-3002-0101	STA 4+40 of the DF-3002-01 road	Hard Rock
DF-3002-07 (Proposed)	STA 39+00 of the DF-3002 road	Hard Rock

**6-5 ROCK FROM COMMERCIAL SOURCE**

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

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

Purchaser shall conduct rock source development and use 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.

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

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

**6-12 ROCK SOURCE SPECIFICATIONS**

Rock sources must be in accordance with the following specifications:

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

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

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

**6-13 ROCK EXPLORATION**

Purchaser shall provide an excavator with operator for up to 20 hours of exploration of rock at the following site(s).

<u>Site</u>	<u>Location</u>
DF-3002-07 Proposed Hard Rock Pit	STA 39+00 of the DF-3002 road

#### **6-14 DRILL AND SHOOT**

Rock drilling and shooting must meet the following specifications:

- No oversize material is allowed to remain in the rock source at the termination of this timber sale.
- Oversize material is defined as rock fragments larger than 3 feet in any dimension.
- Oversized rock that exceeds the maximum allowable amount must be stockpiled in a stable location listed in clause 6-65 ROCK STOCKPILE LOCATION or as directed by Contract Administrator.
- Purchaser shall notify the Contract Administrator a minimum of 7 working days before blasting operations.
- All operations must be carried out in compliance with 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 the Safety Standards for Construction Work (296-155 WAC), Washington Department of Labor and Industries.
- Purchaser shall block access roads and trails before blasting operations.

#### **6-21 IN-PLACE PROCESSING**

Purchaser may use in-place processing, such as a grid roller or other method, if suitable crushing can be demonstrated to meet the surfacing size-specified in Clause 6-38 4-INCH IN-PLACE ROCK. Purchaser shall remove any existing organic debris before the start of in-place crushing operations. The use of in-place processing methods is subject to written approval by the Contract Administrator.

#### **6-23 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.

**6-38 4-INCH IN-PLACE ROCK**

4-inch in-place rock must have a minimum of 90 percent of the top 4 inches of the running surface pass a 4-inch square opening.

In-place rock may not contain organic debris and trash. No more than 50 percent of rock may be larger than 6 inches in any dimension and no rock may be larger than 12 inches in any dimension.

**6-50 LIGHT LOOSE RIP RAP**

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

<u>Quantity</u>	<u>Approximate Size Range</u>
20% to 90%	500 lbs. to 1 ton (18" - 28")
15% to 80%	50 lbs. to 500 lbs. (8" - 18")
10% to 20%	3 inch to 50 lbs. (3" - 8")

**6-51 HEAVY LOOSE RIP RAP**

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

<u>Quantity</u>	<u>Size Range</u>
30% to 90%	1 ton to 2 ton (28" - 36")
30% to 70%	500 lbs. to 1 ton (18" - 28")
20% to 50%	50 lbs. to 500 lbs. (8" - 18")
10% to 20%	3 inch to 50 lbs. (3" - 8")

**6-55 ROCK APPLICATION MEASURED BY COMPACTED DEPTH**

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

**6-65 ROCK STOCKPILE LOCATION**

Purchaser shall stockpile rock as listed below. Before placing rock on the stockpile site, the site must be cleared of vegetation, trees, stumps, brush, rocks, or other debris and the ground leveled to a smooth, firm, uniform surface.

<u>Stockpile Location</u>	<u>Quantity (c.y.)</u>	<u>Rock Type</u>	<u>Rock Source</u>
STA 3+80 of DF-26 road	20	Oversized (See clause 11-4.)	DF-3002-0101 Hard Rock Pit OR
STA 6+65 of DF- 2602 road	20	Oversized (See clause 11-4.)	Material uncovered during road work

**6-70 APPROVAL BEFORE ROCK APPLICATION**

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

**6-71 ROCK APPLICATION**

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

**6-73 ROCK FOR WIDENED PORTIONS**

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

SECTION 8 – EROSION CONTROL

**8-2 PROTECTION FOR EXPOSED SOIL**

Purchaser shall provide and evenly spread a 4-inch layer of straw to all exposed soils at culvert installations. Soils must be covered before the first anticipated storm event. Soils may not sit exposed during any rain event.

**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.

**8-16 REVEGETATION SUPPLY**

The Purchaser shall provide the grass seed and fertilizer as directed in clauses 8-25 GRASS SEED and 8-27 FERTILIZER.

**8-17 REVEGETATION TIMING**

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

**8-18 PROTECTION FOR SEED**

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

**8-19 ASSURANCE FOR SEEDED AREA**

Purchaser shall ensure the growth of a uniform and dense crop (at least 50% coverage) of 3-inch tall grass. Purchaser shall reapply the 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 additional 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 unless a comparable mix is approved in writing by the Contract Administrator.

<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.

**9-15 ROAD CLOSURE**

Purchaser shall close the following roads before the termination of this contract.

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
DF-34	0+00 TO 57+30	See clause 9-16 CLOSURE

**9-16 CLOSURE**

- Construct drivable waterbars according to the attached DRIVABLE WATERBAR DETAIL at a maximum spacing that will produce a vertical drop of no more than 20 feet between waterbars or between natural drainage paths and with a maximum spacing of 400 feet.
- Skew waterbars at least 30 degrees from perpendicular to the road centerline on roads in excess of 3 percent grade.
- Waterbars may not be keyed into the ditch. They should function only as road surface drains.
- Place logging slash and stumps in and across ditches. This work must be approved in writing by the Contract Administrator in consultation with DNR Recreation .
- Replace bollards (see clause 11-1 RECREATIONAL TRAIL AND ROAD INTERSECTIONS). This work must be approved in writing by the Contract Administrator in consultation with DNR Recreation.
- Block road shoulders between bollards and the edge of the running surface with Oversized Riprap (see clause 11-4 OVERSIZED RIPRAP) **OR** 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 closure.

Modifications to these requirements are as follows:

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
DF-34	48+90 TO 52+40, 54+60 to 56+30	Do not construct waterbars. This road segment is located above steep or unstable terrain.

**9-21 ROAD ABANDONMENT**

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

<u>Road</u>	<u>Stations</u>	<u>Type</u>
DF-26	13+50 TO 22+03	ABANDONMENT
DF-27	0+00 TO 3+63	HEAVY ABANDONMENT
DF-32	0+00 TO 11+40	ABANDONMENT FOR TRAIL CONVERSION
DF-33	0+00 TO 19+50	ABANDONMENT FOR TRAIL CONVERSION
DF-3301	0+00 TO 13+07	ABANDONMENT FOR TRAIL CONVERSION
DF-3302	0+00 TO 11+51	ABANDONMENT FOR TRAIL CONVERSION
DF-3406	0+00 TO 7+50	ABANDONMENT FOR TRAIL CONVERSION
DF-3407	0+00 TO 4+89	ABANDONMENT FOR TRAIL CONVERSION
DF-3407	4+89 TO 15+15	ABANDONMENT

## 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 1.5:1 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.

### **9-23 ABANDONMENT FOR TRAIL CONVERSION**

In addition to the requirements listed in 9-22 ABANDONMENT the purchaser shall also complete the following work:

- Construct drivable waterbars at all culvert removals according to the attached DRIVABLE WATERBAR DETAIL, and also at a maximum spacing that will produce a vertical drop of no more than 20 feet between waterbars or between natural drainage paths and with a maximum 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.
- Place Oversize Riprap (see clause 11-4 OVERSIZED RIPRAP) on the road surface adjacent to every waterbar as a Speed Control Barricade. The quantity of material at each waterbar must be a minimum of 2cy and a maximum of 10cy. See also 'Speed Control Barricade' on the RIPRAP BARRICADE DETAIL.
- Place logging slash and stumps in and across ditches. (This may include stumps retained at the direction of clause 3-12 STUMP PLACEMENT.) Do not place stumps on existing trails or in locations where stumps could fall on the road or trails. This work must be approved in writing by the Contract Administrator in consultation with DNR Recreation .

Modifications to the requirements listed in 9-22 ABANDONMENT include the following:

- Do NOT block the road with large woody debris.
- Roads shall be blocked with Oversized Riprap (see clause 11-4 OVERSIZED RIPRAP) according to the RIPRAP BARRICADE DETAIL.

### **9-24 HEAVY ABANDONMENT**

In addition to the requirements listed in 9-22 ABANDONMENT the purchaser shall also complete the following work:

- Purchaser shall rip the road surface to a depth of 10 inches.

## **SECTION 10 MATERIALS**

### **10-15 CORRUGATED STEEL CULVERT**

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

### **10-16 CORRUGATED ALUMINUM CULVERT**

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

**10-17 CORRUGATED PLASTIC CULVERT**

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

**10-21 METAL BAND**

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

**10-22 PLASTIC BAND**

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

**10-24 GAUGE AND CORRUGATION**

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

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

**SECTION 11 SPECIAL NOTES**

**11-1 RECREATIONAL TRAIL AND ROAD INTERSECTIONS**

Road work (construction, reconstruction, closure, or abandonment), shall not impede a smooth transition between the road surface and any recreational trail or parking lot. Purchaser shall construct ballast rock ramps on the recreational trails to allow for a smooth transition between the trail and road surface that must be approved in writing by the contract administrator. Trail intersections include (but are not limited to) the following locations:

<u>Road</u>	<u>Stations</u>
DF-2602	6+65, 10+11
DF-32	8+60
DF-34	1+60, 7+10, 10+10, 10+60, 11+20, 52+30, 57+30
DF-3407	5+85

**11-2 RECREATIONAL TRAIL DAMAGE**

Any trail damage that occurs as a consequence of road work must be repaired at the Purchaser’s expense with approval in writing by the Contract Administrator. Exceptions are as follows:

<u>Road</u>	<u>Stations</u>	<u>Comments</u>
DF-32	0+00 TO 2+45	Switchback construction will demolish trails. It is not necessary to preserve trails or trail intersections in the vicinity of the switchback. All infrastructure shall be preserved.

**11-3 RECREATIONAL TRAIL INFRASTRUCTURE**

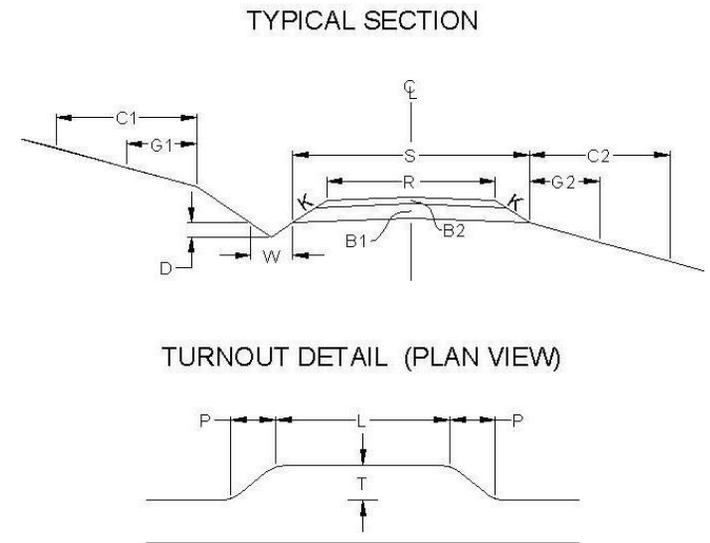
All recreational infrastructure (including signs and structures) that may incur damage during road work must be removed to a safe location to be approved in writing by the contract administrator in consultation with DNR Recreation staff. Any signs or structures that are damaged or moved shall be repaired or replaced at the Purchaser’s expense and must be approved in writing by the Contract Administrator.

**11-4 OVERSIZED RIPRAP FOR ABANDONMENT**

Oversize material is defined as rock fragments larger than three feet in any dimension. Oversize Riprap used to block roads for abandonment as directed in clauses 9-23 ABANDONMENT FOR TRAIL CONVERSION shall meet the following requirements:

<u>At Least/Not More Than</u>	<u>Weight Range</u>	<u>Size Range</u>
0% / 50 %	3 tons to 4 tons	54” – 72”
50% / 100%	2 tons to 3 tons	36”- 54”

ROAD #		DF-ML	DF-26	DF-2602	DF-2602
REQUIRED / OPTIONAL		REQUIRED	OPTIONAL	OPTIONAL	OPTIONAL
CONSTRUCT / RECONSTRUCT		MAINTENANCE	MAINTENANCE	CONSTRUCT	RECONSTRUCT
TOLERANCE CLASS (A/B/C)		C	C	C	C
STATION / MP TO		0+00	0+00	0+00	6+65
STATION / MP		179+70	13+50	6+65	10+11
ROAD WIDTH	R	-	-	12	12
CROWN (INCHES @ C/L)		-	-	3	3
DITCH WIDTH	W	-	-	2	2
DITCH DEPTH	D	-	-	1	1
TURNOUT LENGTH	L	-	-	25	25
TURNOUT WIDTH	T	-	-	10	10
TURNOUT TAPER	P	-	-	25	25
GRUBBING	G1	-	-	5	5
	G2	-	-	5	5
CLEARING	C1	-	-	10	10
	C2	-	-	10	10
ROCK FILLSLOPE	K:1	-	-	1 ½	1 ½
❖ BALLAST DEPTH	B1	-	-	12	6
CUBIC YARDS / STATION		-	-	72	34
➤ TOTAL CY BALLAST		250 <sup>A</sup>	-	480	120
❖ SURFACING DEPTH	B2	-	-		
CUBIC YARDS / STATION		-	-		
➤ TOTAL CY SURFACING		-	-		
➤ TOTAL CUBIC YARDS		250 <sup>A</sup>	-	480	120
SUBGRADE WIDTH	S	-	-	15.0	13.5
BRUSHCUT (Y/N)		-	Y	N/A	N
BLADE, SHAPE, & DITCH (Y/N)		-	N	N/A	Y



### **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.

<sup>A</sup> Rock for spot patching as directed by the Contract Administrator.

<sup>B</sup>Remove recreational obstacles (rocks and stumps) to banks.

#### Rock Totals Summary

Type	Quantity (Cubic Yards)
Ballast	5610
Rip Rap	167

ROAD #		DF-2602	DF-27	DF-30	DF-3002	DF-3002-01			
REQUIRED / OPTIONAL		OPTIONAL	OPTIONAL	REQUIRED	REQUIRED	REQUIRED			
CONSTRUCT / RECONSTRUCT		CONSTRUCT	CONSTRUCT	MAINTENANCE	MAINTENANCE	MAINTENANCE			
TOLERANCE CLASS (A/B/C)		C	C	C	C	C			
STATION / MP TO		10+11	0+00	0+00	0+00	0+00			
STATION / MP		14+35	3+63	9+70	39+00	4+40			
ROAD WIDTH	R	12	12	-	-	-			
CROWN (INCHES @ C/L)		3	3	-	-	-			
DITCH WIDTH	W	2	2	-	-	-			
DITCH DEPTH	D	1	1	-	-	-			
TURNOUT LENGTH	L	25	25	-	-	-			
TURNOUT WIDTH	T	10	10	-	-	-			
TURNOUT TAPER	P	25	25	-	-	-			
GRUBBING	G1	5	5	-	-	-			
	G2	5	5	-	-	-			
CLEARING	C1	10	10	-	-	-			
	C2	10	10	-	-	-			
ROCK FILLSLOPE	K:1	1 ½	1 ½	-	-	-			
❖ BALLAST DEPTH	B1	12	12	-	-	-			
CUBIC YARDS / STATION		72	72	-	-	-			
➤ TOTAL CY BALLAST		310	270	-	-	-			
❖ SURFACING DEPTH	B2			-	-	-			
CUBIC YARDS / STATION				-	-	-			
➤ TOTAL CY SURFACING				-	-	-			
➤ TOTAL CUBIC YARDS		310	270	-	-	-			
SUBGRADE WIDTH	S	15.0	15.0	-	-	-			
BRUSHCUT (Y/N)		N/A	N/A	Y	Y	Y			
BLADE, SHAPE, & DITCH (Y/N)		N/A	N/A	N	N	N			

ROAD #		DF-32	DF-32	DF-33 <sup>B</sup>	DF-33	DF-34	DF-3406	DF-3407	
REQUIRED / OPTIONAL		OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL	
CONSTRUCT / RECONSTRUCT		CONSTRUCT	RECONSTRUCT	RECONSTRUCT	RECONSTRUCT	CONSTRUCT	CONSTRUCT	CONSTRUCT	
TOLERANCE CLASS (A/B/C)		C	C	C	C	C	C	C	
STATION / MP TO		0+00	2+45	0+00	8+78	0+00	0+00	0+00	
STATION / MP		2+45	11+40	8+78	19+50	57+30	3+63	15+15	
ROAD WIDTH	R	12	12	-	12	12	12	12	
CROWN (INCHES @ C/L)		3	3	-	3	3	3	3	
DITCH WIDTH	W	2	2	-	2	2	2	2	
DITCH DEPTH	D	1	1	-	1	1	1	1	
TURNOUT LENGTH	L	25	25	-	25	25	25	25	
TURNOUT WIDTH	T	10	10	-	10	10	10	10	
TURNOUT TAPER	P	25	25	-	25	25	25	25	
GRUBBING	G1	5	5	-	5	5	5	5	
	G2	5	5	-	5	5	5	5	
CLEARING	C1	10	10	-	10	10	10	10	
	C2	10	10	-	10	10	10	10	
ROCK FILLSLOPE	K:1	1 ½	1 ½	-	1 ½	1 ½	1 ½	1 ½	
❖ BALLAST DEPTH	B1	12	6	-	6	6	12	12	
CUBIC YARDS / STATION		72	34	-	34	34	72	72	
➤ TOTAL CY BALLAST		180	310	-	370	1950	270	1100	
❖ SURFACING DEPTH	B2	/	/	-	/	/	/	/	
CUBIC YARDS / STATION		/	/	-	/	/	/	/	
➤ TOTAL CY SURFACING		/	/	-	/	/	/	/	
➤ TOTAL CUBIC YARDS		180	310	-	370	1950	270	1100	
SUBGRADE WIDTH	S	15.0	13.5	-	13.5	13.5	15.0	15.0	
BRUSHCUT (Y/N)		N/A	N	Y	Y	N/A	N/A	N/A	
BLADE, SHAPE, & DITCH (Y/N)		N/A	Y	N	Y	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			Note: Galvanized metal culverts shall conform to the following specifications for gage and corrugation as a function of the diameter:	
												Diameter	Gage
DF-34	1+60	-	-	-	-	-	-	-	-	-	-	Trail junction	
	4+00	18	28	XX	/	/	2	3	L	NT	C		
	7+10	-	-	-	-	-	-	-	-	-	-	Trail junction	
	9+00	18	32	XX	/	/	2	3	L	NT	C		
	10+10	-	-	-	-	-	-	-	-	-	-	Trail junction	
	10+60	-	-	-	-	-	-	-	-	-	-	Trail junction	
	11+20	-	-	-	-	-	-	-	-	-	-	Trail junction	
	14+60	18	28	XX	/	/	2	3	L	NT	C		
	20+30	18	28	XX	/	/	2	3	L	NT	C		
	25+20	18	32	XX	/	/	2	3	L	NT	C		
	27+90	18	32	XX	/	/	2	3	L	NT	C		
	29+70	18	28	XX	/	/	2	3	L	NT	C		
	32+40	18	28	XX	/	/	2	3	L	NT	C		
	34+20	49S 33R	36	GM	/	/	8	12	L/H	NT	C	T4 Stream. Replace round culvert with a pipe arch of 49" span, 33" rise.	
	38+30	18	32	XX	/	/	2	3	L	NT	C	Place outlet below DF-3406 road	
	40+40	18	28	XX	/	/	2	3	L	NT	C		
	43+30	18	32	XX	/	/	2	3	L	NT	C		
	47+90	18	32	XX	/	/	2	3	L	NT	C		
	52+30	-	-	-	-	-	-	-	-	-	-	Trail junction	
	57+30	-	-	-	-	-	-	-	-	-	-	Trail continues on abandoned grade, maintain access	

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			Note: Galvanized metal culverts shall conform to the following specifications for gage and corrugation as a function of the diameter:		
												Diameter	Gage	Corrugation
DF-3406	2+55	18	32	XX	/	/	2	3	L	NT	C			
	4+10	18	32	XX	/	/	2	3	L	NT	C			
DF-3407	3+94	18	36	XX	/	/	2	3	L	NT	C			
	5+85	-	-	-	-	-	-	-	-	-	-	Trail junction		
	6+66	18	36	XX	/	/	2	3	L	NT	C			
	8+73	18	36	XX	/	/	2	3	L	NT	C			
	11+67	30	36	GM	/	/	6	8	L/H	NT	C	T4 stream		
	12+38	18	36	XX	/	/	2	3	L	NT	C			
Contingency Culverts (See clause 5-13)		18	32	PD	/	/	/	/	/	/	/			
		18	32	PD	/	/	/	/	/	/	/			
		18	32	PD	/	/	/	/	/	/	/			
		18	32	PD	/	/	/	/	/	/	/			
		18	32	PD	/	/	/	/	/	/	/			

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

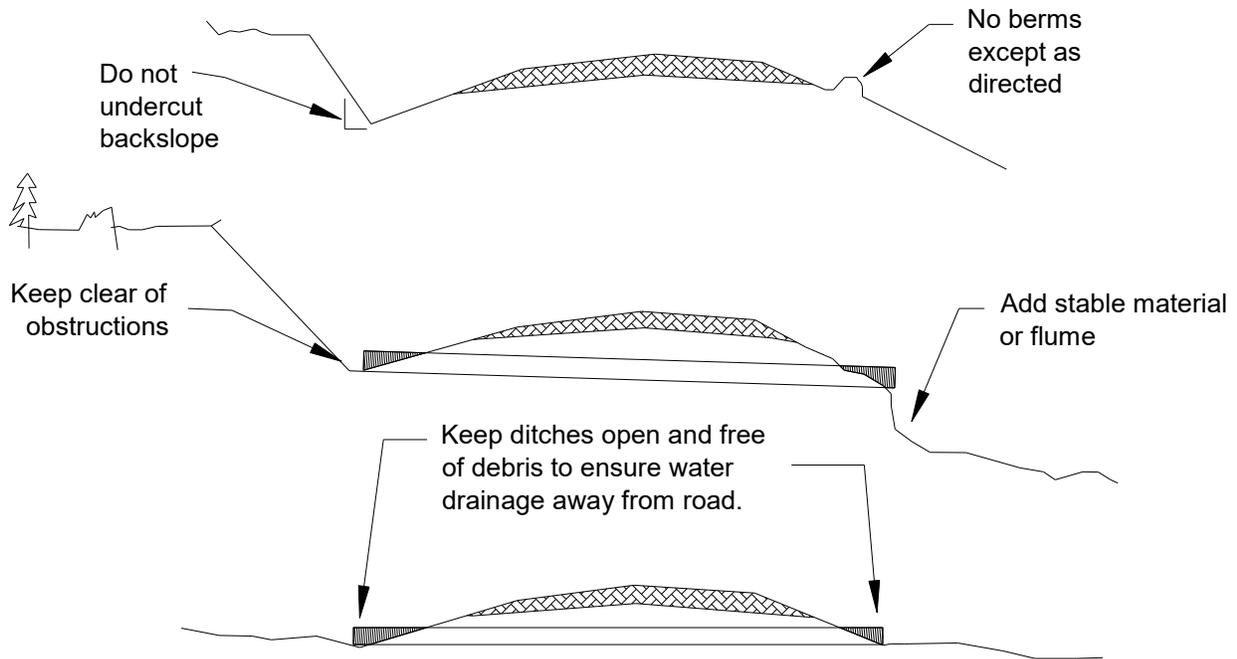
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

### Termination of Use or End of Season

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

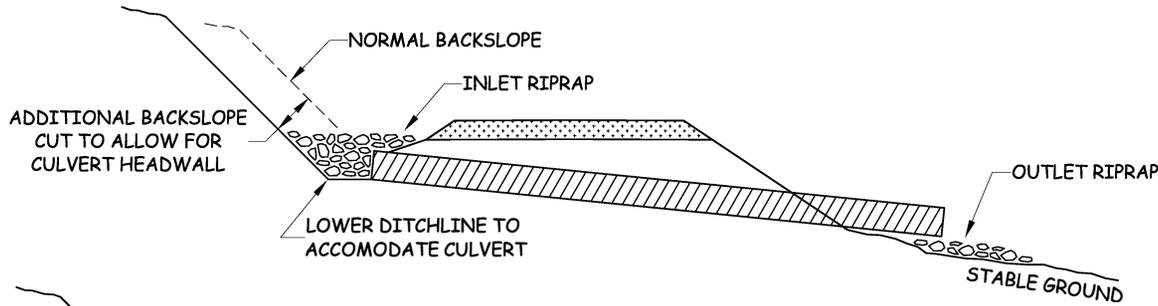
### Debris

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

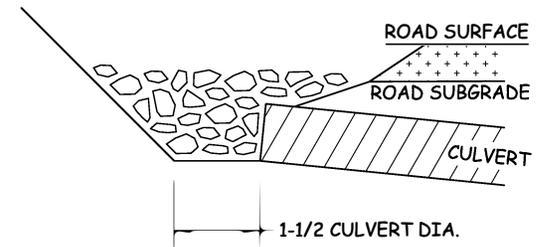


# CULVERT AND DRAINAGE SPECIFICATIONS

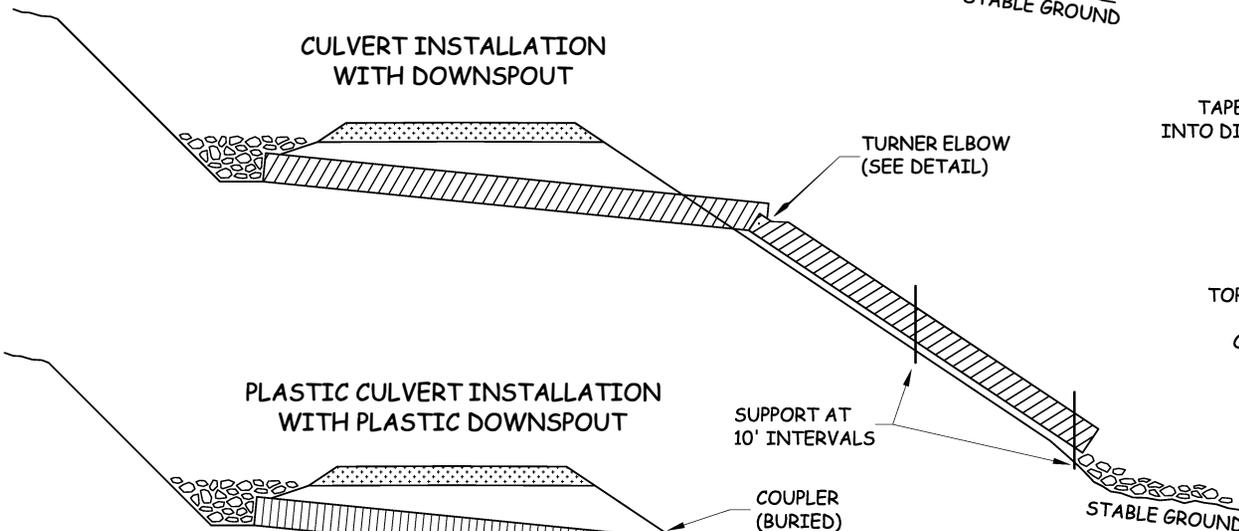
**CULVERT INSTALLATION (TYPICAL)**



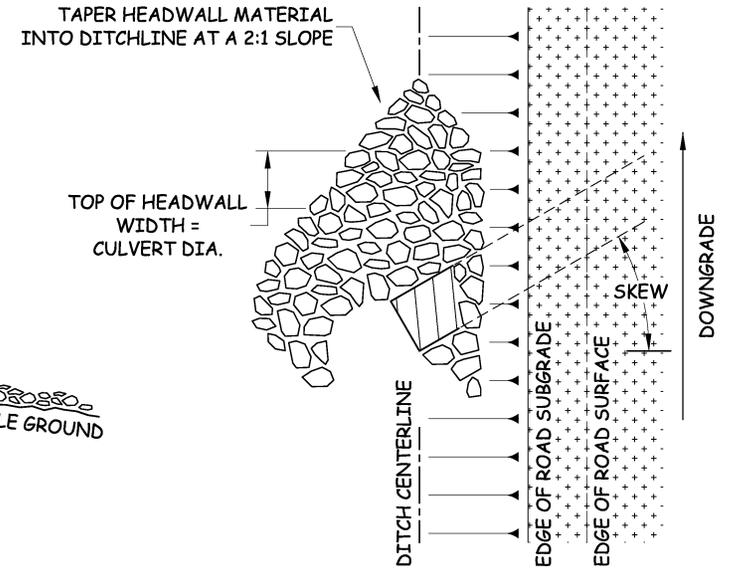
**CULVERT HEADWALL - SECTION VIEW**



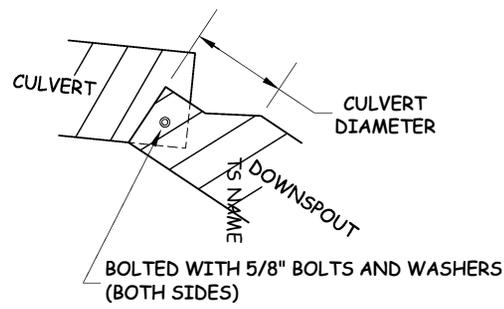
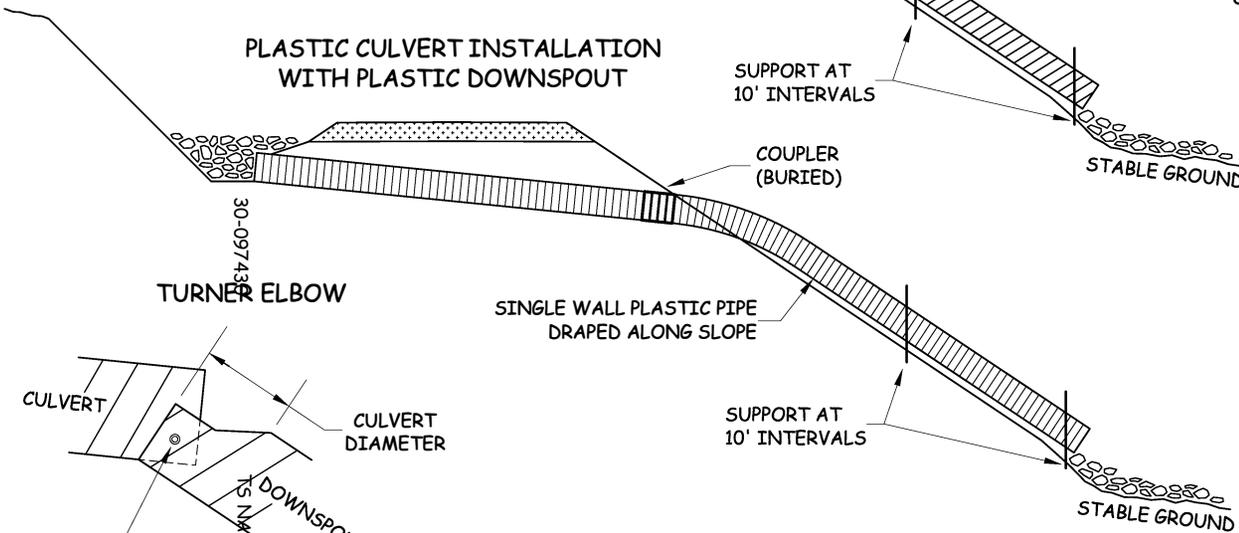
**CULVERT INSTALLATION WITH DOWNSPOUT**



**CULVERT HEADWALL - PLAN VIEW**



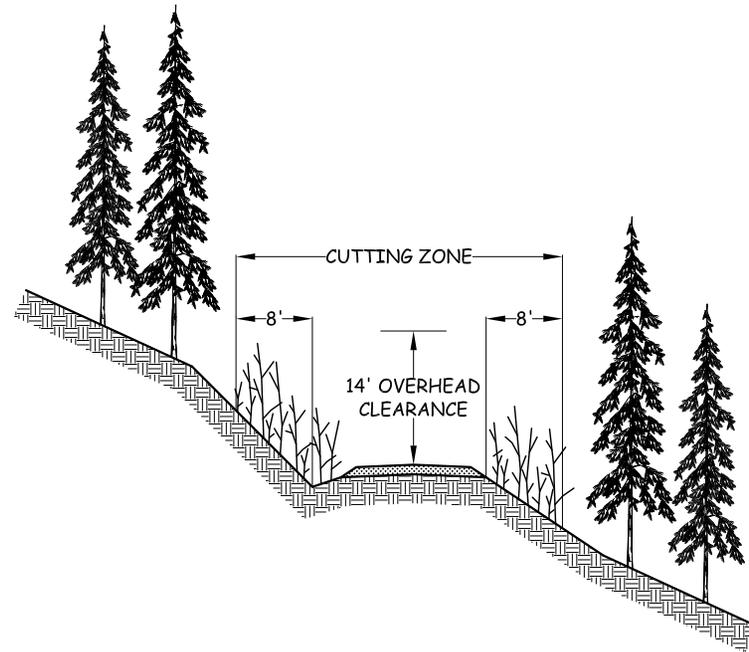
**PLASTIC CULVERT INSTALLATION WITH PLASTIC DOWNSPOUT**



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

CONTRACT # 30-097430	PROJECT SKY RIDER	SHEET 37 OF 41
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## ROAD BRUSHING DETAILS



### SPECIFICATIONS

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

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

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

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

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

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

DITCHES SHALL BE CLEARED OF WOODY DEBRIS.

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

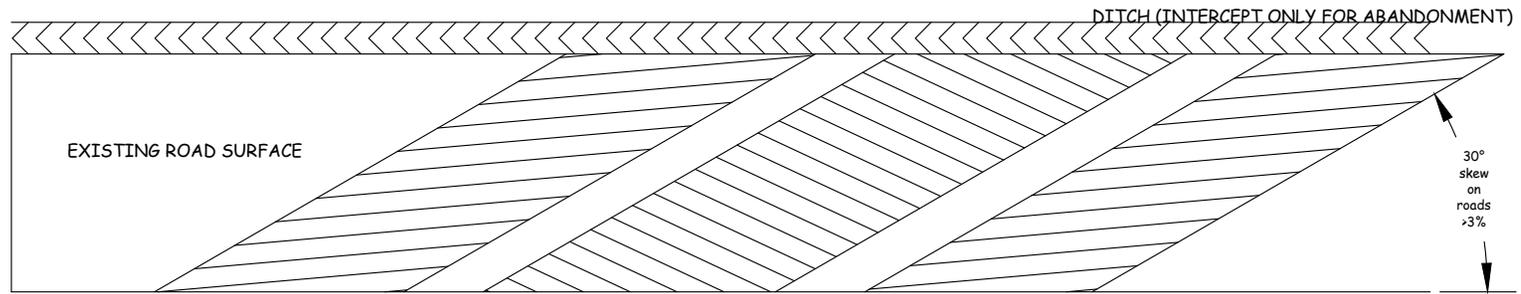
CONTRACT #  
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PROJECT  
SKY RIDER

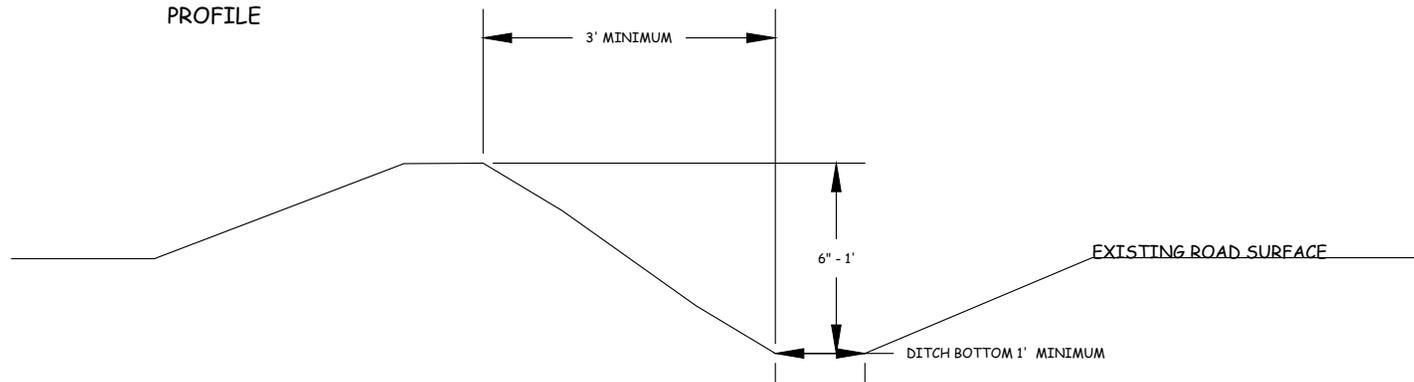
SHEET  
38 OF 41

# DRIVABLE WATERBAR DETAIL

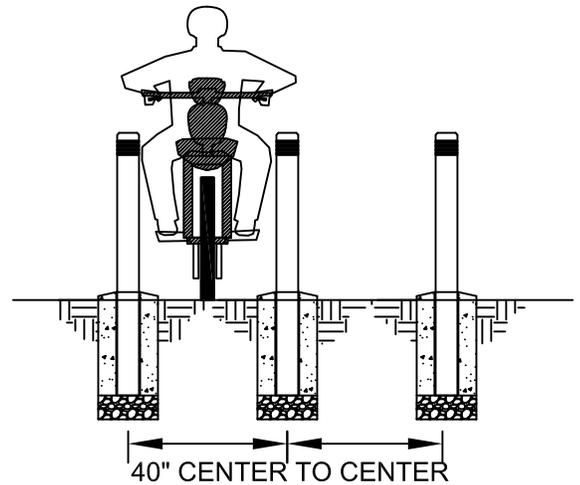
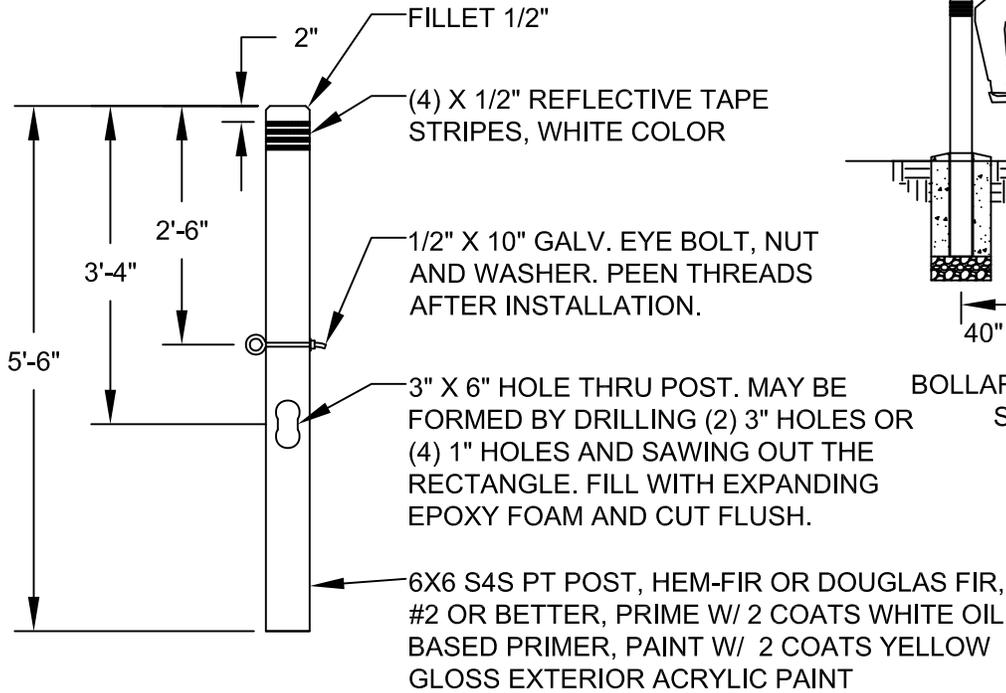
PLAN



PROFILE

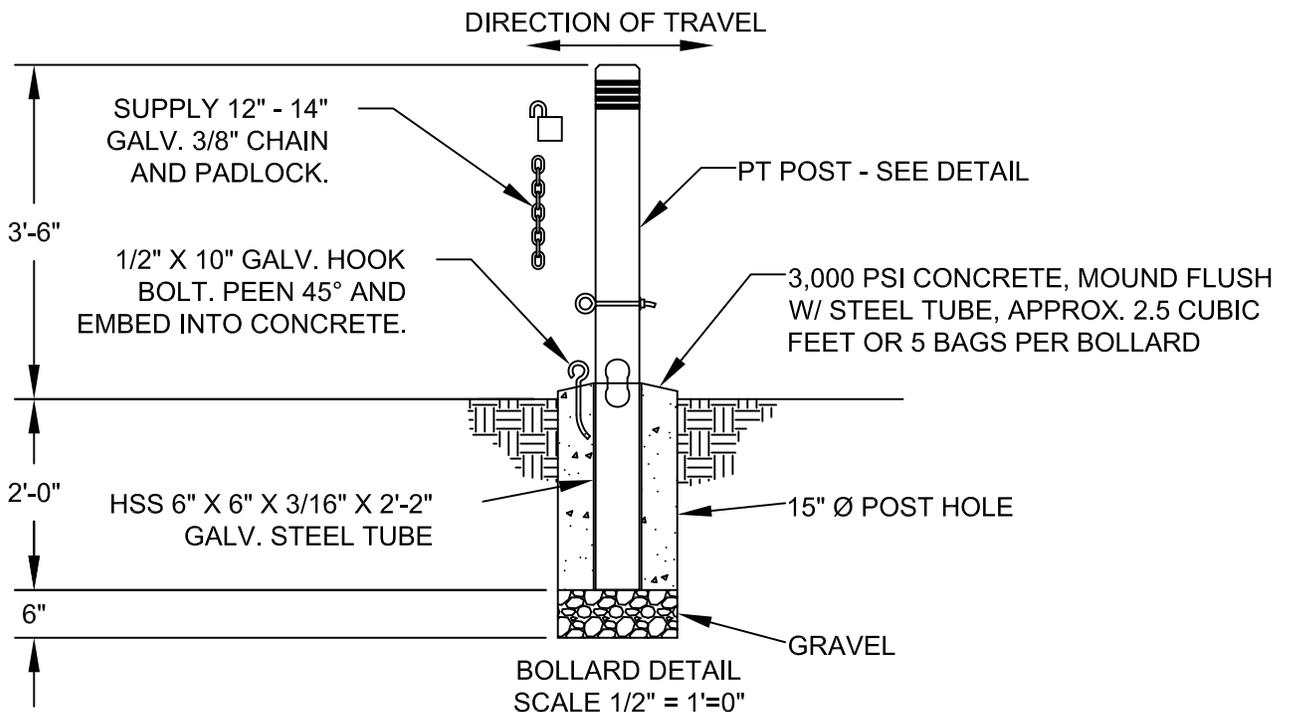


CONTRACT #	PROJECT	SHEET
30-097430	SKY RIDER	39 OF 41



BOLLARD PLACEMENT DETAIL  
SCALE 1/4" = 1'-0"

BOLLARD POST DETAIL  
SCALE 1/2" = 1'-0"



Motorized Trail Plans  
Construction Details

Subject to Change Without Notice  
Date/Revision: Drawn/Reviewed:  
6-18-13 JP LA/JP

S.T. Motorcycle Trails  
**Bollard Detail**

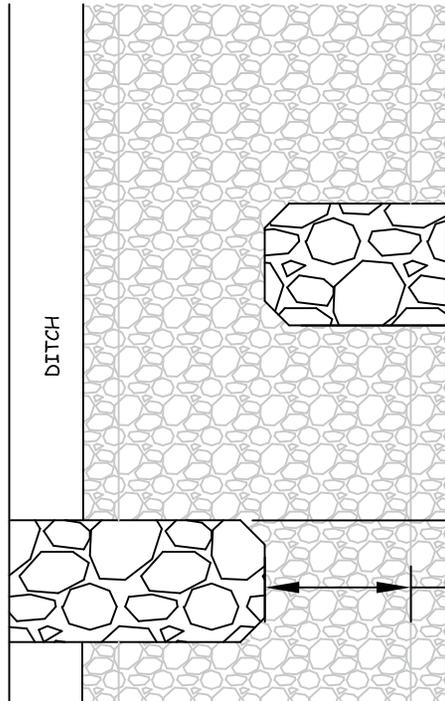
SKY RIDER

30-097430

SHEET 40 OF 41

# RIPRAP BARRICADE DETAIL

SPEED CONTROL BARRICADE

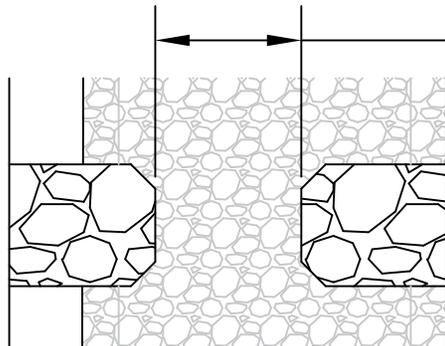


DITCH

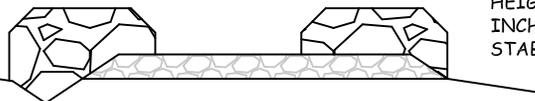
SPACING BETWEEN SPEED CONTROL BARRICADES  
MUST BE A MINIMUM OF EIGHT FEET

GAP BETWEEN RIP RAP BARRICADE AND SHOULDER  
MUST BE AT LEAST 4.5 FEET BUT NOT MORE THAN 6  
FEET

TRAILHEAD BARRICADE



GAP BETWEEN TRAILHEAD BARRICADES MUST BE AT  
LEAST 4.5 FEET BUT NOT MORE THAN 6 FEET



HEIGHT OF BARRICADE SHALL BE AT LEAST 24  
INCHES. RIPRAP SHALL BE PLACED SO THAT IT IS  
STABLE.

## CONSTRUCTION NOTES:

CONSTRUCT A RIPRAP BARRICADE TO ACT AS A GATEKEEPER FOR RECREATIONAL VEHICLES AND TO PREVENT ACCESS BY FOUR-WHEELED HIGHWAY VEHICLES. USE OVERSIZED RIP RAP AS SPECIFIED IN CLAUSE 11-3 OVERSIZED RIP RAP, IN THE LOCATIONS SPECIFIED IN THE MATERIALS LIST SO THAT FOUR WHEEL HIGHWAY VEHICLES CANNOT PASS THE POINT OF ABANDONMENT. BARRICADES MUST BE APPROVED IN WRITING BY THE CONTRACT ADMINISTRATOR.

CONTRACT #  
30-097430

PROJECT  
SKY RIDER

SHEET  
41 OF 41

## SUMMARY - Road Development Costs

REGION: NW  
DISTRICT: Cascade

SALE/PROJECT NAME: Sky Rider

CONTRACT #: 30-097430

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ROAD NUMBERS: DF-2602, Df-27, DF-32, DF-34, DF-2602, DF-32, DF-33 DF-ML, DF-30, DF-3002, DF-3002-01, DF-3406, DF-3407

ROAD STANDARD:	Construction	Reconstruction	Maintenance
NUMBER OF STATIONS:	94.92	29.40	246.30
CLEARING & GRUBBING:	\$14,819.95	\$1,494.24	\$3,275.79
EXCAVATION AND FILL:	\$15,473.05	\$3,098.79	-
MISC. MAINTENANCE:			-
ROAD ROCK:	\$57,376.53	\$9,058.45	\$3,822.09
ROCK STOCKPILE PROD:	\$1,256	-	-
CULVERTS AND FLUMES:	\$14,900	\$9,178	-
STRUCTURES:	\$0	\$0	\$0
MOBILIZATION:	\$5,825	-	\$600
TOTAL COSTS:	\$109,651	\$22,830	\$7,698
COST PER STATION:	\$1,155	\$777	\$31
ROAD DEACTIVATION & ABANDONMENT COSTS:		\$12,941	

**TOTAL (All Roads) = \$153,119**  
**SALE VOLUME MBF = 4050**  
**TOTAL \$/MBF = \$38**

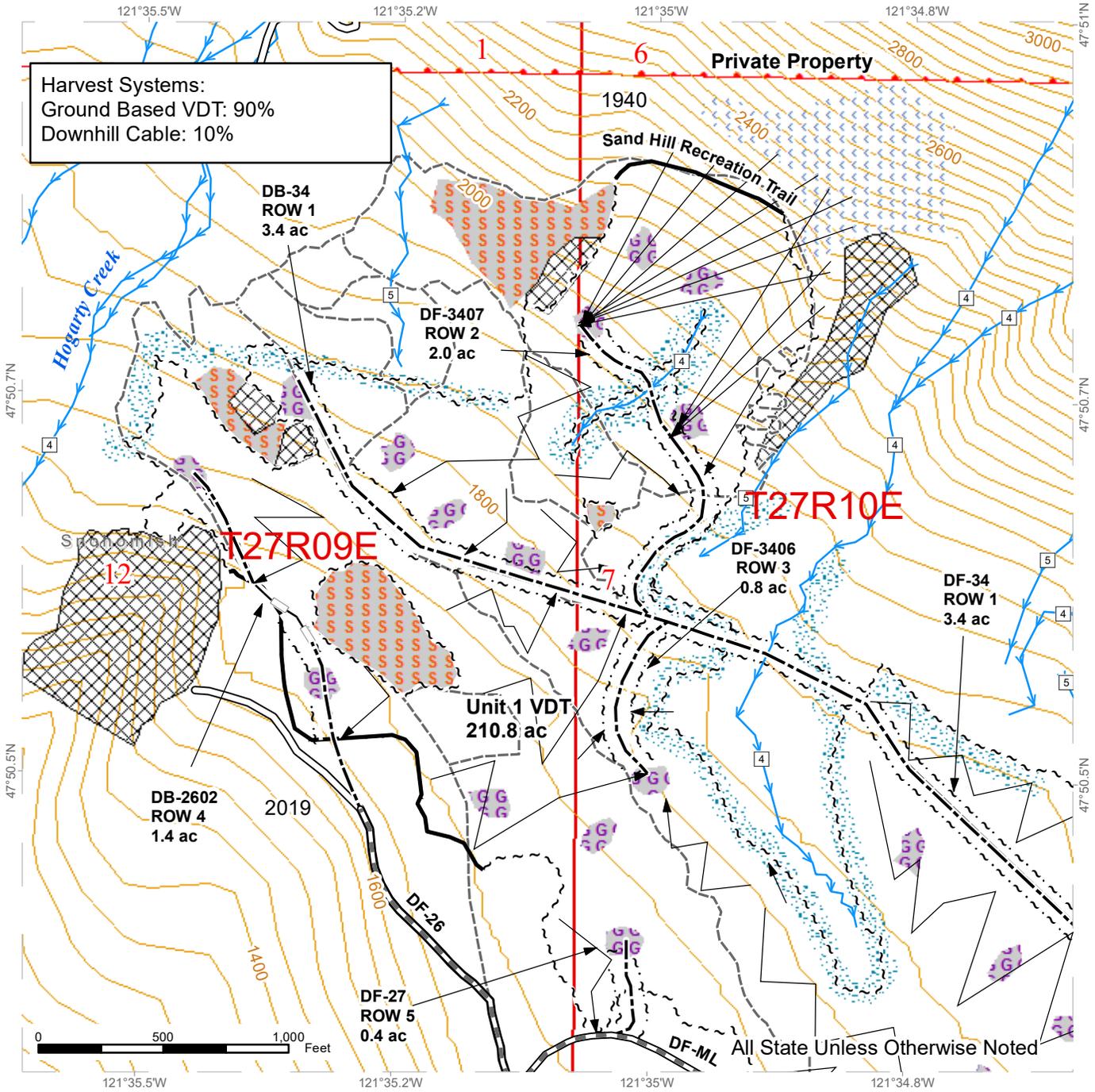
Compiled by: A. Halgren

Date: 8/6/2019

# LOGGING PLAN MAP

SALE NAME: SKY RIDER VDT  
 AGREEMENT#: 30-097430  
 TOWNSHIP(S): T27R10E, T27R9E  
 TRUST(S): State Forest Transfer (1)

REGION: Northwest Region  
 COUNTY(S): Snohomish  
 ELEVATION RGE: 1640-2480



Harvest Systems:  
 Ground Based VDT: 90%  
 Downhill Cable: 10%

Public Land Survey Townships	Ground Harvest	Existing Roads
Public Land Survey Sections	Cable Harvest	Required Pre-Haul Maintenance
DNR Managed Lands	Sale Boundary Tags	Optional Construction
Skip	Sale Boundary (No Tags)	Optional Reconstruction
Gap	Right of Way Tags	Streams
Riparian Mgt Zone		Motorized Recreation Trails
Tailhold Restrictions		Stream Type
No Entry Zone		Stream Type Break

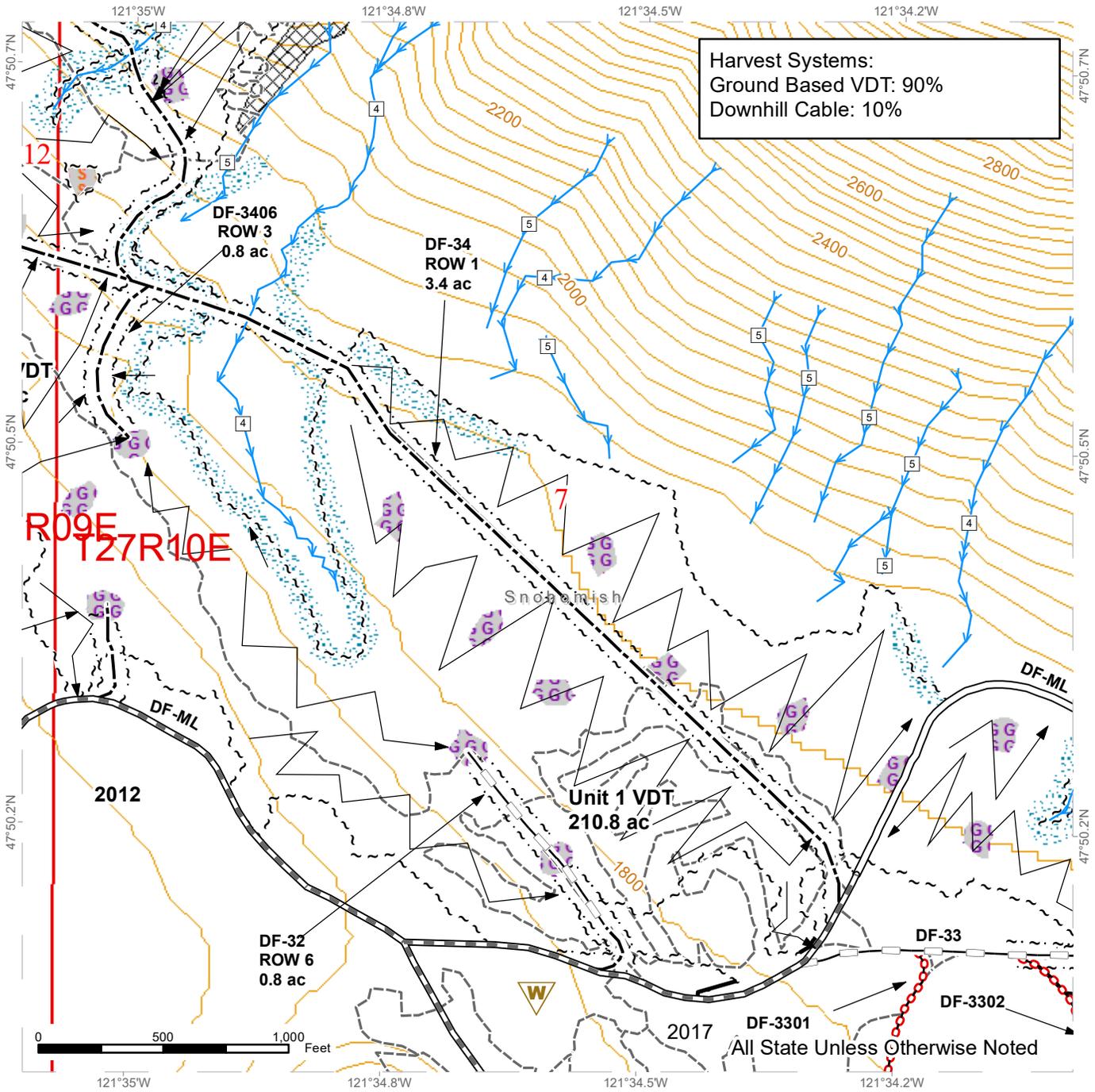


# LOGGING PLAN MAP

**SALE NAME:** SKY RIDER VDT  
**AGREEMENT#:** 30-097430  
**TOWNSHIP(S):** T27R10E, T27R9E  
**TRUST(S):** State Forest Transfer (1)

**REGION:** Northwest Region  
**COUNTY(S):** Snohomish  
**ELEVATION RGE:** 1640-2480

**Harvest Systems:**  
 Ground Based VDT: 90%  
 Downhill Cable: 10%



Public Land Survey Townships	Ground Harvest	Existing Roads	Waste Area
Public Land Survey Sections	Cable Harvest	Required Pre-Haul Maintenance	
DNR Managed Lands	Sale Boundary Tags	Optional Construction	
Skip	Sale Boundary (No Tags)	Optional Reconstruction	
Gap	Right of Way Tags	Required Abandonment	
Riparian Mgt Zone		Streams	
No Entry Zone		Motorized Recreation Trails	
		Stream Type	
		Stream Type Break	

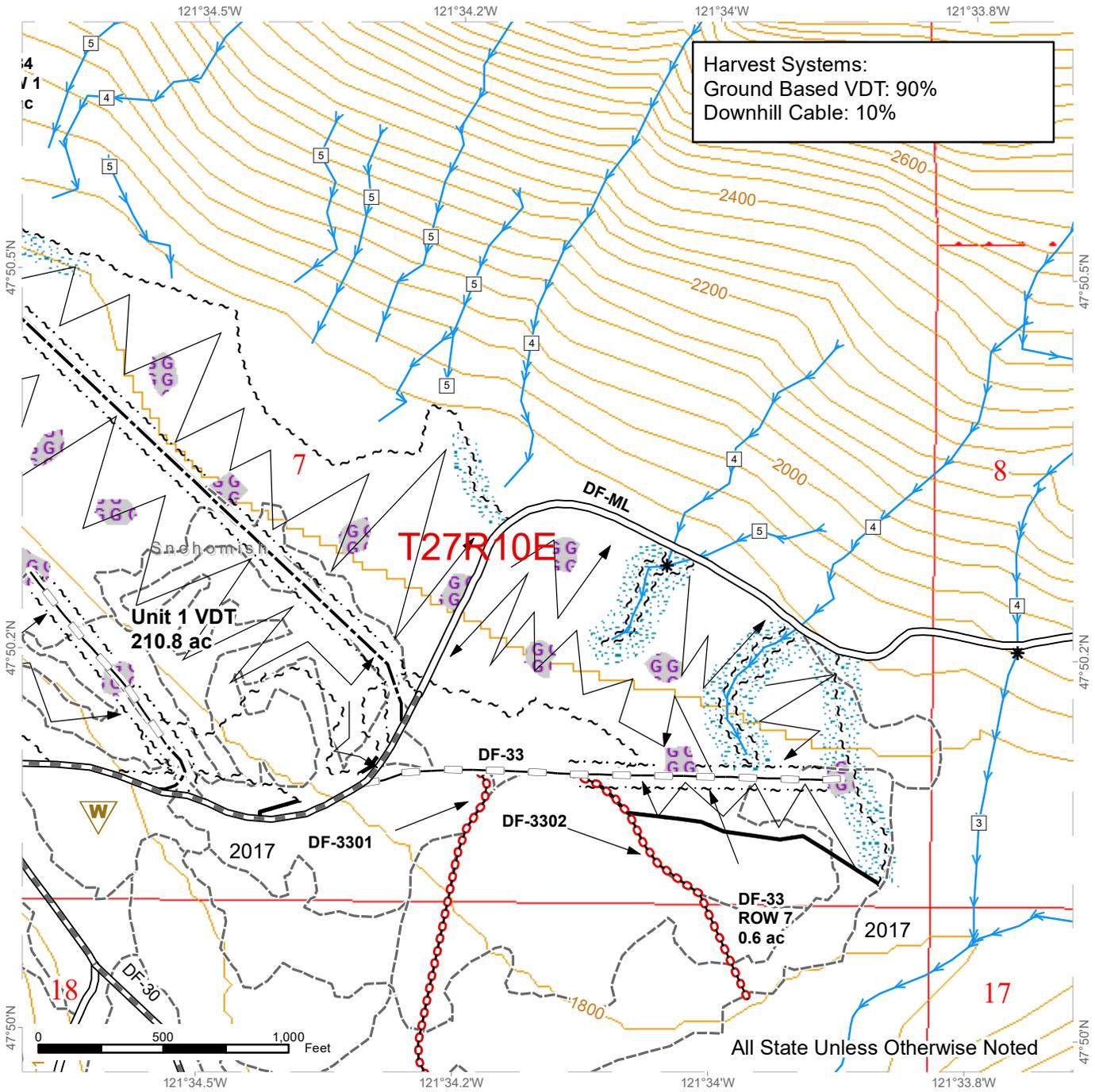


# LOGGING PLAN MAP

**SALE NAME:** SKY RIDER VDT  
**AGREEMENT#:** 30-097430  
**TOWNSHIP(S):** T27R10E, T27R9E  
**TRUST(S):** State Forest Transfer (1)

**REGION:** Northwest Region  
**COUNTY(S):** Snohomish  
**ELEVATION RGE:** 1640-2480

**Harvest Systems:**  
 Ground Based VDT: 90%  
 Downhill Cable: 10%



All State Unless Otherwise Noted

Public Land Survey Townships	Ground Harvest	Existing Roads	Waste Area
Public Land Survey Sections	Sale Boundary Tags	Required Pre-Haul Maintenance	
DNR Managed Lands	Sale Boundary (No Tags)	Optional Construction	
Gap	Right of Way Tags	Optional Reconstruction	
Riparian Mgt Zone		Required Abandonment	
		Streams	
		Motorized Recreation Trails	
		Stream Type	
		Stream Type Break	