

**TIMBER NOTICE OF SALE**

**SALE NAME: BLACKHORSE FIRE SALVAGE**

**AGREEMENT NO: 30-093304**

**AUCTION:** March 9, 2016 starting at 10:00 a.m.,  
Northeast Region Office, Colville, WA

**COUNTY:** Stevens

**SALE LOCATION:** Sale located approximately 10 miles east of Hunters, WA

**PRODUCTS SOLD  
AND SALE AREA:**

All decked and cut timber along the north edge of the fire trail clearing in Unit 1. All decked timber within the fire trail clearing in Unit 2. All ponderosa pine 8 inches and greater in diameter at breast height and all other conifer species 7 inches and greater in diameter at breast height except leave trees banded with blue paint bounded by white timber sale boundary tags in Units 3, 4, 5, 6, 7 and 8. All ponderosa pine 8 inches and greater in diameter at breast height and all other conifer species 7 inches and greater in diameter at breast height except leave trees banded with purple paint bounded by white timber sale boundary tags in Unit 9, on part(s) of Sections 16 all in Township 29 North, Range 37 East, Sections 16 all in Township 30 North, Range 38 East, Sections 36 all in Township 30 North, Range 37 East, Sections 16, 28, 29 and 32 all in Township 31 North, Range 38 East, W.M., containing 471 acres, more or less.

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

**ESTIMATED SALE VOLUMES AND QUALITY:**

Species	Avg Ring DBH Count	Total MBF	Total Tons	Price \$/Ton	MBF by Grade									
					P	SM	1S	2S	3S	4S	5S	6S	UT	
Douglas fir	14	3,795	27,235	\$17.08				998	2,149	648				
Ponderosa pine	15.7	736	5,297	\$17.08					1	256	479			
Grand fir	14.5	393	2,771	\$17.08				116	223	54				
Larch	13.3	144	818	\$17.08				20	101	23				
Red cedar	23.3	39	314	\$17.08					36	3				
Sale Total		5,107	36,435											

**MINIMUM BID:** \$17.08/ton (est. value \$622,000.00) **BID METHOD:** Sealed Bids

**PERFORMANCE SECURITY:** \$100,000.00 **SALE TYPE:** Tonnage Scale

**EXPIRATION DATE:** November 15, 2016 **ALLOCATION:** Export Restricted

**BIDDABLE SPECIES:** Bidding to be allowed on all species combined.

**BID DEPOSIT:** \$62,200.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

**HARVEST METHOD:** Track skidder, Rubber tired skidder and Dozer. Falling and Yarding will not be permitted from March 1 to May 1 unless authorized in writing by the Contract Administrator due to spring breakup.

**ROADS:** 4.45 stations of required construction. 51.50 stations of required reconstruction. 13.00 stations of optional reconstruction. 328.93 stations of required prehaul maintenance. 64.50 stations of required decommissioning. Road construction will not be permitted from March 1 to May 1 unless authorized in writing by the Contract Administrator due to

## TIMBER NOTICE OF SALE

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spring breakup. The hauling of forest products will not be permitted from March 1 to May 1 unless authorized in writing by the Contract Administrator due to spring breakup.

### **ACREAGE DETERMINATION**

**CRUISE METHOD:** Acreage determined using GPS methods. Acreage shown above is net harvest acres in harvest units. Ponderosa pine: 8.0 - 17.5 inches dbh has a minimum top of 5.6 inch dib. All other species: 7.0 - 17.5 dbh has minimum top of 4.6 inch dib. All species 17.6 inch and greater dbh measure height to 40% of dob at 16 feet or a 6 inch top whichever is greater.

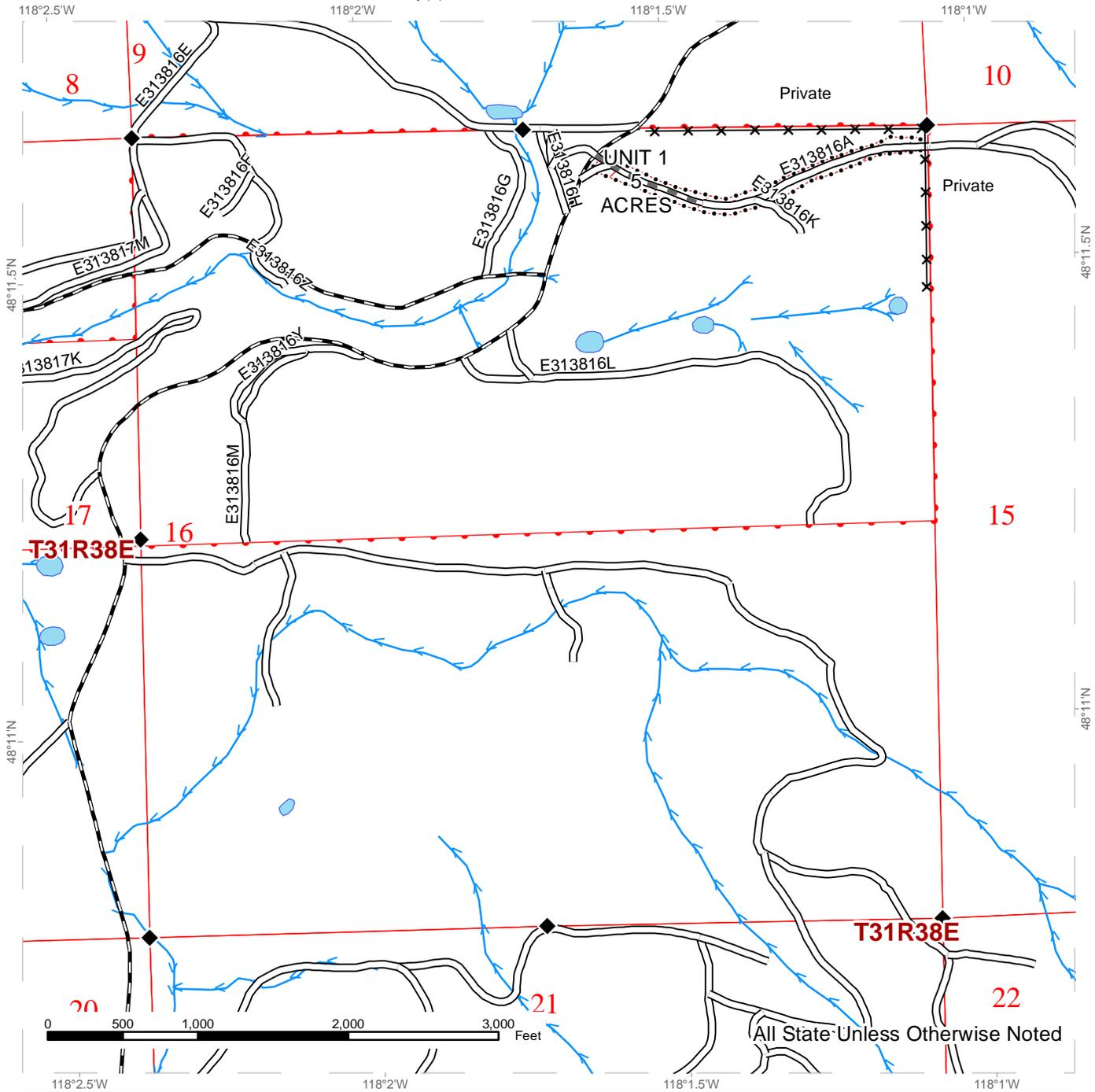
**FEES:** Within 10 days of day of sale, Purchaser shall provide a check payable to Stimson Lumber Company in the amount of \$580.00 for a road use permit. \$90,650.00 is due on day of sale. \$1.26 per ton is due upon removal. These are in addition to the bid price.

**SPECIAL REMARKS:** The decked and cut timber in Units 1 and 2 is a result from fire trail construction. Blue stain ponderosa pine will be optional removal at \$2.00 per ton. Locked gate restricts access to Unit 8 and 9. Contact the Northeast Region Office at (509) 684-7474 for access.

# TIMBER SALE MAP

**SALE NAME:** BLACKHORSE FIRE SALVAGE  
**AGREEMENT #:** 30-93304  
**TOWNSHIP(S):** T31R38E, T30R38E, T30R37E, T29R37E  
**TRUST(S):** Common School and Indemnity(3)

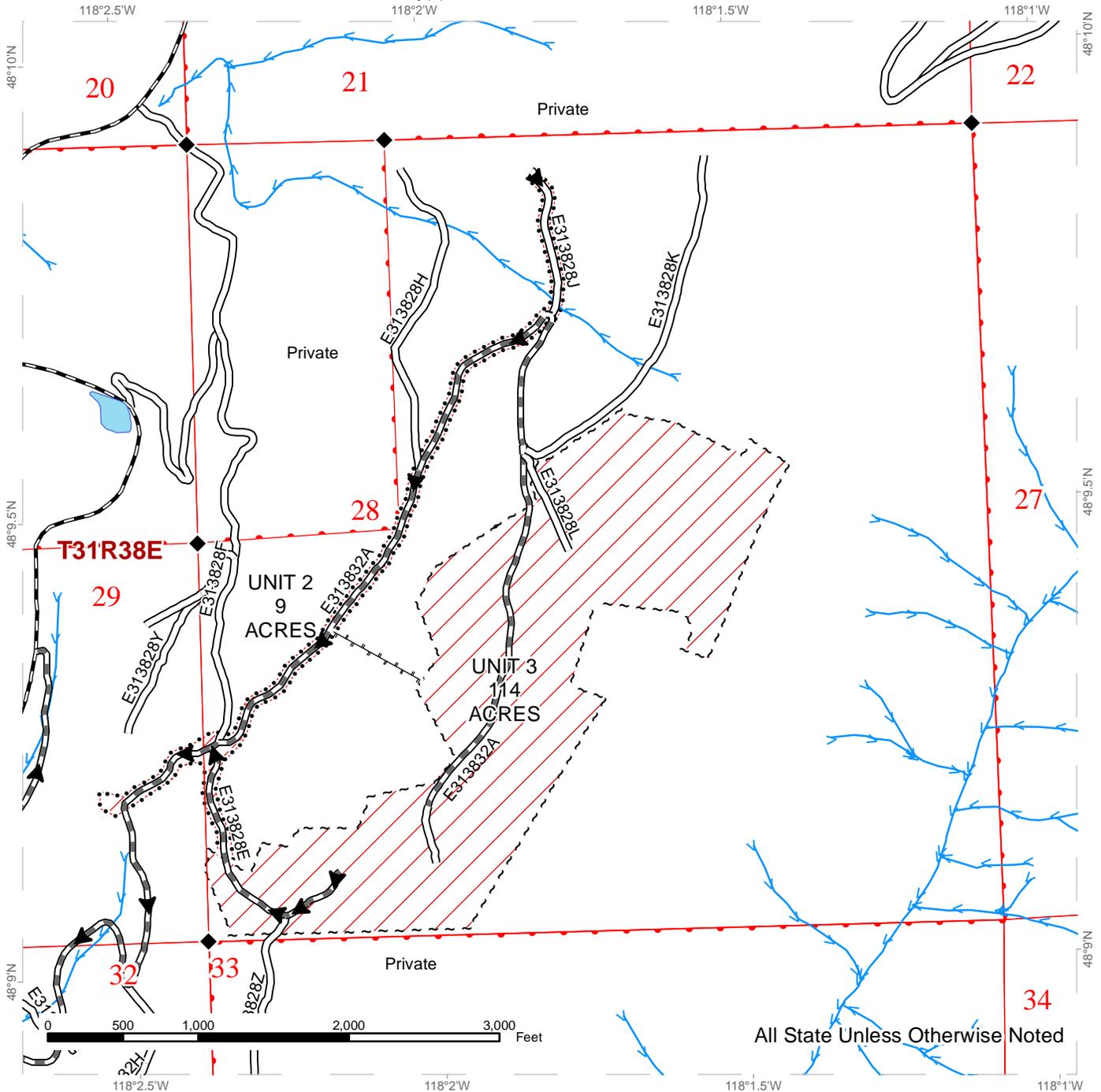
**REGION:** Northeast Region  
**COUNTY(S):** STEVENS  
**ELEVATION RGE:** 2563-4291



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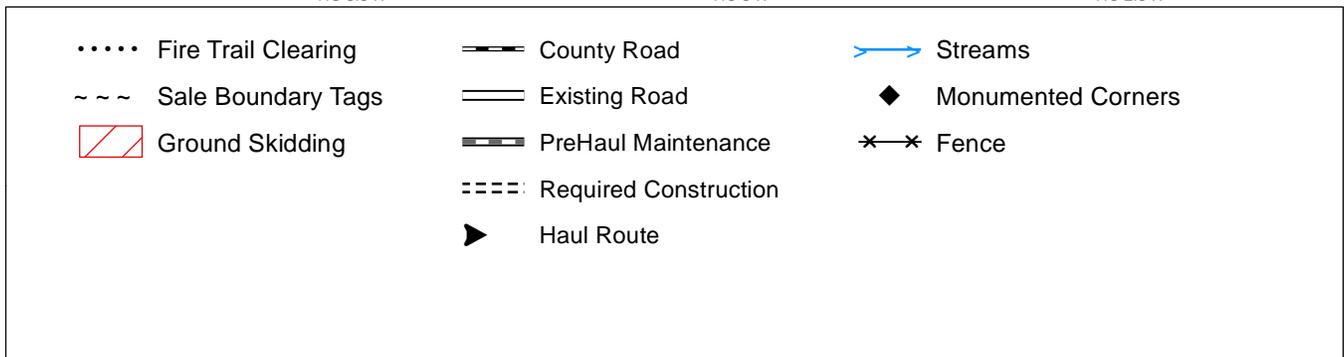
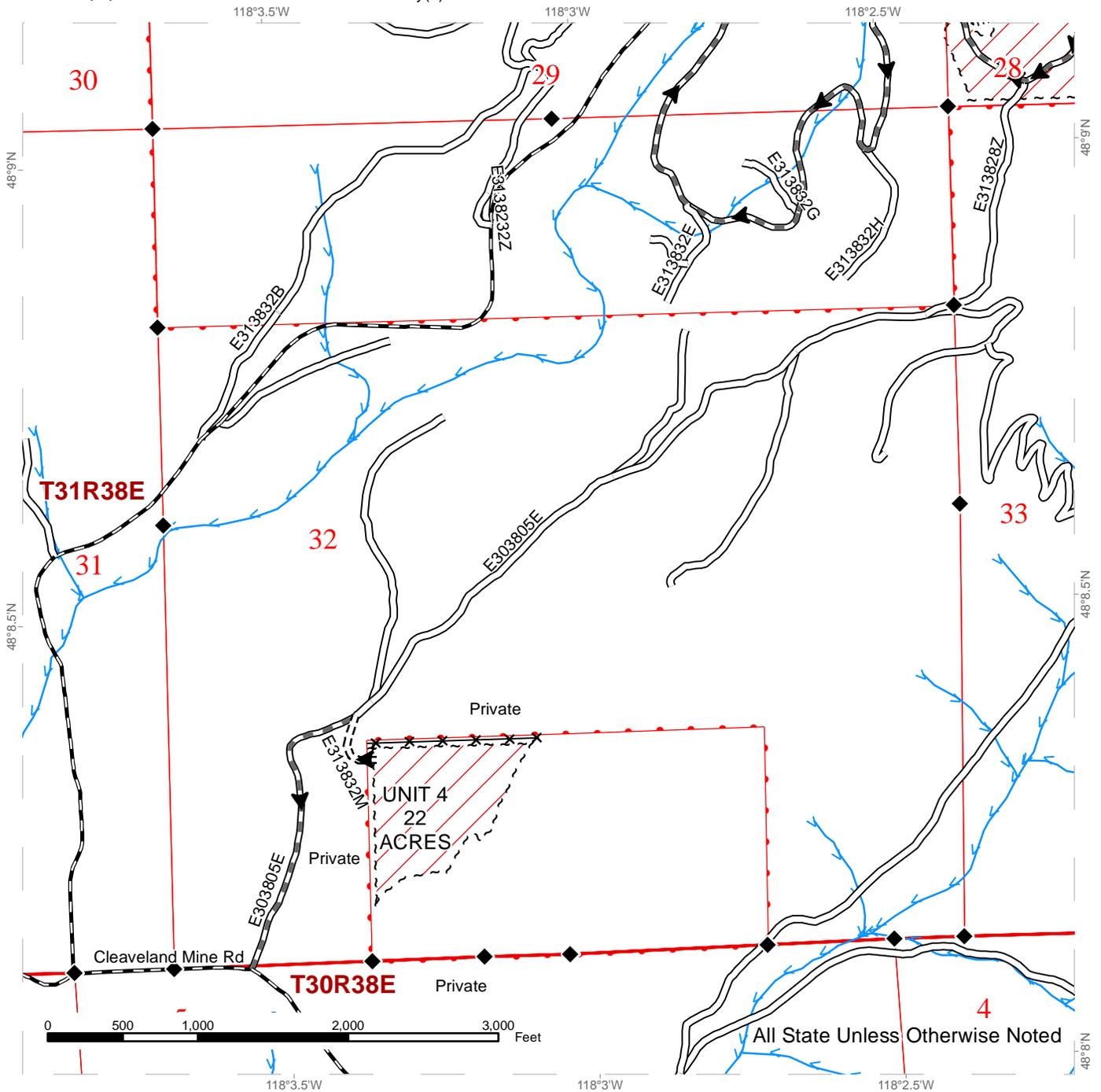
.....	Fire Trail Clearing	—	County Road	→	Streams
---	Sale Boundary Tags	==	Existing Road	◆	Monumented Corners
▨	Ground Skidding	---	PreHaul Maintenance		
		---	Required Construction		
		---	Designated Skid Trail		
		▶	Haul Route		



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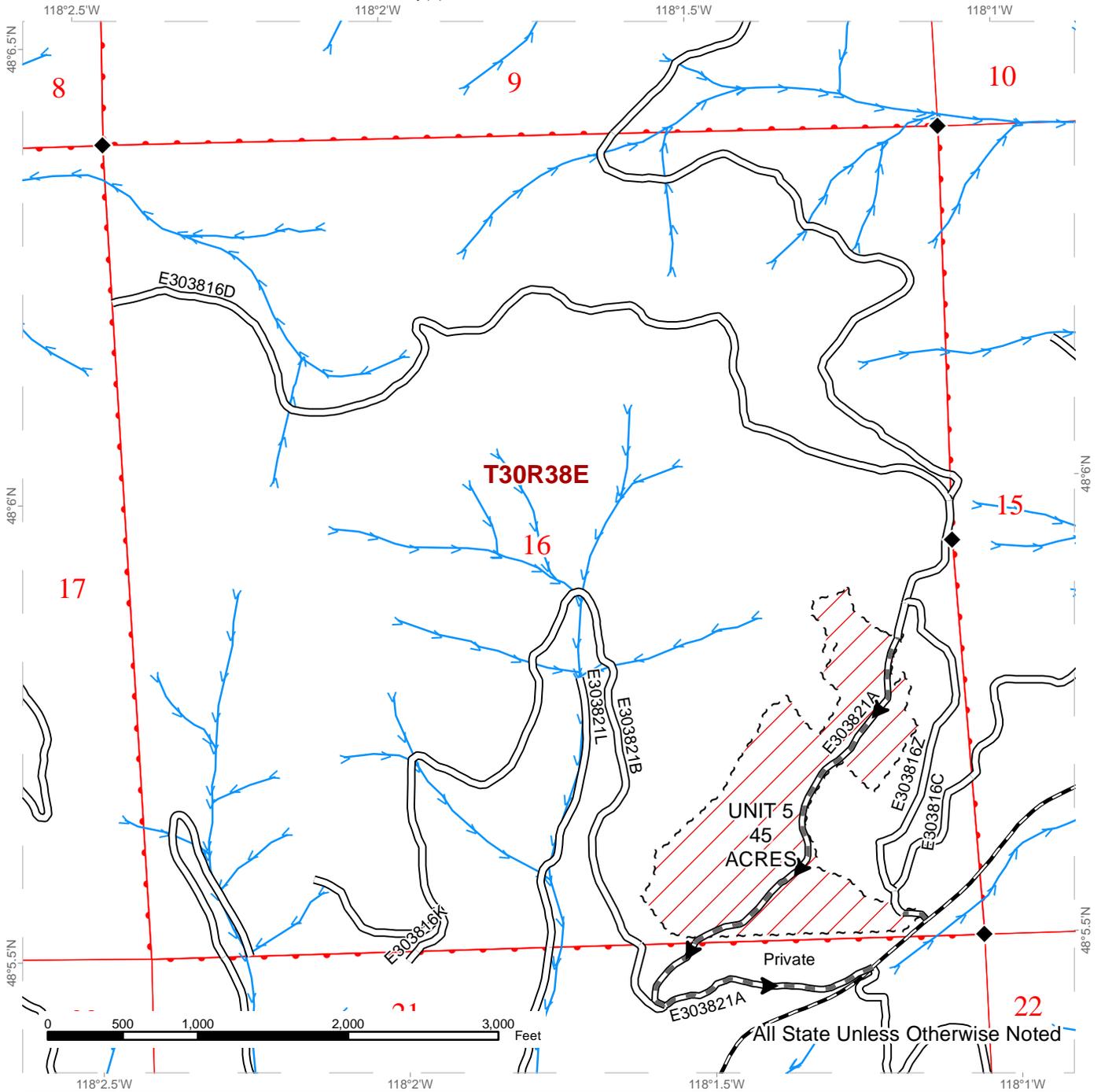
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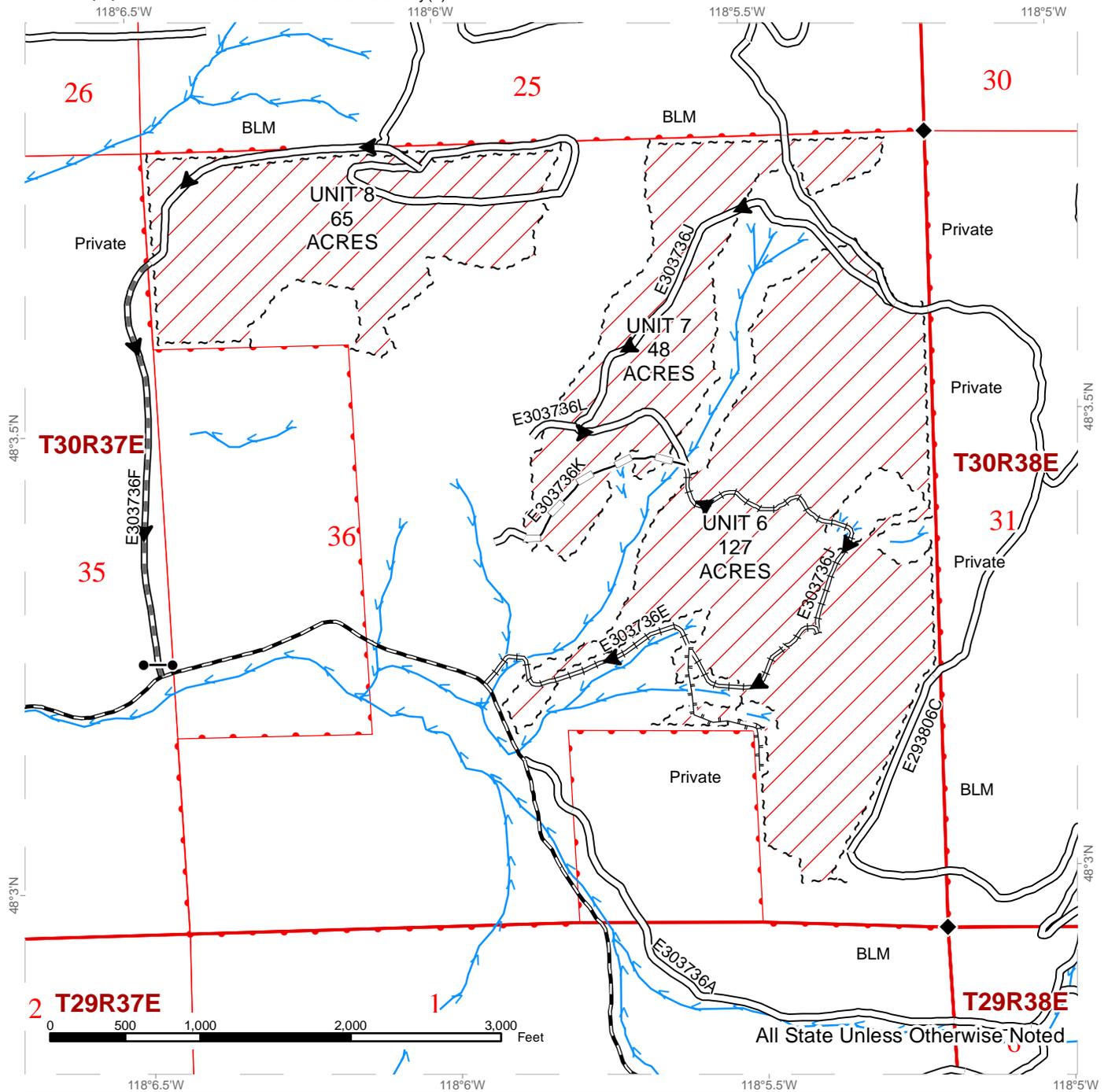
--- Sale Boundary Tags	— County Road	—> Streams
▨ Ground Skidding	— Existing Road	◆ Monumented Corners
	— PreHaul Maintenance	
	▶ Haul Route	

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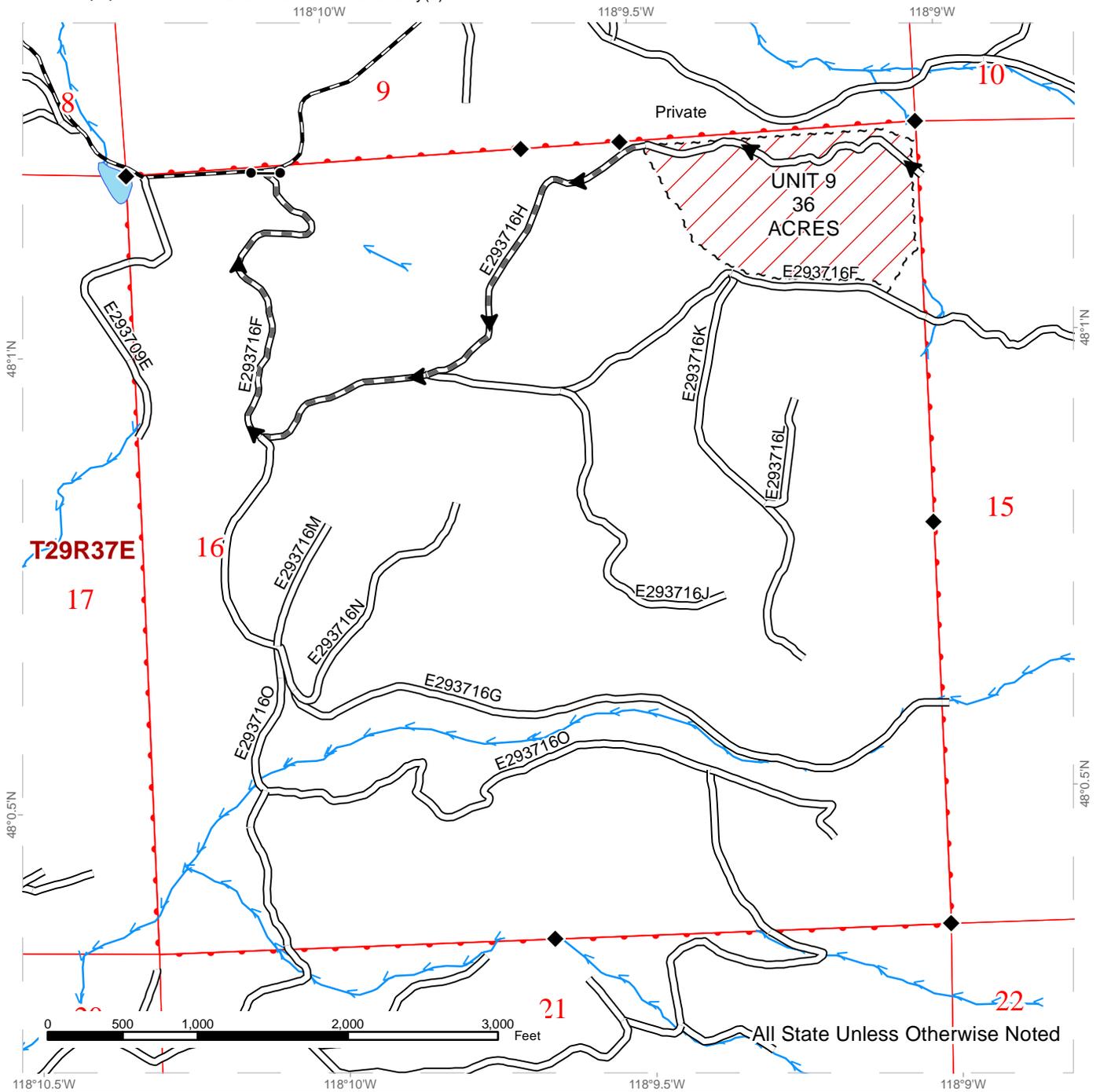
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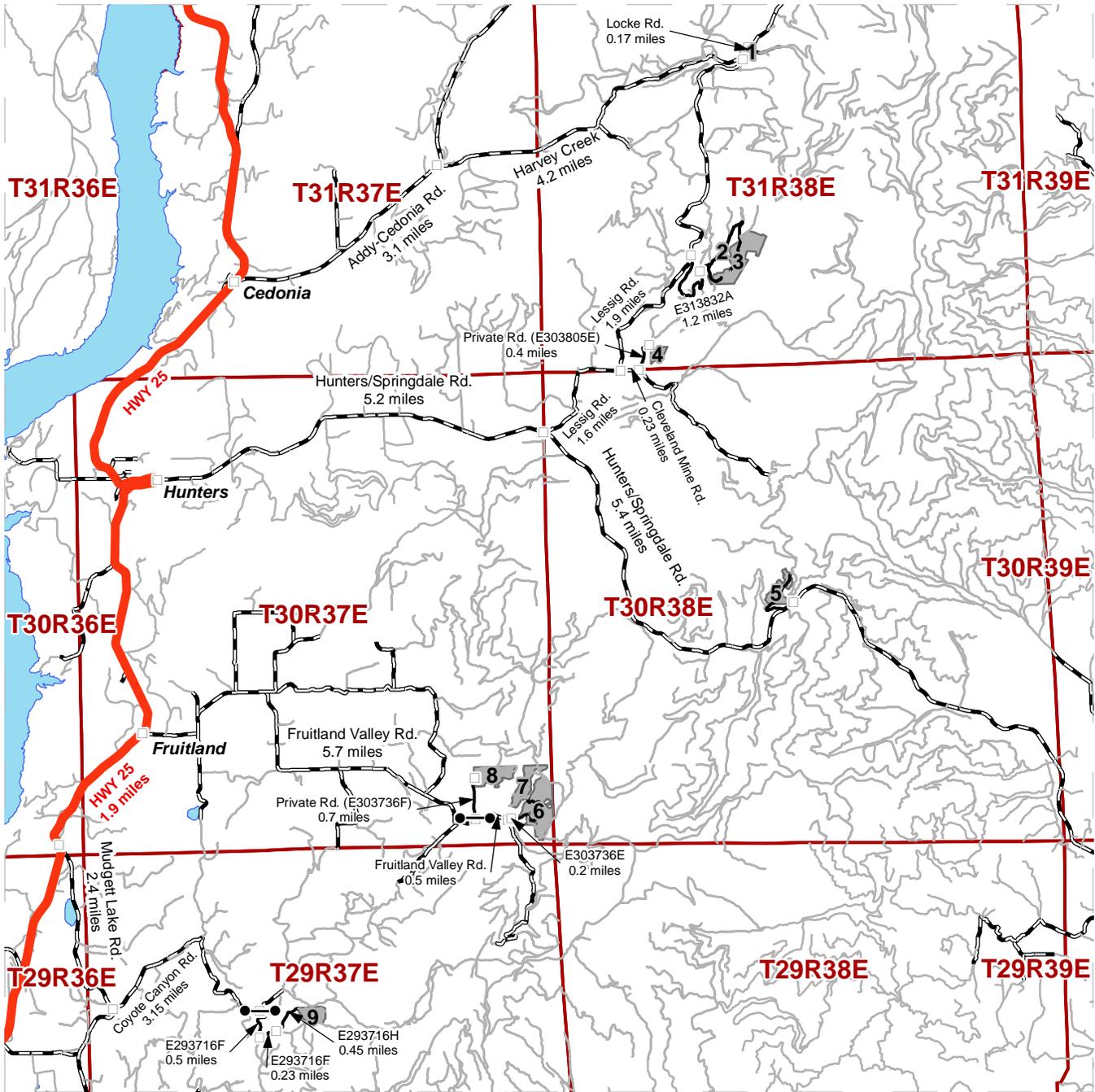


~ ~ ~	Sale Boundary Tags	— — —	County Road	— >	Streams
	Ground Skidding	— — —	Existing Road	◆	Monumented Corners
		— — —	PreHaul Maintenance	● — ●	Gate
		▶	Haul Route		

# DRIVING MAP

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	Timber Sale Unit
	Haul Route
	County Road
	Other Route
	Highways
	Milepost Markers
	Gate

**DRIVING DIRECTIONS:**

Unit 1: From the junction of State Hwy 25 and Addy Cedonia Road at Cedonia, travel 3.1 miles east on Addy Cedonia Road to Harvey Creek. Turn right on Harvey Creek and travel 4.2 miles to the Lessig and Locke Road junction. Turn left and travel 0.17 miles on Locke Road. Turn right into Unit 1.

Unit 2 and 3: From the town of Hunters, travel east 5.2 miles on Hunters/Springdale Road to Lessig Road. Turn left on Lessig Road and travel 3.5 miles north. Turn right and travel 1.2 miles on E313832A to Units 2 and 3. Road junctions will be marked with Timber Sale signs.

Unit 4: From the Hunters/Springdale and Lessig Road junction, turn left on Lessig Road and travel 1.6 miles north to Cleveland Mine Road. Turn right on Cleveland Mine Road and travel 0.23 miles. Turn left onto private road (E303805E) and travel 0.4 miles. Turn right on old skid trail and follow orange ribbons approximately 100 feet to Unit 4.

Unit 5: From the Hunters/Springdale and Lessig Road junction, travel 5.4 miles east on Hunters/Springdale Road to the access road at Unit 5. Turn left into the unit.

Unit 6 through 8: From the town of Fruitland travel 5.7 miles east on Fruitland Valley Road to a double green gate on the left. Gate will have a combination padlock. Northeast Region will have to be contacted for the combination. Go through the gate 0.7 miles on the private road (E303736F) staying to the right to Unit 8. The unit will be marked with Timber Sale signs. From the double green gate continue on Fruitland Valley Road 0.5 miles, turn left on road E303736E travel 0.2 miles, following the signs to Units 6 and 7.

Unit 9: From Fruitland travel 1.9 miles south on State Hwy 25 to Mudgett Lake Road. Turn left on Mudgett Lake Road and travel 2.4 miles to Coyote Canyon Road. Turn left on Coyote Canyon Road and travel 3.15 miles to road E293716F. Turn right, go through the gate and travel 0.5 miles. Turn left and travel 0.23 miles. Turn left on E293716H and travel 0.45 miles to Unit 9.



**STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES**

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

**Export Restricted Tonnage Scale AGREEMENT NO. 30-093304**

**SALE NAME: BLACKHORSE FIRE SALVAGE**

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

Section G: General Terms

G-001 Definitions

The following definitions apply throughout this contract;

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

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

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

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

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

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

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

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

Purchaser was the successful bidder on March 9, 2016 and the sale was confirmed on \_\_\_\_\_. The State, as owner, agrees to sell to Purchaser, and Purchaser agrees to purchase, cut, and remove the following forest products: All decked and cut timber along the north edge of the fire trail clearing in Unit 1. All decked timber within the fire trail clearing in Unit 2. All ponderosa pine 8 inches and greater in diameter at breast height and all other conifer species 7 inches and greater in diameter at breast height except leave trees banded with blue paint bounded by white timber sale boundary tags in Units 3, 4, 5, 6, 7 and 8. All ponderosa pine 8 inches and greater in diameter at breast height and all other conifer species 7 inches and greater in diameter at breast height except leave trees banded with purple paint bounded by white timber sale boundary tags in Unit 9., located on approximately 471 acres on part(s) of Section 16 in Township 29 North, Range 37 East, Section 16 in Township 30 North, Range 38 East, Section 36 in Township 30 North, Range 37 East, Sections 16, 28, 29, and 32 all in Township 31 North, Range 38 East W.M. in Stevens 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-030 Contract Term

Purchaser shall remove the forest products conveyed and complete all work required by this contract prior to November 15, 2016.

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 \$376.00 per acre per annum for the acres on which an operating release has not been issued .
- f. In no event will the extension charge be less than \$200.00.
- g. Extension payments are non-refundable.

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

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

**G-060 Exclusion of Warranties**

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

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

OTHER PRE-BID DOCUMENTS PREPARED BY OR FOR THE STATE. These documents have been prepared for the State's appraisal purposes only.

- f. THAT THE SALE AREA IS FREE FROM THREATENED OR ENDANGERED SPECIES or their habitat. The State is not responsible for any interference with forestry operations that result from the presence of any threatened or endangered species, or the presence of their habitat, within the sale area.
- g. THAT THE FORESTRY OPERATIONS to be performed under this contract WILL BE FREE FROM REGULATORY ACTIONS by governmental agencies. The State is not responsible for actions to enforce regulatory laws, such as the Washington Forest Practices Act (chapter 76.09 RCW), taken by the Department of Natural Resources or any other agency that may affect the operability of this timber sale.
- h. Items contained in any other documents prepared for or by the State.

G-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-110 Title and Risk of Loss**

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

**G-116 Sustainable Forestry Initiative® (SFI) Certification**

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

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

**G-120 Responsibility for Work**

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

**G-121 Exceptions**

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

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

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

1. Failure of (a) required improvements or roads designated in clause C-050, or (b) required or optional construction completed to the point that authorization to haul has been issued;
2. Caused by a single event from forces beyond the control of Purchaser, its employees, agents, or invitees, including independent contractors; and

3. Includes, but is not limited to natural disasters such as earthquakes, volcanic eruptions, landslides, and floods.

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

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

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

#### G-140 Indemnity

To the fullest extent permitted by law, Purchaser shall indemnify, defend and hold harmless State, agencies of State and all officials, agents and employees of State, from and against all claims arising out of or resulting from the performance of the contract. "Claim" as used in this contract means any financial loss, claim, suit, action, damage, or expense, including but not limited to attorneys' fees, attributable for bodily injury, sickness, disease or death, or injury to or destruction of tangible property including loss of use resulting therefrom. Purchasers' obligations to indemnify, defend, and hold harmless includes any claim by Purchasers' agents, employees, representatives, or any subcontractor or its employees. Purchaser expressly agrees to indemnify, defend, and hold harmless State for any claim arising out of or incident to Purchasers' or any subcontractors' performance or failure to perform the contract. Purchasers' obligation to indemnify, defend, and hold harmless State shall not be eliminated or reduced by any actual or alleged concurrent negligence of State or its agents, agencies, employees and officials. Purchaser waives its immunity under Title 51 RCW to the extent it is required to indemnify, defend and hold harmless State and its agencies, officials, agents or employees.

#### G-150 Insurance

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

All insurance and surety bonds should be issued by companies admitted to do business within the State of Washington and have a rating of A-, Class VII or better in the most recently published edition of Best's Reports. If an insurer is not admitted, all insurance

policies and procedures for issuing the insurance policies must comply with Chapter 48.15 RCW and 284-15 WAC.

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

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

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

Purchaser shall include all subcontractors as insured under all required insurance policies, or shall furnish separate certificates of insurance and endorsements for each subcontractor. Subcontractor(s) must comply fully with all insurance requirements stated herein. Failure of subcontractor(s) to comply with insurance requirements does not limit Purchaser's liability or responsibility.

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

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

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

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

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

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

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

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

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

Business Auto Policy (BAP). Purchaser shall maintain business auto liability and, if necessary, commercial umbrella liability insurance with a limit not less than \$1,000,000.00 per accident. Such insurance shall cover liability arising out of "Any Auto". Business auto coverage shall be written on ISO form CA 00 01, or substitute liability form providing equivalent coverage. If necessary the policy shall be endorsed to provide contractual liability coverage and cover a "covered pollution cost or

expense" as provided in the 1990 or later editions of CA 00 01. Purchaser waives all rights against State for the recovery of damages to the extent they are covered by business auto liability or commercial umbrella liability insurance.

G-160 Agents

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

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

G-170 Assignment and Delegation

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

G-180 Modifications

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

G-190 Contract Complete

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

G-200 Notice

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

G-210 Violation of Contract

G-220 State Suspends Operations

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

## G-210 Violation of Contract

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

## G-220 State Suspends Operation

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

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

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

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

**G-230** Unauthorized Activity

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

**G-240** Dispute Resolution

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

- a. In the event of a dispute, Purchaser must make a written request to the Region Manager for resolution prior to seeking other relief.
- b. The Region Manager will issue a written decision on Purchaser's request within ten business days.
- c. Within ten business days of receipt of the Region Manager's decision, Purchaser may make a written request for resolution to the Deputy Supervisor - Uplands of the Department of Natural Resources.
- d. Unless otherwise agreed, a conference will be held by the Deputy Supervisor - Uplands within 30 calendar days of the receipt of Purchaser's request for review of the Region Manager's written decision. Purchaser and the Region Manager will have an opportunity to present their positions. The Deputy Supervisor - Uplands will issue a decision within a reasonable time of being presented with both Parties' positions.

**G-250** Compliance with All Laws

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

**G-260** Venue

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

**G-270** Equipment Left on State Land

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

damages to or loss of the equipment or damage caused by the moving, storing or disposal of the equipment.

G-280 Operating Release

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

G-310 Road Use Authorization

Purchaser is authorized to use the following State roads and roads for which the State has acquired easements and road use permits; E313816A, E313832A, E313828E, E303805E, E313832M, E303821A, E303816C, E303736F, E303736E, E303736J, E293716F, E293716H, E303736K, E303736L, E313828K, E313828L, E303718J and E303718E. The State may authorize in writing the use of other roads subject to fees, restrictions, and prior rights.

G-320 Erosion Control

Purchaser shall deliver 300 pounds of grass seed to a location designated by the Contract Administrator. Seed provided shall meet the following specifications.

20% Timothy, 40% Smooth Brome, 40% Alsike Clover

Seed shall be certified weed free, premixed and delivered to Northeast Region Office in 50 pound bags clearly labeled with the timber sale name on each bag.

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 E313816A, E303816C and E303821A roads, unless authority is granted in writing by the Contract Administrator.

G-380 Road Easement and Road Use Permit Requirements

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

- Road Use Permit 93255 with John & Virginia Fraley dated December 11, 2015.
- Road Use Permit 93262 with Stimson Lumber Co. dated November 20, 2015.
- Easement 1009 with Boise Cascade Corp. dated June 2, 1976.

G-430 Open Fires

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

G-450 Encumbrances

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

DATA MISSING

Section P: Payments and Securities

P-010 Initial Deposit

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

P-024 Payment for Forest Products

Purchaser agrees to pay the following rate per ton for forest products conveyed plus \$90,650.00 on day of sale and \$1.26 per ton 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.

**P-027 Payment for Removal of Optional Forest Products**

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

**P-040 Weighing and Scaling Costs**

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

**P-045 Guarantee of Payment**

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

**P-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 Northeast 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 Northeast 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-024 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-060 Load Tickets**

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

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

**L-071 Log and Load Reporting Service**

This contract requires the use of a State approved third party Log and Load Reporting Service (LLRS). Purchaser shall ensure log volume measurement data and/or load and weight data is received by the LLRS within 2 business day 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-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.

Section H: Harvesting Operations

H-010 Cutting and Yarding Schedule

Falling and Yarding will not be permitted from March 1 to May 1 in all Units unless authorized in writing by the Contract Administrator.

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

If the Contract Administrator determines that a reserve tree has been cut or damaged, the Purchaser shall provide a replacement reserve tree of like condition, size, and species within the sale area, as approved by the Contract Administrator. Purchaser may

be required to pay liquidated damages for Excessive Reserve Tree Damage as detailed in clause D-041.

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

#### H-015 Skid Trail Requirements

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

Purchaser shall comply with the following during the yarding operation:

- a. Skid trails will not exceed 14 feet in width, including rub trees.
- b. Skid trails shall not cover more than 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-018 Temporary Stream Crossings

A temporary stream crossing is required to access a portion of the south end of Unit 6.

Purchaser shall comply with the following during the yarding operation:

- a. Adhere to the approved Hydraulic Permit Application (HPA) or Forest Practice Application (FPA) with approved hydraulic project work, if required, amend a current FPA or obtain a new FPA prior to commencing any new stream crossing construction.
- b. Location of the temporary stream crossing must be approved by the Contract Administrator.
- c. A temporary stream crossing shall not exceed 14 feet in width, including rub trees.
- d. Purchaser shall suspend operations during periods of wet weather when a high potential for sediment delivery into typed waters may occur.
- e. Temporary stream crossings shall be removed at the time of completion of yarding as required by the Contract Administrator.

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

H-025 Timing Requirements for Timber Removal

All timber in Units 3, 4, 5, 6, 7, 8 and 9 must be removed within 4 days of being felled.

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 Units 1, 2, 3, 4, 5, 6, 7, 8 and 9. The plan shall address the harvest operations and be incorporated at the prework conference, which are part(s) of this contract. The harvest plan shall be approved by the Contract Administrator prior to beginning the harvest operation. Purchaser shall not deviate from the harvest plan without prior written approval by the Contract Administrator.

H-050 Rub Trees

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

H-052 Branding and Painting

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

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

H-080 Snags Not to be Felled

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

H-110 Stump Height

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

H-120 Harvesting Equipment

Forest products sold under this contract shall be felled by hand or mechanical means and yarded by rubber tired, tracked skidder or D-6 and smaller dozer unless authority to use other equipment is granted in writing by the State.

H-130 Hauling Schedule

The hauling of forest products will not be permitted on all roads from March 1 to May 1 unless authorized in writing by the Contract Administrator .

H-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

- a. All slash created at the landings shall be haul back and scattered in the units.
- b. Harvesting equipment is prohibited in the Riparian Management Zone area except for the designated skid trail located outside the Unit 6 boundary.

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

H-150 Required Removal of Forest Products

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

Species	Net bd ft	Log length (ft)	Log dib
Red Cedar	10	12	5.6
PP non blue stain	10	12	5.6
All other species	10	12	4.6

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.

Section C: Construction and Maintenance

C-040 Road Plan

Road construction and associated work provisions of the Road Plan for this sale, dated 12/2/2015 are hereby made a part of this contract.

C-050 Purchaser Road Maintenance and Repair

Purchaser shall perform work at their own expense on E313816A, E313832A, E313828E, E303805E, E313832M, E303821A, E303816C, E303736F, E303736E, E303736J, E293716F, E293716H, E303736K, E303736L, E313828K, E313828L, E303718J and E303718E roads. All work shall be completed to the specifications detailed in the Road Plan.

C-080 Landing Locations Approved Prior to Construction

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

C-140 Water Bars

Purchaser shall, as directed by the Contract Administrator, construct water bars across haul roads, skid trails and fire trails as necessary to control soil erosion and water pollution.

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-040 Noxious Weed Control

Purchaser shall notify the Contract Administrator in advance of moving equipment onto State lands. Purchaser shall thoroughly clean all off road equipment prior to entry onto State land to remove contaminated soils and noxious weed seed. If equipment is moved from one DNR project area to another, the Contract Administrator reserves the right to require the cleaning of equipment. Equipment shall be cleaned at a location approved by the Contract Administrator.

S-060 Pump Truck or Pump Trailer

Purchaser shall provide a fully functional pump truck or pump trailer equipped to meet the specifications of WAC 332-24-005 and WAC 332-24-405 during the "closed season" or as extended by the State and shall provide trained personnel to operate this equipment on the sale area during all operating periods.

S-100 Stream Cleanout

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

S-120 Stream Protection

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

S-130 Hazardous Materials

a. Hazardous Materials and Waste - Regulatory Compliance

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

b. Hazardous Materials Spill Prevention

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

c. Hazardous Materials Spill Containment, Control and Cleanup

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

d. Hazardous Material Release Reporting

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

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

DNR Contract Administrator

ECY - Northwest Region:

1-425-649-7000

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

ECY - Southwest Region:

1-360-407-6300

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

ECY - Central Region:

1-509-575-2490

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

ECY - Eastern Region:

1-509-329-3400

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

S-131 Refuse Disposal

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

S-140 Fence Repair

Purchaser shall immediately repair all fence damage resulting from operations on this sale to an equal or better condition than existed at the time of sale.

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-021 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 tonnage to date from the cruised tonnage 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:  $\text{Interest} = r \times \text{LD} \times \text{N}$ .

Where:

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

#### D-030 Inadequate Log Accountability

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

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

data is not properly submitted to the Log and Load Reporting Service within 24 hours of log removal, and \$250 each time a ticket is either lost or otherwise unaccounted for.

D-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 Units 3, 4, 5, 6, 7, 8 and 9.

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

STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

\_\_\_\_\_  
Purchaser

\_\_\_\_\_  
Loren D. Torgerson  
Northeast Region Manager

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

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

Address: \_\_\_\_\_

CORPORATE ACKNOWLEDGEMENT

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

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

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

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

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

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

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



## WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

### FOREST EXCISE TAX ROAD SUMMARY SHEET

**Region:**

**Timber Sale Name:**

**Application Number:**

#### EXCISE TAX APPLICABLE ACTIVITIES

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

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

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

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

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

#### EXCISE TAX EXEMPT ACTIVITIES

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

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

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

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

(Revised 4/09)

## PRE-CRUISE NARRATIVE

Sale Name: <b>Blackhorse Fire Salvage</b>	Region: <b>Northeast</b>
Agreement #: <b>30-093304</b>	District: North Columbia
Contact Forester: Nathan Simpkins Phone / Location: (509) 684-7474	County(s): Stevens, Choose a county
Alternate Contact: Tony Flanagan Phone / Location: (509) 684-7474	Other information: Click here to enter text.

Type of Sale: Weight Scale	
Harvest System: Ground based Click here to enter text.	100%

### 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 a16cres)				Net Harvest Acres	Acreage Determination  (List method and error of closure if applicable )
				RMZ/ WMZ Acres	Leave Tree Acres	Existing Road Acres	Other Acres (describe)		
1	Sec 16 / Twn 31/ Rng 38E	03	5.34					5.34	GPS (Garmin)
2	Sec 28/ Twn31/ Rng38E	03	8.64					8.64	GPS (Garmin)
3	Sec 28/ Twn 31/ Rng38E	03	115.77			1.78		113.99	GPS (Garmin)
4	Sec 32/ Rng 31/ Twn 38E	03	21.62					21.62	GPS (Garmin)
5	Sec 16/ Twn 30 Rng 38	03	46.54			1.49		45.05	GPS (Garmin)
6	Sec 36/ Twn 30/ Rng 37E	03	129.90			3.24		126.66	GPS (Garmin)
7	Sec 36/ Twn 30/ Rng 37E	03	50.60			2.08		48.52	GPS (Garmin)
8	Sec 36/ Twn 30/ Rng 37E	03	65.17					65.17	GPS (Garmin)
9	Sec 16/ Twn 29/ Rng 37E	03	37.49			1.12		36.37	GPS (Garmin)
<b>TOTAL ACRES</b>			481.07			9.71		471.36	

**HARVEST PLAN AND SPECIAL CONDITIONS:**

Unit #	Harvest Prescription: (Leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
1	Trees are already cut and skidded into small decks from the contingency fire line along road # E313816A.		
2	Trees are already cut and skidded into small decks from the contingency fire line along road # E313832A.		
3	Cut all timber not marked with blue paint.		6-7
4	Cut all timber not marked with blue paint.		6-7
5	Cut all timber not marked with blue paint.		6-7
6	Cut all timber not marked with blue paint.		6-7
7	Cut all timber not marked with blue paint.		6-7
8	Cut all timber not marked with blue paint.		6-7
9	Cut all timber not marked with purple paint.		6-7

**OTHER PRE-CRUISE INFORMATION:**

Unit #	Primary,secondary Species / Estimated Volume (MBF)	Access information (Gates, locks, etc.)	Photos, traverse maps required
1	DF, 20 mbf		
2	DF, 50 mbf		
3	DF,PP 1.392 mmbf		
4	DF,PP 352 mbf		
5	DF 705 mbf		
6	DF,WL,PP 1,950 mmbf		
7	DF,PP 765 mbf		
8	DF,PP 910 mbf	Combination to gate through pvt. 1955	There are no roads within the Unit.
9	DF,PP 296 mbf		
TOTAL MBF	6.530mmbf		

**REMARKS:**

Timber in Units 1 and 2 are felled green trees, all other units are fire killed salvage with the exception of some green trees were included for operational purposes from the Carpenter Road Fire in August, 2015.
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Prepared By: Bernie Beardslee Date: 11/30/2015	Title: NRS1	CC:
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# Cruise Narrative

<b>Sale Name:</b> Blackhorse Fire Salvage	<b>Region:</b> Northeast
<b>Agreement Number:</b> 30-093304	<b>District:</b> North Columbia
<b>Lead Cruiser:</b> Dan Griggs	<b>Completion Date:</b> 12/8/2015
<b>Other Cruisers on sale:</b> Jim Putnam, Nathan Simpkins	<b>Legal:</b> Section 16, T 29 N, R 37 E; Section 36, T 30 N, R 37 E; Section 16, T 30 N, R 38 E; Sections 16, 28, 29 and 32 T 31 N, R 38 E WM.

<b>Unit Acreage Specifications:</b>							
<b>Unit #</b>	<b>Gross Acres</b>	<b>Net Acres</b>	<b>Total Deletions</b>	<b>RMZ/WMZ Acres</b>	<b>Leave Tree Acres</b>	<b>Existing Road Acres</b>	<b>Other</b>
1	5.34	5.34	0.00				
2	8.64	8.64	0.00				
3	115.77	113.99	1.78			1.78	
4	21.62	21.62	0.00				
5	46.54	45.05	1.49			1.49	
6	129.90	126.66	3.24			3.24	
7	50.60	48.52	2.08			2.08	
8	65.17	65.17	0.00				
9	37.49	36.37	1.12			1.12	
<b>Total</b>	<b>481.07</b>	<b>471.36</b>	<b>9.71</b>	<b>0.00</b>	<b>0.00</b>	<b>9.71</b>	<b>0.00</b>

## Cruise Sample Design:

This timber sale was cruised using the **variable plot** sampling method. The double basal area system was employed; a small BAF to determine Basal Area (count trees) and a large BAF to determine the Volume-Basal Area Ratio (cruise trees). Each plot was a full plot. Plot locations were created using a computer generated grid, and found using a hand held GPS unit. **Units 1 and 2** are bundles of trees that were cut and stacked during the fireline construction. These trees have not been burned. We cruised every fifth tree in the log decks.

Unit #	Small BAF (count)	Large BAF (cruise)	Sighting height	Grid size (plot spacing in feet)	% Cruise to count Target	% Cruise to count Actual	Total number of Plots
1	ITS		D4H		20%		1
2	ITS		D4H		20%		2
3	27.78	111.11	D4H	310 x 310	25%	24.8%	49
4	33.61	33.61	D4H	310 x 310	100%	100.0%	10
5	33.61	134.44	D4H	310 x 310	25%	26.7%	22
6	33.61	134.44	D4H	310 x 310	25%	30.2%	53
7	33.61	134.44	D4H	310 x 310	25%	25.7%	24
8	33.61	134.44	D4H	310 x 310	25%	26.3%	24
9	20.00	40.00	D4H	310 x 310	50%	42.0%	14
Total						33.0%	199

### Cruise Specifications:

Minor species cruise intensity:	We grade the first tree of all minor species encountered with the smaller BAF; then followed through with the small BAF to large BAF ratio.
Minimum top dib:	<p><b>Ponderosa pine and red cedar:</b> Trees less than 17.5" DBH have a minimum top of 5.6" dib. Trees 17.6" and greater DBH have a minimum top dib of 40% of DOB at 16' or a 6" top whichever is greater.</p> <p><b>All other species:</b> Trees less than 17.5" DBH have a minimum top of 4.6" dib. Trees 17.6" and greater DBH have a minimum top dib of 40% of DOB at 16' or a 6" top whichever is greater.</p>
Minimum dbh:	Ponderosa pine: 8.0 inches DBH All other species: 7.0 inches DBH
Log lengths:	Saw logs: 32 feet where possible, minimum of 12 feet
Take / Leave tree description:	Units 1 and 2: remove all bundled logs along roads. Units 3-8: harvest all conifers that meet the minimum cruise specifications and are not banded with blue paint. Unit 9: harvest all conifers that meet the minimum cruise specifications and are not banded with purple paint.
Commercial species observed in sale area, but not in cruise:	
Utility wood:	None
Status codes used:	None
Sort codes used	D – saw log
Species table used:	NE 2 inch
Grade table used:	Eastgrad
Other tables used (cruise adjustment):	Cruise Adjustment Table: Blackhorse

**Field Observations:**

Location:	32 miles south of Colville, WA in southwest Stevens County.
Aspect:	North, East, South and West
Elevation:	2640-4280 feet
Slope:	Unit 1 – 0% to 20%, Average 10% Unit 2 – 0% to 20%, Average 10% Unit 3 – 5% to 45%, Average 35% Unit 4 – 0% to 65%, Average 35% Unit 5 – 0% to 55%, Average 35% Unit 6 – 0% to 60%, Average 30% Unit 7 – 0% to 50%, Average 30% Unit 8 – 0% to 60%, Average 35% Unit 9 – 0% to 40%, Average 35%
Harvest Methods:	100% Ground base yarding with the longest skidding of 2800 feet.
Stand Composition:	The stands are fire damaged second growth Douglas-fir, ponderosa pine and western larch with larger residual trees. There is a minor component of Western red cedar and grand fir.
Stand Health:	The trees in this sale were killed by the Carpenter Road Fire which burned in August, 2015. Bark beetles are active and the woodpeckers are working on those trees.
Timber Quality:	This sale is a mix of poor quality Douglas-fir (74%), ponderosa pine (14%), grand fir (8%), western larch(3%) and red cedar (1%). We made the following cruise adjustment to the volume for hidden defect due to fire damage. Douglas-fir – 5% Ponderosa pine – 20% Grand fir – 10% Red cedar – 5% Western larch – 5%
Non-board Foot Volume:	None
Other Considerations:	This sale will be sold on the tons of logs removed from the sale area.

**Trust and Counties:**

This sale is 100% Trust 03

This sale is 100% in Stevens County

**Prepared by:** Jim Putnam**Title:** Timber Cruiser and Small Sales Forester**CC:** Timber Sales Document Center & File #30-093304



TC PSTATS		PROJECT STATISTICS							PAGE	1	
		PROJECT BLACKF5							DATE	12/9/2015	
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt	
29N 31N	37E 38E	16 32	BLACKHORSE BLACKHORSE	00U9 00U4	THR	471.36	199	1,247	S	E	
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL			199	1247	6.3						
CRUISE			124	844	6.8	40,112	2.1				
DBH COUNT											
REFOREST											
COUNT			58	129	2.2						
BLANKS			17								
100 %											
STAND SUMMARY											
		SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR		688	63.8	14.0	67	18.2	68.3	8,808	8,050	2,027	1,922
P PINE		122	13.2	15.7	64	4.5	17.7	2,073	1,561	468	362
GR FIR		15	5.5	14.5	75	1.7	6.3	1,027	833	205	185
W LARCH		16	2.4	13.3	86	0.6	2.3	343	306	72	69
WR CEDAR		3	.3	23.3	67	0.2	.9	116	83	28	27
<b>TOTAL</b>		<i>844</i>	<i>85.1</i>	<i>14.3</i>	<i>68</i>	<i>25.2</i>	<i>95.3</i>	<i>12,367</i>	<i>10,834</i>	<i>2,801</i>	<i>2,565</i>
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL	68.1	COEFF		SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR				376	376	376					
P PINE				417	417	417					
GR FIR		116.7	31.2	158	229	301					
W LARCH				490	490	490					
WR CEDAR		45.7	31.6	227	332	438					
<b>TOTAL</b>				<i>379</i>	<i>379</i>	<i>379</i>					
CL	68.1	COEFF		SAMPLE TREES - CF			# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR				87	87	87					
P PINE				85	85	85					
GR FIR		111.8	29.9	34	49	64					
W LARCH				105	105	105					
WR CEDAR		47.5	32.8	72	108	143					
<b>TOTAL</b>				<i>85</i>	<i>85</i>	<i>85</i>					
CL	68.1	COEFF		TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR		68.5	4.9	61	64	67					
P PINE		154.9	11.0	12	13	15					
GR FIR		304.9	21.6	4	5	7					
W LARCH		566.2	40.1	1	2	3					
WR CEDAR		714.7	50.6	0	0	0					
<b>TOTAL</b>		<i>29.1</i>	<i>2.1</i>	<i>83</i>	<i>85</i>	<i>87</i>	<i>34</i>	<i>8</i>	<i>4</i>		
CL	68.1	COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR		67.5	4.8	65	68	72					
P PINE		140.4	9.9	16	18	19					
GR FIR		311.3	22.1	5	6	8					
W LARCH		412.7	29.2	2	2	3					
WR CEDAR		741.6	52.5	0	1	1					
<b>TOTAL</b>		<i>16.8</i>	<i>1.2</i>	<i>94</i>	<i>95</i>	<i>96</i>	<i>11</i>	<i>3</i>	<i>1</i>		

**PROJECT STATISTICS**  
**PROJECT BLACKFS**

TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
29N	37E	16	BLACKHORSE	00U9	THR	471.36	199	1,247	S	E
31N	38E	32	BLACKHORSE	00U4						

CL	68.1	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR		77.9	5.5	7,606	8,050	8,494			
P PINE		144.8	10.3	1,401	1,561	1,722			
GR FIR		325.9	23.1	641	833	1,025			
W LARCH		434.3	30.8	212	306	400			
WR CEDAR		754.7	53.5	39	83	128			
<b>TOTAL</b>		<b>39.4</b>	<b>2.8</b>	<b>10,531</b>	<b>10,834</b>	<b>11,136</b>	<b>62</b>	<b>16</b>	<b>7</b>

CL	68.1	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR		72.4	5.1	1,824	1,922	2,021			
P PINE		142.2	10.1	325	362	398			
GR FIR		320.3	22.7	143	185	227			
W LARCH		407.5	28.9	49	69	89			
WR CEDAR		750.0	53.1	13	27	41			
<b>TOTAL</b>		<b>31.6</b>	<b>2.2</b>	<b>2,507</b>	<b>2,565</b>	<b>2,622</b>	<b>40</b>	<b>10</b>	<b>4</b>

CL	68.1	COEFF		V BAR/ACRE			# OF PLOTS REQ.		INF. POP.
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR		287.1	20.3	111	118	124			
P PINE		283.0	20.0	79	88	97			
GR FIR		180.4	12.8	102	132	163			
W LARCH		319.5	22.6	93	134	175			
WR CEDAR		640.0	45.3	46	98	150			
<b>TOTAL</b>		<b>260.9</b>	<b>18.5</b>	<b>110</b>	<b>114</b>	<b>117</b>	<b>2,719</b>	<b>680</b>	<b>302</b>

<b>T31N R38E S16 T00U1</b>										<b>T31N R38E S16 T00U1</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>31N</b>	<b>38E</b>	<b>16</b>	<b>BLACKHORSE</b>	<b>00U1</b>	<b>5.34</b>	<b>1</b>	<b>235</b>	<b>S</b>	<b>E</b>					

Spp	Sp	T	So	Gr	ad	% Net BdFt	Bd. Ft. per Acre Def% Gross Net			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre	
											Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft		CF/ Lf
											4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
DF		D	2			5	5.0	268	254	1	100				100				32	12	194	1.32	1.3
DF		D	3			75	7.8	3,515	3,241	17	100				2 98				32	9	104	0.73	31.3
DF		D	4			20	5.0	916	870	5	4	71	25		27	28	45		23	6	37	0.41	23.8
<b>DF</b>	<b>Totals</b>					62	7.1	4,699	4,366	23	1	88	11		5	7	88		28	8	77	0.64	56.4
PP		D	4			43	20.0	1,245	996	5	68 32				100				32	15	266	1.43	3.7
PP		D	5			57	22.7	1,678	1,297	7	100				13 7 80				25	8	65	0.56	19.9
<b>PP</b>	<b>Totals</b>					33	21.5	2,923	2,294	12		57	30	14	7	4	89		26	9	97	0.73	23.6
WL		D	2			60	5.0	234	222	1	100				100				32	14	237	1.35	.9
WL		D	3			35	5.0	131	125	1	100				100				32	10	133	0.77	.9
WL		D	4			5	5.0	19	18	0	100				100				20	6	19	0.35	.9
<b>WL</b>	<b>Totals</b>					5	5.0	384	365	2		39	61		5		95		28	10	130	0.89	2.8
<b>Type Totals</b>							12.3	8,006	7,024	38	1	75	20	4	6	6	88		28	8	85	0.67	82.8

<b>T31N R38E S28 T00U2</b>		<b>T31N R38E S28 T00U2</b>
<b>Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt</b>		<b>BdFt</b>
<b>31N 38E 28 BLACKHORSE 00U2 8.64 2 410 S</b>		<b>E</b>

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre	
									Log Scale Dia.				Log Length				Ln	Dia	Bd		CF/
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft		Lf
DF	D	2		15	5.0	804	764	7	100				100				32	14	264	1.80	2.9
DF	D	3		58	5.2	3,083	2,924	25	96 4				100				32	8	91	0.68	32.2
DF	D	4		27	5.0	1,381	1,312	11	75	25			28	16	57		23	5	31	0.28	42.7
<b>DF</b>	<b>Totals</b>			91	5.1	5,269	5,000	43	20	63	17		7	4	89		27	7	64	0.54	77.8
PP	D	3		25	20.0	144	115	1	100				100				32	28	992	5.20	.1
PP	D	5		75	20.0	410	328	3	79	3	18		4	14	82		28	8	77	0.61	4.3
<b>PP</b>	<b>Totals</b>			8	20.0	553	443	4	59	2	39		3	10	86		28	9	101	0.75	4.4
WL	D	3		70	5.0	41	38	0	100				100				32	8	66	0.54	.6
WL	D	4		30	5.0	17	16	0	100				100				28	5	28	0.23	.6
<b>WL</b>	<b>Totals</b>			1	5.0	58	55	0	30	70			30 70			30	7	47	0.39	1.2	
<b>Type Totals</b>					6.5	5,880	5,497	47	18	63	16	3	7	5	88		27	7	66	0.55	83.3

<b>T31N R38E S28 T00U3</b>									<b>T31N R38E S28 T00U3</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>31N</b>	<b>38E</b>	<b>28</b>	<b>BLACKHORSE F</b>	<b>00U3</b>	<b>113.99</b>	<b>49</b>	<b>32</b>	<b>S</b>	<b>E</b>			

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre	
									Log Scale Dia.				Log Length				Ln	Dia	Bd		CF/
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft		Lf
DF	D	2		14	6.1	798	749	85	100				100				32	14	243	1.80	3.1
DF	D	3		45	7.7	2,639	2,435	278	100				100				32	8	87	0.72	28.1
DF	D	4		41	15.6	2,533	2,138	244	63	37			6	35	58	27	5	29	0.35	72.8	
<b>DF</b>	<b>Totals</b>			<b>86</b>	<b>10.9</b>	<b>5,970</b>	<b>5,322</b>	<b>607</b>	<b>25</b>	<b>61</b>	<b>14</b>			<b>3</b>	<b>14</b>	<b>83</b>	<b>28</b>	<b>6</b>	<b>51</b>	<b>0.51</b>	<b>103.9</b>
PP	D	4		48	20.0	317	254	29	100				100				32	15	236	1.42	1.1
PP	D	5		52	24.8	364	273	31	100				3	97			30	8	65	0.61	4.2
<b>PP</b>	<b>Totals</b>			<b>8</b>	<b>22.6</b>	<b>681</b>	<b>527</b>	<b>60</b>	<b>52</b>	<b>48</b>			<b>2</b>	<b>98</b>		<b>30</b>	<b>9</b>	<b>100</b>	<b>0.79</b>	<b>5.3</b>	
WL	D	3		76	10.7	284	254	29	100				100				32	9	76	0.66	3.3
WL	D	4		24	5.0	84	79	9	100				39	61		22	5	24	0.26	3.3	
<b>WL</b>	<b>Totals</b>			<b>5</b>	<b>9.4</b>	<b>368</b>	<b>333</b>	<b>38</b>	<b>24</b>	<b>76</b>			<b>9</b>	<b>15</b>	<b>76</b>	<b>27</b>	<b>7</b>	<b>50</b>	<b>0.49</b>	<b>6.7</b>	
GF	D	4		100	28.0	39	28	3	100				100				32	6	36	0.44	.8
<b>GF</b>	<b>Totals</b>			<b>0</b>	<b>28.0</b>	<b>39</b>	<b>28</b>	<b>3</b>	<b>100</b>				<b>100</b>				<b>32</b>	<b>6</b>	<b>36</b>	<b>0.44</b>	<b>.8</b>
<b>Type Totals</b>					<b>12.0</b>	<b>7,057</b>	<b>6,210</b>	<b>708</b>	<b>23</b>	<b>61</b>	<b>16</b>			<b>3</b>	<b>13</b>	<b>84</b>	<b>29</b>	<b>6</b>	<b>53</b>	<b>0.52</b>	<b>116.7</b>

<b>T31N R38E S32 T00U4</b>										<b>T31N R38E S32 T00U4</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>31N</b>	<b>38E</b>	<b>32</b>	<b>BLACKHORSE</b>	<b>00U4</b>	<b>21.62</b>	<b>10</b>	<b>45</b>	<b>S</b>	<b>E</b>				

Spp	So	Gr	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre	
								Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft		CF/Lf
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
DF	D	2	16	7.0	3,356	3,121	67	100				100				32	13	221	1.53	14.1
DF	D	3	66	7.9	13,645	12,573	272	95	5	1				99	32	9	100	0.72	126.0	
DF	D	4	18	9.9	3,821	3,442	74	66	34	31	18	51	23	6	29	0.29	116.7			
<b>DF</b>	<b>Totals</b>		97	8.1	20,822	19,136	414	12	68	20	6	4	91	28	7	75	0.61	256.9		
PP	D	4	89	20.0	772	618	13	37	63	100				32	17	344	1.61	1.8		
PP	D	5	11	20.0	90	72	2	100	100				30	8	80	0.63	.9			
<b>PP</b>	<b>Totals</b>		3	20.0	862	689	15	10	33	56	10	90	31	14	256	1.30	2.7			
<b>Type Totals</b>				8.6	21,683	19,826	429	11	66	20	2	5	4	91	28	8	76	0.61	259.6	

<b>T30N R38E S16 T00U5</b>										<b>T30N R38E S16 T00U5</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>30N</b>	<b>38E</b>	<b>16</b>	<b>BLACKHORSE</b>	<b>00U5</b>	<b>45.05</b>	<b>22</b>	<b>27</b>	<b>S</b>	<b>E</b>					

Spp	So	Gr	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre					
								Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft		CF/Lf				
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99									
DF	D	2	23	8.3	4,289	3,933	177	100				100				32	13	213	1.27	18.4				
DF	D	3	62	5.5	10,974	10,370	467	100				100				32	9	104	0.67	99.6				
DF	D	4	15	5.0	2,622	2,491	112	24	76					61	14	24	21	6	28	0.33	88.5			
<b>DF</b>	<b>Totals</b>		85	6.1	17,885	16,794	757	4	73	23					9	2	89	27	8	81	0.62	206.6		
PP	D	4		100.0	204											16	15		0.00	1.5				
PP	D	5	100	27.8	2,652	1,914	86	100				4 96				32	9	76	0.55	25.3				
<b>PP</b>	<b>Totals</b>		10	33.0	2,856	1,914	86	100				4 96				31	9	72	0.54	26.8				
WL	D	3	75	5.0	700	665	30	100				100				32	7	57	0.34	11.7				
WL	D	4	25	5.0	233	222	10	100					100				16	5	19	0.19	11.7			
<b>WL</b>	<b>Totals</b>		4	5.0	933	887	40	25	75					25	75					24	6	38	0.29	23.3
GF	D	3	100	10.0	196	176	8	100				100				32	7	63	0.37	2.8				
<b>GF</b>	<b>Totals</b>		1	10.0	196	176	8	100				100				32	7	63	0.37	2.8				
<b>Type Totals</b>				9.6	21,870	19,771	891	4	76	20					9	2	89	28	8	76	0.58	259.4		

**T30N R37E S36 T00U6**  
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt  
 30N 37E 36 BLACKHORSE 00U6 126.66 53 49 S E

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre	
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft		CF/ Lf
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
DF	D	2		22	14.1	1,907	1,637	207			72	28			100	32	15	286	1.96	5.7	
DF	D	3		65	7.7	5,153	4,754	602			87	13			100	32	8	98	0.78	48.3	
DF	D	4		13	5.0	940	893	113	64	36			37	16	47	22	6	31	0.33	28.4	
<b>DF</b>	<b>Totals</b>			61	8.9	8,000	7,285	923	8	61	24	6	4	2	94	29	8	88	0.75	82.4	
GF	D	2		32	19.7	1,138	914	116			66	34			100	32	15	266	1.62	3.4	
GF	D	3		55	18.7	1,913	1,555	197		100					100	32	9	97	0.69	16.0	
GF	D	4		13	22.0	460	358	45	3	97			24	9	66	24	6	32	0.35	11.1	
<b>GF</b>	<b>Totals</b>			24	19.5	3,511	2,827	358	0	67	21	11	3	1	96	29	9	93	0.70	30.5	
PP	D	4		22	20.0	287	229	29			100				100	32	16	296	1.92	.8	
PP	D	5		78	24.1	1,026	778	99		100			9	19	72	25	7	47	0.56	16.6	
<b>PP</b>	<b>Totals</b>			8	23.2	1,313	1,008	128		77	23		7	15	79	26	8	58	0.64	17.4	
WL	D	2		29	17.9	182	149	19			37	63			100	32	17	332	2.35	.4	
WL	D	3		64	15.2	379	322	41		68	32			4	96	31	10	109	0.81	2.9	
WL	D	4		7	5.0	34	32	4	41	59			100			16	6	24	0.28	1.4	
<b>WL</b>	<b>Totals</b>			4	15.4	595	503	64	3	48	31	19	6	3	91	27	9	106	0.89	4.7	
RC	D	3		92	29.4	405	286	36		37	43	19			100	32	13	176	1.82	1.6	
RC	D	4		8	5.0	25	24	3		100				100		24	7	48	0.44	.5	
<b>RC</b>	<b>Totals</b>			3	28.0	431	310	39		42	40	18		8	92	30	11	145	1.56	2.1	
<b>Type Totals</b>					13.8	13,849	11,933	1,511	5	63	24	8	4	3	93	28	8	87	0.74	137.2	

<b>T30N R37E S36 T00U7</b>										<b>T30N R37E S36 T00U7</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>30N</b>	<b>37E</b>	<b>36</b>	<b>BLACKHORSE</b>	<b>00U7</b>	<b>48.52</b>	<b>24</b>	<b>18</b>	<b>S</b>	<b>E</b>					

Spp	Sp	T	So	Gr	ad	% Net BdFt	Bd. Ft. per Acre Def% Gross Net			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre			
											Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft		CF/ Lf		
											4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99							
PP			D		4	32	20.0	1,960	1,568	76	100				100				32	12	158	1.20	9.9		
PP			D		5	68	29.0	4,596	3,265	158	100				13	8	79	25	7	49	0.46	66.7			
<b>PP</b>	<b>Totals</b>					49	26.3	6,556	4,833	234	68	32	9	5	86	26	8	63	0.57	76.6					
DF			D		2	17	5.0	904	859	42	100				100				32	17	399	2.64	2.2		
DF			D		3	73	5.0	3,865	3,672	178	88	12	100				32	9	110	0.86	33.5				
DF			D		4	10	5.0	485	460	22	100				66	34					18	6	24	0.33	19.0
<b>DF</b>	<b>Totals</b>					51	5.0	5,254	4,991	242	74	9	17	6	3	91	27	8	91	0.82	54.6				
<b>Type Totals</b>							16.8	11,811	9,824	477	71	21	9	7	4	88	27	8	75	0.68	131.2				

<b>T30N R37E S36 T00U8</b>		<b>T30N R37E S36 T00U8</b>
<b>Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt</b>		<b>BdFt</b>
<b>30N 37E 36 BLACKHORSE 00U8 65.17 24 20 S</b>		<b>E</b>

Spp	S	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs						
									Net	BdFt	Def%	Gross	Net	Net MBF	Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/	
															4-5	6-11	12-16	17+	12-20	21-30		31-35					36-99
DF	D		2	54	15.1	6,908	5,867	382			63	37			100	32	14	256	1.74	22.9							
DF	D		3	37	5.0	4,284	4,070	265		100				98	32	7	70	0.58	57.7								
DF	D		4	9	6.6	993	928	60	38	62				100	17	6	19	0.30	48.0								
<b>DF</b>	<b>Totals</b>			80	10.8	12,185	10,865	708	3	43	34	20		9	91	26	8	84	0.76	128.7							
PP	D		4	68	20.0	1,986	1,588	104			39	61		100	32	14	242	1.42	6.6								
PP	D		5	32	21.2	911	718	47		68	32			28	18	54	38	0.39	19.1								
<b>PP</b>	<b>Totals</b>			17	20.4	2,897	2,307	150		21	37	42		9	6	86	22	9	90	0.77	25.7						
GF	D		3	77	10.0	309	278	18		100				100	32	11	153	1.01	1.8								
GF	D		4	23	10.0	91	82	5	100					100	32	5	45	0.36	1.8								
<b>GF</b>	<b>Totals</b>			3	10.0	400	360	23	23	77				100	32	8	99	0.68	3.6								
<b>Type Totals</b>					12.6	15,482	13,532	882	3	40	34	23		9	1	90	26	8	86	0.76	157.9						

<b>T29N R37E S16 T00U9</b>										<b>T29N R37E S16 T00U9</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>29N</b>	<b>37E</b>	<b>16</b>	<b>BLACKHORSE</b>	<b>00U9</b>	<b>36.37</b>	<b>14</b>	<b>8</b>	<b>S</b>	<b>E</b>				

Spp	S T	So rt	Gr ad	%	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre					
									Net BdFt	Def%	Gross	Net	Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf	
													4-5	6-11	12-16	17+	12-20	21-30	31-35						36-99
DF		D	2	36	5.0	830	789	29	100				100				32	13	214	1.36	3.7				
DF		D	3	56	5.0	1,257	1,194	43	100				100				32	8	96	0.66	12.5				
DF		D	4	8	5.0	176	168	6	100				19 81				26	5	37	0.27	4.5				
<b>DF</b>	<b>Totals</b>			63	5.0	2,263	2,150	78	8	56	37	1 99				31	8	104	0.72	20.6					
PP		D	5	100	21.2	1,616	1,273	46	100				10 5 85				26	8	51	0.44	25.2				
<b>PP</b>	<b>Totals</b>			37	21.2	1,616	1,273	46	100				10 5 85				26	8	51	0.44	25.2				
<b>Type Totals</b>					11.8	3,880	3,423	124	5	72	23	5 2 94				28	8	75	0.58	45.8					

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

T29N R37E S16 Ty00U9	36.3
T30N R37E S36 Ty00U6	126.6
T31N R38E S32 Ty00U	21.6

**Project BLACKFS**  
**Acres 471.36**

**Page No 1**  
**Date: 12/9/2015**  
**Time 7:13:00AM**

Species	S T	Total	Total	Total	Net Cubic Ft/		CF/ LF	Total CCF		Total MBF	
		Trees	Logs	Tons	Tree	Log		Gross	Net	Gross	Net
DOUG FIR		30,079	49,899	27,235	30.12	18.16	0.65	9,556	9,061	4,152	3,795
P PINE		6,204	10,534	5,297	27.50	16.20	0.63	2,207	1,706	977	736
GR FIR		2,579	4,320	2,771	33.75	20.15	0.71	967	870	484	393
W LARCH		1,115	2,435	818	29.04	13.30	0.52	341	324	162	144
WR CEDAR		135	271	314	93.72	46.86	1.56	134	127	55	39
<b>Totals</b>		<b>40,112</b>	<b>67,459</b>	<b>36,435</b>	<b>30.14</b>	<b>17.92</b>	<b>0.65</b>	<b>13,205</b>	<b>12,088</b>	<b>5,829</b>	<b>5,107</b>

Wood Type Species	Total	Total	Total	Net Cubic Ft/		CF/ LF	Total CCF		Total MBF	
	Trees	Logs	Tons	Tree	Log		Gross	Net	Gross	Net
C	40,112	67,459	36,435	30.14	17.92	0.65	13,205	12,088	5,829	5,107
<b>Totals</b>	<b>40,112</b>	<b>67,459</b>	<b>36,435</b>	<b>30.14</b>	<b>17.92</b>	<b>0.65</b>	<b>13,205</b>	<b>12,088</b>	<b>5,829</b>	<b>5,107</b>

**Log Stock Table - MBF**

T29N R37E S16 Ty00U9  
THRU  
T31N R38E S32 Ty00U4

**Project: BLACKFS**  
**Acres 471.36**

**Page 1**  
**Date 12/9/2015**  
**Time 7:12:58AM**

Spp	S T	So rt	Gr de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches										
									2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39
PP		D	3	32	1	20.0	1	.1									1		
PP		D	4	16	9	100.0													
PP		D	4	32	320	20.0	256	34.8				118	35	103					
PP		D	5	12	3	20.0	3	.4			3								
PP		D	5	14	28	20.0	22	3.0			20	2							
PP		D	5	16	21	20.0	17	2.3			15	2		0					
PP		D	5	18	0	20.0	0	.0			0								
PP		D	5	20	8	20.0	7	.9			7								
PP		D	5	24	17	53.6	8	1.0			8								
PP		D	5	26	22	20.0	17	2.3			17								
PP		D	5	28	18	20.0	15	2.0			15								
PP		D	5	30	9	20.0	7	1.0			6	2							
PP		D	5	32	520	26.3	383	52.0			60	159	148	15		1			
PP		Totals			977	24.7	736	14.4			150	165	148	133	35	104		1	
DF		D	2	32	1,131	11.7	998	26.3					479	248	199		73		
DF		D	3	20	5	5.0	4	.1				4							
DF		D	3	28	2	5.0	2	.1			2								
DF		D	3	30	0	5.0	0	.0			0								
DF		D	3	32	2,294	6.6	2,142	56.4			591	632	804	114					
DF		D	4	12	18	5.0	17	.5		16	1								
DF		D	4	14	15	5.0	15	.4		10	5								
DF		D	4	16	115	5.0	109	2.9		41	58	11							
DF		D	4	18	3	5.0	3	.1			3								
DF		D	4	20	91	6.1	86	2.3		12	53	22							
DF		D	4	24	36	12.9	32	.8		22	10								
DF		D	4	26	22	5.0	21	.5			21								
DF		D	4	28	49	5.0	47	1.2		46	0								
DF		D	4	30	48	5.0	45	1.2		34	11								
DF		D	4	32	323	14.9	275	7.2		160	113	0		1					
DF		Totals			4,152	8.6	3,795	74.3		341	867	669	804	594	248	199		73	
WL		D	2	32	24	17.2	20	13.9						8	12				
WL		D	3	24	3	36.7	2	1.1				2							
WL		D	3	32	110	10.4	99	68.7			30	46	11	13					
WL		D	4	16	15	5.0	14	9.8		12	2								

**Log Stock Table - MBF**

T29N R37E S16 Ty00U9  
THRU  
T31N R38E S32 Ty00U4

**Project: BLACKFS**  
**Acres 471.36**

**Page 2**  
**Date 12/9/2015**  
**Time 7:12:58AM**

Spp	S T	So rt	Gr de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches										
									2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39
WL		D	4	20	4	5.0	4	2.5		3	0								
WL		D	4	24	6	5.0	6	3.9		6									
WL		D	4	28	0	5.0	0	.1		0									
WL		Totals			162	11.0	144	2.8		21	32	47	11	13	8	12			
GF		D	2	32	144	19.7	116	29.5				26	50	16	24				
GF		D	3	32	271	17.8	223	56.8		30	81	113							
GF		D	4	12	2	10.0	1	.4		1									
GF		D	4	16	11	10.0	10	2.5			10								
GF		D	4	24	5	10.0	4	1.1			4								
GF		D	4	32	52	25.1	39	9.8		5	33								
GF		Totals			484	18.9	393	7.7		7	77	81	113	26	50	16	24		
RC		D	3	32	51	29.4	36	92.2			5	9	6	10	7				
RC		D	4	24	3	5.0	3	7.8			3								
RC		Totals			55	28.0	39	.8			3	5	9	6	10	7			
Total		All Species			5,829	12.4	5,107	100.0		368	1129	968	1084	773	350	337	97	1	

**Log Stock Table - TONS(SED)**

Project: **BLACKFS**

**T31N R38E S16 T00U1**

**T31N R38E S16 T00U1**

**Twp Rge Sec Tract Type Acres Plots Sample Trees Page**  
**31N 38E 16 BLACKHORSE 00U1 5.34 1 235 Date 12/9/2015**  
**Time 7:12:59AM**

Spp	T	S	So	Gr	Log	Len	SED	Tons	Tons by Scaling Diameter in Inches												
									2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+	
DF	D	2	32			12.3		9					9								
DF	D	3	30			6.0		2		2											
DF	D	3	32			8.8		115		20	35		60								
DF	D	4	12			6.0		1		1											
DF	D	4	14			6.0		0		0											
DF	D	4	16			6.7		3		1	1										
DF	D	4	18			6.0		1		1											
DF	D	4	20			6.2		6		6											
DF	D	4	26			6.0		6		6											
DF	D	4	28			6.0		3		3											
DF	D	4	30			5.0		2	2												
DF	D	4	32			8.3		14		4	3		7								
Graded						7.9		162		2	45	39	60	15							
DF			Totals			7.9		162		2	45	39	60	15							
PP	D	4	32			15.0		27					5	7	16						
PP	D	5	14			7.0		1		1											
PP	D	5	16			6.5		3		2	1										
PP	D	5	18			7.0		2		2											
PP	D	5	20			6.5		2		2											
PP	D	5	26			6.6		2		2											
PP	D	5	30			6.0		2		2											
PP	D	5	32			10.2		33			5	28									
Graded						9.3		72		10	6	28	5	7	16						
PP			Totals			9.3		72		10	6	28	5	7	16						
WL	D	2	32			14.0		5						5							
WL	D	3	32			10.0		3				3									
WL	D	4	20			6.0		1		1											
Graded						10.0		9		1		3		5							
WL			Totals			10.0		9		1		3		5							
Total All Species								27,270	935	6328	5431	5868	4308	1659	2114	627					

**Log Stock Table - TONS(SED)**

Project: **BLACKFS**

**T31N R38E S28 T00U2**

**T31N R38E S28 T00U2**

**Twp Rge Sec Tract Type Acres Plots Sample Trees Page**  
**31N 38E 28 BLACKHORSE 00U2 8.64 2 410 1**  
**Date 12/9/2015**  
**Time 7:12:59AM**

Spp	S	So	Gr	Log	Len	SED	Tons	Tons by Scaling Diameter in Inches												
								2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+	
DF	D	2	32		14.0		43					14	18	11						
DF	D	3	32		8.0		182			63	54	59	6							
DF	D	4	12		6.4		1			1										
DF	D	4	14		5.3		2		1	1										
DF	D	4	16		5.1		11		10	1										
DF	D	4	20		5.2		4		3	1										
DF	D	4	24		5.0		11		11											
DF	D	4	28		5.0		1		1											
DF	D	4	32		5.4		43		25	18										
Graded					6.7		298		51	85	54	59	21	18	11					
DF	Totals				6.7		298		51	85	54	59	21	18	11					
PP	D	3	32		28.0		5												5	
PP	D	5	12		6.0		0			0										
PP	D	5	16		13.0		1					1								
PP	D	5	28		6.0		1		1											
PP	D	5	30		6.0		2		2											
PP	D	5	32		9.2		15		1	3		8							2	
Graded					8.6		24		5	3		8	1						2	5
PP	Totals				8.6		24		5	3		8	1						2	5
WL	D	3	32		8.0		2				2									
WL	D	4	28		5.0		1		1											
Graded					6.5		3		1											2
WL	Totals				6.5		3		1											2
Total All Species							27,595		987	6418	5490	5936	4329	1677	2127	627	5			

**Log Stock Table - TONS(SED)**

**Project: BLACKFS**

**T31N R38E S28 T00U3**

**T31N R38E S28 T00U3**

<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>Page</b>	<b>1</b>
<b>31N</b>	<b>38E</b>	<b>28</b>	<b>BLACKHORSE 1</b>	<b>00U3</b>	<b>113.99</b>	<b>49</b>	<b>32</b>	<b>Date</b>	<b>12/9/2015</b>
								<b>Time</b>	<b>7:12:59AM</b>

Spp	T	S	So	Gr	Log	Len	SED	Tons	Tons by Scaling Diameter in Inches											
									2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
DF		D	2	32			13.6	608					203	405						
DF		D	3	32			7.9	2,210			1074	347	789							
DF		D	4	12			5.0	80		80										
DF		D	4	14			5.0	71		71										
DF		D	4	24			5.0	40		40										
DF		D	4	28			5.0	425		425										
DF		D	4	30			5.0	323		323										
DF		D	4	32			5.6	1,415		446	969									
Graded							6.2	5171		1385	2043	347	789	203	405					
DF				Totals			6.2	5,171		1385	2043	347	789	203	405					
PP		D	4	32			14.5	167						167						
PP		D	5	16			6.0	7		7										
PP		D	5	32			7.8	258		105	73	81								
Graded							8.9	433		112	73	81		167						
PP				Totals			8.9	433		112	73	81		167						
WL		D	3	32			8.5	202			202									
WL		D	4	20			5.0	21		21										
WL		D	4	24			5.0	32		32										
Graded							6.8	256		54		202								
WL				Totals			6.8	256		54		202								
GF		D	4	32			6.0	40		40										
Graded							6.0	40		40										
GF				Totals			6.0	40		40										
Total All Species								33,495		2426	8613	6112	6805	4532	2249	2127	627	5		

**Log Stock Table - TONS(SED)**

Project: **BLACKFS**

**T31N R38E S32 T00U4**

**T31N R38E S32 T00U4**

<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>Page</b>	<b>1</b>
<b>31N</b>	<b>38E</b>	<b>32</b>	<b>BLACKHORSE</b>	<b>00U4</b>	<b>21.62</b>	<b>10</b>	<b>45</b>	<b>Date</b>	<b>12/9/2015</b>
								<b>Time</b>	<b>7:12:59AM</b>

Spp	T	S	So	Gr	Log	Len	SED	Tons	Tons by Scaling Diameter in Inches											
									2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
DF		D	2	32		13.0		449					349	100						
DF		D	3	28		6.0		14		14										
DF		D	3	32		8.7		1,861		326	730		709	95						
DF		D	4	12		5.0		4		4										
DF		D	4	14		5.0		19		19										
DF		D	4	16		5.9		83		24	42	17								
DF		D	4	20		5.1		57		48	9									
DF		D	4	24		6.0		93		29	22		42							
DF		D	4	26		6.0		34			34									
DF		D	4	30		6.0		16			16									
DF		D	4	32		5.2		238		173	65									
Graded						7.5		2868		297	529	747	751	445	100					
DF		Totals				7.5		2,868		297	529	747	751	445	100					
PP		D	4	32		17.0		60						24	36					
PP		D	5	30		8.0		11			11									
Graded						14.0		71			11			24	36					
PP		Totals				14.0		71			11				24	36				
Total All Species								36,435		2723	9142	6870	7556	4977	2372	2163	627	5		

**Log Stock Table - TONS(SED)**

**Project: BLACKFS**

**T30N R38E S16 T00U5**

**T30N R38E S16 T00U5**

<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>Page</b>	<b>1</b>
<b>30N</b>	<b>38E</b>	<b>16</b>	<b>BLACKHORSE</b>	<b>00U5</b>	<b>45.05</b>	<b>22</b>	<b>27</b>	<b>Date</b>	<b>12/9/2015</b>
								<b>Time</b>	<b>7:12:59AM</b>

Spp	S	So	Gr	Log	SED	Tons	Tons by Scaling Diameter in Inches									
							2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29
DF	D	2	32		12.9	1,015					807	208				
DF	D	3	32		8.7	2,880			373	1402	1106					
DF	D	4	16		6.4	149			149							
DF	D	4	18		6.0	23			23							
DF	D	4	20		6.6	348			278	70						
DF	D	4	26		6.0	155			155							
DF	D	4	32		5.0	179		179								
Graded					8.0	4750		179	978	1471	1106	807	208			
DF	Totals				8.0	4,750		179	978	1471	1106	807	208			
PP	D	4	16		15.0	46						46				
PP	D	5	28		6.0	24			24							
PP	D	5	32		8.8	574			46	272	255					
Graded					8.9	643			70	272	255	46				
PP	Totals				8.9	643			70	272	255	46				
WL	D	3	32		7.0	143			143							
WL	D	4	16		5.0	41			41							
Graded					6.0	184			41	143						
WL	Totals				6.0	184			41	143						
GF	D	3	32		7.0	47			47							
Graded					7.0	47			47							
GF	Totals				7.0	47			47							
Total All Species						27,027		933	6272	5386	5776	4288	1647	2098	627	

**Log Stock Table - TONS(SED)**

**Project: BLACKFS**

**T30N R37E S36 T00U6**

**T30N R37E S36 T00U6**

**Twp Rge Sec Tract Type Acres Plots Sample Trees Page**  
**30N 37E 36 BLACKHORSE 00U6 126.66 53 49 1**  
**Date 12/9/2015**  
**Time 7:12:59AM**

Spp	T	S	So	Gr	Log	Len	SED	Tons	Tons by Scaling Diameter in Inches									
									2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29
DF	D	2	32	14.9	1,363						407	412	328	215				
DF	D	3	32	8.4	4,575			1359	488	2122	606							
DF	D	4	12	5.4	27			13	14									
DF	D	4	16	5.9	177			76	58	43								
DF	D	4	20	5.4	77			45	33									
DF	D	4	24	5.0	56			56										
DF	D	4	30	6.0	62				62									
DF	D	4	32	5.4	382			310	72									
Graded				7.9	6719			499	1598	532	2122	1013	412	328	215			
DF	Totals			7.9	6,719			499	1598	532	2122	1013	412	328	215			
GF	D	2	32	14.8	717						154	311	91	159				
GF	D	3	32	9.0	1,426			142	674	610								
GF	D	4	12	5.0	11			11										
GF	D	4	16	6.5	67				67									
GF	D	4	24	7.0	30				30									
GF	D	4	32	6.2	269				269									
Graded				8.6	2519			11	508	674	610	154	311	91	159			
GF	Totals			8.6	2,519			11	508	674	610	154	311	91	159			
PP	D	4	32	16.0	181								181					
PP	D	5	12	6.0	18				18									
PP	D	5	16	6.5	52				33	19								
PP	D	5	26	6.0	155				155									
PP	D	5	28	6.0	50				50									
PP	D	5	32	9.2	613					341	273							
Graded				7.7	1070				257	360	273			181				
PP	Totals			7.7	1,070				257	360	273			181				
WL	D	2	32	16.5	108							33	75					
WL	D	3	24	9.0	12				12									
WL	D	3	32	10.0	225				74	75	77							
WL	D	4	16	6.0	20			8	12									
Graded				9.4	366			8	12	86	75	77	33	75				
WL	Totals			9.4	366			8	12	86	75	77	33	75				
RC	D	3	32	12.6	297				27	80	28	81	81					
RC	D	4	24	7.0	17				17									
Graded				11.3	314				17	27	80	28	81	81				
RC	Totals			11.3	314				17	27	80	28	81	81				
Total All Species						11,793		553	2570	1946	3309	1358	926	756	375			

**Log Stock Table - TONS(SED)**

**Project: BLACKFS**

**T30N R37E S36 T00U7**

**T30N R37E S36 T00U7**

<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>Page</b>	<b>1</b>
<b>30N</b>	<b>37E</b>	<b>36</b>	<b>BLACKHORSE</b>	<b>00U7</b>	<b>48.52</b>	<b>24</b>	<b>18</b>	<b>Date</b>	<b>12/9/2015</b>
								<b>Time</b>	<b>7:12:59AM</b>

Spp	T	S	So	Gr	Log	Len	SED	Tons	Tons by Scaling Diameter in Inches											
									2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
PP	D	4	32			12.2		552				552								
PP	D	5	12			6.0		8		8										
PP	D	5	14			6.0		21		21										
PP	D	5	16			6.3		58		58										
PP	D	5	20			6.0		73		73										
PP	D	5	24			7.0		51		51										
PP	D	5	28			6.0		38		38										
PP	D	5	30			6.0		33		33										
PP	D	5	32			8.6		979		217	325	331		105						
Graded						8.0		1812		499	325	331	552	105						
PP Totals						8.0		1,812		499	325	331	552	105						
DF	D	2	32			17.0		264						264						
DF	D	3	32			8.8		1,334		273	403	545	112							
DF	D	4	16			6.1		101		101										
DF	D	4	24			6.0		59		59										
Graded						8.2		1759		434	403	545	112	264						
DF Totals						8.2		1,759		434	403	545	112	264						
Total All Species									15,364		553	3503	2674	4185	2023	1031	1021	375		

**Log Stock Table - TONS(SED)**

Project: **BLACKFS**

**T30N R37E S36 T00U8**

**T30N R37E S36 T00U8**

<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>Page</b>	<b>1</b>
<b>30N</b>	<b>37E</b>	<b>36</b>	<b>BLACKHORSE</b>	<b>00U8</b>	<b>65.17</b>	<b>24</b>	<b>20</b>	<b>Date</b>	<b>12/9/2015</b>
								<b>Time</b>	<b>7:12:59AM</b>

Spp	T	S	So	Gr	Log	Len	SED	Tons	Tons by Scaling Diameter in Inches												
									2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+	
DF		D	2	32			14.2	2,486					1123	362	749	253					
DF		D	3	20			8.0	41				41									
DF		D	3	32			7.2	2,016			1191	716	109								
DF		D	4	12			5.0	35			35										
DF		D	4	14			6.0	25			25										
DF		D	4	16			5.4	127			82	23	22								
DF		D	4	20			6.6	280				152	127								
Graded							7.9	5010			117	1391	907	109	1123	362	749	253			
DF					Totals		7.9	5,010			117	1391	907	109	1123	362	749	253			
PP		D	4	32			14.4	585					257		328						
PP		D	5	14			6.0	76			76										
PP		D	5	24			7.0	26			26										
PP		D	5	26			7.0	37			37										
PP		D	5	32			9.5	139				61		78							
Graded							8.7	864			140	61		335		328					
PP					Totals		8.7	864			140	61		335		328					
GF		D	3	32			11.0	122					122								
GF		D	4	32			5.0	43			43										
Graded							8.0	165			43			122							
GF					Totals		8.0	165			43			122							
Total All Species								21,403		713	5034	3642	4415	3481	1392	2098	627				

**Log Stock Table - TONS(SED)**

Project: **BLACKFS**

**T29N R37E S16 T00U9**

**T29N R37E S16 T00U9**

<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>Page</b>	<b>1</b>
<b>29N</b>	<b>37E</b>	<b>16</b>	<b>BLACKHORSE</b>	<b>00U9</b>	<b>36.37</b>	<b>14</b>	<b>8</b>	<b>Date</b>	<b>12/9/2015</b>
								<b>Time</b>	<b>7:12:59AM</b>

Spp	T	S	So	Gr	Log	Len	SED	Tons	Tons by Scaling Diameter in Inches									
									2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29
DF		D	2		32		12.9	175					87	88				
DF		D	3		32		8.2	287		72	129		87					
DF		D	4		16		5.0	8		8								
DF		D	4		32		5.0	28		28								
Graded							8.3	497		35	72	129	87	87	88			
DF				Totals			8.3	497		35	72	129	87	87	88			
PP		D	5		14		6.9	30		12	18							
PP		D	5		24		6.0	17		17								
PP		D	5		32		8.1	262		78	121		63					
Graded							7.5	308		107	139		63					
PP				Totals			7.5	308		107	139		63					
Total All Species								806		35	179	268	149	87	88			

TC TSTATS				<b>STATISTICS</b>				PAGE 1		
				<b>PROJECT BLACKFS</b>				DATE 12/9/2015		
<b>TWP</b>	<b>RGE</b>	<b>SECT</b>	<b>TRACT</b>	<b>TYPE</b>	<b>ACRES</b>	<b>PLOTS</b>	<b>TREES</b>	<b>CuFt</b>	<b>BdFt</b>	
<b>31N</b>	<b>38E</b>	<b>16</b>	<b>BLACKHORSE</b>	<b>00U1</b>	5.34	1	235	S	E	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	1	235	235.0							
CRUISE	1	235	235.0	235	100.0					
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
<b>STAND SUMMARY</b>										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	167	31.3	14.5	71	9.4	35.7	4,699	4,366	1,063	1,010
P PINE	63	11.8	17.2	58	4.6	19.1	2,923	2,294	562	449
W LARCH	5	.9	18.5	88	0.4	1.7	384	365	74	70
<b>TOTAL</b>	<b>235</b>	<b>44.0</b>	<b>15.4</b>	<b>68</b>	<b>14.4</b>	<b>56.6</b>	<b>8,006</b>	<b>7,024</b>	<b>1,698</b>	<b>1,529</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	<b>SAMPLE TREES - BF</b>				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR			686	686	686					
P PINE			942	942	942					
W LARCH										
<b>TOTAL</b>			<b>781</b>	<b>781</b>	<b>781</b>					
CL: 68.1 %	COEFF	<b>SAMPLE TREES - CF</b>				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR			159	159	159					
P PINE			185	185	185					
W LARCH										
<b>TOTAL</b>			<b>170</b>	<b>170</b>	<b>170</b>					

TC TSTATS		STATISTICS						PAGE	1	
		PROJECT BLACKFS						DATE	12/9/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
31N	38E	28	BLACKHORSE	00U2	8.64	2	410	S	E	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		2	410	205.0						
CRUISE		2	410	205.0	410	100.0				
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
DOUG FIR	384	44.4	12.9	52	11.3	40.6	5,269	5,000	1,210	1,150
P PINE	21	2.4	17.5	58	1.0	4.1	553	443	116	92
W LARCH	5	.6	12.0	64	0.1	.5	58	55	14	14
<b>TOTAL</b>	<b>410</b>	<b>47.5</b>	<b>13.2</b>	<b>53</b>	<b>12.4</b>	<b>45.1</b>	<b>5,880</b>	<b>5,497</b>	<b>1,340</b>	<b>1,256</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR				561	561	561				
P PINE				765	765	765				
W LARCH										
<b>TOTAL</b>				<b>572</b>	<b>572</b>	<b>572</b>				
CL:	68.1 %	COEFF	SAMPLE TREES - CF			# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR				129	129	129				
P PINE				160	160	160				
W LARCH										
<b>TOTAL</b>				<b>131</b>	<b>131</b>	<b>131</b>				
CL:	68.1 %	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	53.0	49.7		22	44	67				
P PINE	6.7	6.3		2	2	3				
W LARCH	141.4	132.4			1	1				
<b>TOTAL</b>	<b>51.7</b>	<b>48.4</b>		<b>24</b>	<b>47</b>	<b>70</b>	<b>188</b>	<b>47</b>	<b>21</b>	
CL:	68.1 %	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	55.3	51.8		20	41	62				
P PINE	67.0	62.7		2	4	7				
W LARCH	141.4	132.4			0	1				
<b>TOTAL</b>	<b>57.3</b>	<b>53.6</b>		<b>21</b>	<b>45</b>	<b>69</b>	<b>230</b>	<b>58</b>	<b>26</b>	
CL:	68.1 %	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	61.2	57.3		2,136	5,000	7,864				
P PINE	97.0	90.9		40	443	845				
W LARCH	141.4	132.4			55	128				
<b>TOTAL</b>	<b>64.9</b>	<b>60.7</b>		<b>2,158</b>	<b>5,497</b>	<b>8,836</b>	<b>295</b>	<b>74</b>	<b>33</b>	
CL:	68.1 %	COEFF	NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	58.4	54.7		521	1,150	1,778				
P PINE	84.3	78.9		20	92	165				
W LARCH	141.4	132.4			14	32				
<b>TOTAL</b>	<b>61.2</b>	<b>57.3</b>		<b>536</b>	<b>1,256</b>	<b>1,975</b>	<b>263</b>	<b>66</b>	<b>29</b>	

TC TSTATS				<b>STATISTICS</b>			PAGE	2		
				<b>PROJECT BLACKFS</b>			DATE	12/9/2015		
<b>TWP</b>	<b>RGE</b>	<b>SECT</b>	<b>TRACT</b>	<b>TYPE</b>	<b>ACRES</b>	<b>PLOTS</b>	<b>TREES</b>	<b>CuFt</b>	<b>BdFt</b>	
<b>31N</b>	<b>38E</b>	<b>28</b>	<b>BLACKHORSE</b>	<b>00U2</b>	8.64	2	410	S	E	
CL:	68.1 %	COEFF		<b>V-BAR/ACRE</b>			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
CL:	68.1 %	COEFF		<b>V-BAR/ACRE</b>			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		53.4	50.0	53	123	194				
P PINE		39.2	36.7	10	108	207				
W LARCH		141.4	132.4		121	281				
<b>TOTAL</b>		<i>54.0</i>	<i>50.6</i>	<i>48</i>	<i>122</i>	<i>196</i>	<i>205</i>	<i>51</i>	<i>23</i>	

TC TSTATS				STATISTICS				PAGE	1	
PROJECT				BLACKFS				DATE	12/9/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
31N	38E	28	BLACKHORSE F	00U3	113.99	49	129	S	E	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	49	129	2.6							
CRUISE	28	32	1.1	10,590			.3			
DBH COUNT										
REFOREST										
COUNT	19	36	1.9							
BLANKS	2									
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	25	85.9	11.6	60	18.6	63.5	5,970	5,322	1,592	1,509
P PINE	4	2.9	18.8	67	1.3	5.7	681	527	158	127
W LARCH	2	3.3	13.7	75	0.9	3.4	368	333	94	89
GR FIR	1	.8	11.6	56	0.2	.6	39	28	12	11
<b>TOTAL</b>	<b>32</b>	<b>92.9</b>	<b>12.0</b>	<b>60</b>	<b>21.1</b>	<b>73.1</b>	<b>7,057</b>	<b>6,210</b>	<b>1,856</b>	<b>1,735</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF					# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	101.6	20.7	84	106	128					
P PINE	67.8	38.7	135	220	305					
W LARCH	20.2	18.9	81	100	119					
GR FIR										
<b>TOTAL</b>	<b>96.3</b>	<b>17.0</b>	<b>98</b>	<b>118</b>	<b>138</b>	<b>370</b>	<b>93</b>	<b>41</b>		
CL: 68.1 %	COEFF	SAMPLE TREES - CF					# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	87.5	17.8	23	28	34					
P PINE	46.4	26.5	36	49	62					
W LARCH	3.0	2.8	26	27	28					
GR FIR										
<b>TOTAL</b>	<b>79.5</b>	<b>14.0</b>	<b>26</b>	<b>31</b>	<b>35</b>	<b>253</b>	<b>63</b>	<b>28</b>		
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	44.5	6.4	80	86	91					
P PINE	227.5	32.5	2	3	4					
W LARCH	270.5	38.6	2	3	5					
GR FIR	700.0	99.9	0	1	2					
<b>TOTAL</b>	<b>27.6</b>	<b>3.9</b>	<b>89</b>	<b>93</b>	<b>97</b>	<b>30</b>	<b>8</b>	<b>3</b>		
CL: 68.1 %	COEFF	BASAL AREA/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	39.9	5.7	60	63	67					
P PINE	223.2	31.9	4	6	7					
W LARCH	270.5	38.6	2	3	5					
GR FIR	700.0	99.9	0	1	1					
<b>TOTAL</b>			<b>73</b>	<b>73</b>	<b>73</b>					
CL: 68.1 %	COEFF	NET BF/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	40.5	5.8	5,014	5,322	5,629					
P PINE	233.3	33.3	351	527	702					
W LARCH	272.0	38.8	204	333	462					
GR FIR	700.0	99.9	0	28	56					
<b>TOTAL</b>			<b>6,210</b>	<b>6,210</b>	<b>6,210</b>					

TC TSTATS				STATISTICS			PAGE	2		
PROJECT				BLACKFS			DATE	12/9/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
31N	38E	28	BLACKHORSE F	00U3	113.99	49	129	S	E	
CL:	68.1 %	COEFF	NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
CL:	68.1 %	COEFF	NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		40.5	5.8	1,422	1,509	1,596				
P PINE		224.7	32.1	86	127	167				
W LARCH		270.6	38.6	55	89	123				
GR FIR		700.0	99.9	0	11	22				
<b>TOTAL</b>				<i>1,735</i>	<i>1,735</i>	<i>1,735</i>				
CL:	68.1 %	COEFF	V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR				79	84	89				
P PINE		120.0	17.1	62	93	124				
W LARCH		135.6	19.4	60	98	136				
GR FIR		700.0	99.9	0	49	98				
<b>TOTAL</b>		<i>391.5</i>	<i>55.9</i>	<i>85</i>	<i>85</i>	<i>85</i>	<i>6,120</i>	<i>1,530</i>	<i>680</i>	

TC TSTATS				STATISTICS				PAGE	1	
PROJECT				BLACKFS				DATE	12/9/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
31N	38E	32	BLACKHORSE	00U4	21.62	10	45	S	E	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	10	45	4.5							
CRUISE	10	45	4.5	2,848			1.6			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	44	130.8	14.4	78	39.0	147.9	20,822	19,136	4,655	4,359
P PINE	1	.9	26.2	95	0.7	3.4	862	689	137	109
<b>TOTAL</b>	<b>45</b>	<b>131.7</b>	<b>14.5</b>	<b>78</b>	<b>39.7</b>	<b>151.2</b>	<b>21,683</b>	<b>19,826</b>	<b>4,792</b>	<b>4,469</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	56.3	8.5	170	186	201					
P PINE										
<b>TOTAL</b>	<b>68.0</b>	<b>10.1</b>	<b>179</b>	<b>199</b>	<b>219</b>	<b>184</b>	<b>46</b>	<b>20</b>		
CL: 68.1 %	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	51.8	7.8	39	42	46					
P PINE										
<b>TOTAL</b>	<b>56.0</b>	<b>8.3</b>	<b>40</b>	<b>44</b>	<b>48</b>	<b>125</b>	<b>31</b>	<b>14</b>		
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	42.4	14.1	112	131	149					
P PINE	316.2	105.2		1	2					
<b>TOTAL</b>	<b>41.4</b>	<b>13.8</b>	<b>114</b>	<b>132</b>	<b>150</b>	<b>76</b>	<b>19</b>	<b>8</b>		
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	50.5	16.8	123	148	173					
P PINE	316.2	105.2		3	7					
<b>TOTAL</b>	<b>47.1</b>	<b>15.7</b>	<b>128</b>	<b>151</b>	<b>175</b>	<b>98</b>	<b>25</b>	<b>11</b>		
CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	63.7	21.2	15,079	19,136	23,193					
P PINE	316.2	105.2		689	1,415					
<b>TOTAL</b>	<b>59.4</b>	<b>19.8</b>	<b>15,904</b>	<b>19,826</b>	<b>23,748</b>	<b>157</b>	<b>39</b>	<b>17</b>		
CL: 68.1 %	COEFF	NET CUFT FT/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	58.3	19.4	3,513	4,359	5,205					
P PINE	316.2	105.2		109	225					
<b>TOTAL</b>	<b>54.8</b>	<b>18.3</b>	<b>3,653</b>	<b>4,469</b>	<b>5,284</b>	<b>133</b>	<b>33</b>	<b>15</b>		
CL: 68.1 %	COEFF	V-BAR/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	63.7	21.2	102	129	157					
P PINE	316.2	105.2		205	421					
<b>TOTAL</b>	<b>59.4</b>	<b>19.8</b>	<b>105</b>	<b>131</b>	<b>157</b>	<b>157</b>	<b>39</b>	<b>17</b>		

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT BLACKFS				DATE	12/9/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
30N	38E	16	BLACKHORSE	00U5	45.05	22	101	S	E	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	22	101	4.6							
CRUISE	16	27	1.7	6,608		.4				
DBH COUNT										
REFOREST										
COUNT	4	16	4.0							
BLANKS	2									
100 %										
<b>STAND SUMMARY</b>										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	18	112.3	14.0	69	32.2	120.7	17,885	16,794	3,699	3,514
P PINE	7	19.9	15.5	53	6.6	26.0	2,856	1,914	595	442
W LARCH	1	11.7	9.8	87	2.0	6.1	933	887	170	162
GR FIR	1	2.8	10.0	70	0.5	1.5	196	176	36	33
<b>TOTAL</b>	<b>27</b>	<b>146.7</b>	<b>13.9</b>	<b>68</b>	<b>41.4</b>	<b>154.3</b>	<b>21,870</b>	<b>19,771</b>	<b>4,501</b>	<b>4,150</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	<b>SAMPLE TREES - BF</b>				<b># OF TREES REQ.</b>		<b>INF. POP.</b>		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	54.1	13.1	157	181	205					
P PINE	8.4	3.8	110	115	119					
W LARCH										
GR FIR										
<b>TOTAL</b>	<b>57.0</b>	<b>11.4</b>	<b>139</b>	<b>157</b>	<b>175</b>	<b>135</b>	<b>34</b>	<b>15</b>		
CL: 68.1 %	COEFF	<b>SAMPLE TREES - CF</b>				<b># OF TREES REQ.</b>		<b>INF. POP.</b>		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	50.7	12.3	33	38	42					
P PINE			27	27	27					
W LARCH										
GR FIR										
<b>TOTAL</b>	<b>51.6</b>	<b>10.3</b>	<b>30</b>	<b>33</b>	<b>37</b>	<b>111</b>	<b>28</b>	<b>12</b>		
CL: 68.1 %	COEFF	<b>TREES/ACRE</b>				<b># OF PLOTS REQ.</b>		<b>INF. POP.</b>		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR			112	112	112					
P PINE	103.7	22.6	15	20	24					
W LARCH	365.5	79.7	2	12	21					
GR FIR	469.0	102.2		3	6					
<b>TOTAL</b>			<b>147</b>	<b>147</b>	<b>147</b>					
CL: 68.1 %	COEFF	<b>BASAL AREA/ACRE</b>				<b># OF PLOTS REQ.</b>		<b>INF. POP.</b>		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR			121	121	121					
P PINE	97.3	21.2	20	26	31					
W LARCH	365.5	79.7	1	6	11					
GR FIR	469.0	102.2		2	3					
<b>TOTAL</b>			<b>154</b>	<b>154</b>	<b>154</b>					
CL: 68.1 %	COEFF	<b>NET BF/ACRE</b>				<b># OF PLOTS REQ.</b>		<b>INF. POP.</b>		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR			16,794	16,794	16,794					
P PINE	100.0	21.8	1,497	1,914	2,331					
W LARCH	365.5	79.7	180	887	1,593					
GR FIR	469.0	102.2		176	357					
<b>TOTAL</b>			<b>19,771</b>	<b>19,771</b>	<b>19,771</b>					

TC TSTATS			STATISTICS				PAGE	2		
			PROJECT BLACKFS				DATE	12/9/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
30N	38E	16	BLACKHORSE	00U5	45.05	22	101	S	E	
CL:	68.1 %	COEFF	NET CUFT FT/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
CL:	68.1 %	COEFF	NET CUFT FT/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR				3,514	3,514	3,514				
P PINE		98.6	21.5	347	442	537				
W LARCH		365.5	79.7	33	162	290				
GR FIR		469.0	102.2		33	66				
<b>TOTAL</b>				<i>4,150</i>	<i>4,150</i>	<i>4,150</i>				
CL:	68.1 %	COEFF	V-BAR/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR				139	139	139				
P PINE				58	74	90				
W LARCH		62.7	13.7	30	145	261				
GR FIR		469.0	102.2		116	234				
<b>TOTAL</b>		<i>371.0</i>	<i>80.9</i>	<i>128</i>	<i>128</i>	<i>128</i>	<i>5,757</i>	<i>1,439</i>	<i>640</i>	

TC TSTATS		STATISTICS						PAGE	1	
		PROJECT BLACKFS						DATE	12/9/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
30N	37E	36	BLACKHORSE	00U6	126.66	53	162	S	E	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		53	162	3.1						
CRUISE		33	49	1.5	9,842	.5				
DBH COUNT										
REFOREST										
COUNT		16	37	2.3						
BLANKS		4								
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	26	47.0	15.5	67	15.6	61.5	8,000	7,285	1,861	1,768
GR FIR	12	17.7	14.7	76	5.5	20.9	3,511	2,827	694	625
P PINE	5	10.3	15.8	68	3.5	14.0	1,313	1,008	352	282
W LARCH	3	1.6	19.2	107	0.7	3.2	595	503	120	114
WR CEDAR	3	1.1	23.3	67	0.7	3.2	431	310	105	100
<b>TOTAL</b>	<b>49</b>	<b>77.7</b>	<b>15.6</b>	<b>70</b>	<b>26.0</b>	<b>102.7</b>	<b>13,849</b>	<b>11,933</b>	<b>3,133</b>	<b>2,889</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	98.0	19.6		185	231	276				
GR FIR	110.7	33.3		174	262	349				
P PINE	110.4	54.9		71	158	245				
W LARCH	67.0	46.3		219	409	598				
WR CEDAR	45.7	31.6		227	332	438				
<b>TOTAL</b>	<b>95.1</b>	<b>13.6</b>		<b>214</b>	<b>248</b>	<b>282</b>	<b>361</b>	<b>90</b>	<b>40</b>	
CL:	68.1 %	COEFF	SAMPLE TREES - CF			# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	82.6	16.5		45	54	63				
GR FIR	107.2	32.3		37	55	73				
P PINE	82.0	40.8		23	40	56				
W LARCH	68.8	47.6		49	94	138				
WR CEDAR	47.5	32.8		72	108	143				
<b>TOTAL</b>	<b>85.1</b>	<b>12.2</b>		<b>52</b>	<b>59</b>	<b>66</b>	<b>289</b>	<b>72</b>	<b>32</b>	
CL:	68.1 %	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	81.3	11.2		42	47	52				
GR FIR	152.3	20.9		14	18	21				
P PINE	201.1	27.6		7	10	13				
W LARCH	329.5	45.2		1	2	2				
WR CEDAR	361.2	49.6		1	1	2				
<b>TOTAL</b>				<b>78</b>	<b>78</b>	<b>78</b>				
CL:	68.1 %	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	79.3	10.9		55	62	68				
GR FIR	155.0	21.3		16	21	25				
P PINE	191.5	26.3		10	14	18				
W LARCH	312.8	42.9		2	3	5				
WR CEDAR	375.6	51.5		2	3	5				
<b>TOTAL</b>				<b>103</b>	<b>103</b>	<b>103</b>				
CL:	68.1 %	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	80.5	11.1		6,479	7,285	8,090				

TC TSTATS				STATISTICS			PAGE	2		
PROJECT				BLACKFS			DATE	12/9/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
30N	37E	36	BLACKHORSE	00U6	126.66	53	162	S	E	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
GR FIR		161.5	22.2	2,200	2,827	3,454				
P PINE		191.4	26.3	743	1,008	1,272				
W LARCH		313.9	43.1	286	503	720				
WR CEDAR		382.6	52.5	147	310	473				
<b>TOTAL</b>				<i>11,933</i>	<i>11,933</i>	<i>11,933</i>				
CL:	68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		79.8	11.0	1,575	1,768	1,962				
GR FIR		158.5	21.8	489	625	761				
P PINE		190.4	26.1	208	282	355				
W LARCH		313.0	43.0	65	114	163				
WR CEDAR		380.1	52.2	48	100	152				
<b>TOTAL</b>				<i>2,889</i>	<i>2,889</i>	<i>2,889</i>				
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR				105	118	132				
GR FIR		52.7	7.2	105	135	165				
P PINE				53	72	91				
W LARCH		235.2	32.3	90	159	227				
WR CEDAR		321.2	44.1	46	98	149				
<b>TOTAL</b>		<i>303.8</i>	<i>41.7</i>	<i>116</i>	<i>116</i>	<i>116</i>	<i>3,686</i>	<i>922</i>	<i>410</i>	

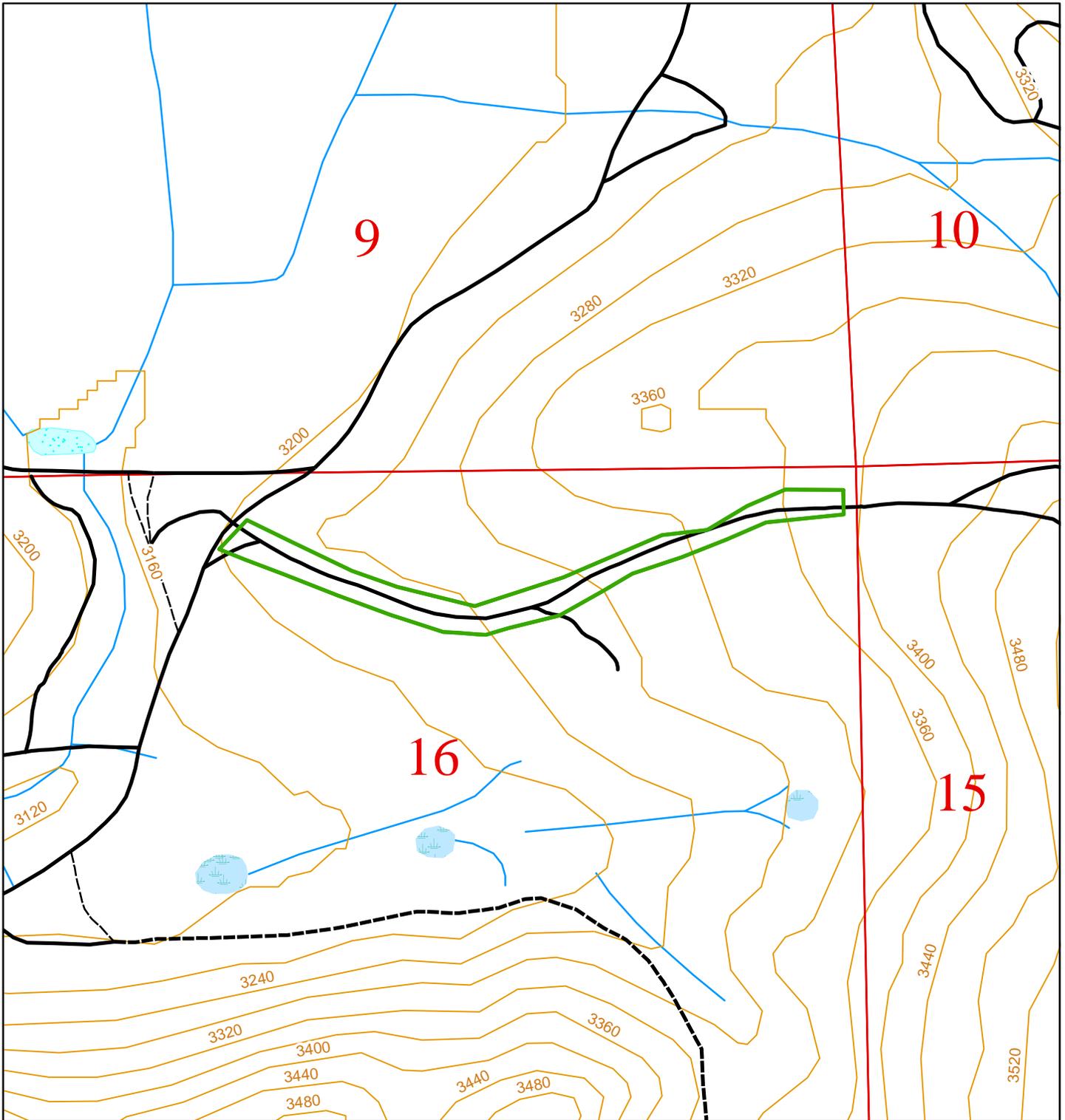
TC TSTATS		<b>STATISTICS</b>				PAGE	1			
		<b>PROJECT BLACKFS</b>				DATE	12/9/2015			
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
30N	37E	36	BLACKHORSE	00U7	48.52	24	70	S	E	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		24	70	2.9						
CRUISE		13	18	1.4	3,320	.5				
DBH COUNT										
REFOREST										
COUNT		7	17	2.4						
BLANKS		4								
100 %										
<b>STAND SUMMARY</b>										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
P PINE	13	40.2	16.2	84	14.3	57.4	6,556	4,833	1,556	1,153
DOUG FIR	5	28.2	16.2	78	10.1	40.6	5,254	4,991	1,272	1,209
<b>TOTAL</b>	<b>18</b>	<b>68.4</b>	<b>16.2</b>	<b>81</b>	<b>24.3</b>	<b>98.0</b>	<b>11,811</b>	<b>9,824</b>	<b>2,828</b>	<b>2,362</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	<b>SAMPLE TREES - BF</b>			# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
P PINE		58.1	16.7	125	150	175				
DOUG FIR		89.3	44.4	142	255	368				
<b>TOTAL</b>		<b>78.7</b>	<b>19.1</b>	<b>145</b>	<b>179</b>	<b>213</b>	<b>262</b>	<b>65</b>	<b>29</b>	
CL:	68.1 %	COEFF	<b>SAMPLE TREES - CF</b>			# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
P PINE		55.8	16.1	30	36	42				
DOUG FIR		73.2	36.4	37	58	79				
<b>TOTAL</b>		<b>67.7</b>	<b>16.4</b>	<b>35</b>	<b>42</b>	<b>49</b>	<b>193</b>	<b>48</b>	<b>21</b>	
CL:	68.1 %	COEFF	<b>TREES/ACRE</b>			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
P PINE		54.0	11.3	36	40	45				
DOUG FIR		105.9	22.1	22	28	34				
<b>TOTAL</b>		<b>21.5</b>	<b>4.5</b>	<b>65</b>	<b>68</b>	<b>71</b>	<b>19</b>	<b>5</b>	<b>2</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	10	15	
P PINE		40.4	8.4	53	57	62				
DOUG FIR		106.3	22.1	32	41	50				
<b>TOTAL</b>				<b>98</b>	<b>98</b>	<b>98</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	10	15	
P PINE		45.5	9.5	4,375	4,833	5,291				
DOUG FIR		109.6	22.8	3,852	4,991	6,131				
<b>TOTAL</b>		<b>27.5</b>	<b>5.7</b>	<b>9,261</b>	<b>9,824</b>	<b>10,388</b>	<b>32</b>	<b>8</b>	<b>4</b>	
CL:	68.1 %	COEFF	<b>NET CUFT FT/ACRE</b>			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
P PINE		44.2	9.2	1,047	1,153	1,260				
DOUG FIR		107.6	22.4	938	1,209	1,480				
<b>TOTAL</b>		<b>26.7</b>	<b>5.6</b>	<b>2,231</b>	<b>2,362</b>	<b>2,493</b>	<b>30</b>	<b>7</b>	<b>3</b>	
CL:	68.1 %	COEFF	<b>V-BAR/ACRE</b>			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
P PINE				76	84	92				
DOUG FIR				95	123	151				
<b>TOTAL</b>		<b>422.2</b>	<b>88.0</b>	<b>94</b>	<b>100</b>	<b>106</b>	<b>7,426</b>	<b>1,857</b>	<b>825</b>	

TC TSTATS				STATISTICS				PAGE	1	
PROJECT				BLACKFS				DATE	12/9/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
30N	37E	36	BLACKHORSE	00U8	65.17	24	76	S	E	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	24	76	3.2							
CRUISE	15	20	1.3	5,456			.4			
DBH COUNT										
REFOREST										
COUNT	8	17	2.1							
BLANKS	1									
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	15	64.1	15.5	73	21.3	84.0	12,185	10,865	2,698	2,563
P PINE	4	17.8	14.2	37	5.2	19.6	2,897	2,307	552	442
GR FIR	1	1.8	16.8	83	0.7	2.8	400	360	88	79
<b>TOTAL</b>	<b>20</b>	<b>83.7</b>	<b>15.3</b>	<b>65</b>	<b>27.2</b>	<b>106.4</b>	<b>15,482</b>	<b>13,532</b>	<b>3,338</b>	<b>3,084</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	<b>SAMPLE TREES - BF</b>				<b># OF TREES REQ.</b>		<b>INF. POP.</b>		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	84.6	22.6	232	300	367					
P PINE	79.0	45.1	188	342	496					
GR FIR										
<b>TOTAL</b>	<b>80.7</b>	<b>18.5</b>	<b>247</b>	<b>303</b>	<b>359</b>	<b>273</b>	<b>68</b>	<b>30</b>		
CL: 68.1 %	COEFF	<b>SAMPLE TREES - CF</b>				<b># OF TREES REQ.</b>		<b>INF. POP.</b>		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	82.3	22.0	53	68	83					
P PINE	72.9	41.7	38	65	91					
GR FIR										
<b>TOTAL</b>	<b>78.5</b>	<b>18.0</b>	<b>54</b>	<b>66</b>	<b>78</b>	<b>259</b>	<b>65</b>	<b>29</b>		
CL: 68.1 %	COEFF	<b>TREES/ACRE</b>				<b># OF PLOTS REQ.</b>		<b>INF. POP.</b>		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	45.0	9.4	58	64	70					
P PINE	145.2	30.3	12	18	23					
GR FIR	338.8	70.6	1	2	3					
<b>TOTAL</b>			<b>84</b>	<b>84</b>	<b>84</b>					
CL: 68.1 %	COEFF	<b>BASAL AREA/ACRE</b>				<b># OF PLOTS REQ.</b>		<b>INF. POP.</b>		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	39.1	8.2	77	84	91					
P PINE	123.0	25.6	15	20	25					
GR FIR	338.8	70.6	1	3	5					
<b>TOTAL</b>			<b>106</b>	<b>106</b>	<b>106</b>					
CL: 68.1 %	COEFF	<b>NET BF/ACRE</b>				<b># OF PLOTS REQ.</b>		<b>INF. POP.</b>		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	42.6	8.9	9,901	10,865	11,829					
P PINE	127.1	26.5	1,696	2,307	2,918					
GR FIR	338.8	70.6	106	360	615					
<b>TOTAL</b>			<b>13,532</b>	<b>13,532</b>	<b>13,532</b>					
CL: 68.1 %	COEFF	<b>NET CUFT FT/ACRE</b>				<b># OF PLOTS REQ.</b>		<b>INF. POP.</b>		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	40.8	8.5	2,345	2,563	2,781					
P PINE	126.2	26.3	326	442	558					
GR FIR	338.8	70.6	23	79	136					
<b>TOTAL</b>			<b>3,084</b>	<b>3,084</b>	<b>3,084</b>					

TC TSTATS				<b>STATISTICS</b>				PAGE	2	
				<b>PROJECT BLACKFS</b>				DATE	12/9/2015	
<b>TWP</b>	<b>RGE</b>	<b>SECT</b>	<b>TRACT</b>	<b>TYPE</b>	<b>ACRES</b>	<b>PLOTS</b>	<b>TREES</b>	<b>CuFt</b>	<b>BdFt</b>	
<b>30N</b>	<b>37E</b>	<b>36</b>	<b>BLACKHORSE</b>	<b>00U8</b>	65.17	24	76	S	E	
CL:	68.1 %	COEFF		<b>V-BAR/ACRE</b>			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
CL:	68.1 %	COEFF		<b>V-BAR/ACRE</b>			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR				118	129	141				
P PINE				87	118	149				
GR FIR		228.4	47.6	38	129	219				
<b>TOTAL</b>		<i>348.1</i>	<i>72.5</i>	<i>127</i>	<i>127</i>	<i>127</i>	<i>5,048</i>	<i>1,262</i>	<i>561</i>	

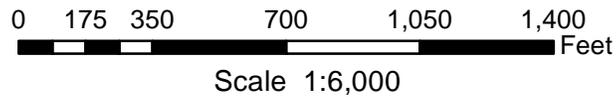
TC TSTATS		STATISTICS							PAGE	1
		PROJECT BLACKFS							DATE	12/9/2015
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
29N	37E	16	BLACKHORSE	00U9	36.37	14	19	S	E	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
		PLOTS	TREES	PER PLOT	TREES	TREES				
TOTAL		14	19	1.4						
CRUISE		6	8	1.3	803	1.0				
DBH COUNT										
REFOREST										
COUNT		4	6	1.5						
BLANKS		4								
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	4	9.5	16.6	84	3.5	14.3	2,263	2,150	480	456
P PINE	4	12.6	13.7	56	3.5	12.9	1,616	1,273	353	283
<b>TOTAL</b>	<b>8</b>	<b>22.1</b>	<b>15.0</b>	<b>68</b>	<b>7.0</b>	<b>27.1</b>	<b>3,880</b>	<b>3,423</b>	<b>833</b>	<b>738</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF					# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	43.2	24.7	186	247	308					
P PINE	30.5	17.4	89	108	127					
<b>TOTAL</b>	<b>58.7</b>	<b>22.1</b>	<b>138</b>	<b>178</b>	<b>217</b>	<b>157</b>	<b>39</b>	<b>17</b>		
CL: 68.1 %	COEFF	SAMPLE TREES - CF					# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	36.1	20.6	41	52	62					
P PINE	38.9	22.2	19	25	30					
<b>TOTAL</b>	<b>52.2</b>	<b>19.7</b>	<b>31</b>	<b>38</b>	<b>46</b>	<b>124</b>	<b>31</b>	<b>14</b>		
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	111.6	30.9	7	10	12					
P PINE	110.8	30.7	9	13	16					
<b>TOTAL</b>	<b>51.5</b>	<b>14.3</b>	<b>19</b>	<b>22</b>	<b>25</b>	<b>114</b>	<b>29</b>	<b>13</b>		
CL: 68.1 %	COEFF	BASAL AREA/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	115.6	32.0	10	14	19					
P PINE	115.9	32.1	9	13	17					
<b>TOTAL</b>	<b>54.9</b>	<b>15.2</b>	<b>23</b>	<b>27</b>	<b>31</b>	<b>129</b>	<b>32</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	10	15		
DOUG FIR	118.6	32.8	1,444	2,150	2,856					
P PINE	113.7	31.5	872	1,273	1,674					
<b>TOTAL</b>	<b>62.2</b>	<b>17.2</b>	<b>2,833</b>	<b>3,423</b>	<b>4,013</b>	<b>166</b>	<b>42</b>	<b>18</b>		
CL: 68.1 %	COEFF	NET CUFT FT/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	116.8	32.3	308	456	603					
P PINE	117.3	32.5	191	283	374					
<b>TOTAL</b>	<b>60.9</b>	<b>16.9</b>	<b>614</b>	<b>738</b>	<b>863</b>	<b>159</b>	<b>40</b>	<b>18</b>		
CL: 68.1 %	COEFF	V-BAR/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR			101	151	200					
P PINE			68	99	130					

TC TSTATS				<b>STATISTICS</b>				PAGE	2	
				<b>PROJECT BLACKFS</b>				DATE	12/9/2015	
<b>TWP</b>	<b>RGE</b>	<b>SECT</b>	<b>TRACT</b>	<b>TYPE</b>	<b>ACRES</b>	<b>PLOTS</b>	<b>TREES</b>	<b>CuFt</b>	<b>BdFt</b>	
<b>29N</b>	<b>37E</b>	<b>16</b>	<b>BLACKHORSE</b>	<b>00U9</b>	36.37	14	19	S	E	
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E. %	LOW	AVG	HIGH	5	10	15	
<b>TOTAL</b>		271.3	75.2	104	126	148	3,163	791	351	



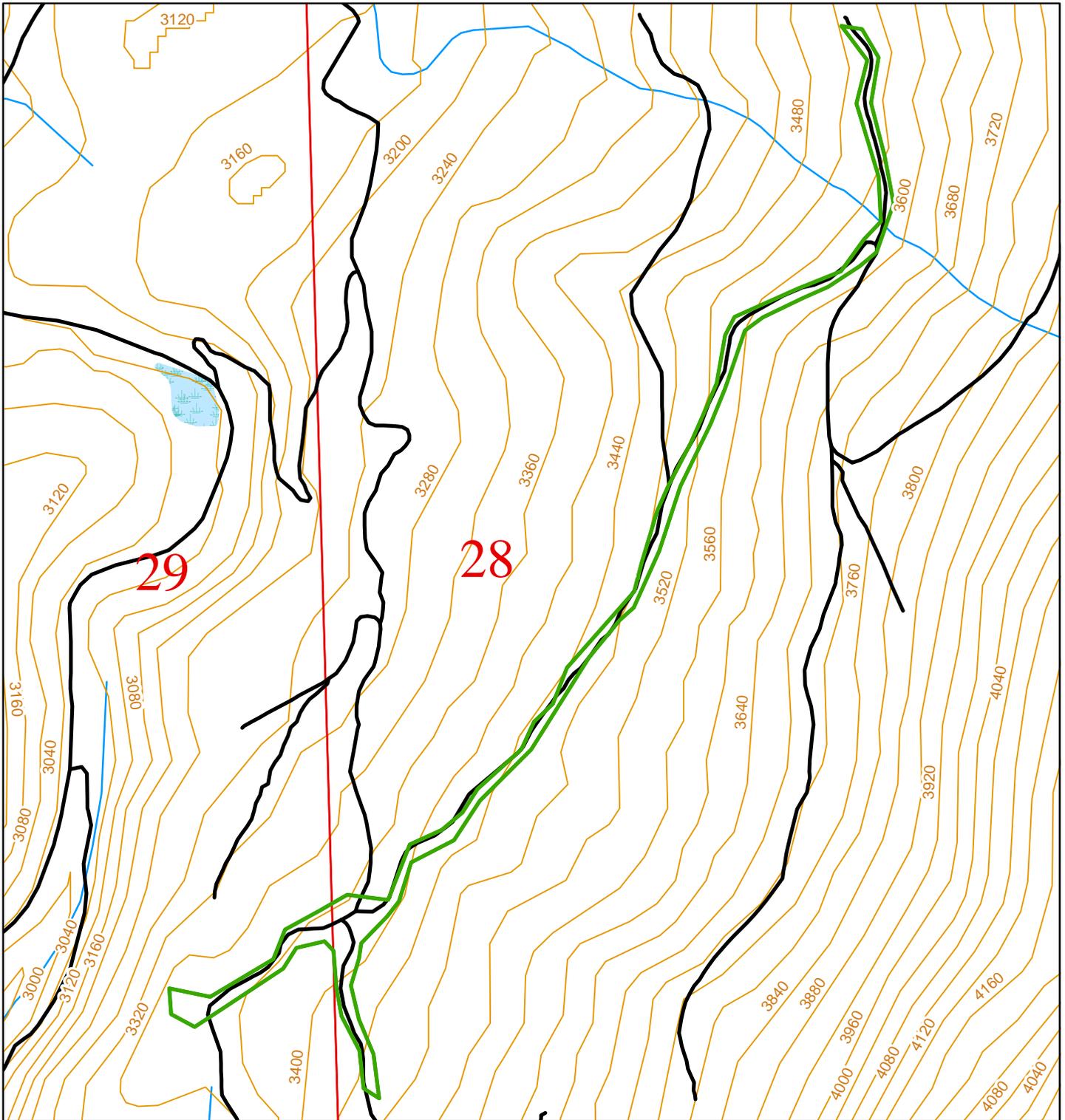
**FMU POLYGON AND SAMPLE POINT INFORMATION**

FMU_NM:	BLACKHORSE FIRE U1	Township:	T31R38E
FMU_ID:	93935	DNR Region:	NORTHEAST
Acres:	5	Total Sample Points:	1
County:	STEVENS	Spacing Between Points:	Width: 310 Height: 310
		Point Rotation Degrees:	0



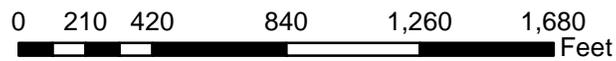
**Legend**

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



**FMU POLYGON AND SAMPLE POINT INFORMATION**

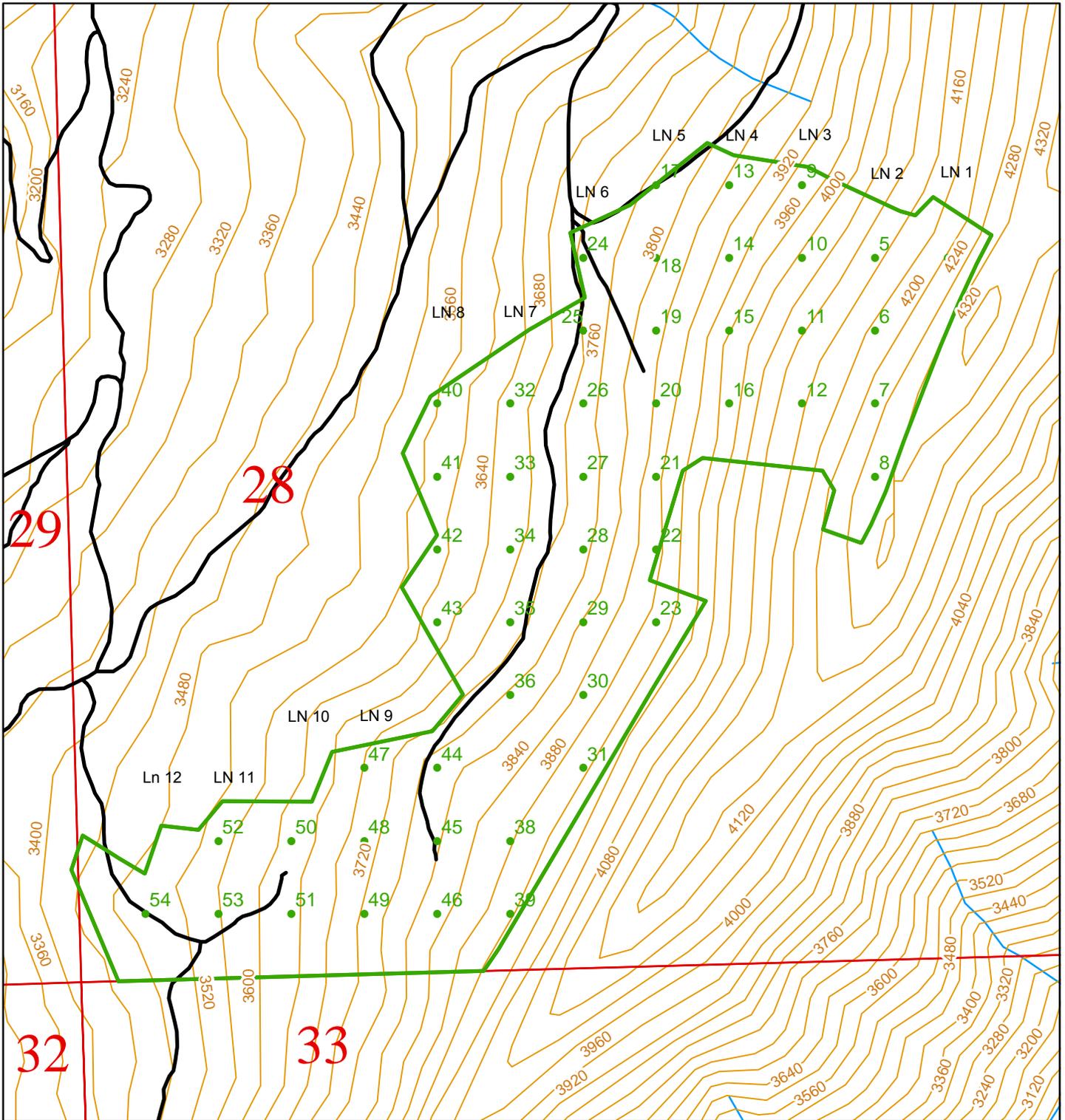
FMU_NM:	BLACKHORSE FIRE U2	Township:	T31R38E
FMU_ID:	93936	DNR Region:	NORTHEAST
Acres:	9	Total Sample Points:	2
County:	STEVENS	Spacing Between Points:	Width: 310 Height: 310
		Point Rotation Degrees:	0



Scale 1:7,200

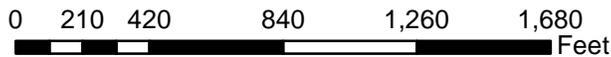
**Legend**

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



**FMU POLYGON AND SAMPLE POINT INFORMATION**

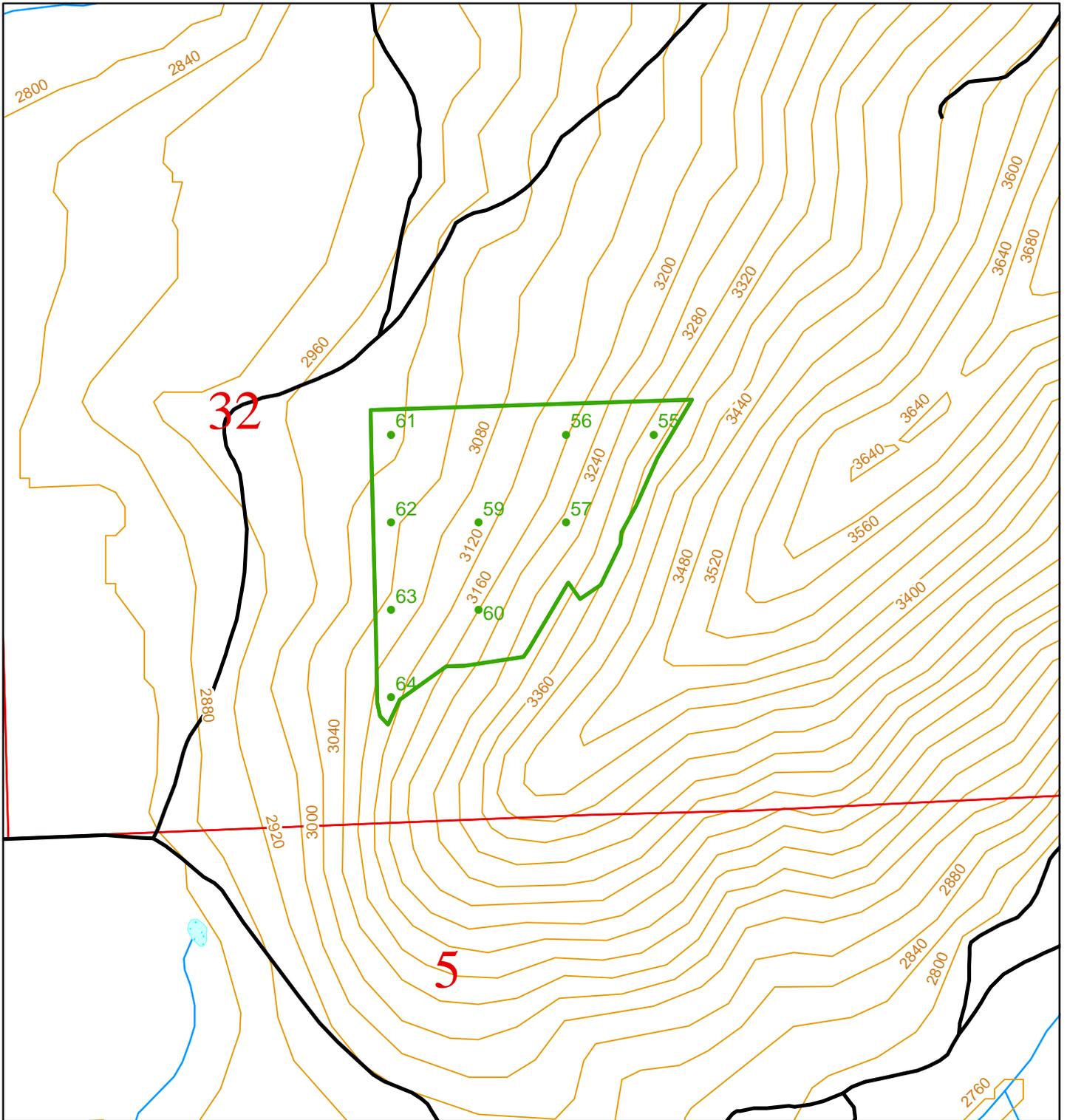
FMU_NM:	BLACKHORSE FIRE U3	Township:	T31R38E
FMU_ID:	93937	DNR Region:	NORTHEAST
Acres:	116	Total Sample Points:	51
County:	STEVENS	Spacing Between Points:	Width: 310 Height: 310
		Point Rotation Degrees:	0



Scale 1:7,200

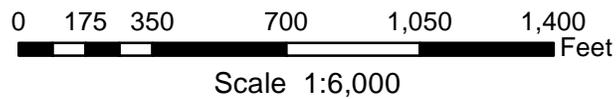
**Legend**

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



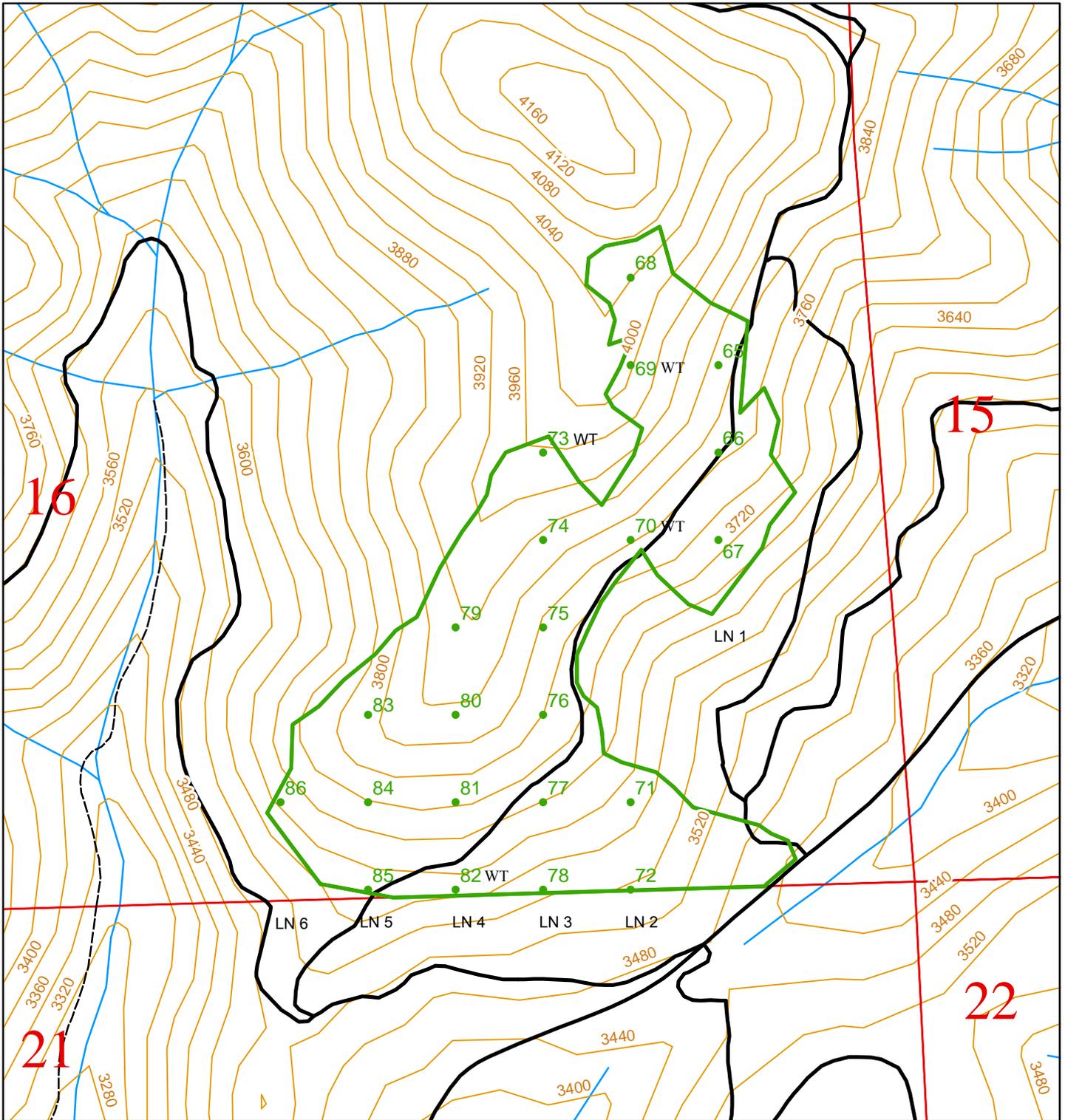
**FMU POLYGON AND SAMPLE POINT INFORMATION**

FMU_NM:	BLACKHORSE FIRE U4	Township:	T31R38E
FMU_ID:	93938	DNR Region:	NORTHEAST
Acres:	18	Total Sample Points:	10
County:	FERRY	Spacing Between Points:	Width: 310 Height: 310
		Point Rotation Degrees:	0



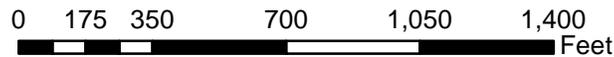
**Legend**

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



**FMU POLYGON AND SAMPLE POINT INFORMATION**

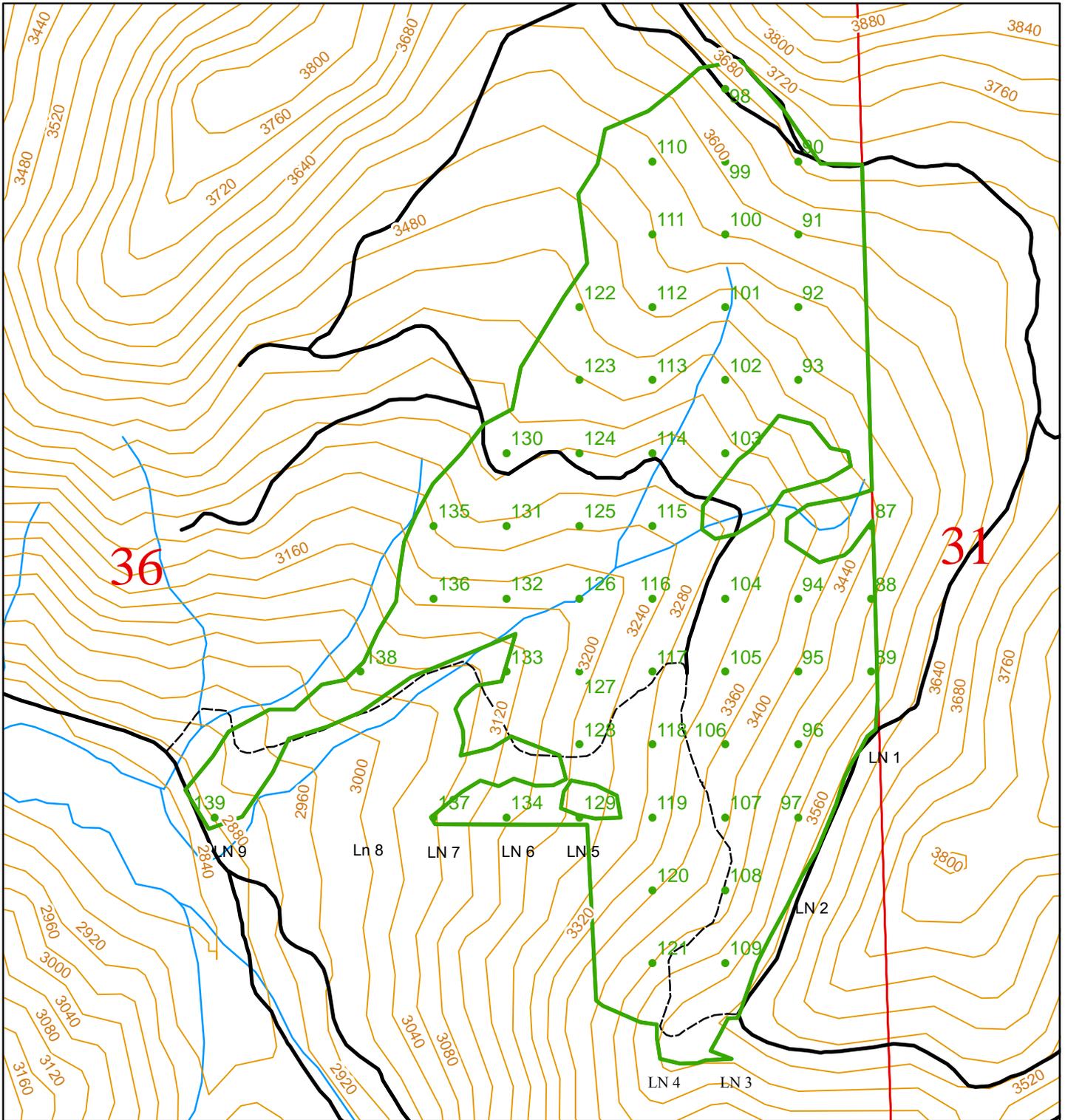
FMU_NM:	BLACKHORSE FIRE U5	Township:	T30R38E
FMU_ID:	93939	DNR Region:	NORTHEAST
Acres:	47	Total Sample Points:	22
County:	STEVENS	Spacing Between Points:	Width: 310 Height: 310
Walk Through Plot	WT	Point Rotation Degrees:	0



Scale 1:6,000

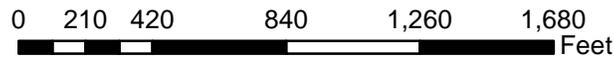
**Legend**

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



**FMU POLYGON AND SAMPLE POINT INFORMATION**

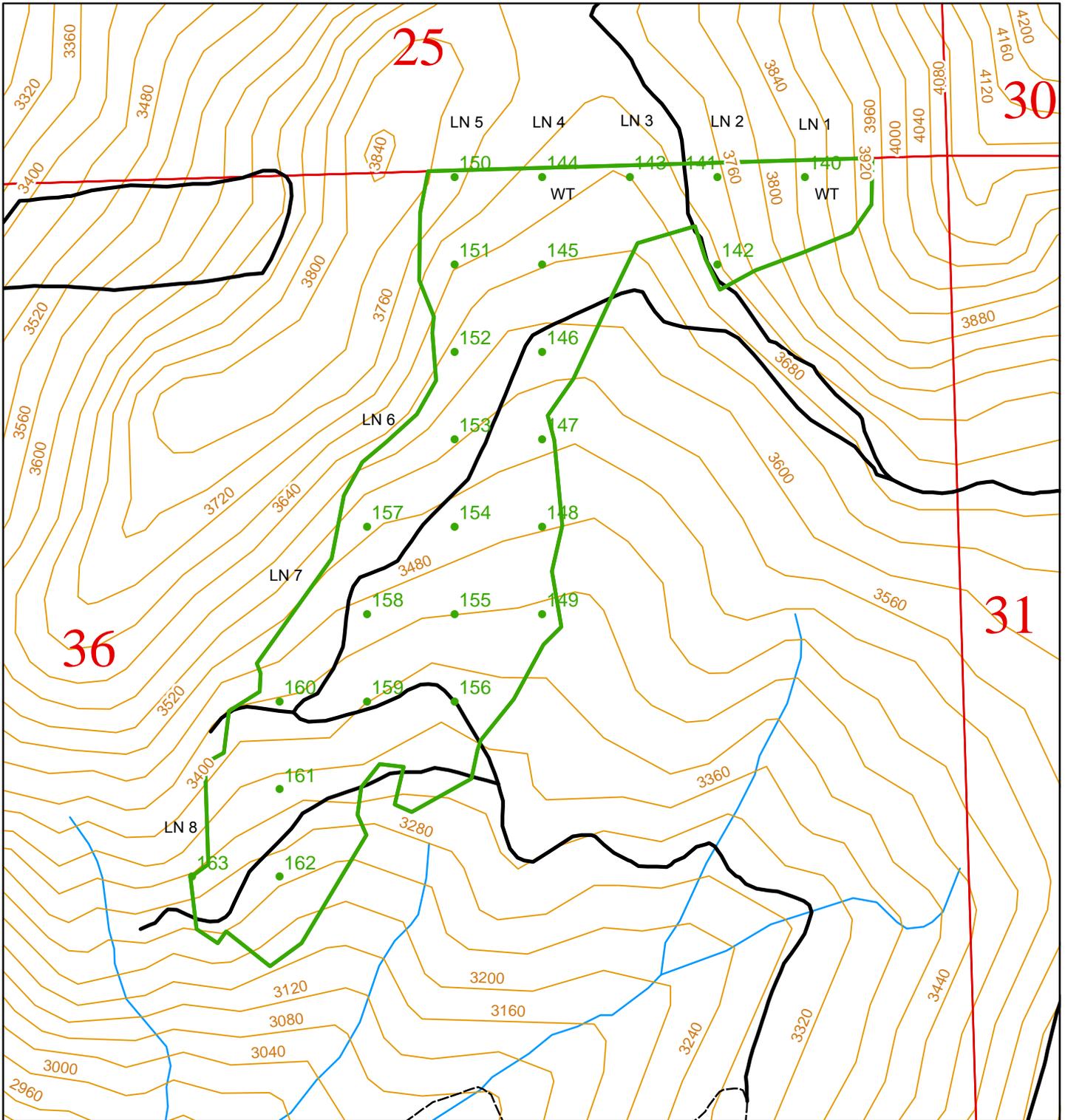
FMU_NM:	BLACKHORSE FIRE U6	Township:	T30R37E
FMU_ID:	93940	DNR Region:	NORTHEAST
Acres:	124	Total Sample Points:	53
County:	STEVENS	Spacing Between Points:	Width: 310 Height: 310
		Point Rotation Degrees:	0



Scale 1:7,200

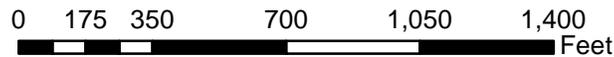
**Legend**

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



**FMU POLYGON AND SAMPLE POINT INFORMATION**

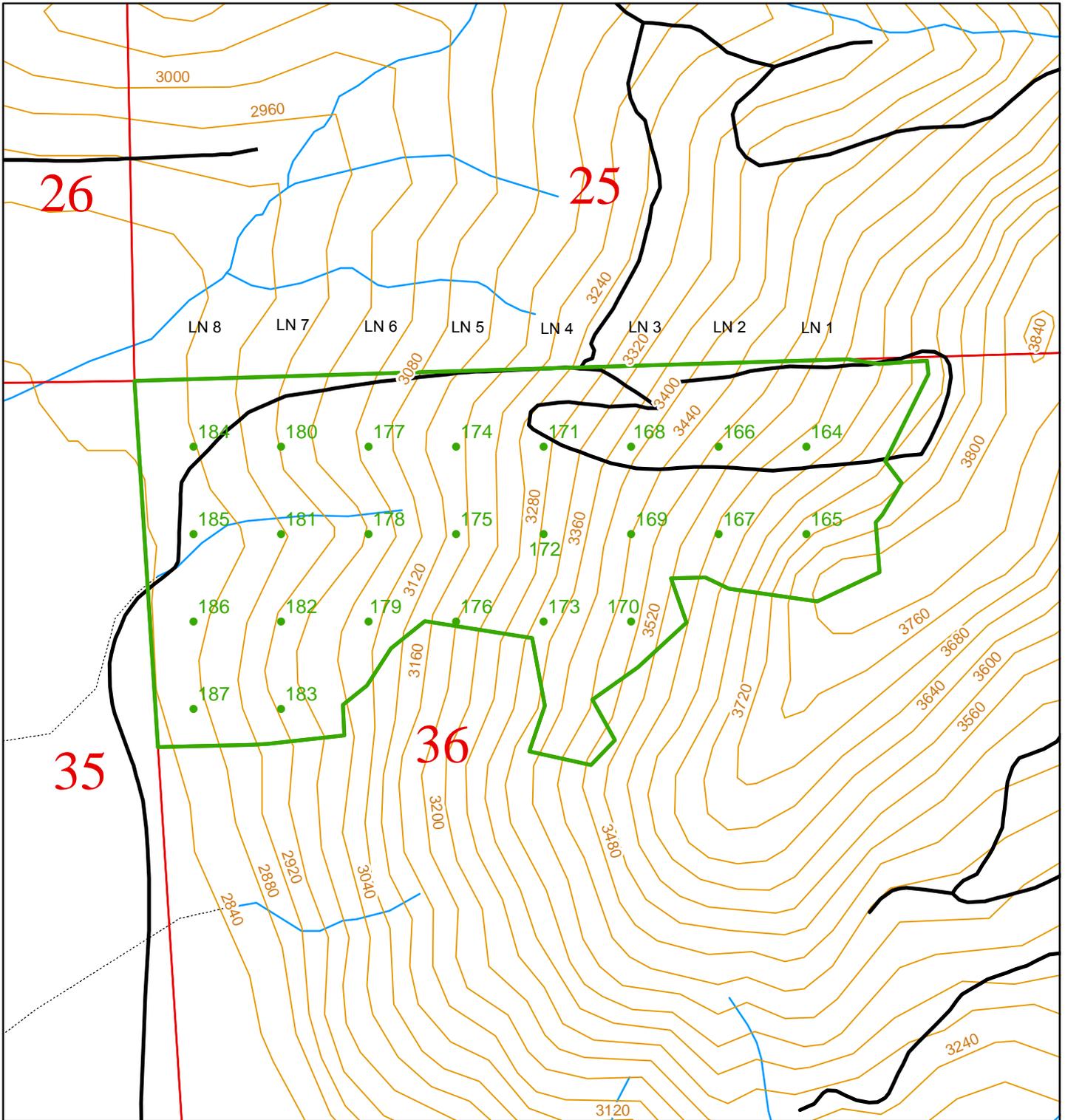
FMU_NM:	BLACKHORSE FIRE U7	Township:	T30R37E
FMU_ID:	93941	DNR Region:	NORTHEAST
Acres:	51	Total Sample Points:	24
County:	STEVENS	Spacing Between Points:	Width: 310 Height: 310
Walk Through Plot	WT	Point Rotation Degrees:	0



Scale 1:6,000

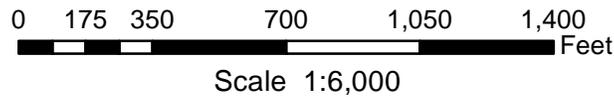
**Legend**

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



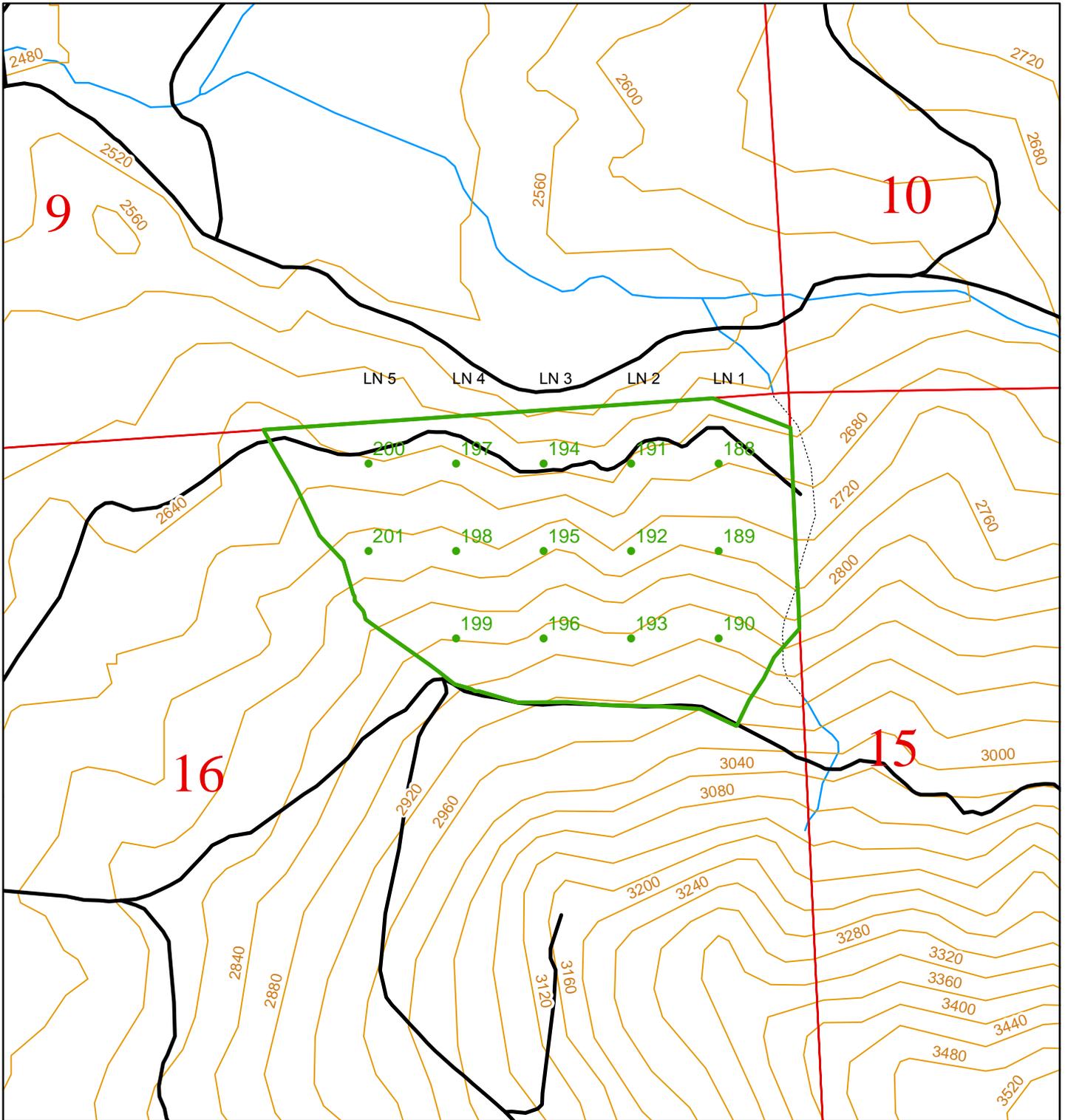
**FMU POLYGON AND SAMPLE POINT INFORMATION**

FMU_NM:	BLACKHORSE FIRE U8	Township:	T30R37E
FMU_ID:	93942	DNR Region:	NORTHEAST
Acres:	64	Total Sample Points:	24
County:	STEVENS	Spacing Between Points:	Width: 310 Height: 310
		Point Rotation Degrees:	0



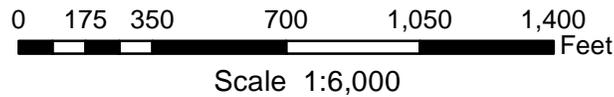
**Legend**

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



**FMU POLYGON AND SAMPLE POINT INFORMATION**

FMU_NM:	BLACKHORSE FIRE U9	Township:	T29R37E
FMU_ID:	93943	DNR Region:	NORTHEAST
Acres:	37	Total Sample Points:	14
County:	STEVENS	Spacing Between Points:	Width: 310 Height: 310
		Point Rotation Degrees:	0



**Legend**

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



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

FPA/N No: 3020644

Effective Date: 12/18/2015

Expiration Date: 12/18/2018

Shut Down Zone: 686, 687

EARR Tax Credit:  Eligible  Non-eligible

Reference: DNR

Blackhorse Fire Salvage

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

**Decision**

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

**FPA/N Classification**

Class II  Class III  Class IVG  Class IVS

**Number of Years Granted on Multi-Year Request**

4 years  5 years

**Conditions on Approval / Reasons for Disapproval**

1. Water courses and wetland management areas may have been identified within this permit. If changes occur to water courses or wetlands during the timeframe of this permit, notify the forest practice forester immediately for correct protection measures.
2. Where harvesting operations occur on slopes or near draws that have the potential to deliver sediment to a public resource, it is required that measures be taken to minimize that potential. These would include: progressive water-barring of skid trails, slash placement or grass seeding. Falling and leaving small trees or logs that are perpendicular to the slope can also be helpful in minimizing erosion to slopes and delivery of sediment to a public resource.

This approval also comes with the following "reminders";

1. 2 green recruitment trees (grts) and 2 wildlife reserve trees (wrts) are required to be left, per acre, following harvest. These trees may be scattered throughout the harvest unit(s) or may be clumped, depending on the landowners preference. If clumped, the forest practice permit must be amended and the clumps shown on the harvest map. Where grts do not exist due to fire severity, only 2 wrts are required per acre. Wrts must be the 2 largest trees per acre for cavity nesters.
2. For every acre harvested, reforestation is required. If green trees suitable for seed production exist and will be thinned and left on site, then natural reforestation is adequate where the green seed source exists. If no seed source exists due to fire severity, then artificial reforestation is required by means of hand planting and must be accomplished 3 years following harvest at an acceptable stocking level suitable for the specific site that's harvested. It is suggested you work closely with the forest practice forester to determine adequate reforestation numbers for seedlings per acre.

Issued By: Bernie Jones

Region: Northeast

Title: Forest Practices Forester

Date: 12/18/2015

Copies to:  Landowner, Timber Owner and Operator.

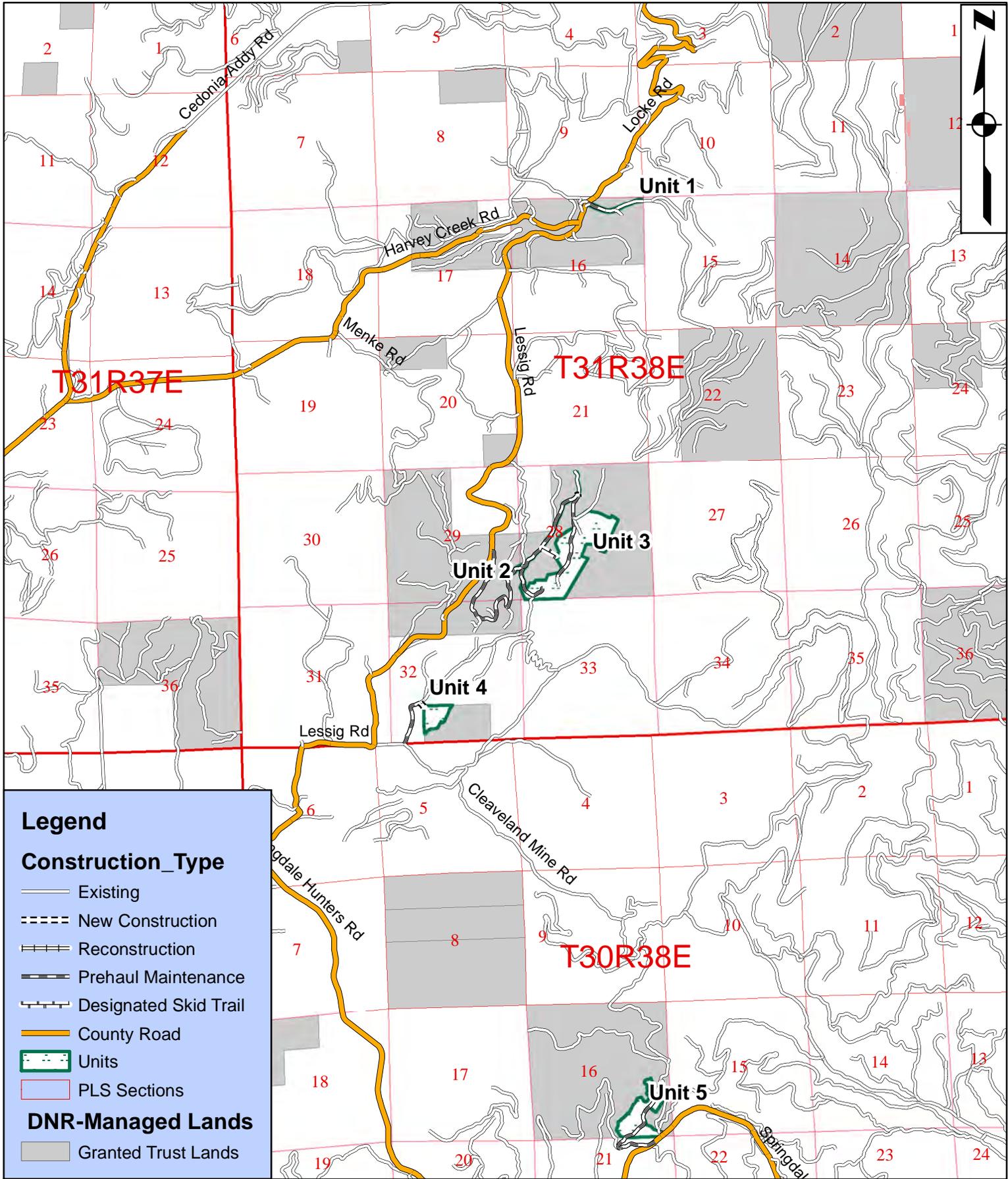
Issued in person:  Landowner  Timber Owner  Operator By: Nichole Fandrey

Washington State Department of Natural Resources

Sale Name: Blackhorse Fire Salvage  
Agreement No.: 30-093304

Road Plan Map  
Page 1 of 12

Region: Northeast  
County: Stevens



**Legend**

**Construction\_Type**

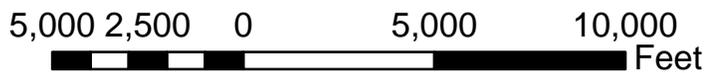
- Existing
- - - - New Construction
- ==== Reconstruction
- Prehaul Maintenance
- Designated Skid Trail
- County Road

**Units**

- Units
- PLS Sections

**DNR-Managed Lands**

- Granted Trust Lands



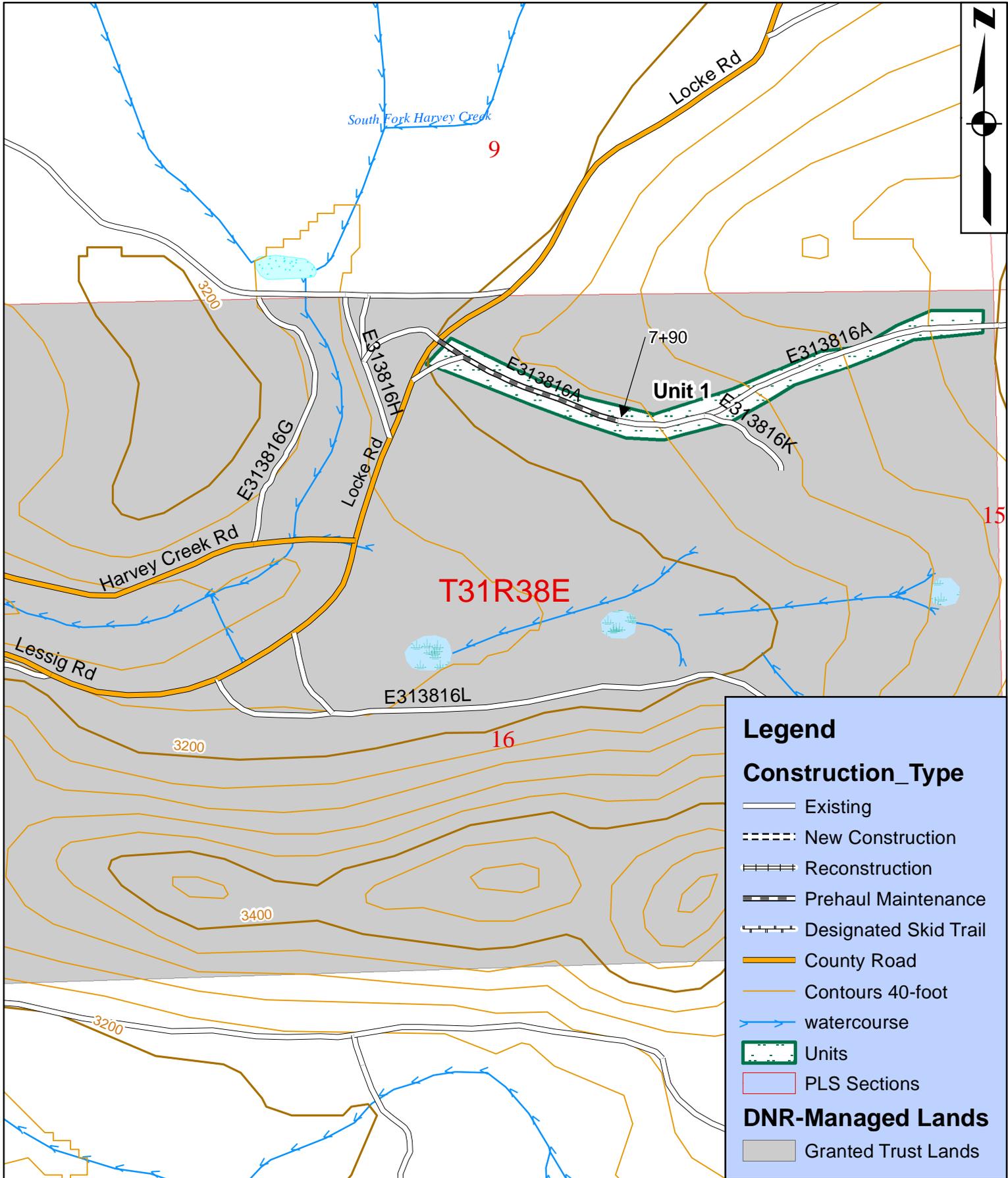
1 inch = 5,000 feet

Washington State Department of Natural Resources

Sale Name: Blackhorse Fire Salvage  
Agreement No.: 30-093304

Road Plan Map  
Page 2 of 12

Region: Northeast  
County: Stevens



500 250 0 500 1,000 Feet

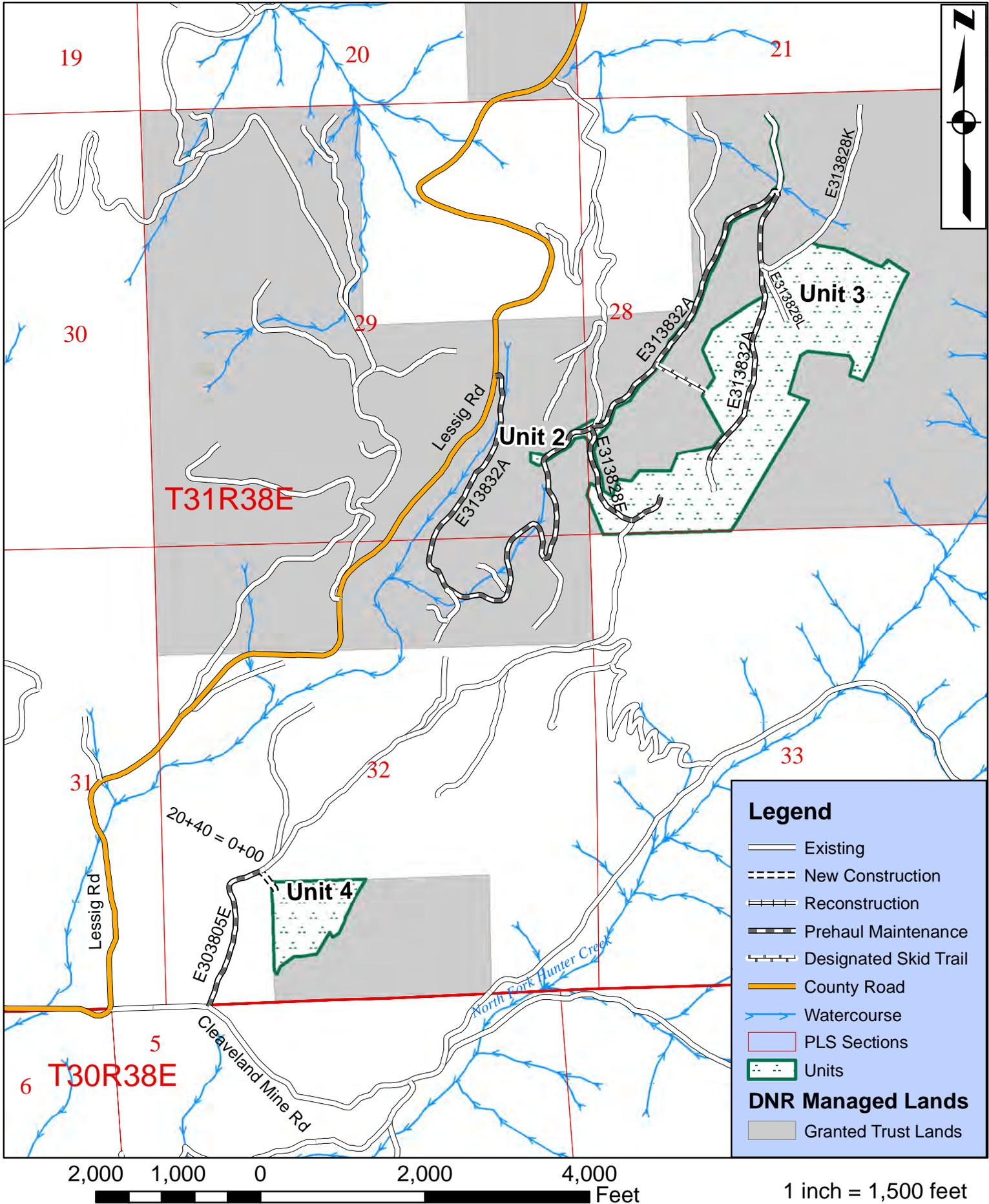
1 inch = 500 feet

Washington State Department of Natural Resources

Sale Name: Blackhorse Fire Salvage  
 Agreement No.: 30-093304

Road Plan Map  
 Page 3 of 12

Region: Northeast  
 County: Stevens

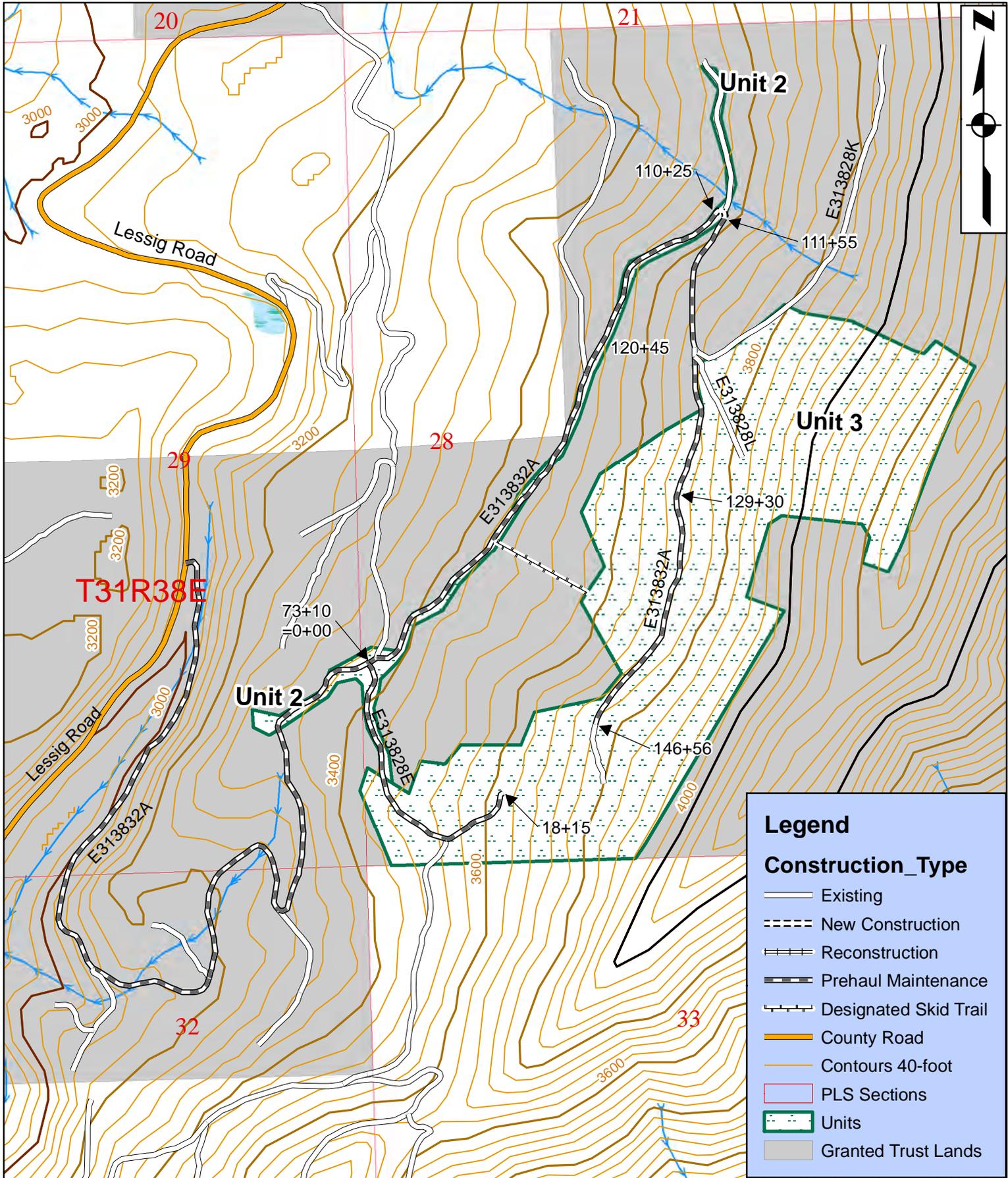


Washington State Department of Natural Resources

Sale Name: Blackhorse Fire Salvage  
 Agreement No.: 30-093304

Road Plan Map  
 Page 4 of 12

Region: Northeast  
 County: Stevens



**Legend**

**Construction\_Type**

- Existing
- New Construction
- ==== Reconstruction
- ==== Prehaul Maintenance
- Designated Skid Trail
- County Road
- Contours 40-foot
- PLS Sections
- Units
- Granted Trust Lands

500 250 0 500 1,000 Feet

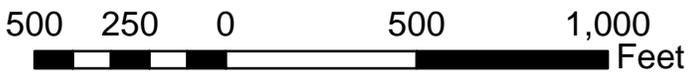
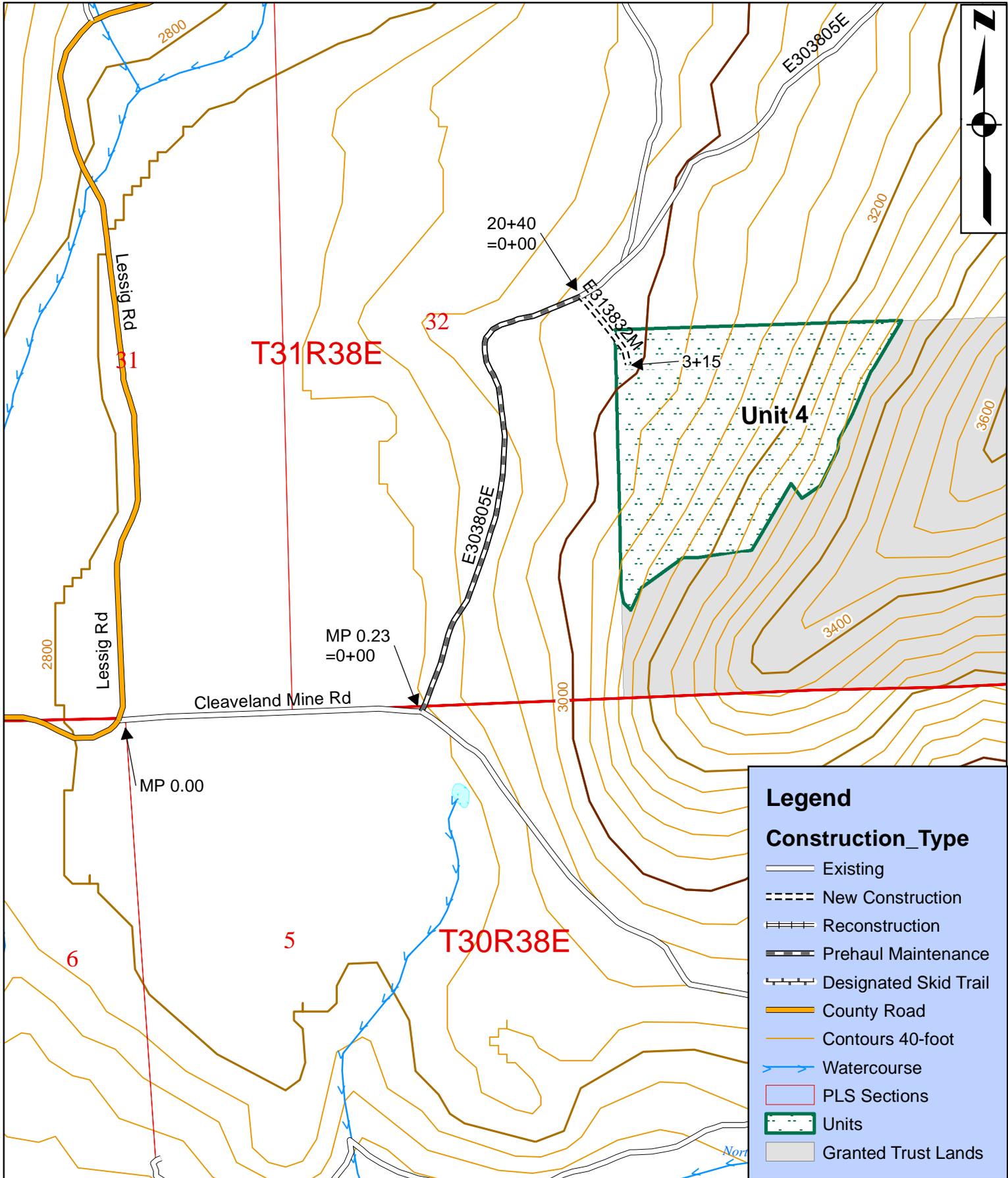
1 inch = 800 feet

Washington State Department of Natural Resources

Sale Name: Blackhorse Fire Salvage  
 Agreement No.: 30-093304

Road Plan Map  
 Page 5 of 12

Region: Northeast  
 County: Stevens



1 inch = 500 feet

**Legend**

**Construction\_Type**

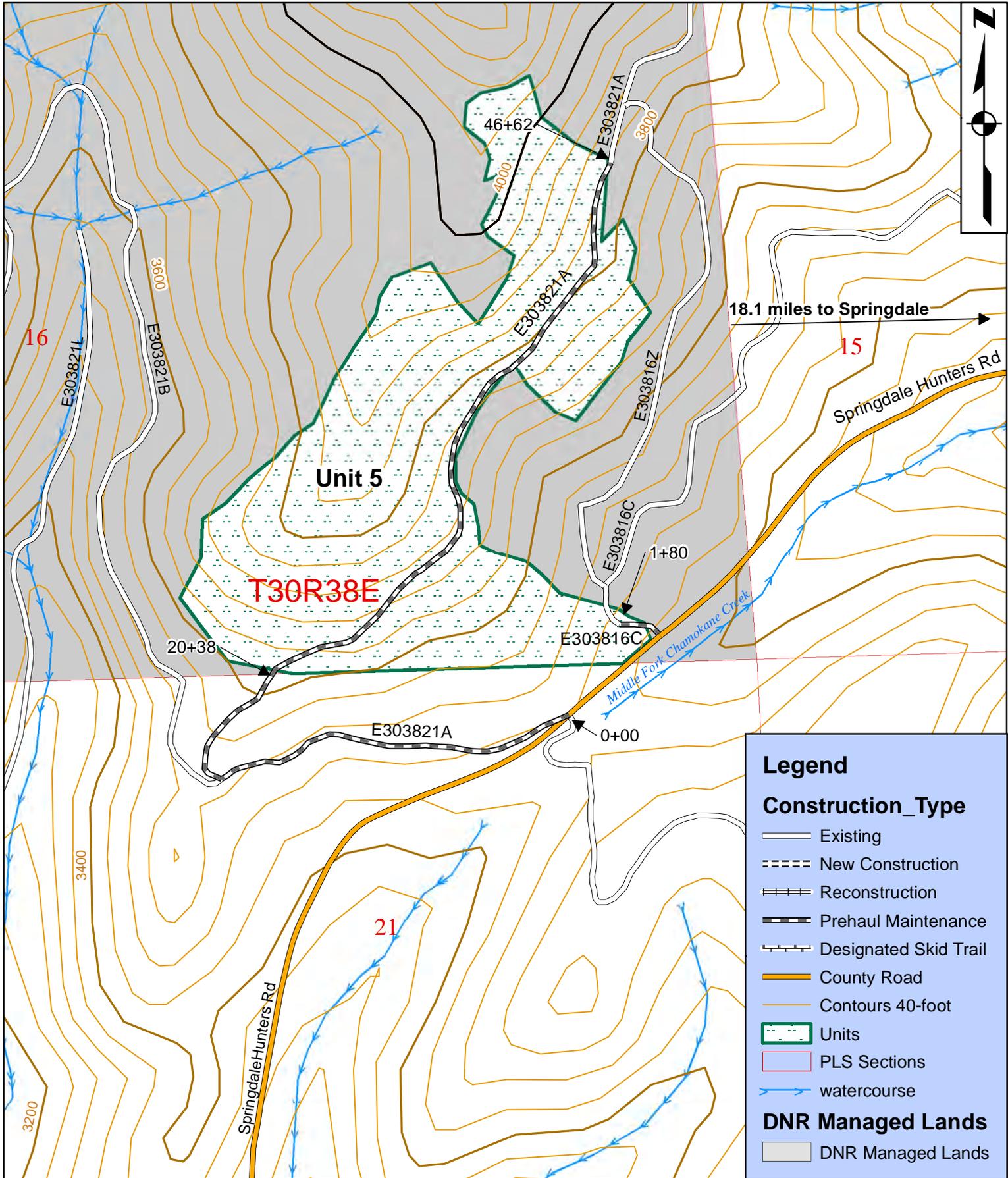
- Existing
- - - - New Construction
- ==== Reconstruction
- ▬▬▬ Prehaul Maintenance
- ⊢⊢⊢ Designated Skid Trail
- ▬ County Road
- Contours 40-foot
- Watercourse
- ▭ PLS Sections
- ▭ Units
- ▭ Granted Trust Lands

Washington State Department of Natural Resources

Sale Name: Blackhorse Fire Salvage  
 Agreement No.: 30-093304

Road Plan Map  
 Page 6 of 12

Region: Northeast  
 County: Stevens



**Legend**

**Construction\_Type**

- Existing
- - - - New Construction
- · · · Reconstruction
- ▬▬▬▬ Prehaul Maintenance
- ⊥⊥⊥⊥ Designated Skid Trail
- County Road
- Contours 40-foot
- ▭ Units
- ▭ PLS Sections
- watercourse

**DNR Managed Lands**

- ▭ DNR Managed Lands

500 250 0 500 1,000 Feet

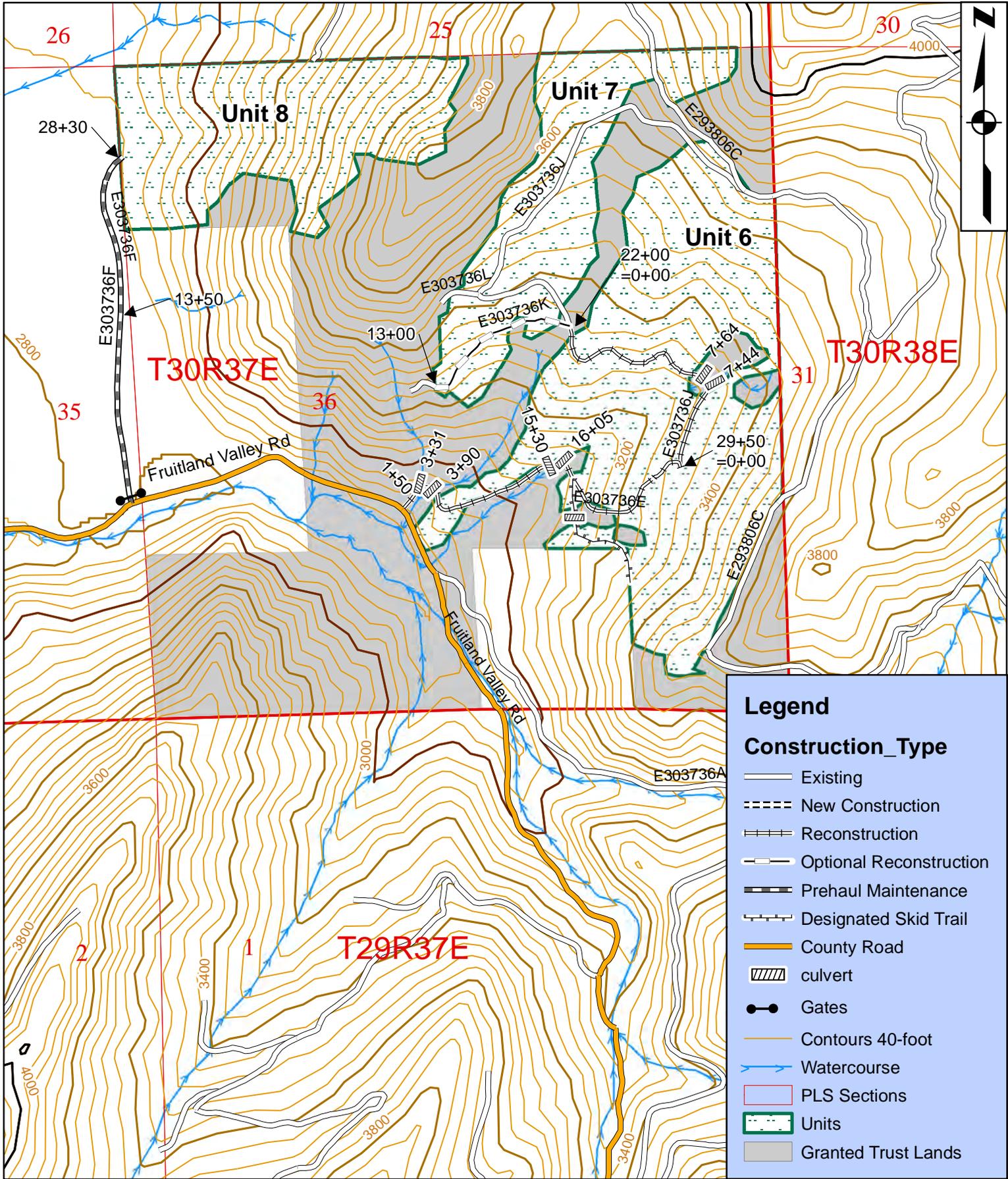
1 inch = 500 feet

Washington State Department of Natural Resources

Sale Name: Blackhorse Fire Salvage  
 Agreement No.: 30-093304

Road Plan Map  
 Page 7 of 12

Region: Northeast  
 County: Stevens



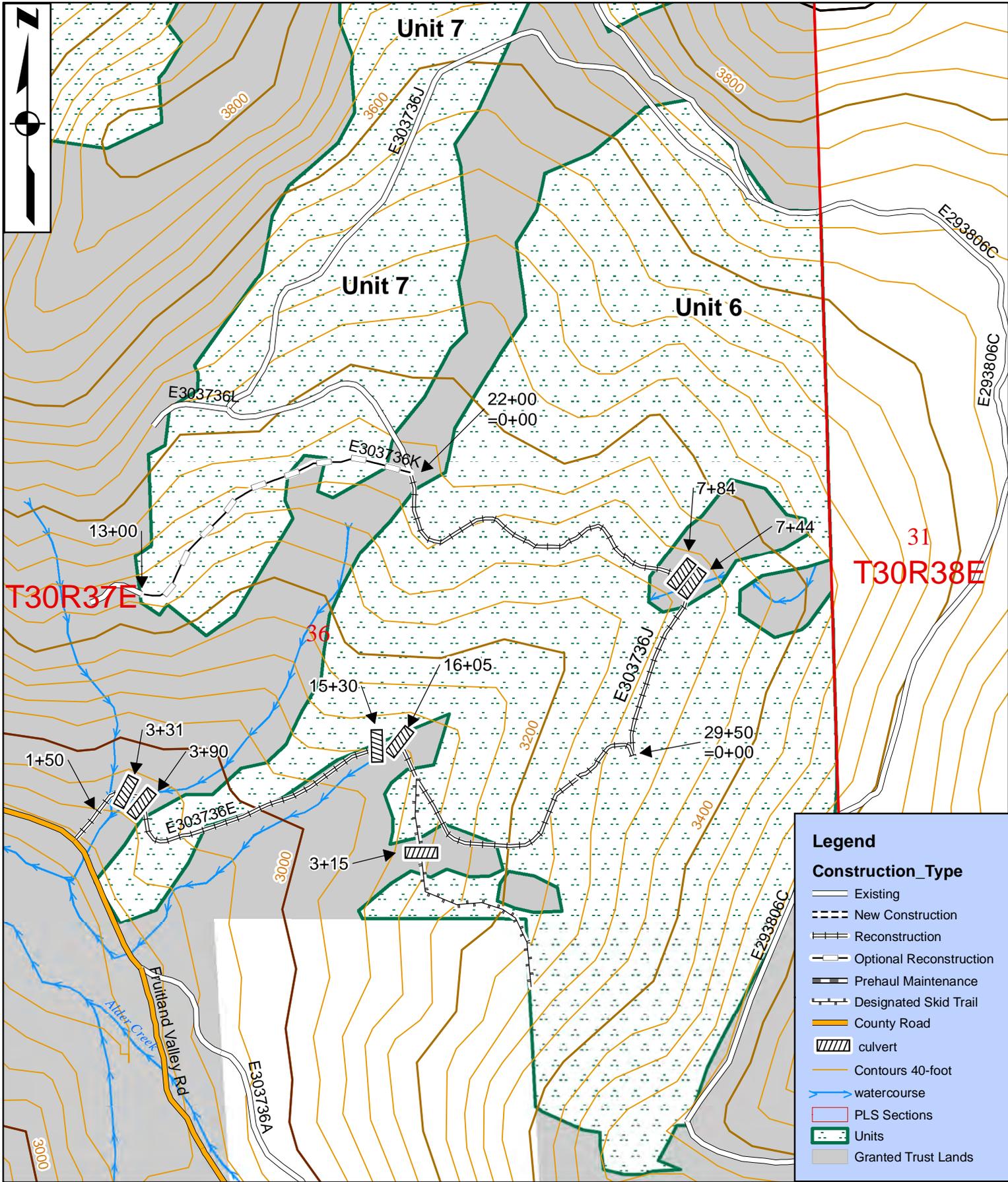
**Legend**

**Construction\_Type**

- Existing
- - - - New Construction
- ==== Reconstruction
- · - · Optional Reconstruction
- ▬▬▬▬ Prehaul Maintenance
- ▬▬▬▬ Designated Skid Trail
- ▬▬▬▬ County Road
- ▨▨▨▨ culvert
- Gates
- Contours 40-foot
- Watercourse
- ▭ PLS Sections
- ▭ Units
- ▭ Granted Trust Lands

1,000 500 0 1,000 2,000 Feet

1 inch = 1,000 feet



Legend	
Construction_Type	
	Existing
	New Construction
	Reconstruction
	Optional Reconstruction
	Prehaul Maintenance
	Designated Skid Trail
	County Road
	culvert
	Contours 40-foot
	watercourse
	PLS Sections
	Units
	Granted Trust Lands

500 250 0 500 1,000 Feet

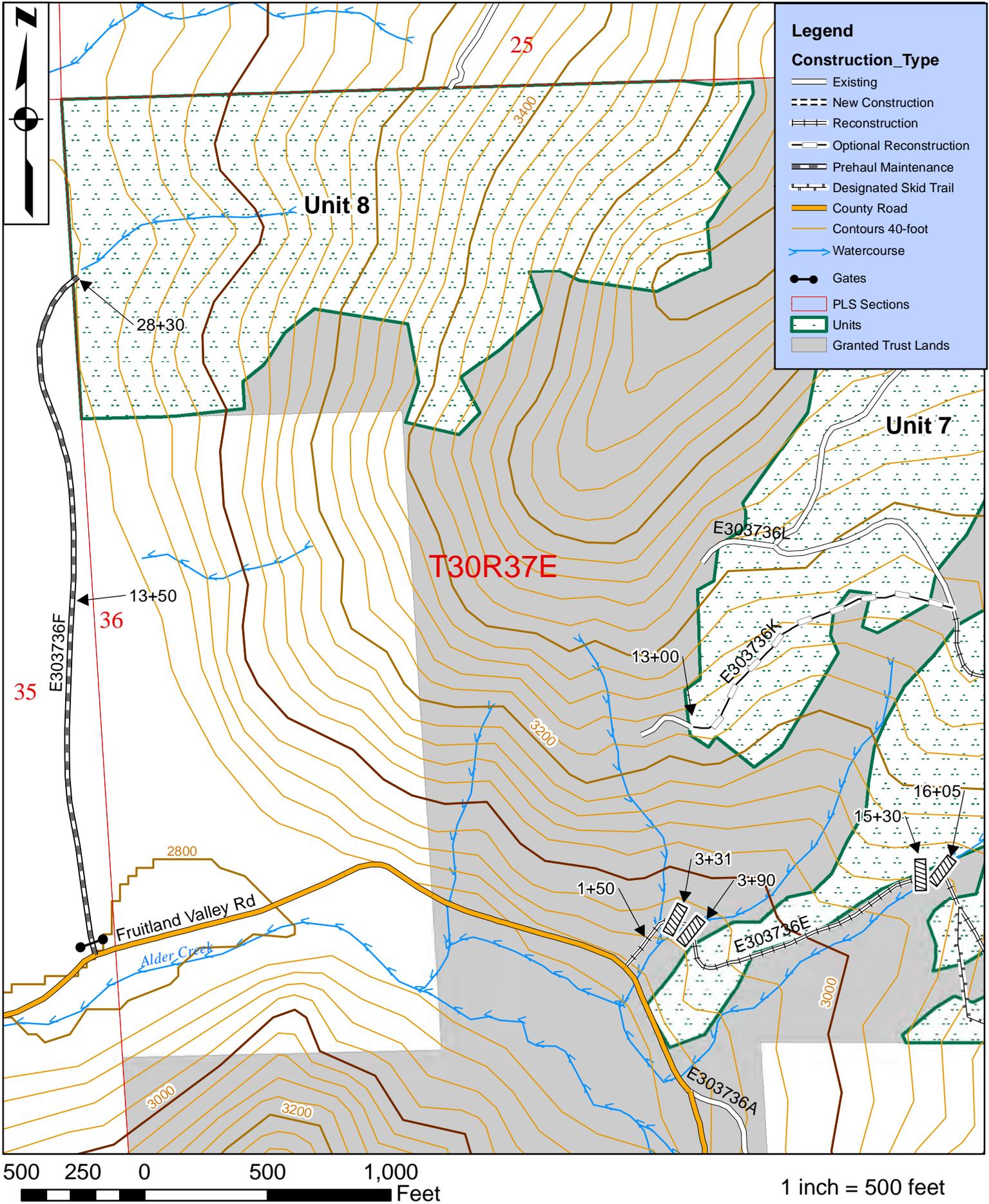
1 inch = 500 feet

Washington State Department of Natural Resources

Sale Name: Blackhorse Fire Salvage  
Agreement No.: 30-093304

Road Plan Map  
Page 9 of 12

Region: Northeast  
County: Stevens



**Legend**

**Construction\_Type**

- Existing
- New Construction
- Reconstruction
- Optional Reconstruction
- Prehaul Maintenance
- Designated Skid Trail
- County Road
- Contours 40-foot
- Watercourse
- Gates
- PLS Sections
- Units
- Granted Trust Lands

500 250 0 500 1,000 Feet

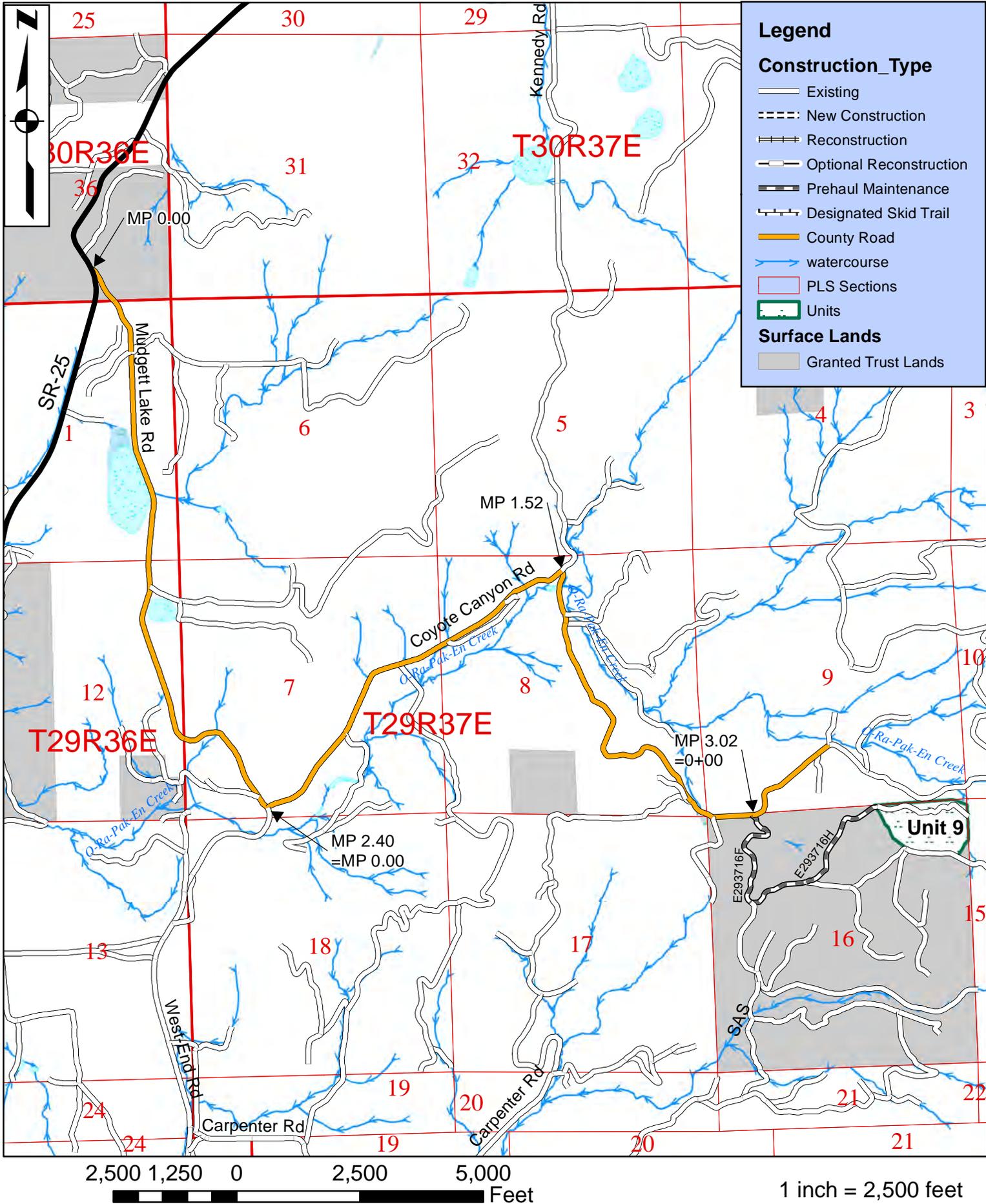
1 inch = 500 feet

Washington State Department of Natural Resources

Sale Name: Blackhorse Fire Salvage  
Agreement No.: 30-093304

Road Plan Map  
Page 10 of 12

Region: Northeast  
County: Stevens

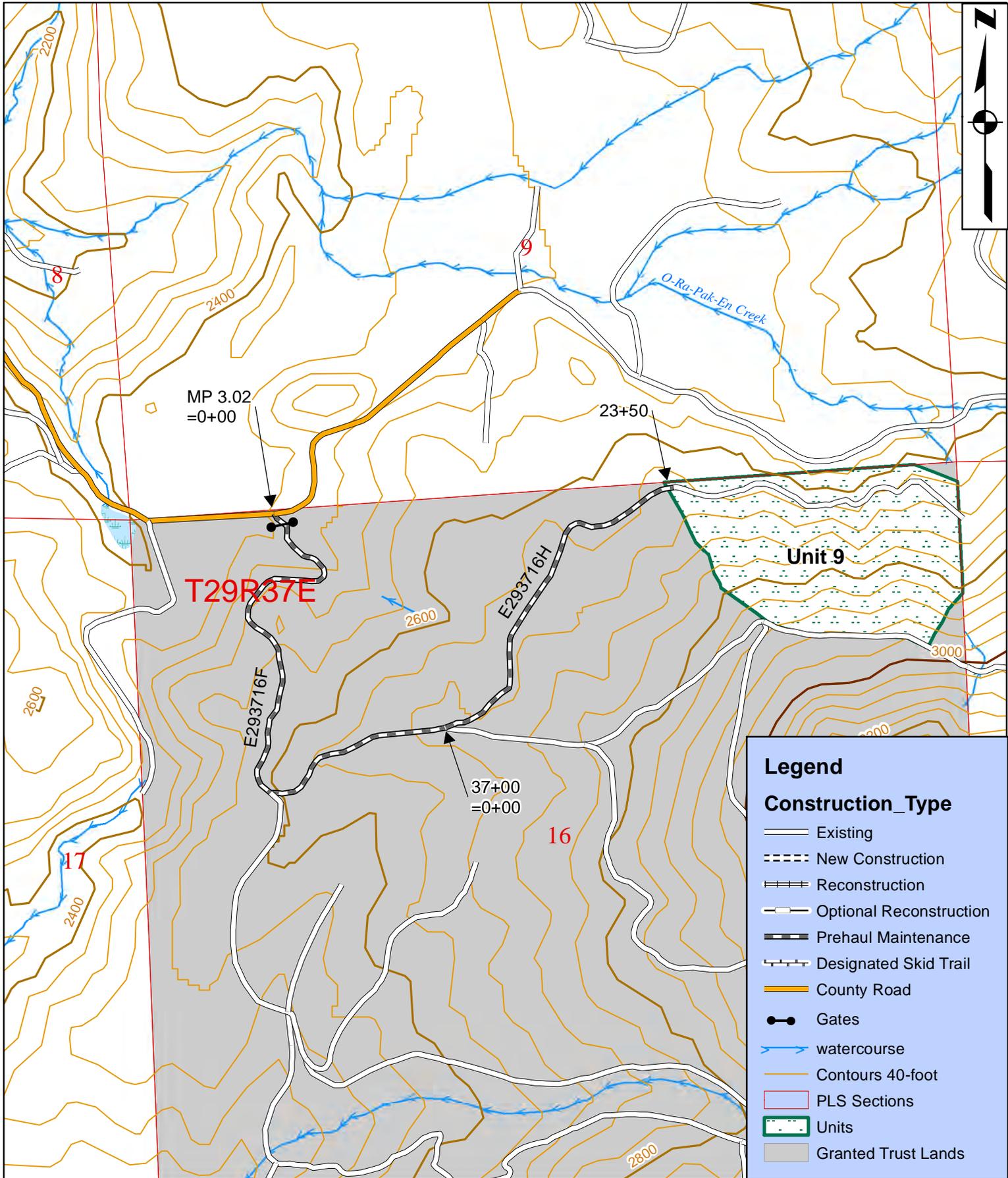


Washington State Department of Natural Resources

Sale Name: Blackhorse Fire Salvage  
 Agreement No.: 30-093304

Road Plan Map  
 Page 11 of 12

Region: Northeast  
 County: Stevens



**Legend**

**Construction\_Type**

- Existing
- - - - New Construction
- ==== Reconstruction
- - - - Optional Reconstruction
- Prehaul Maintenance
- Designated Skid Trail
- County Road
- Gates
- watercourse
- Contours 40-foot
- PLS Sections
- Units
- Granted Trust Lands

800 400 0 800 1,600 2,400 Feet

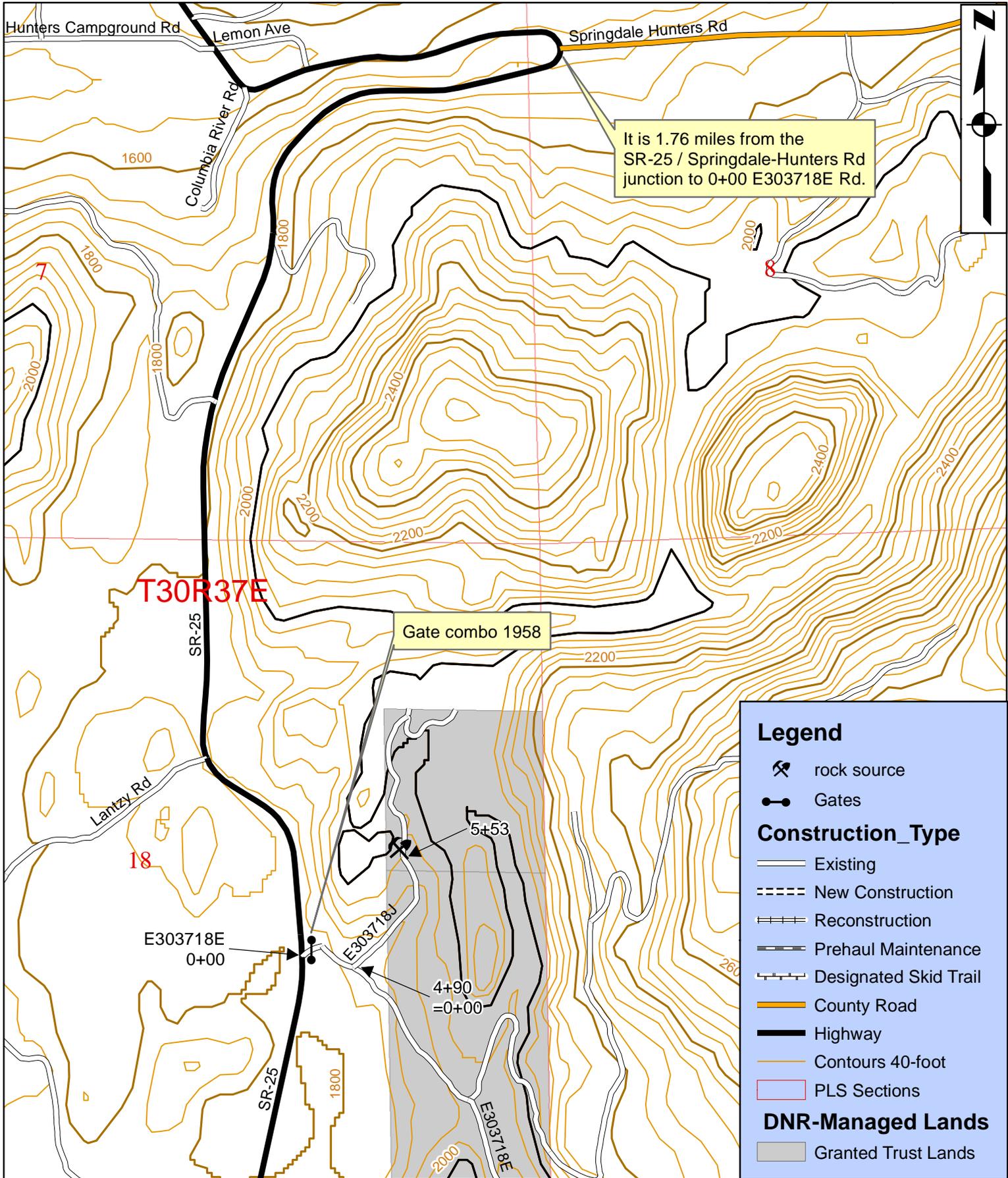
1 inch = 800 feet

Washington State Department of Natural Resources

Sale Name: Blackhorse Fire Salvage  
Agreement No.: 30-093304

Road Plan Map  
Page 12 of 12

Region: Northeast  
County: Stevens



5,000

2,500

0

1 inch = 1,000 feet

STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

BLACK HORSE FIRE SALVAGE TIMBER SALE ROAD PLAN  
STEVENS COUNTY  
NORTH COLUMBIA DISTRICT

AGREEMENT NO.: 30-093304

STAFF ENGINEER: GENE GIBBS

DATE: 12/2/2015

DRAWN & COMPILED BY: GENE GIBBS

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>
E313816A	0+00 to 7+90	Pre-haul Maintenance
E313832A	0+00 to 110+25	Pre-haul Maintenance
E313832A	110+25 to 111+55	New Construction
E313832A	111+55 to 146+56	Pre-haul Maintenance
E313828E	0+00 to 18+15	Pre-haul Maintenance
E303805E	0+00 to 20+40	Pre-haul Maintenance
E313832M	0+00 to 3+15	New Construction
E303821A	0+00 to 46+62	Pre-haul Maintenance
E303816C	0+00 to 1+80	Pre-haul Maintenance
E303736F	0+00 to 28+30	Pre-haul Maintenance
E303736E	0+00 to 29+50	Reconstruction
E303736J	0+00 to 22+00	Reconstruction
E293716F	0+00 to 37+00	Pre-haul Maintenance
E293716H	0+00 to 23+50	Pre-haul 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>
E303736K	0+00 to 13+00	Reconstruction

**0-4 CONSTRUCTION**

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
E313832A	110+25 to 111+55	Widen the running surface on the approaches to the switchback an additional 5 feet on the outside of fill slope, and 5 additional feet into the cut slope.
E313832M	0+00 to 3+15	Construct road in accordance to THE TYPICAL SECTION SHEET.

Construction includes, but is not limited to clearing & grubbing, pioneering & decking logs, subgrade construction and compaction, rolling dip, cross drain, and culvert installation, Fish passage structure installation, cut & fill, embankment construction, riprap and rock application. Construct roads to the TYPICAL SECTION SHEET, ROCK LIST, and CULVERT & DRAINAGE LIST, for general specifications, unless otherwise specified in design details.

**0-5 RECONSTRUCTION**

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
E303736E	0+00 to 29+50	Reconstruct road in accordance to typical section and CULVERT & DRAINAGE LIST. Remove 3 soils berms at station 1+50, and install temporary stream crossings at stations 3+31, 3+90 and 16+05.
E303736J	0+00 to 22+00	Reconstruct road in accordance to typical section and CULVERT & DRAINAGE LIST. Install temporary stream crossings at stations 7+44 and 7+64. Trees and brush will need to be removed from the subgrade, cut and fill slopes. No pulling of stumps and root systems will be permitted on the cut and fill slopes.
E303736K	0+00 to 13+00	Optional Reconstruction: Reconstruct road in accordance to typical section and CULVERT & DRAINAGE LIST. Trees and brush will need to be removed from the subgrade, cut and fill slopes. No pulling of stumps and root systems will be permitted on the cut and fill slopes.

Reconstruction includes, but is not limited to clearing & grubbing, subgrade reconstruction, rolling dip, cross drain, and culvert installation, bridge installation, cut & fill, embankment construction, culvert and ditch cleaning, riprap and rock application.

Reference the TYPICAL SECTION SHEET, ROCK LIST, and CULVERT & DRAINAGE LIST, for general specifications.

**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>
E313816A	0+00 to 7+90	Reshape road to provide drainage as needed. Clean inlet of cross drain at 7+90 and reshape approximately 30' of ditch line to ensure inlet of cross drain is the lowest point of ditch.
E313832A	0+00 to 110+25	Reshape road to provide drainage as needed.
E313832A	111+55 to 146+56	Reshape road to provide drainage as needed. Light brushing required, brush road in accordance with brushing detail. Fill in and compact 2 burnt out stump holes on edge of subgrade at station 129+30.
E313828E	0+00 to 18+15	Reshape road to provide drainage as needed. Light brushing required, brush road in accordance with brushing detail.
E303805E	0+00 to 20+40	Reshape road to provide drainage as needed.
E303821A	0+00 to 46+62	Reshape road to provide drainage as needed.
E303816C	0+00 to 1+80	Reshape road to provide drainage as needed.
E303736F	0+00 to 28+30	Reshape road to provide drainage as needed.
	0+00 to 13+50	Upon completion of hauling activities reshape subgrade and apply lift of rock as shown in the ROCK LIST.
E293716F	0+00 to 37+00	Reshape road to provide drainage as needed.
E293716H	0+00 to 23+50	Reshape road to provide drainage as needed.

Maintenance includes, but is not limited to brushing, clearing, subgrade reshaping, rolling dip, cross drain, underdrain, and culvert installation, cleaning culverts and ditches, grading, and riprap and rock application. Reference the TYPICAL SECTION SHEET, ROCK LIST, and CULVERT & DRAINAGE LIST, for general specifications.

**0-7 POST-HAUL MAINTENANCE**

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

**0-8 CLOSURE**

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

**0-9 DECOMMISSIONING**

This project includes decommissioning listed in Clause 9-20 ROAD DECOMMISSIONING.

**0-10 ABANDONMENT**

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

**0-12 DEVELOP ROCK SOURCE**

Purchaser may develop a new rock source. Work for developing rock sources is listed in Section 6 ROCK AND SURFACING.

**0-13 STRUCTURES**

Purchaser shall provide and install structures. Requirements for these structures are listed in Section 7 STRUCTURES.

**SECTION 1 – GENERAL**

**1-1 ROAD PLAN CHANGES**

If the Purchaser desires a change from this road plan including, but not limited to, relocation, extension, change in design, or adding roads; a revised road plan 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, unless controlled by construction stakes or design data (plan, profile, and cross-sections).

**1-4 ROAD TOLERANCES**

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

<u>Tolerance Class</u>	<u>A</u>	<u>B</u>	<u>C</u>
Road and Subgrade Width (feet)	+1.5	+1.5	+2.0
Subgrade Elevation (feet +/-)	0.5	1.0	2.0

Centerline alignment (feet lt./rt.)	1.0	1.5	3.0
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**1-5 DESIGN DATA**

Design data is available upon request at the Department of Natural Resources Northeast Region Office in Colville, 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.

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

**1-7 TEMPORARY ROAD CLOSURE**

Purchaser shall notify the Contract Administrator a minimum of 5 calendar days before the closure of any road. Construction may not close the any roads for more than 5 consecutive days unless authorized by the contract administrator.

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

Purchaser shall repair or replace all materials, roadway infrastructure, and road components damaged during road work or operation activities. The Contract Administrator will direct repairs and replacements. Repairs to structural materials must be made in accordance with the manufacturer’s recommendation , and may not begin without written approval from the Contract Administrator.

**1-9 DAMAGED METALLIC COATING**

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

**1-10 WSDOT STANDARD SPECIFICATION REFERENCE**

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

## SUBSECTION ROAD MARKING

### **1-15 ROAD MARKING**

Purchaser shall perform road work in accordance with the state's marked location. All road work is marked as follows:

- Center line marked with orange flagging for new construction
- Maintenance and reconstruction stationing marked on orange ribbon and/or pink tags.

### **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 timber hauling, rock hauling, other than timber cut on the right-of-way, without written approval from the Contract Administrator.

### **1-22 WORK NOTIFICATIONS**

Purchaser shall notify the Contract Administrator a minimum of 5 calendar days before work begins.

### **1-23 ROAD WORK PHASE APPROVAL**

Purchaser shall obtain written approval from the Contract Administrator upon completion of each of the following phases of road work:

- Subgrade construction
- Drainage installation
- Subgrade compaction
- Rock application
- Rock compaction
- Excavation to elevation

### **1-25 ACTIVITY TIMING RESTRICTION**

Construction restrictions apply to this contract. All construction and transportation of heavy equipment and/or trucks is prohibited between the following dates, except as may be authorized in writing by the Contract Administrator.

March 1 to May 1

### **1-26 OPERATING DURING CLOSURE PERIOD**

If permission is granted to operate during a closure period, 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.

**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 jaw run or pit run roads.
- Wheel track rutting exceeds 4 inches on crushed rock roads.
- Wheel track rutting exceeds 6 inches on native surface 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.

**1-32 BRIDGE AND ASPHALT SURFACE RESTRICTION**

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

If tracked equipment is used on bridge or asphalt surfaces, Purchaser shall immediately cease all road construction and hauling operations. Purchaser shall remove any dirt, rock, or other material tracked or spilled on the bridge or asphalt surface(s) and have surface(s) evaluated for any damage caused by transporting equipment. Any damage to the surface(s) will be repaired, at the Purchaser's expense, as directed by the Contract Administrator.

**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.

**1-40 ROAD APPROACHES TO COUNTY ROADS AND STATE HIGHWAYS**

Purchaser shall immediately remove any mud, dirt, rock, or other material tracked or spilled on to county roads and state highways.

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

**1-43 ROAD WORK AROUND UTILITIES**

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

SECTION 2 – MAINTENANCE

**2-1 GENERAL ROAD MAINTENANCE**

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

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

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

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

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

**2-4 PASSAGE OF LIGHT VEHICLES**

Purchaser shall maintain roads in a condition that will allow the passage of light administrative vehicles.

**2-5 MAINTENANCE GRADING – EXISTING ROAD**

Purchaser shall use a grader to shape the existing surface before. Purchaser shall accomplish all grading using a motor grader with a minimum of 175 horsepower.

**2-6 CLEANING CULVERTS**

Purchaser shall clean the inlets, outlets and catch basins of all culverts on constructed, reconstructed, or maintained roads.

**SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL**

**3-1 BRUSHING**

Purchaser shall cut vegetative material up to 3 inches in diameter, including limbs, as shown on the BRUSHING DETAIL. Brushing must be achieved by manual or 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.

Purchaser shall cut vegetative material up to 3 inches in diameter, including limbs, as shown on the BRUSHING DETAIL. Brushing must be achieved by manual or 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.

**3-2 BRUSHING RESTRICTION**

Pulling, digging, pushing over, and other non-cutting methods used for vegetation removal may not be used for brushing within riparian management zones. Excavator buckets, log loaders and similar equipment may not be used for brushing unless otherwise approved in writing by the Contract Administrator.

**3-5 CLEARING**

Purchaser shall fall all vegetative material larger than 3 inches DBH or over 5 feet high between the marked right-of-way boundaries and within waste and debris areas or if not marked in the field, between the clearing limits specified on the TYPICAL SECTION SHEET. Clearing must be completed before starting excavation and embankment.

**3-7 RIGHT-OF-WAY DECKING**

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

**3-8 PROHIBITED DECKING AREAS**

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

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

### **3-10 GRUBBING**

Purchaser shall remove all stumps between the grubbing limits specified on the TYPICAL SECTION SHEET. Those stumps outside the grubbing limits but with undercut roots shall also be removed. Stumps over 22 inches diameter shall be split. Stumps over 40 inches shall be quartered. Grubbing shall be completed before starting excavation and embankment.

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

Organic debris is defined as all vegetative material not eligible for removal by Contract Clauses G-010 PRODUCTS SOLD AND SALE AREA or G-011 RIGHT TO REMOVE FOREST PRODUCTS AND CONTRACT AREA, that is larger than one cubic foot in volume within the grubbing 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. All disposal of organic debris, except burning, shall be completed before the application of rock or timber haul.

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

Waste areas for organic debris shall be located within the cleared right-of-way or in natural openings, or in areas approved in writing by the Contract Administrator.

### **3-23 PROHIBITED DISPOSAL AREAS**

Purchaser shall not place organic debris in the following areas:

- Within 50 feet of a cross drain culvert.
- Within 100 feet of a live stream, or wetland.
- On road subgrades, or excavation and embankment slopes.
- On slopes greater than 40%.
- Within the operational area for cable landings where debris may shift or roll.
- On locations where brush can fall into the ditch or onto the road surface.
- Against standing timber.

### **3-24 BURYING ORGANIC DEBRIS RESTRICTED**

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

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

Purchaser shall scatter organic debris outside of the grubbing limits on the downhill side of the road unless otherwise directed by the Contract Administrator.

**3-30 EXCLUSION OF DOZER BLADES**

Purchaser shall not use dozer blades for the piling of organic debris.

**3-31 PILING**

Purchaser shall pile organic debris no closer than 20 feet from standing timber and no higher than 10 feet in areas specified in Clause 3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS. Piles must be burnable, clean and free of rock and soil.

**SECTION 4 – EXCAVATION**

**4-1 EXCAVATOR CONSTRUCTION**

Purchaser shall use a track mounted hydraulic excavator for construction work, unless authorized in writing by the Contract Administrator.

**4-2 PIONEERING**

Pioneering may not extend more than 1000 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

**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 5% grade change.
- Transition grades required to meet switchback grade limitations must be constructed on the tangents preceding and departing from the switchbacks.

**4-5 CUT SLOPE RATIO**

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>
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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:

- 7 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 1 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 road(s), and where side slopes exceed 45%, Purchaser shall use full bench construction for the entire subgrade width except as construction staked or designed. If designated, Purchaser shall haul waste material to the location specified in Clause 4-37 WASTE AREA LOCATION.

**4-14 ONE-FOOT EXCAVATION LIMIT**

Purchaser shall not exceed a one-foot cut at centerline where side slopes are less than 15% unless approved by the Contract Administrator.

**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.

**4-22 TURNAROUNDS**

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

**4-25 DITCH CONSTRUCTION AND RECONSTRUCTION**

Purchaser shall construct and/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 needed and as directed by the Contract Administrator. Purchaser shall construct ditchouts at locations shown on the culvert and drainage sheet. 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 45% if the waste material is compacted and free of organic debris. On side slopes greater than 55%, 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 areas identified or approved by the Contract Administrator. The amount of material allowed in a waste area is at the discretion of the Contract Administrator.

**4-38 PROHIBITED WASTE DISPOSAL AREAS**

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

- Within 50 feet of a cross drain culvert.

- Within 100 feet of a live stream or wetland.
- Within a riparian management zone.
- On side slopes steeper than 40%.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Within the operational area for cable landings.
- Against standing timber.

**4-45 SELECT BORROW**

Select borrow consists of granular material, either naturally occurring or processed, and contains no more than 5% clay, organic debris, or trash by volume.

**4-46 COMMON BORROW**

Common borrow consists of soil, and/or aggregate that is non-plastic and contains no more than 5% clay, organic debris, or trash by volume. The material is considered non-plastic if the fines in the sample cannot be rolled, between the hand and a smooth surface, into a thread at any moisture content.

**4-47 NATIVE MATERIAL**

Native material consists of naturally occurring material that is free of organic debris, trash, and rocks greater than 6 inches in any dimension.

**4-48 BORROW MATERIAL**

Borrow material may not contain more than 5% clay, organic debris, or trash by volume.

**4-49 BORROW SOURCE**

Purchaser shall obtain borrow material from borrow sources identified or approved by the Contract Administrator. Development of the borrow source must be in accordance with written BORROW SOURCE DEVELOPMENT PLAN to be submitted by the Purchaser and approved in writing by the Contract Administrator.

**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. Purchaser shall accomplish final shaping using a motor grader with a minimum of 175 horsepower.

**4-56 DRY WEATHER SHAPING**

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

**4-60 FILL COMPACTION**

Purchaser shall compact all embankment and waste material. Minimum acceptable compaction is achieved by placing embankments in 1 foot or shallower lifts, and routing excavation equipment over the entire width of each lift. Waste material may be placed by end-dumping or sidecasting until sufficiently wide enough to support the equipment.

Except as otherwise specified in this plan, a vibratory plate compactor or tamper shall be used for areas specifically requiring keyed embankment construction, and for embankment segments too narrow to accommodate equipment. Compaction with a plate compactor shall be made by a minimum of three full coverages; each lift shall not exceed 6 inches in depth.

**4-61 SUBGRADE COMPACTION**

Purchaser shall compact constructed or reconstructed subgrades by routing equipment over the entire width. Subgrade compaction shall be approved, in writing, by the Contract Administrator before rock application or timber haul.

**4-62 DRY WEATHER COMPACTION**

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

**4-63 EXISTING SURFACE COMPACTION**

Purchaser shall compact maintained road surfaces by routing equipment over the entire width.

**SECTION 5 – DRAINAGE**

**5-1 REMOVAL OF SHOULDER BERMS**

Purchaser shall remove berms from road shoulders to permit the escape of runoff. The construction of ditchouts will be required where ponding will result from the effects of sidecast debris.

**5-5 CULVERTS**

Purchaser shall install culverts as part of this contract. Culverts shall be installed concurrently with subgrade work and shall be installed before subgrade compaction and rock application. Culvert locations and the minimum requirements for culvert length and diameter are designated on the CULVERT AND DRAINAGE LIST. Culvert, downspout, and flume lengths shall be adjusted to fit as-built conditions and shall not terminate directly on unprotected soil that will erode. Culverts shall be new steel, aluminum, or polyethylene meeting the material specifications in Clauses 10-15 through 10-23. Culvert placement shall precede embankment construction.

**5-7 TEMPORARY STREAM CULVERT INSTALLATION**

Purchaser shall install temporary culverts on the following roads as shown in the CULVERT & DRAINAGE LIST. Temporary stream culverts shall be located in the natural channel of the stream. Temporary culverts shall be installed as shown in the temporary culvert detail. Temporary culverts shall be removed upon completion of use of the road and in accordance with FPA.

<u>Road</u>	<u>Stations</u>
E303736E	3+31
	3+90
	15+30
	16+05
E303736J	7+44
	7+64

**5-11 UNUSED MATERIALS STATE PROPERTY**

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

**5-15 CULVERT INSTALLATION**

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

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

Purchaser shall obtain written approval from the Contract Administrator for the installation of culverts 30 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 specified in the Engineer's design or as recommended by the culvert manufacturer for the type and size of the pipe. Minimum depth shall not be less 2 feet.

**5-20 ENERGY DISSIPATERS**

Purchaser shall install energy dissipaters at all culverts on the CULVERT & DRAINAGE LIST. 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. Rock used for energy dissipaters must weigh at least 20 pounds. Energy dissipaters must extend a minimum of 1 foot to each side of the culvert at the outlet and a minimum of 2 feet beyond the outlet. Placement must be by zero-drop-height method only. No placement by end dumping or dropping of rock is allowed.

**5-21 DOWNSPOUTS AND FLUMES**

Downspouts and flumes longer than 5 feet shall be staked on both sides at maximum intervals of 10 feet with 6-foot heavy-duty steel posts, and fastened securely to the posts with No. 10 galvanized smooth wire or 1/2-inch bolts in accordance with 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, except for temporary culverts. Rock used for headwalls must weigh at least 20 pounds or meet the specifications for Light Loose Riprap. 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. Placement must be by zero-drop-height method only.

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

Purchaser shall place Light Loose Riprap in conjunction with immediately following construction of the embankment. Rock must be placed on or shoulders, slopes, and around culvert inlets and outlets as designated on the CULVERT & DRAINAGE LIST DETAIL OR LIST and attached culvert design or as directed by the Contract Administrator. Rock may not restrict the flow of water into culvert inlets or catch basins. Placement must be by zero-drop-height method only. No placement by end dumping or dropping of rock is allowed.

**5-31 ROLLING DIP CONSTRUCTION**

Purchaser shall construct rolling dips in accordance with the ROLLING DIP DETAIL and as specified on the CULVERT & DRAINAGE LIST. Rolling dips shall be installed concurrently with construction of the subgrade and shall be maintained in an operable condition. Minimum frequency of rolling dips shall be at a maximum spacing of 400 feet horizontal or one for every 10 feet of vertical change.

**5-33 NATIVE SURFACE ROADS**

If overwintered, native surface roads must be water barred. Purchaser shall construct waterbars according to the attached WATERBAR DETAIL at a maximum spacing that will produce a vertical distance of no more than 10 feet between waterbars or between natural drainage paths, and with a maximum spacing of 300 feet.

**SECTION 6 – ROCK AND SURFACING**

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

Rock used in accordance with the quantities on the ROCK LIST may be obtained from the following source(s) on state land at no charge to the Purchaser. 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. Purchaser shall notify the Contract Administrator a minimum of 5 calendar days before starting any operations in the listed locations.

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
E303718J Road	Sec. 18, T30N R37E	Barrow pit

**6-5 ROCK FROM COMMERCIAL SOURCE**

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

**6-10 ROCK SOURCE DEVELOPMENT PLAN BY STATE**

Purchaser shall conduct rock source development and use shall be in accordance with a written ROCK SOURCE DEVELOPMENT PLAN prepared by the state and on file at the Northeast Region office. Upon completion of operations, the rock source shall be left in the condition specified in the ROCK SOURCE DEVELOPMENT PLAN, and approved in writing by the Contract Administrator. The Purchaser shall notify the Contract

Administrator a minimum of 5 calendar days before starting any operations in the rock source.

**6-12 ROCK SOURCE SPECIFICATIONS**

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

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

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

- Pit walls must be maintained in a condition to minimize the possibility of the walls sliding or failing.
- The width of pit benches must be a minimum of 1.5 times the maximum length of the largest machine used.
- The surface of pit floors and benches must be uniform and free-draining at a minimum 2% outslope gradient.
- Add in additional information as needed.
- 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.

**6-21 IN-PLACE PROCESSING**

The 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 restrictions 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.

**6-26 5/8-INCH MINUS CRUSHED ROCK**

% Passing 5/8" square sieve	100%
% Passing 3/8" square sieve	55 - 75%

% Passing U.S. #4 sieve 40 - 60%  
 Of the fraction passing the No. 4 sieve, 40% to 60% must pass the No. 10 sieve.

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

**6-28 1 ¼-INCH MINUS CRUSHED ROCK**

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

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

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

Purchaser shall manufacture 4-inch in-place rock. In-place processing such as grid rolling, jaw crushing, or other such method as demonstrated by the Purchaser to be effective, shall be required if necessary to achieve the following requirements:

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

In-place rock shall contain no more than 5 percent by weight of organic debris and trash. No more than 40 percent of rock shall be larger than 8 inches in any dimension and no rock shall be larger than 12 inches in any dimension.

**6-41 PIT RUN ROCK**

No more than 20 percent of the rock may be larger than 8 inches in any dimension and no rock may be larger than 12 inches in any dimension. Pit Run rock may not contain more than 5 percent by weight of organic debris, dirt, and trash. Rock may require processing to meet this specification.

**6-50 LIGHT LOOSE RIP RAP**

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

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

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

Measurement of specified rock depths, are defined as the compacted depth(s) using the compaction methods required in this road plan. Estimated quantities specified in the ROCK LIST are compacted 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**

An existing rock stockpile is located as listed below. Stockpiled rock is to be used on the E303736F road as specified in road plan.

<u>Rock Source</u>	<u>Rock Type</u>	<u>Quantity (c.y.)</u>	<u>Stockpile Location</u>
E303718J Road	Pit Run	400	Sec. 18, T30N R37E

**6-67 ROCK STOCKPILE SPECIFICATIONS**

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

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

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

**6-70 APPROVAL BEFORE ROCK APPLICATION**

Purchaser shall obtain written approval from the Contract Administrator that the Subgrade and drainage installations are completed and approved, before rock application.

**6-71 ROCK APPLICATION**

Purchaser shall apply rock in accordance with the specifications and quantities shown on the ROCK LIST. Rock must be spread, shaped, and compacted full width concurrent with rock hauling operations. Road surfaces must be compacted by routing equipment over the entire width.

**6-72 ROCK APPLICATION AFTER HAULING**

On the following roads, upon completion of all hauling operations, Purchaser shall apply surface rock in accordance with the quantities shown on the ROCK LIST.

<u>Road</u>	<u>Stations</u>	<u>*Rock Type</u>
E303736F	0+00 to 13+50	Pit Run

**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 unless otherwise specified in the ROCK LIST.

**6-80 WATERING FOR DUST ABATEMENT**

Upon the request of the contract administrator roads or road segments on the haul route shall be treated with water for dust abatement.

SECTION 7 – STRUCTURES

**7-5 STRUCTURE DEBRIS**

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

**7-6 STREAM CROSSING INSTALLATION**

Installation of stream crossing structures shall be in accordance with the manufacturer's requirements, Forest Practices Rules and Best Management Practices, and any associated HPA.

**7-7 BANK PROTECTION FOR STREAM CROSSING STRUCTURES**

Bank protection shall be designed and constructed to prevent the undermining of the structure.

**7-56 STEEL PIPE, PIPE ARCH, AND STRUCTURAL PLATE INSTALLATION**

Purchaser shall install steel pipe, pipe arches, and structural plate culverts in accordance with the National Corrugated Steel Pipe Association "Installation Manual for Corrugated Steel Pipe, Pipe Arches, and Structural Plate." Installation is subject to the inspection and approval of the Contract Administrator before placement and backfill. The latest edition of the NCSA Installation Manual can be found at [www.ncspa.org](http://www.ncspa.org).

**7-57 CULVERT SHAPE CONTROL**

Purchaser shall monitor the culvert shape during backfill and compaction. Special attention must be paid to maintaining the structure’s rise dimensions, concentricity, and smooth uniform curvature. If compaction methods are resulting in peaking or deflection of the culvert, Purchaser shall modify the compaction method to achieve the appropriate end result.

**7-71 GATE CLOSURE DURING HAUL**

On the following road(s), Purchaser shall keep gates closed and locked except for passing vehicles. If Purchaser elects to use an alternate plan for gate security, Purchaser shall submit a detailed plan to the Contract Administrator for written approval.

<u>Road</u>	<u>Station</u>	<u>Comment</u>
E303736F	0+25	Gate on private property to access Unit 8.
E293716F	0+35	Gate on private property to access Unit 9.
E303718E	0+25	Gate on private property to access rock source.

**SECTION 8 – EROSION CONTROL**

**8-2 PROTECTION FOR EXPOSED SOIL**

Purchaser shall provide and evenly spread a 6-inch layer of straw to all exposed soils within 50 feet of a stream or wetland. Soils may not sit exposed during any rain event.

**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>	<u>Minimum % pure seed</u>	<u>Minimum % germination</u>
Perennial Rye	35-45		
Red Fescue	30-40		
Highland Bent	5-15		
White Clover	10-20		
Inert and Other Crop	0.5		

## SECTION 9 – POST-HAUL ROAD WORK

### 9-1 EARTHEN BARRICADES

Purchaser shall construct barricades in accordance with the NE SPOILS BERM DETAIL.

<u>Road</u>	<u>Stations</u>
E303736E	Near 0+00
E303736J	Near 0+00
E303736K	0+00 and 13+00

### 9-2 CULVERT REMOVAL FROM LIVE STREAM

On the following road(s), Purchaser shall remove existing culverts from live streams and leave the resulting channel open with excavation slope and excavated channel width as specified. Excavated material shall be placed in a waste area approved in writing by the Contract Administrator. Culvert removal from live streams shall be in accordance with the Forest Practices Rules and Best Management Practices, and any additional conditions listed in the Forest Practice Application.

<u>Road</u>	<u>Stations</u>	<u>Excavated Channel Width</u>	<u>Slope Ratio</u>	<u>Comments</u>
E303736E	3+31 & 3+90	3.0 ft.	1.5 : 1	Waste material in adjacent road prism.
	15+30 & 16+05	3.0 ft.	1.5 : 1	Waste material in adjacent road prism.
E303736J	7+44 & 7+64	3.0 ft.	1.5 : 1	Waste material in adjacent road prism.

### 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 and as specified below.

<u>Road</u>	<u>Stations</u>	<u>Additional Requirements</u>
E303736F	0+00 to 28+30	Reshape road to provide drainage as needed.
	0+00 to 13+50	Upon completion of hauling activities reshape subgrade and apply lift of rock as shown in the ROCK LIST.

**9-10 LANDING DRAINAGE**

Purchaser shall provide for drainage of the landing surface.

**9-11 LANDING EMBANKMENT**

Purchaser shall slope landing embankments to the original construction specifications.

**9-20 ROAD DECOMMISSIONING**

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

<u>Road</u>	<u>Stations</u>	<u>Type</u>
E303736E	0+00 to 29+50	Light Decommissioning
E303736J	0+00 to 22+00	Light Decommissioning
E303736K	0+00 to 13+00	Light Decommissioning

**9-22 LIGHT DECOMMISSIONING AND ABANDONMENT**

- Remove road shoulder berms except as directed.
- Construct non-drivable waterbars according to the attached NON-DRIVABLE WATERBAR DETAIL at a maximum spacing that will produce a vertical drop of no more than 10 feet between waterbars or between natural drainage paths and with a maximum spacing of 300 feet, or as marked in the field.
- 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.
- Slope all trench walls and approach embankments no steeper than 1.5:1.
- Apply grass seed concurrently with abandonment and in accordance with Section 8 EROSION CONTROL.
- Cover, concurrently with abandonment, all exposed soils within 50 feet of any live stream, with a 6-inch deep layer of straw.

- Block the roads with earthen barricades in accordance with the attached NE SPOILS BERM DETAIL
- Furnish and evenly spread a 6-inch layer of straw to all exposed soils associated with stream culvert and puncheon removals, as well as all waste material generated by fill removal that are within 30 feet of excavation limits.

## SECTION 10 MATERIALS

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

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

### **10-17 CORRUGATED PLASTIC CULVERT**

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

### **10-18 CORRUGATED STEEL STRUCTURAL PLATE**

Structural plate culverts must be galvanized steel meeting AASHTO M-167 (ASTM A-761) specifications.

### **10-20 FLUME AND DOWNSPOUT**

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

### **10-21 METAL BAND**

Metal coupling and end bands 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 shall be used. Couplings shall be split coupling band. Split coupling bands shall have a minimum of four corrugations, two on each side of the pipe joint.

### **10-23 RUBBER CULVERT GASKETS**

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

**10-24 GAGE AND CORRUGATION**

Unless otherwise stated in the engineer's design, metal culverts must conform to the following specifications for gage and corrugation as a function of diameter.

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

## **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 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.

### **Structures**

- Repair culverts, bridges, gates, fences, cattle guards, signs, and other road structures as required because of purchaser use. Repairs shall be subject to Contract Administrator's approval.

## FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

### Preventative Maintenance

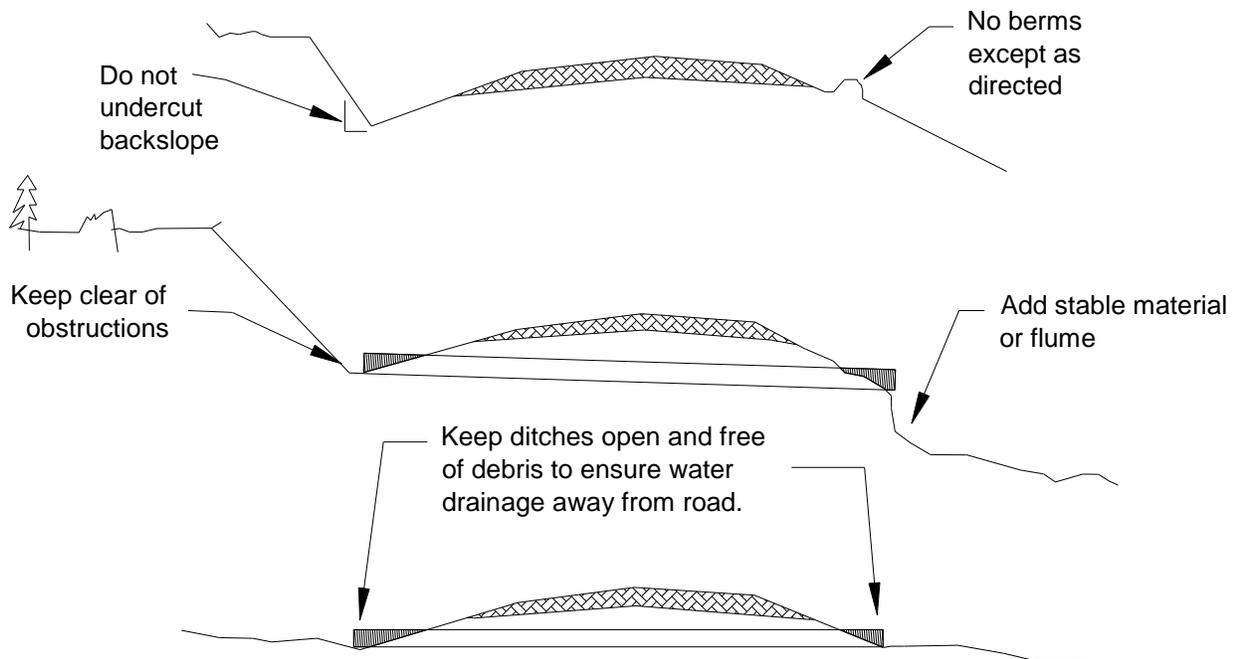
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

### 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.

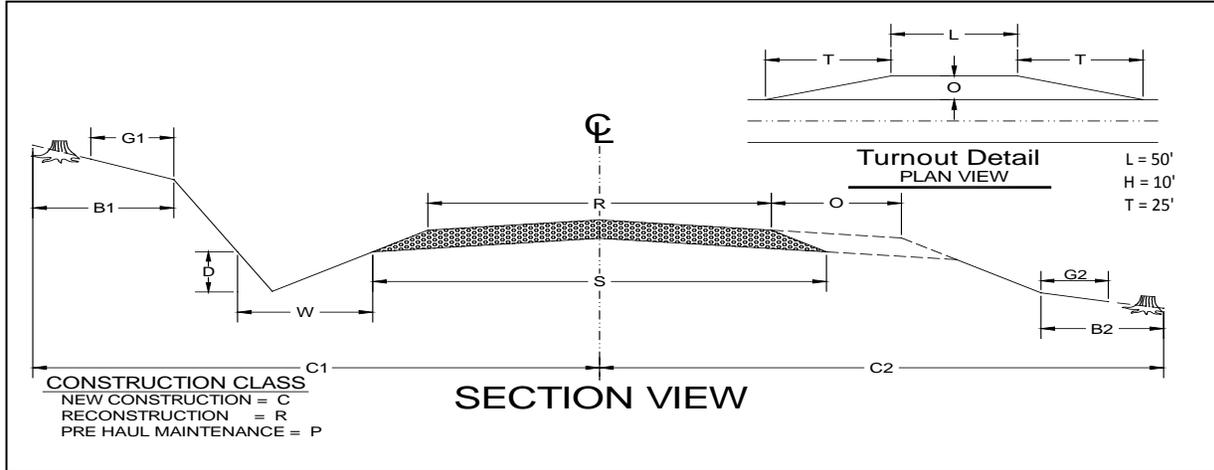


DEPARTMENT OF NATURAL RESOURCES

Application No.: 30-093304

Name of Sale: Black Horse Fire Salvage

TYPICAL SECTION SHEET



MAINTENANCE=M

ROAD NAME	START STATION	END STATION	CONSTRUCTION CLASS	FULL BENCH	TOLERANCE CLASS	SUBGRADE WIDTH (S)	ROAD WIDTH (R)	INSLOPE "/10'	OUTSLOPE "/10'	CROWN " AT CL	DITCH WIDTH (W)	DITCH DEPTH (D)	DITCH 2 SIDES	GRUBBING CUT BANK (G1)	GRUBBING FILL TOE (G2)	ROAD CUT CLEARING (B1)	ROAD FILL CLEARING (B2)	RAW CUT CLEARING (C1)	RAW FILL CLEARING (C2)
E313816A	0+00	7+90	P		C	14	12		4		2	1							
E313832A	0+00	110+25	P		C	14	12		4										
	110+25	111+55	C		C	widen approaches to switchback 5' each side													
	111+55	146+56	P		C	14	12		4										
E313828E	0+00	18+15	P		C	14	12		4										
E303805E	0+00	20+40	P		C	14	12		4										
E313832M	0+00	3+15	C		C	14	12		4										
E303821A	0+00	46+62	P		C	14	12		4										
E303816C	0+00	1+80	P		C	14	12		4										
E303736F	0+00	28+30	P		C	14	12		4										
E303736E	0+00	29+50	R		C	14	12		4										
E303736J	0+00	22+00	R		C	14	12		4										
E303736K*	0+00	13+00	R		C	14	12		4					optional					
E293716F	0+00	37+00	P		C	14	12		4										
E293716H	0+00	23+50	P		C	14	12		4										

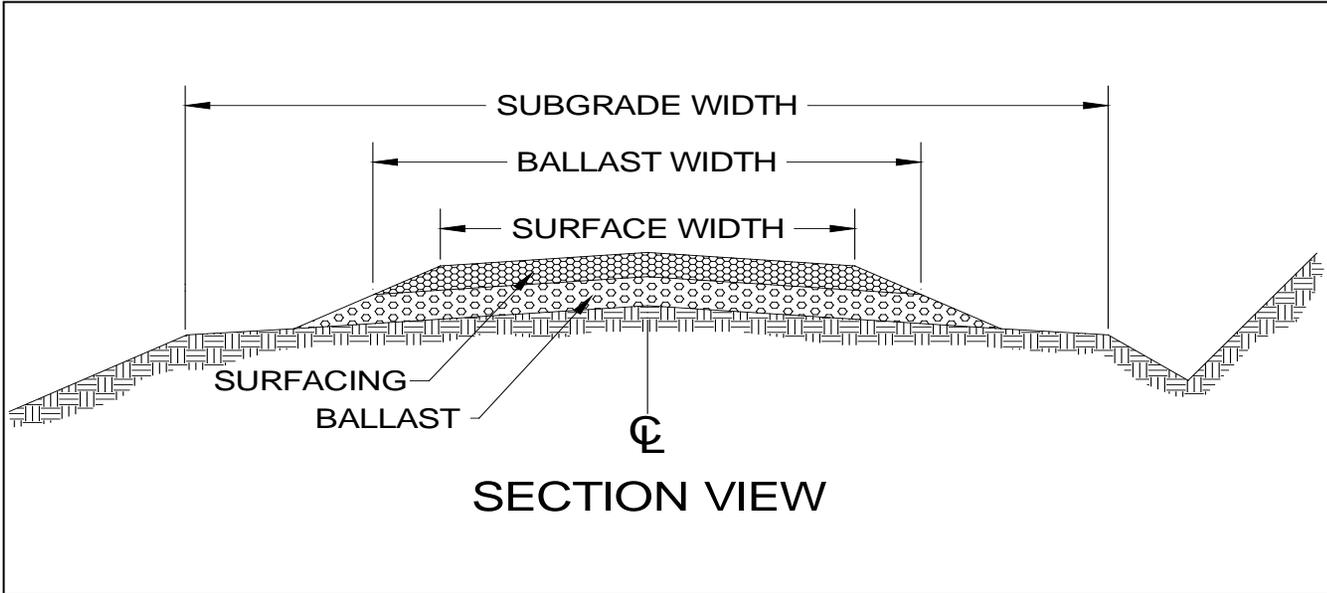


**STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES**

Application No.: 30-093304

Name of Sale: Black Horse Fire Salvage

**ROCK LIST**



1. ROCK DEPTHS ARE DEFINED AS COMPACTED DEPTHS.
2. LOOSE YARD QUANTITIES ARE DEPENDANT ON SOURCE.
3. ROCK SLOPES SHALL BE 1.5(H) : 1(V).
4. ALL ROCK SOURCES ARE SUBJECT TO APPROVAL BY THE CONTRACT ADMINISTRATOR.
5. THE ROCK QUANTITIES SHOWN ASSUME AN EXPANSION FACTOR OF 25%

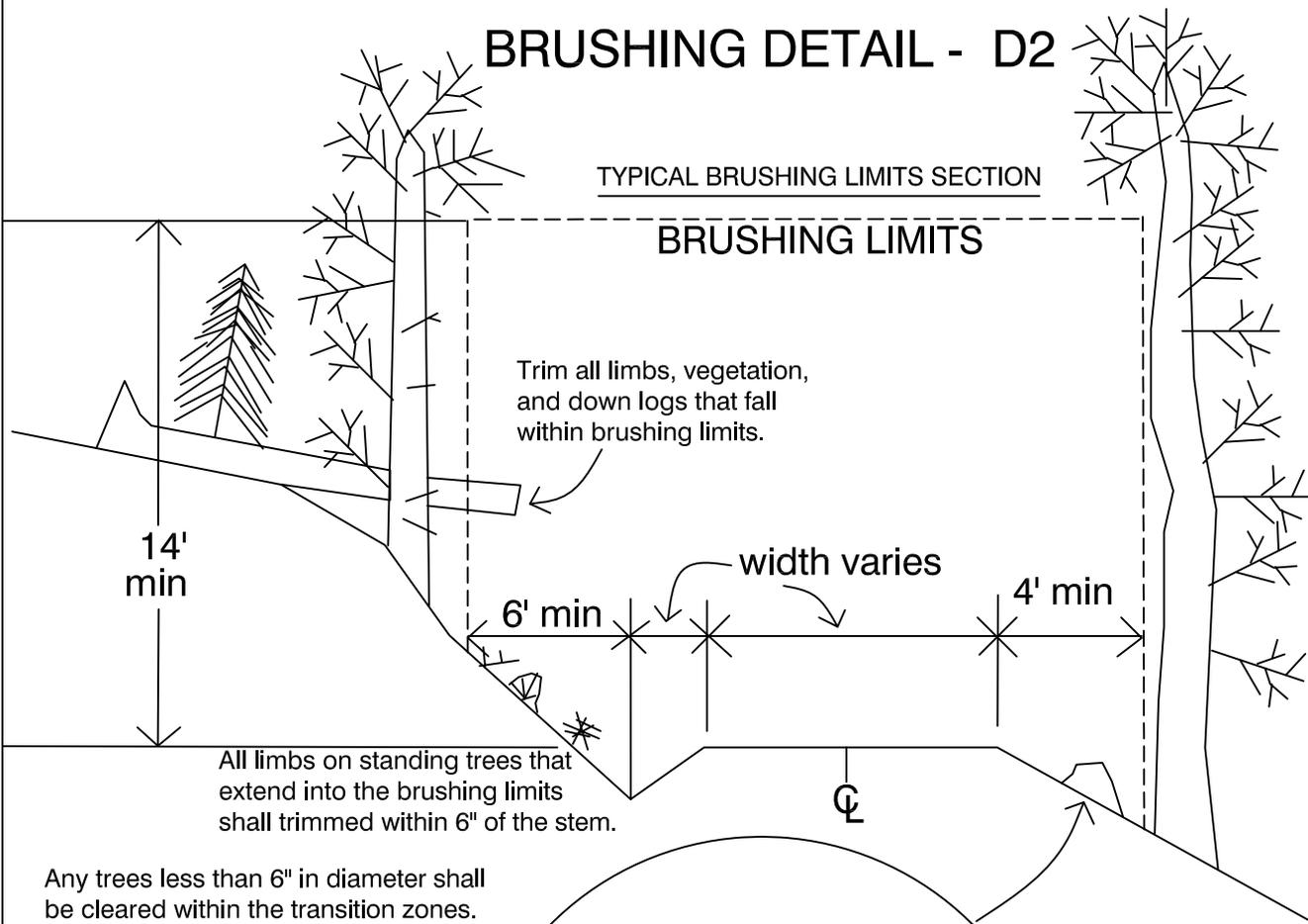
ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	BALLAST SOURCE	BALLAST WIDTH (ft)	BALLAST DEPTH (in)	BALLAST QUANTITY (cu.yd./sta)	SURFACE SOURCE	SURFACE WIDTH (ft)	SURFACE DEPTH (in)	SURFACE QUANTITY (cu.yd./sta)	FABRIC WIDTH (ft)
E303736F	0+00	13+50	14				0		12	6	30	
							0				0	
							0				0	
							0				0	
							0				0	
							0				0	
							0				0	
							0				0	
							0				0	
							0				0	
							0				0	
							0				0	
							0				0	
							0				0	
							0				0	
							0				0	
							0				0	
							0				0	
							0				0	
200 CY to be placed as directed from the contract administrator							0				0	
							0				0	
							0				0	

DATE: 11/24/2015

# BRUSHING DETAIL - D2

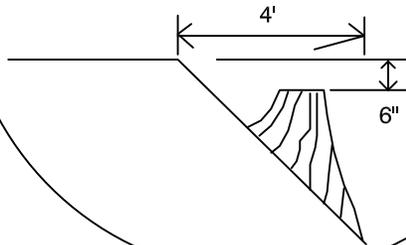
## TYPICAL BRUSHING LIMITS SECTION

### BRUSHING LIMITS

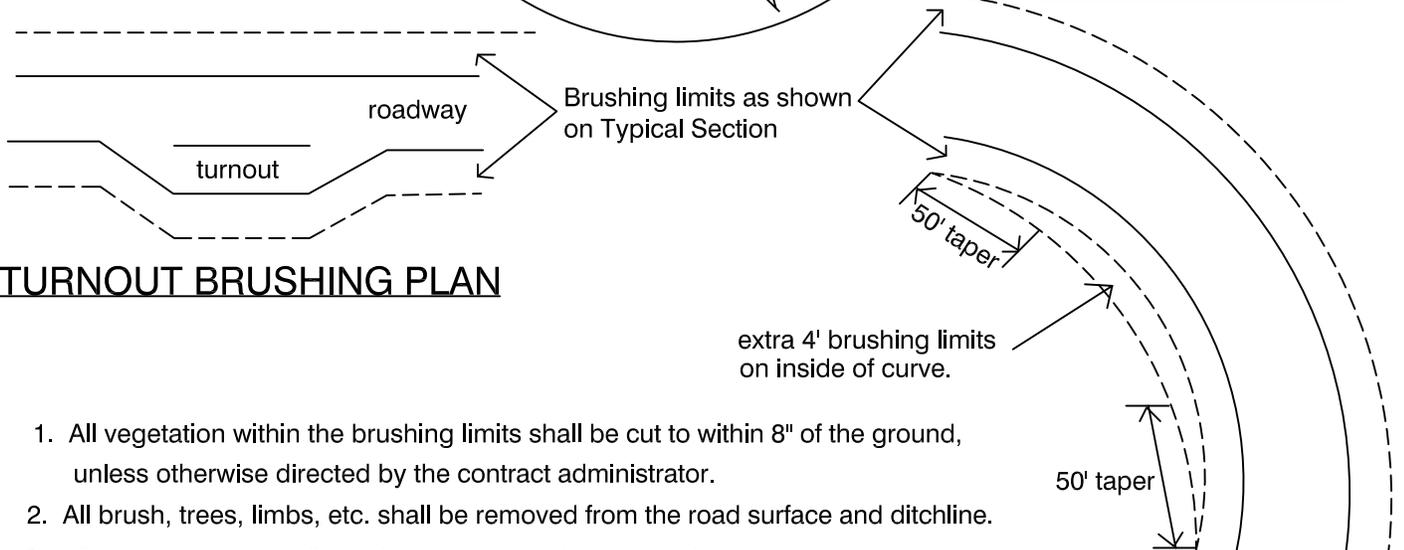


Any trees less than 6" in diameter shall be cleared within the transition zones.

Trim all stumps and vegetation within 4' of edge of road and in ditch to at least 6" below the elevation of the edge of road.



## CURVE BRUSHING PLAN



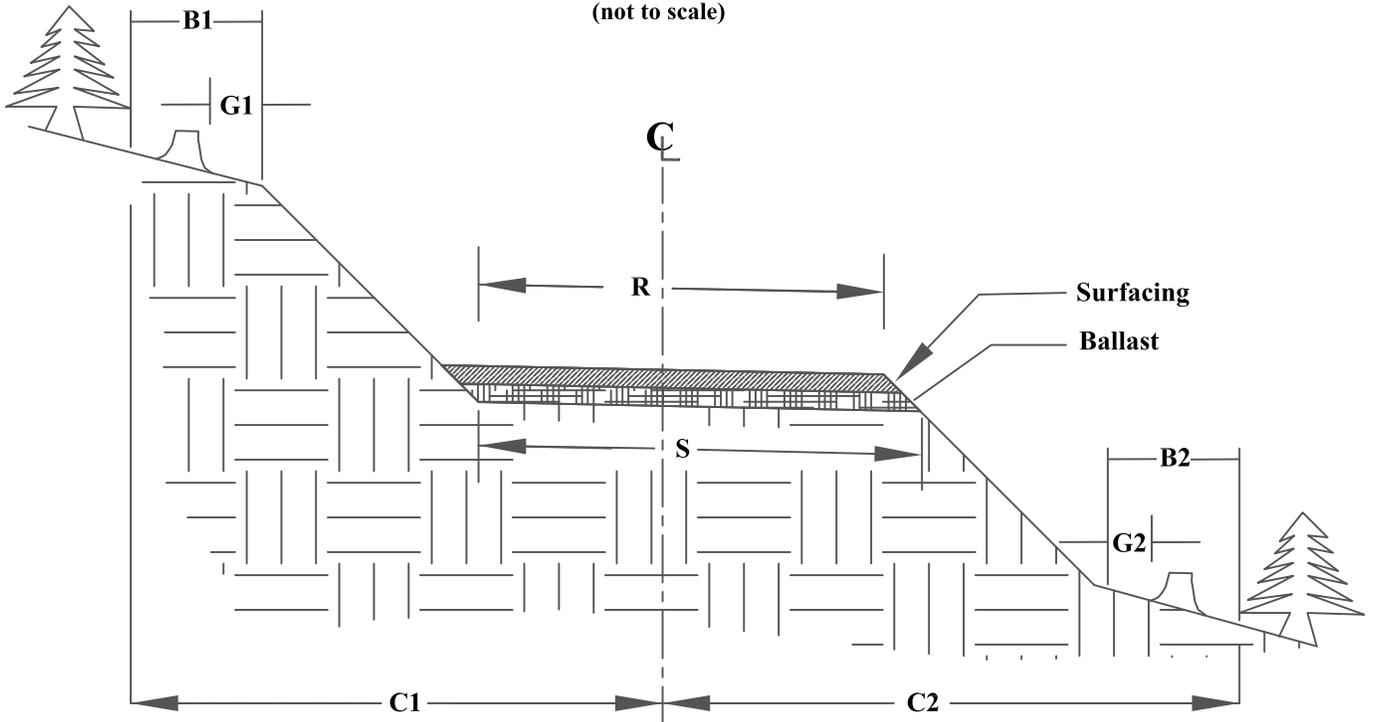
## TURNOUT BRUSHING PLAN

1. All vegetation within the brushing limits shall be cut to within 8" of the ground, unless otherwise directed by the contract administrator.
2. All brush, trees, limbs, etc. shall be removed from the road surface and ditchline.
3. All debris that may roll or migrate into the ditchline shall be removed.

# OUTSLOPED ROAD CROSS-SECTION

## DETAIL D7

(not to scale)

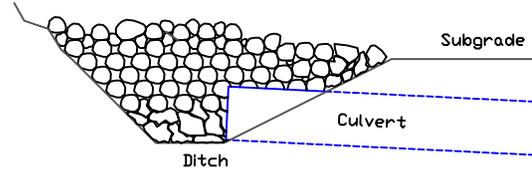
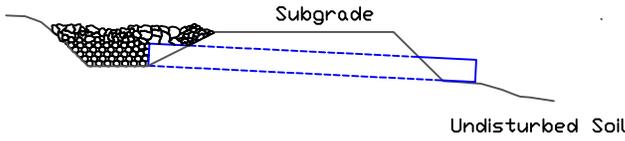


Drawn by: JBB 2/18/03

Revised: JE 12/20/2012

# CULVERT AND DRAINAGE SPECIFICATIONS DETAIL - D1

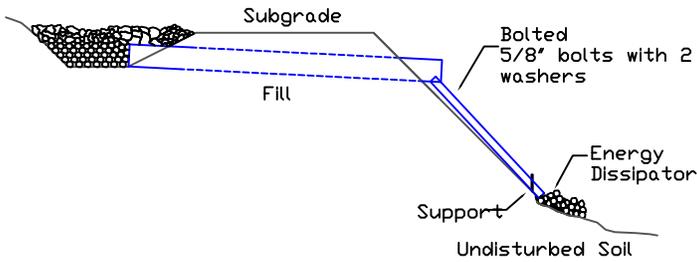
## HEADWALLS



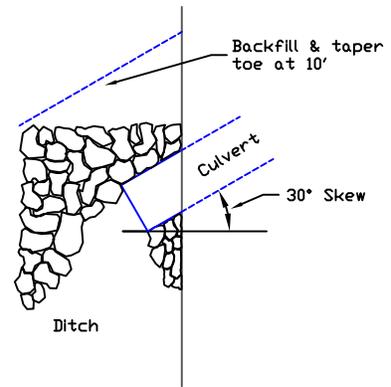
Headwall to be constructed of material that will resist erosion

## FLUME

Use where ground conditions are uniform, providing for stability of flume.

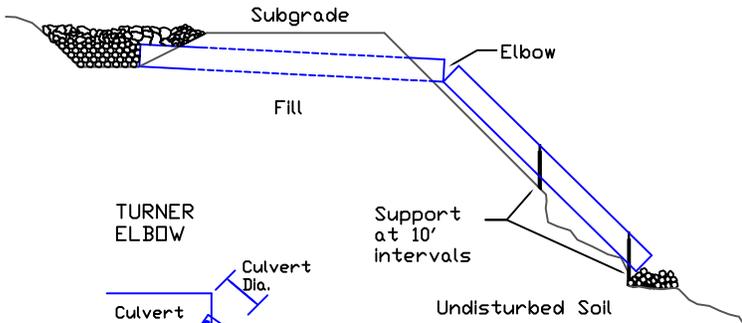


## PLAN VIEW

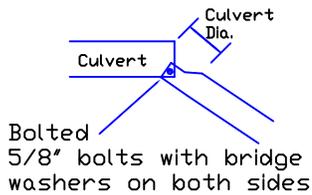


## DOWNSPOUT

Use where ground conditions are irregular.



## TURNER ELBOW



## CULVERT BACKFILL & BASE PREPARATION (For Culverts Less Than 36")

Minimum Cover	Minimum Bed Depth	Min. Trench Width	Nominal Diameter
A	B	C	D
12"	6"	36"	18"
12"	6"	42"	24"
12"	6"	48"	30"
12"	6"	54"	36"

### DISSIPATOR SPEC'S Size In Culvert Diameters

Area	2 X 2
Depth	1
Aggregate	1/3

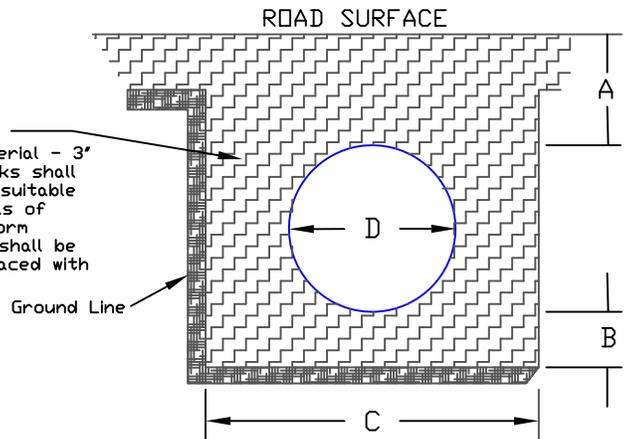


Level



Side Hill

**BEDDING MATERIAL:**  
Use granular material - 3" minus. Large rocks shall be replaced with suitable material. Materials of poor or non-uniform bearing capacity shall be removed and replaced with suitable fill.



# STANDARD 30° ROLLING DIP - D5

Note: Plan of dip shown is for an outsloped rolling dip. Dips may be either insloped or outsloped. When insloped, dips shall discharge into a culvert, drop inlet, overside drain, or drainage ditch. When outsloped, they shall discharge into an overside drain or on to natural ground.

The minum cross grade from "B" to "E" is 1% greater than the original road grade.

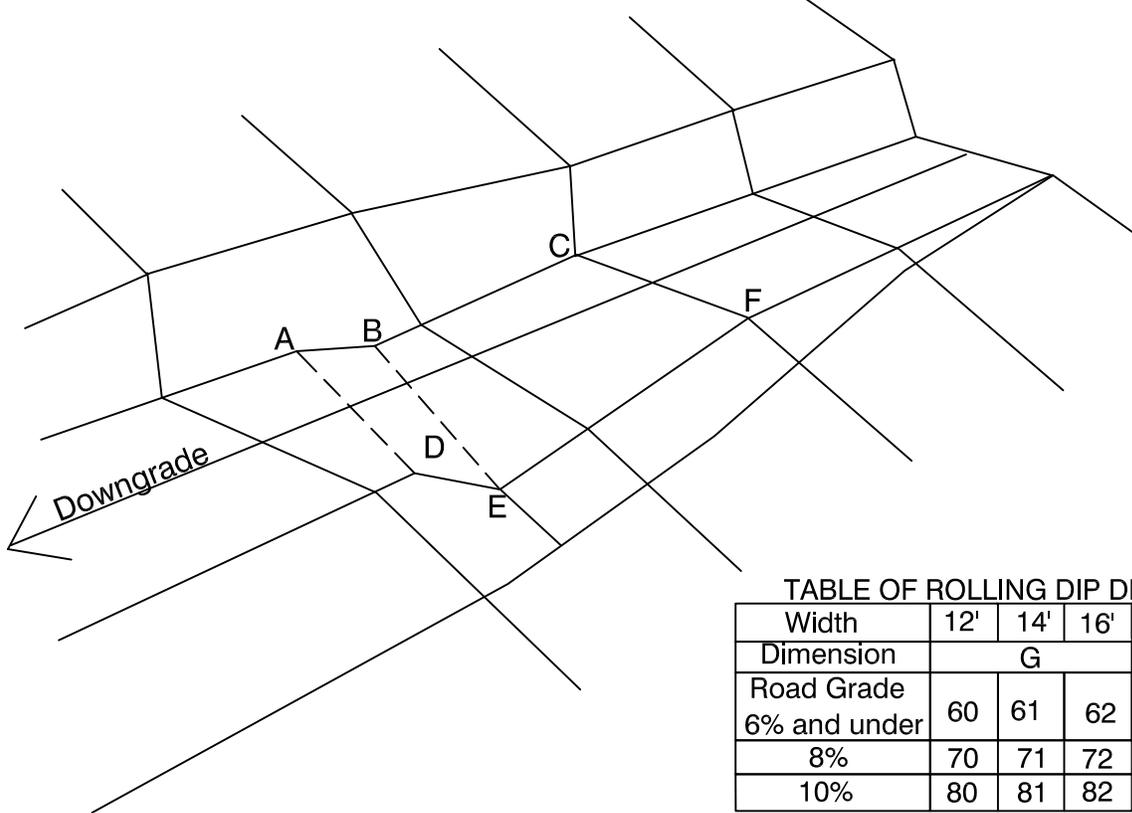
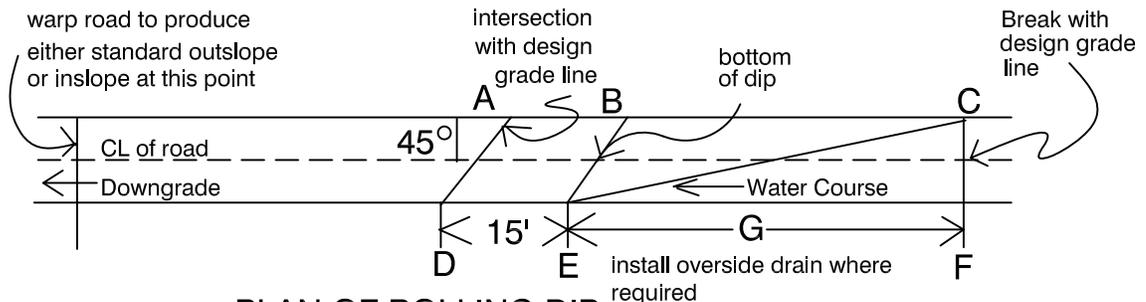
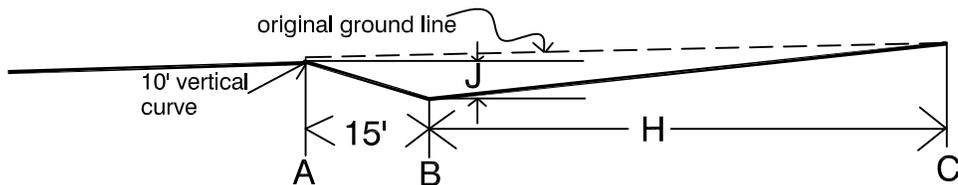


TABLE OF ROLLING DIP DIMENSIONS

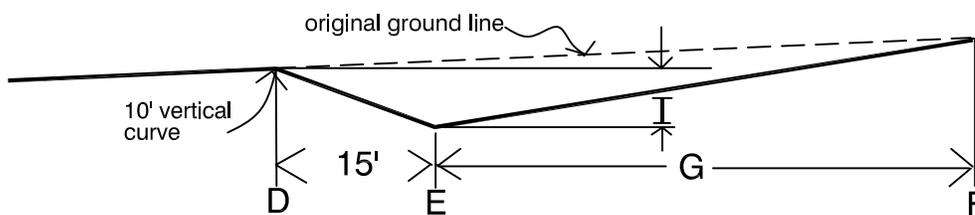
Width	12'	14'	16'	ALL		
Dimension	G			H	I	J
Road Grade						
6% and under	60	61	62	52	.8	0.3
8%	70	71	72	62	1.0	0.2
10%	80	81	82	72	1.1	0.1



PLAN OF ROLLING DIP



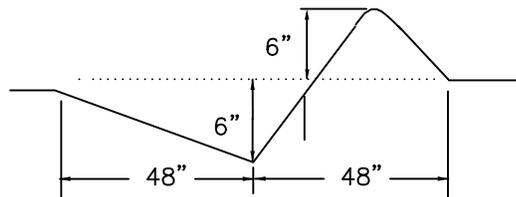
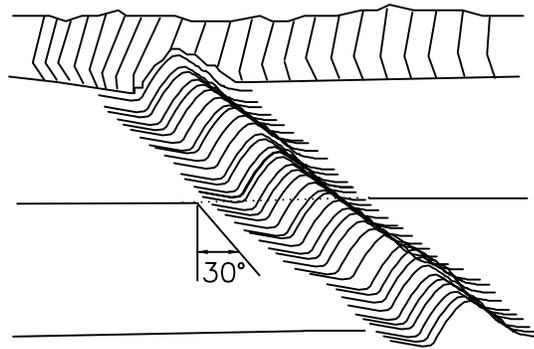
ROAD PROFILE ALONG A-B-C OF ROLLING DIP



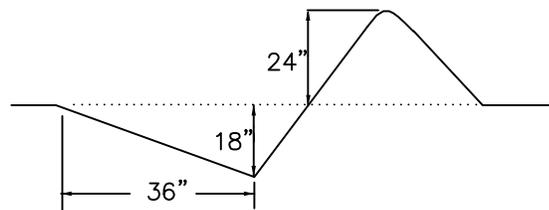
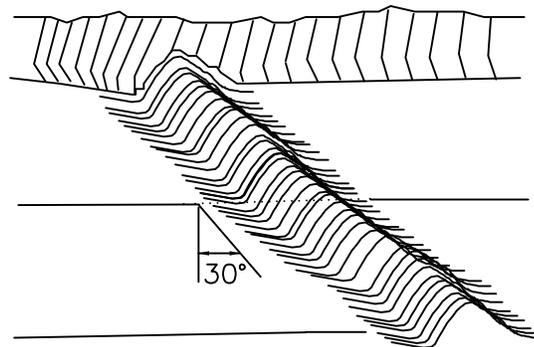
ROAD PROFILE ALONG D-E-F OF ROLLING DIP

# WATERBAR DETAIL—D6

## DRIVABLE WATERBAR



## NON DRIVABLE WATERBAR

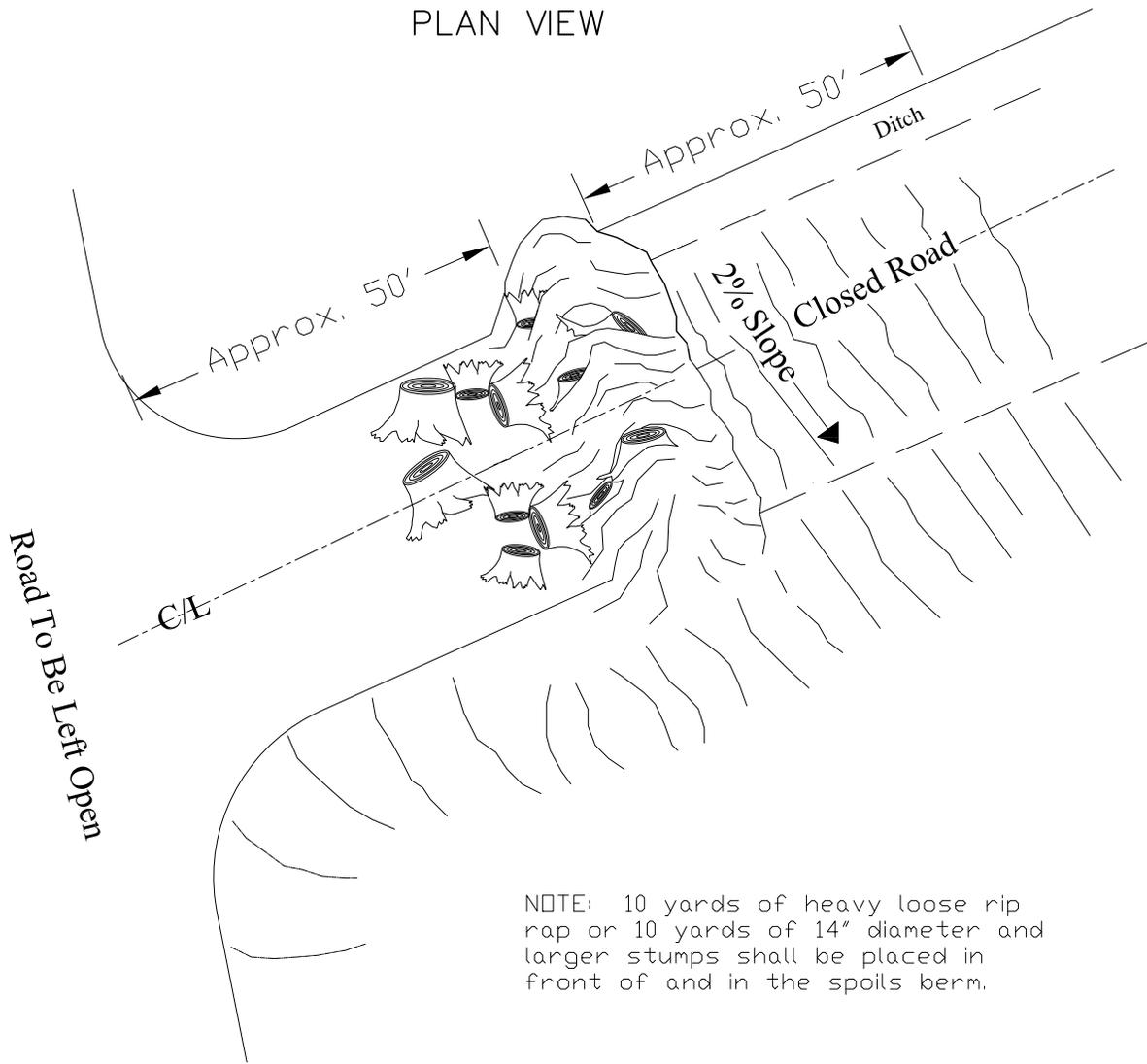


1. Waterbar construction for forest roads Specifications are average and may be adjusted to conditions.
2. Waterbar shall keyed into the bank.
3. The waterbar shall be outsloped for proper drainage.
4. Rock outlet if fill slope is present.

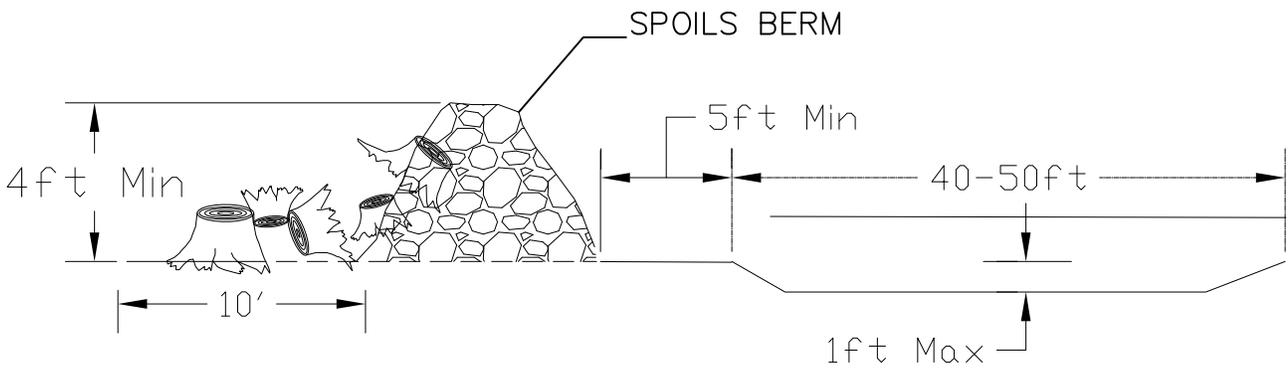
Revised: 05/21/2012

# SPOILS BERM DETAIL-D8

PLAN VIEW



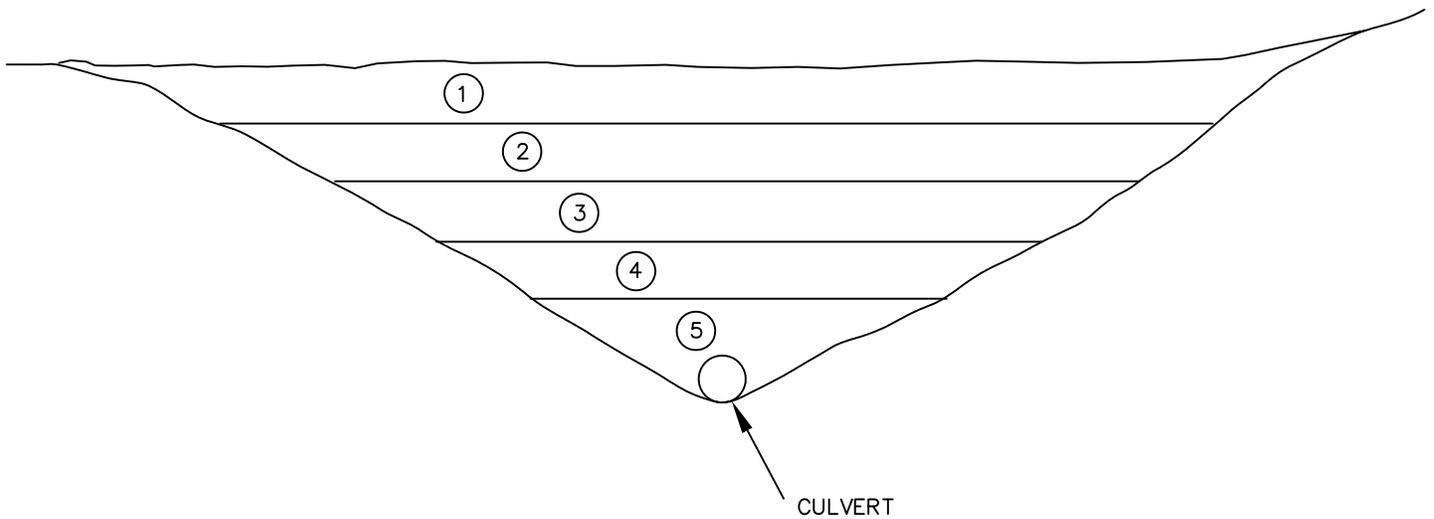
NOTE: 10 yards of heavy loose rip rap or 10 yards of 14" diameter and larger stumps shall be placed in front of and in the spoils berm.



Note:  $\frac{1}{3}$  of stumps or rip rap shall be partially buried in the spoils berm and/or road surface.

# FILL REMOVAL DETAIL – PROFILE

## DETAIL D9



- Remove fill in layers not to exceed 3 feet.
- Channel slopes shall be according to Section 5 – DRAINAGE and the Live Stream Culvert Removal Procedure

## **LIVE STREAM CULVERT REMOVAL PROCEDURE**

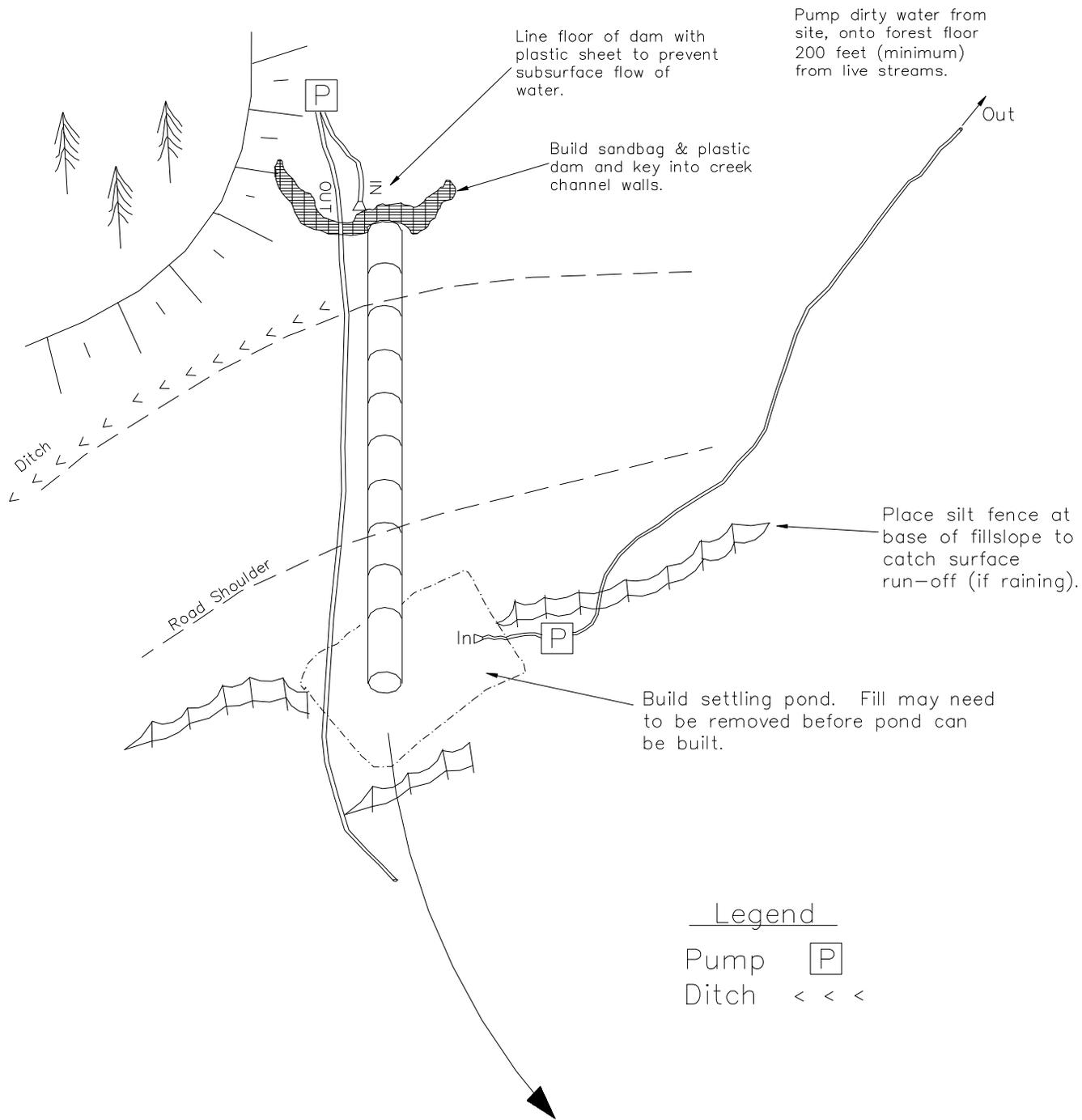
Order of work is as follows, deviations shall be approved, in writing, by the Contract Administrator.

- 1) Purchaser shall notify the State of intent to start project, and a pre-work conference shall be held before move in of equipment. State will designate a representative that will remain on site at all times when work is being performed in creek channel.
- 2) Assemble the items on the Materials List onsite before proceeding.
- 3) Remove 95% of fill (see FILL REMOVAL DETAIL) and on adjacent roadway.
- 4) Set up pumps (3 required, with one as backup).
- 5) Dam up stream with sandbags and line floor of dam with plastic (to prevent sub-surface water flow), place clean rock on plastic to hold in place, and key leading edge of plastic into channel bottom - see SETTLING POND AND PUMP DETAIL. Build a settling pond at culvert outlet. Fill may need to be removed before the settling pond installation due to space limitations. Pump clean water at catch basin around work site and back into stream. Dirty water shall be pumped away from site and onto forest floor a minimum of 100 feet from live streams. Silt fence shall be erected at base of fill slope and bottom edge of fence shall be keyed into slope and held in place with rocks to prevent water from flowing under the silt fence. Gravity diversion may be allowed if approved by Contract Administrator.
- 6) Remove remainder of fill and culvert.
- 7) Backfill settling pond.
- 8) Cover exposed soils within 100 feet of all live streams with straw (minimum depth of 8 inches) and grass seed.

### Materials List:

- 3 pumps, (one as a backup) The clean water pump (dam at culvert catch basin) shall have a minimum capacity of 1200 gallons per minute. The dirty water pump (settling pond) and the backup pump shall each have a minimum capacity of 600 gpm. Culvert removal should not start during rain or threat of rain;
- plastic sheet; (minimum 500 square feet).
- silt fence and stakes; (minimum 50 feet).
- straw. (minimum 5 bales).
- 120 feet of 8-in diameter single wall corrugated plastic pipe, or suitable alternative.

# SETTLING POND AND PUMP DETAIL



# Sale Name Black Horse Fire Salvage SUMMARY - Road Development Costs

REGION: Northeast

CONTRACT #: 30-093304 ENGINEER: Gene Gibbs

DISTRICT: North Columbia

DATE: 1/12/2016

	<i>Construction</i>	<i>Reconstruction</i>	<i>Maintenance</i>	<i>Deactivation</i>	
<b>ROAD NUMBERS:</b>	E313832A, E313832M	E303736E, E303736J, E303736K	E313816A, E313832A, E313828E, E303805E, E303821A, E303816C, E303736F, E293716F, E293716H	E303736E, E303736J, E303736K	Additional Items
<b>ROAD STANDARD:</b>	<i>Construction</i>	<i>Reconstruction</i>	<i>Maintenance</i>	<i>Deactivation</i>	<i>Additional Items</i>
<b>NUMBER OF STATIONS:</b>	<b>4.45</b>	<b>64.50</b>	<b>328.93</b>	<b>64.50</b>	
<b>CLEARING &amp; GRUBBING:</b>	\$156	\$875			
<b>EXCAVATION AND FILL:</b>	\$1,116			\$2,835	
<b>MISC. MAINTENANCE:</b>	\$29		\$3,666		
<b>ROAD ROCK:</b>			\$5,400		\$2,700
<b>ADDITIONAL ROCK:</b>					
<b>CULVERTS AND FLUMES:</b>		\$7,958			\$1,792
<b>STRUCTURES/MATERIALS:</b>					

<b>TOTAL COSTS:</b>	\$1,301	\$8,833	\$9,066	\$2,835	\$4,492
<i>COST PER STATION:</i>	\$292	\$137	\$28	\$44	\$0

	\$/per move	# of moves	Total
<b>MOBILIZATION:</b>	\$300	9	\$2,700

**TOTAL (All Roads) =** \$29,227  
**SALE VOLUME mbf =** 5,107  
**TOTAL \$/MBF =** \$6

Engineer's Notes: