WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

TIMBER NOTICE OF SALE

***SALE NAME**: ALICE MAE* ***AGREEMENT NO**: 30-093947*

AUCTION: December 13, 2016 starting at 10:00 a.m., Northeast Region Office, Colville, WA **COUNTY:** Stevens

SALE LOCATION: Sale located approximately 23 miles north of Colville, WA

PRODUCTS SOLD AND SALE AREA: All green conifer species (excluding ponderosa pine) 7 inches and greater in diameter at breast height and all green ponderosa pine 8 inches and greater in diameter at breast height, not banded with blue paint; all down and standing dead Douglas-fir and western larch except for two down logs per acre which meet Forest Practice requirements, except trees bounded out by yellow "Leave Tree Area" tags in Units 1, 2, 3, 4, 5, 6 and 7 bounded by white timber sale boundary tags; and all timber bounded by orange right of way boundary tags on part(s) of Sections 2, 3 and 10 all in Township 38 North, Range 39 East, Sections 35 and 36 all in Township 39 North, Range 39 East, W.M., containing 392 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 DBH	Ring Count	Total MBF	MBF by Grade P	SM	1S	2S	3S	4S	5S	6S	UT
Douglas fir	12.7		3,291				784	1,531	740			236
Larch	12		420				23	267	83			47
Red cedar	11		171					107	64			
Lodgepole	9.6		118					42	71			5
Grand fir	11.3		62					43	19			
Ponderosa pine	12.8		48						12	36		
Spruce	19.3		9					8	1			
Sale Total			4,119									

MINIMUM BID: $757,000.00 **BID METHOD:** Sealed Bids

PERFORMANCE SECURITY: $100,000.00 **SALE TYPE:** Lump Sum

EXPIRATION DATE: December 31, 2018 **ALLOCATION:** Export Restricted

BID DEPOSIT: $75,700.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: Forwarder, Rubber tired skidder, Track skidder and Dozer. Falling and Yarding will not be permitted from March 1 to May 31 unless authorized in writing by the Contract Administrator due to spring breakup.

ROADS: 23.65 stations of required construction. 184.90 stations of required reconstruction. 196.40 stations of required prehaul maintenance. 18.80 stations of required decommission. Road construction will not be permitted from November 15 to May 31 unless authorized in writing by the Contract Administrator due to frozen conditions and

spring breakup. The hauling of forest products will not be permitted from March 1 to May 31 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 inches dbh has minimum top of 4.6 inch dib. All species 17.6 inches and greater dbh have a minimum top dib of 40% of dob at 16 feet or a 6 inch top whichever is greater. Utility wood: comprised of non-board foot volume and volume below the minimum top diameter of 5.0 inches or 40% of dob at 16 feet to a minimum of a 2.6 inch top. Firewood volume (209 mbf) is included in the utility wood volume on the notice of sale. Firewood volume per species is available in the cruise.

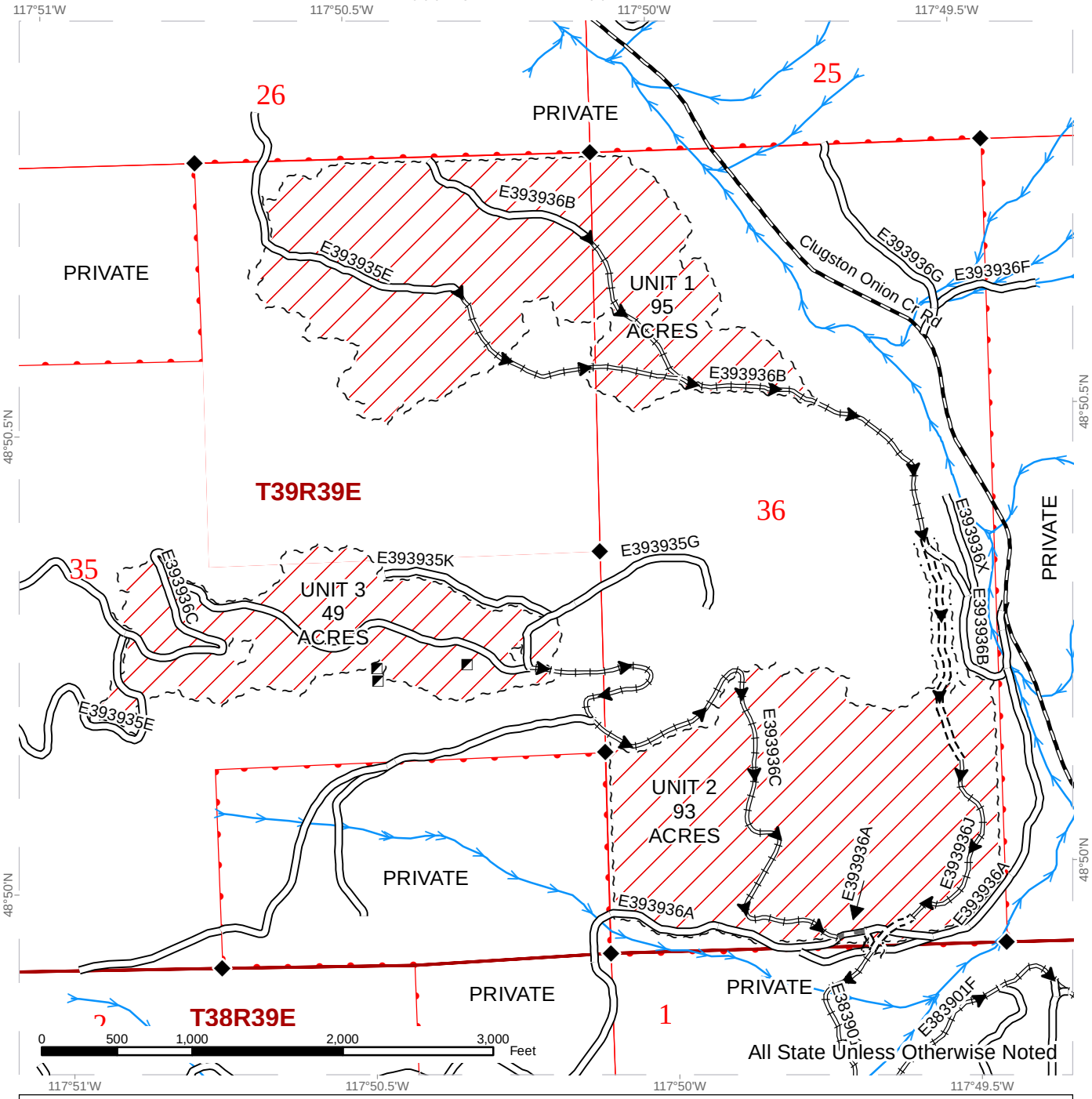
FEES: Within 10 days of day of sale, Purchaser shall provide a check payable to Vaagen Bros. Lumber for 1.28 mbf of right of way timber at the purchaser's bid price and a check payable to MJ Matney Limited Family Partnership in the amount of $650.00 for a road use permit. $73,113.00 is due on day of sale. $9.00 per MBF is due upon removal. These are in addition to the bid price.

SPECIAL REMARKS: Locked gates restricts access to the sale. Contact the Northeast Region Office at (509) 684-7474 for access. In Unit 3 there are three known mine shafts marked with yellow caution ribbon. Approximate locations are shown on the timber sale map.

TIMBER SALE MAP

SALE NAME: ALICE MAE
AGREEMENT #: 30-093947
TOWNSHIP(S): T39R39E, T38R39E
TRUST(S): Common School and Indemnity(3), Agricultural School(4)

REGION: Northeast Region
COUNTY(S): STEVENS
ELEVATION RGE: 1923-4000



~ ~ ~ Sale Boundary Tags	Existing Roads	Streams
Ground Skidding	Required Construction	Monumented Corners
	Required Reconstruction	Safety Hazard
	Required PreHaul Maintanance	
	County Road	
	Haul Route	
	Right of Way Acres = 1	
	Right of Way Tags = Orange	

N

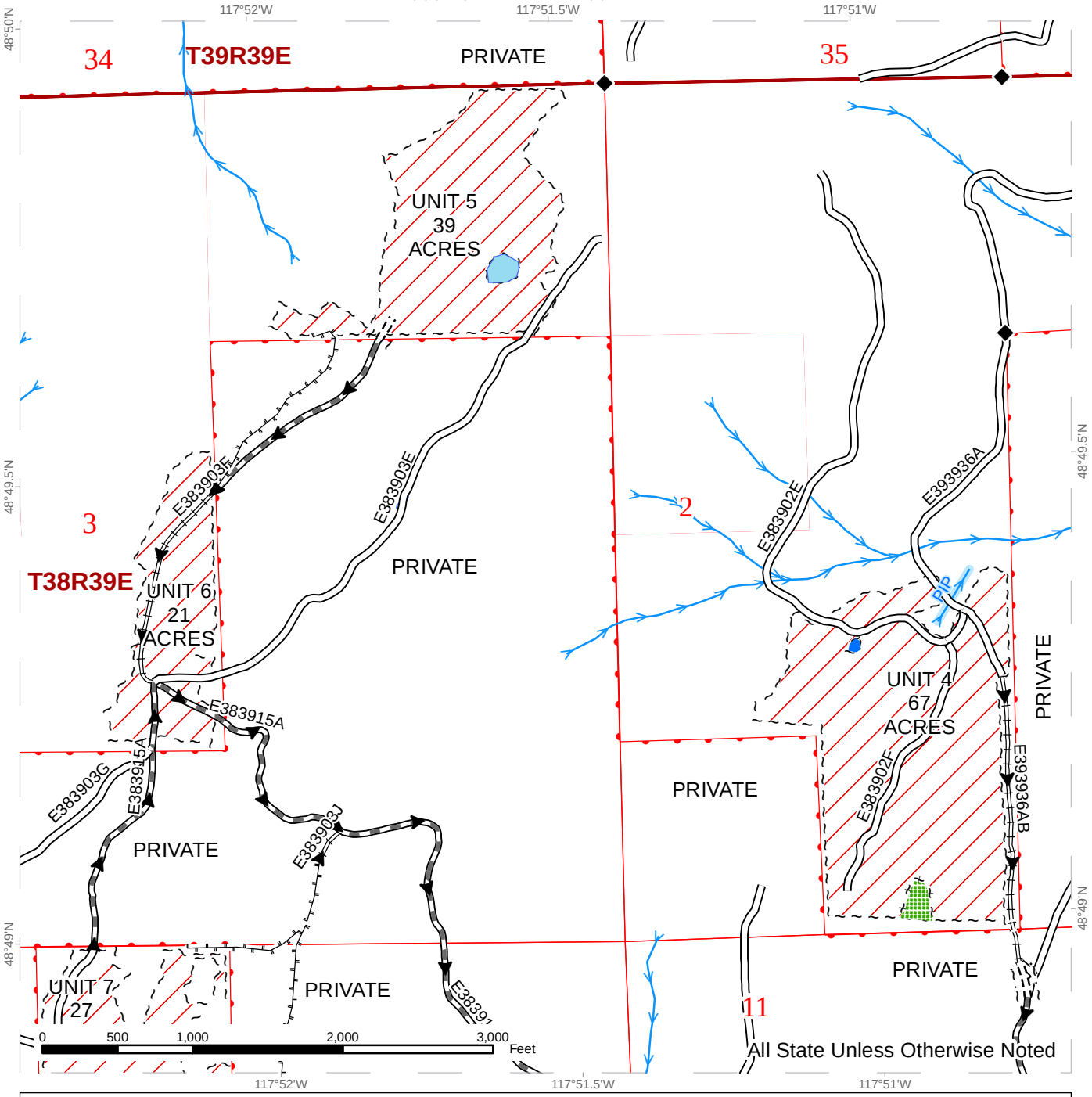
Prepared By: dzei490 04/06/2016

Modification Date: 10/3/2016

TIMBER SALE MAP

SALE NAME: ALICE MAE
AGREEMENT #: 30-093947
TOWNSHIP(S): T39R39E, T38R39E
TRUST(S): Common School and Indemnity(3), Agricultural School(4)

REGION: Northeast Region
COUNTY(S): STEVENS
ELEVATION RGE: 1923-4000



Sale Boundary Tags	Existing Roads	Streams
Ground Skidding	Required Construction	PIP
Leave Tree Tags	Required Reconstruction	Pond
Leave Tree Area	Required PreHaul Maintanance	Spring
	Designated Skid Trail	Monumented Corners
	Haul Route	
	Right of Way Acres = 1	
	Right of Way Tags = Orange	

N

Prepared By: dzei490 04/06/2016

Modification Date: 10/3/2016

TIMBER SALE MAP

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AGREEMENT #: 30-093947
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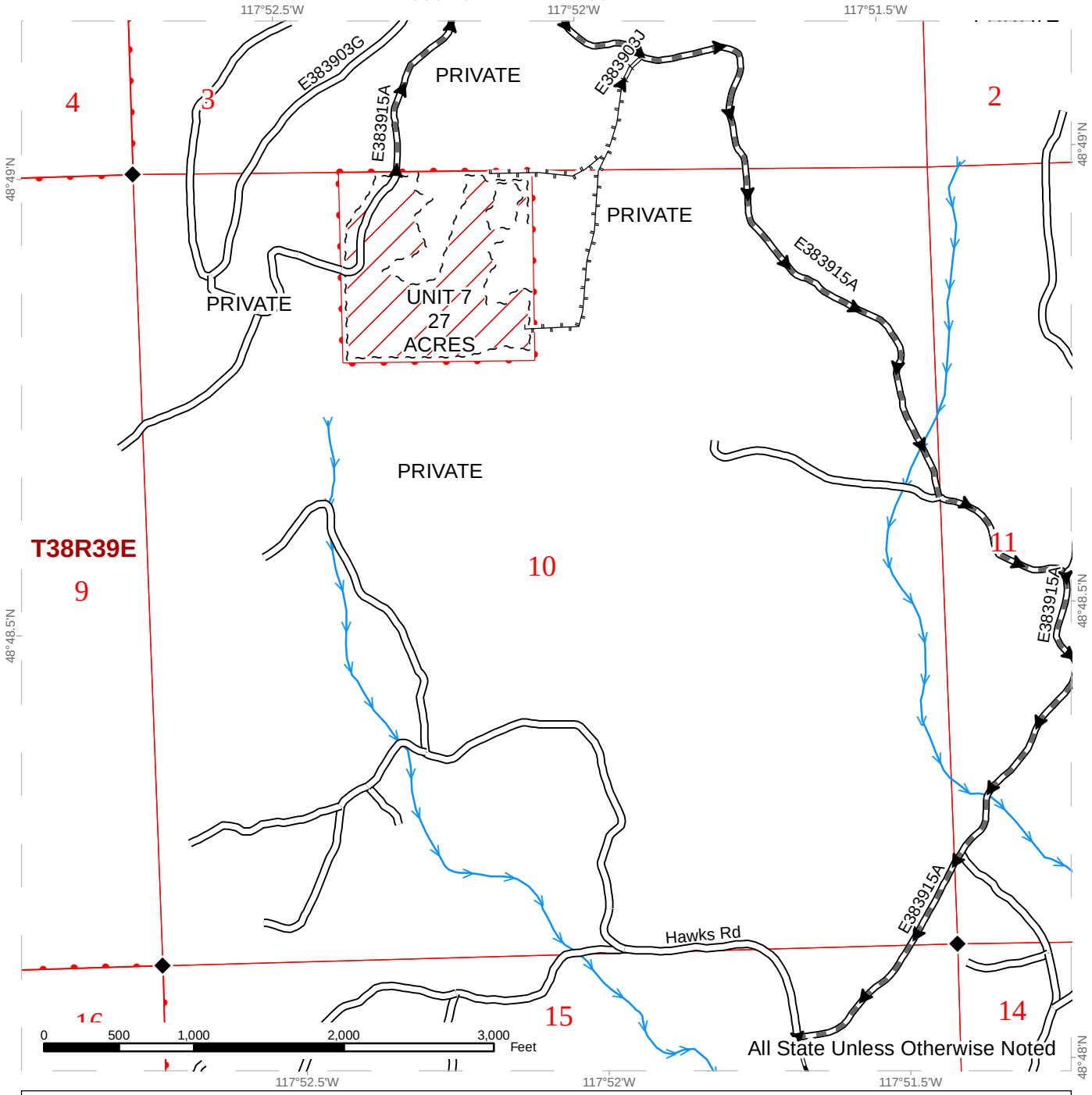


~ ~ ~ Sale Boundary Tags
Ground Skidding
Existing Roads
Required Reconstruction
Required PreHaul Maintanance
Designated Skid Trail
County Road
Haul Route
Streams
Monumented Corners

N

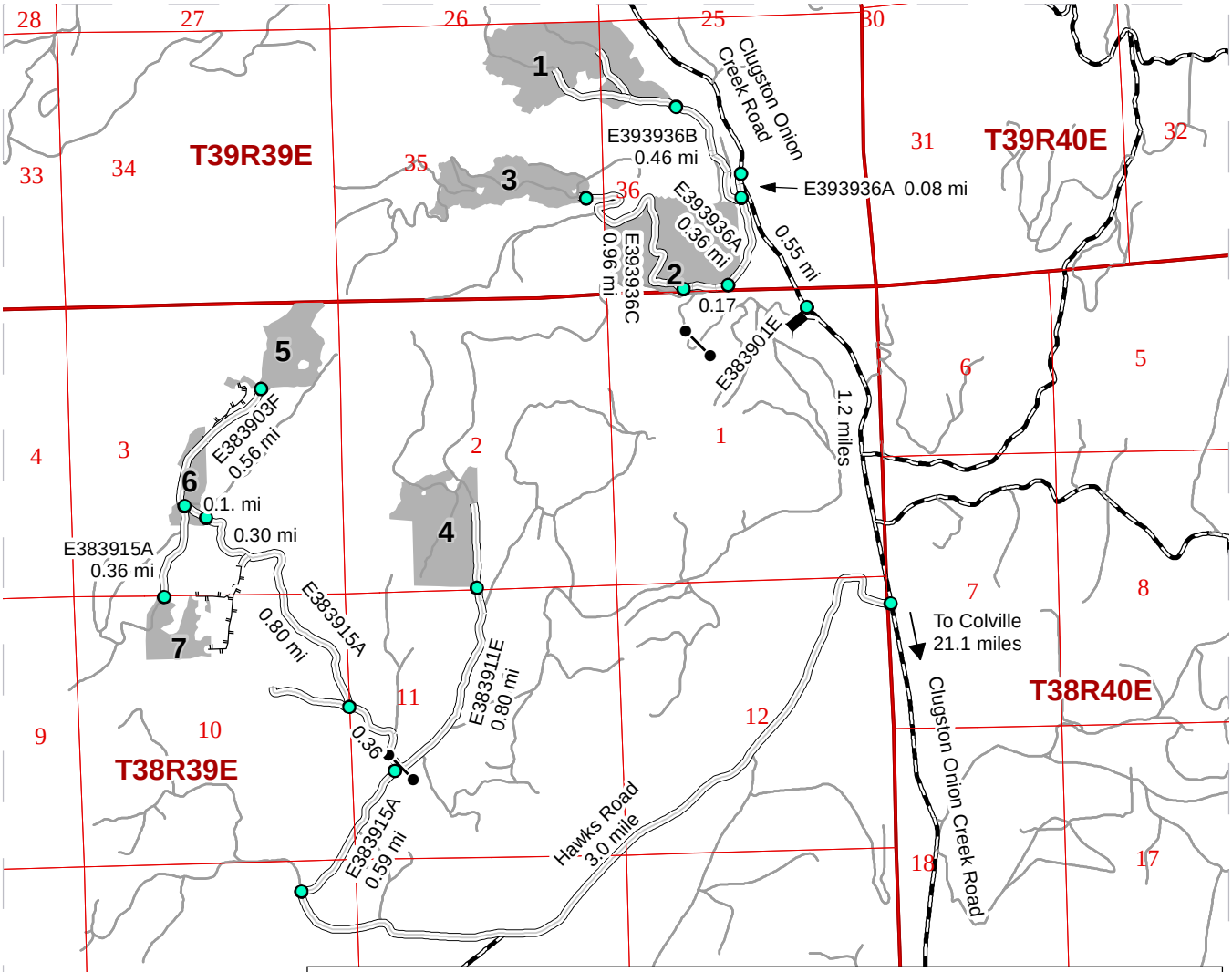
Prepared By: dzei490 04/06/2016

Modification Date: 10/3/2016

SALE PREVIEW DRIVING ACCESS MAP

SALE NAME: ALICE MAE
AGREEMENT#: 30-093947
TOWNSHIP(S): T39R39E, T38R39E
TRUST(S): Common School and Indemnity(3), Agricultural School(4)

REGION: Northeast Region
COUNTY(S): STEVENS
ELEVATION RGE: 1923-4000



Drive Access Directions:
From HWY 395 and HWY 20 junction in Colville, travel 2.0 miles north on HWY 395 to Williams Lake Road. Turn right on to Williams Lake Road and travel 5.5 miles to Clugston Onion Creek Road. Turn right on to Clugston Onion Creek Road and travel 13.6 miles to Hawks Road.

From the Clugston Onion Creek and Hawks Road junction To Units 4-7:
Turn left on to Hawks Road and travel 3.0 miles to the E383915A Road. Turn right on to the E383915A Road (private driveway) and travel 0.59 miles to the E383911E Road junction. Unit 4: Turn right on to the E383911E Road and follow signs 0.8 miles to Unit 4. Unit 5, 6, and 7: At the E383915A Road and E383911E Road junction, stay left on the E383915A Road and follow the signs. Unit 7: Proceed 0.36 miles where the lower access to unit 7 will be on your left. Continue 1.1 mile to Unit 6. Continue another 0.1 mile on E383915A to the junction of E383903F Road. At the E383915A and E383903F junction, stay left on the E383915A Road and travel 0.36 miles for the upper access to Unit 7. At the E383915A and E383903F junction, turn right on to the E383903F Road and travel 0.56 miles to Unit 5.

From the Clugston Onion Creek and Hawks Road junction To Units 1-3:
Continue north on Clugston Onion Creek Road 1.2 miles. The primary haul route (E383901E) is off the left side of the road. There is a black gate near the entrance. The units cannot be accessed from the haul route until road work is completed. To access the units, continue travel another 0.55 miles on Clugston Onion Creek Road. Here will be a driveway with a small sign that reads Paradise. Turn left. Travel 0.08 miles on E393936A and cross the bridge. Unit 1: Turn right after the bridge and follow E393936B Road 0.46 miles to Unit 1. Unit 2: Stay left after crossing the bridge and continue on E393936A. Travel 0.36 miles to Unit 2. Unit 3: Continue 0.17 miles to the E393936A and E393936C junction. Turn right on to the E393936C Road and travel 0.96 miles to Unit 3.

- Timber Sale Unit
- Drive Access
- Designated Skid Trail
- Other Route
- County Road
- Gate
- Bridge
- Distance Indicator

N

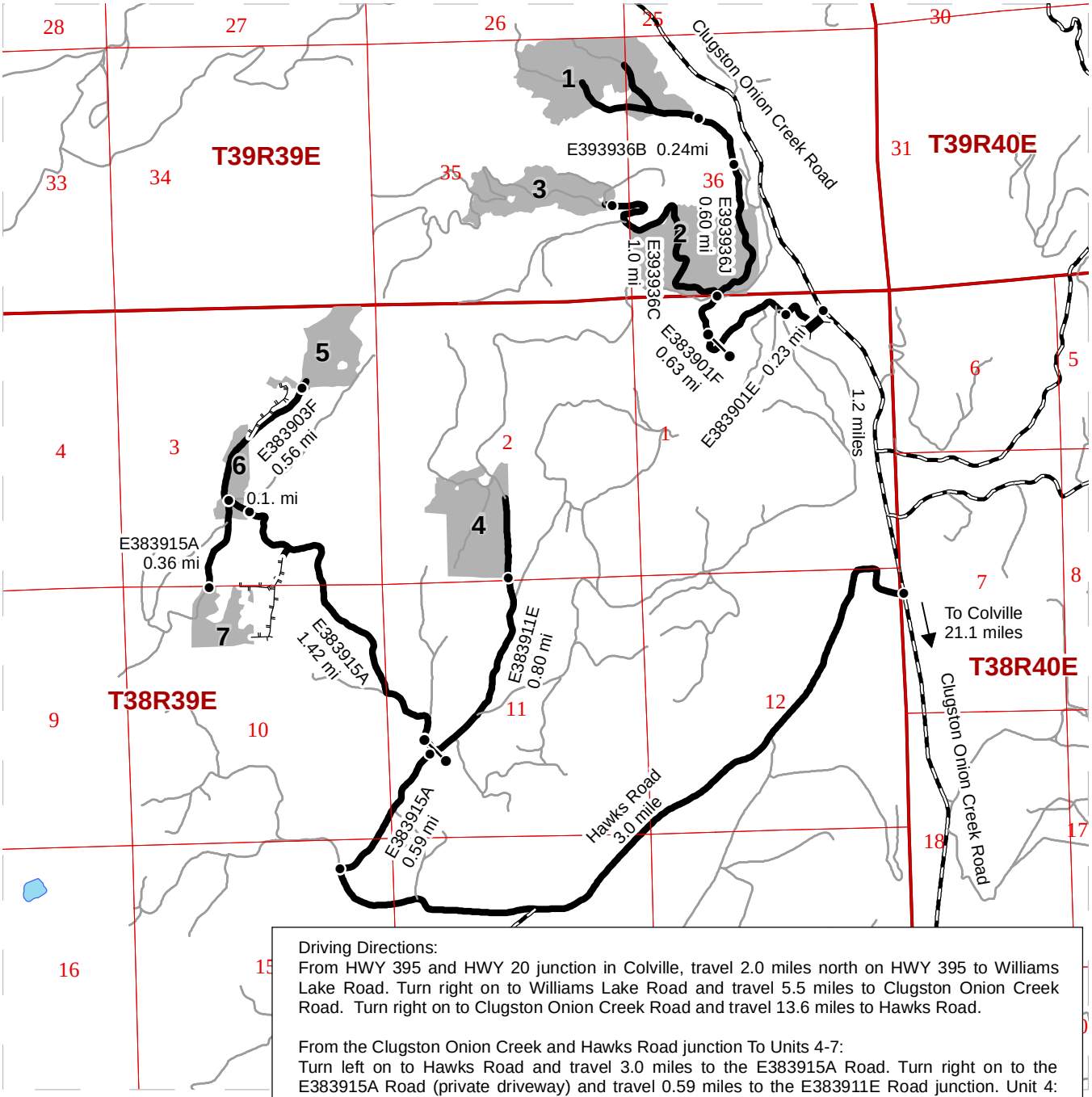
Prepared By: dzei490 04/06/2016

Modification Date: 9/12/2016

HAUL ROUTE MAP

SALE NAME: ALICE MAE
AGREEMENT#: 30-093947
TOWNSHIP(S): T39R39E, T38R39E
TRUST(S): Common School and Indemnity(3), Agricultural School(4)

REGION: Northeast Region
COUNTY(S): STEVENS
ELEVATION RGE: 1923-4000



Driving Directions:
From HWY 395 and HWY 20 junction in Colville, travel 2.0 miles north on HWY 395 to Williams Lake Road. Turn right on to Williams Lake Road and travel 5.5 miles to Clugston Onion Creek Road. Turn right on to Clugston Onion Creek Road and travel 13.6 miles to Hawks Road.

From the Clugston Onion Creek and Hawks Road junction To Units 4-7:
Turn left on to Hawks Road and travel 3.0 miles to the E383915A Road. Turn right on to the E383915A Road (private driveway) and travel 0.59 miles to the E383911E Road junction. Unit 4: Turn right on to the E383911E Road and follow signs 0.8 miles to Unit 4. Unit 5, 6, and 7: At the E383915A Road and E383911E Road junction, stay left on the E383915A Road and follow the signs. Unit 6: Travel 1.42 miles to enter Unit 6. Continue another 0.1 mile on E383915A to the junction of E383903F Road. At the E383915A and E383903F junction, stay left on the E383915A Road and travel 0.36 miles to access Unit 7. At the E383915A and E383903F junction, turn right on to the E383903F Road and travel 0.56 miles to Unit 5.

From the Clugston Onion Creek and Hawks Road junction To Units 1-3:
Continue north on Clugston Onion Creek Road 1.2 miles. Turn left on to E383901E Road. There is a black gate near the entrance. Continue on E383901E for 0.23 mile. Turn right on to E383901F and go 0.63 mile to Unit 2 and the intersection of E393936J Road and E393936C Road. Unit 1: Turn right and follow E393936J Road 0.6 miles to E393936B Road intersection. Stay left and continue northward on E393936B Road another 0.24 mile to enter Unit 1. Unit 3: At the intersection of E393936J and E393936C turn left on to E393936C.Travel 1.0 mile to enter Unit 3.

- Timber Sale Unit
- Haul Route
- Designated Skid Trail
- Other Route
- County Road
- Gate
- Bridge
- Distance Indicator

N

Prepared By: dzei490 04/06/2016

Modification Date: 9/12/2016

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

BILL OF SALE AND CONTRACT FOR FOREST PRODUCTS

Export Restricted Lump Sum AGREEMENT NO. 30-093947

SALE NAME: ALICE MAE

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

Section G: General Terms

G-001 Definitions

The following definitions apply throughout this contract;

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

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

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

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

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

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

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

G-011 Right to Remove Forest Products and Contract Area

Purchaser was the successful bidder on December 13, 2016 and the sale was confirmed on _____. The State, as owner, agrees to sell to Purchaser, and Purchaser agrees to purchase as much of the following forest products as can be cut and removed during the term of this contract: All green conifer species (excluding ponderosa pine) 7 inches and greater in diameter at breast height and all green ponderosa pine 8 inches and greater in diameter at breast height, not banded with blue paint; all down and standing dead Douglas-fir and western larch except for two down logs per acre which meet Forest Practice requirements, except trees bounded out by yellow "Leave Tree Area" tags in Units 1, 2, 3, 4, 5, 6 and 7 bounded by white timber sale boundary tags; and all timber bounded by orange right of way boundary tags, located on approximately 392 acres on part(s) of Sections 2, 3, and 10 all in Township 38 North, Range 39 East, Sections 35, and 36 all in Township 39 North, Range 39 East W.M. in Stevens County(s) as designated on the sale area and as shown on the attached timber sale map.

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

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

G-020 Inspection By Purchaser

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

estimates, appraisals, pre-bid documentation, or any other representations by the State Department of Natural Resources.

G-031 Contract Term

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

G-040 Contract Term Adjustment - No Payment

Purchaser may request an adjustment in the contract term. A claim must be submitted in writing and received by the State within 30 days after the start of interruption or delay. The claim must also indicate the actual or anticipated length of interruption or delay. The State may grant an adjustment without charge only if the cause for contract term adjustment is beyond Purchaser's control. The cause must be one of the following and the adjustment may be granted only if operations or planned operations under this contract are actually interrupted or delayed:

a. Road and bridge failures which deny access.

b. Access road closures imposed by road owner.

c. Excessive suspensions as provided in clause G-220.

d. Regulatory actions not arising from Purchaser's failure to comply with this contract which will prevent timber harvest for a period less than 6 months.

G-051 Contract Term Extension - Payment

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

a. A written request for extension of the contract term must be received prior to the expiration date of the contract.

b. Completion of all required roads and compliance with all contract and regulatory requirements.

c. For the first extension, not to exceed 1 year, payment of at least 25 percent of the total contract price.

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

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

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

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

e. Payment of $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-091 Sale Area Adjustment

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

G-102 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 shall become a part of this contract and the Scribner log scale volume, as defined by the National Forest Log Scaling Handbook,

shall be determined by the Contract Administrator. Added forest products shall be paid for at the following contract payment rates per MBF Scribner log scale.

The pricing schedule has not been set for the sale.

G-111 Title and Risk of Loss

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

G-116 Sustainable Forestry Initiative® (SFI) Certification

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

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

G-120 Responsibility for Work

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

G-121 Exceptions

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

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

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

1. Failure of (a) required improvements or roads designated in clause C-050, or (b) required or optional construction completed to the point that authorization to haul has been issued;

2. Caused by a single event from forces beyond the control of Purchaser, its employees, agents, or invitees, including independent contractors; and

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

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

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

Nothing contained in clauses G-120 and G-121 shall be construed as relieving Purchaser of responsibility for, or damage resulting from, Purchaser's operations or negligence, nor shall Purchaser be relieved from full responsibility for making good any defective work or materials. Authorization to haul does not warrant that Purchaser built roads are free from material defect and the State may require additional work, at 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; E383901E, E383901F, E393936A, E393936C, E393936J, E393936B, E393935E, E383915A, E383911E, E393936AB, E383903J, E383903F and E383902F. 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 200 pounds of grass seed to a location designated by the Contract Administrator. Seed provided shall meet the following specifications.

10% Ladak Alfalfa, 10% Smooth Brome, 10% Big Bluegrass, 15% Hard Fescue, 15% Small Burnet, 20% Alsike Clover, 20% White Dutch 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-350 Permanent Plots

There are permanent plot(s) located within the sale area. The aluminum tags at the base of the trees within the plot(s) shall not be removed or destroyed.

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 E383901E, E383901F, E393936A, E393936C, E393936J, E393936B, E393935E, E383915A, E383911E, E393936AB, E383903J, E383903F and E383902F 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 94139 with MJ Matney Limited Family Partnership dated May 20, 2016
Road Use Permit with Vaagen Bros. Lumber pending

G-430 Open Fires

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

G-450 Encumbrances

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

Easement, including the terms and provisions thereof,
For: Canal
In Favor of: The Upper Columbia Co.
Disclosed by Application No.: 50-007738
Granted: 7/6/1914
Expires: Indefinite

Easement, including the terms and provisions thereof,
For: Overhead Power Transmission
In Favor of: The Washington Water Power Co.
Disclosed by Application No.: 50-021707
Granted: 9/4/1951
Expires: Indefinite

Easement, including the terms and provisions thereof,
For: Road

In Favor of: Boise Cascade Corp.
Disclosed by Application No.: 50-038414
Granted: 6/2/1976
Expires: Indefinite

Easement, including the terms and provisions thereof,
For: Road
In Favor of: B. J. Carney & Company
Disclosed by Application No.: 50-041051
Granted: 10/19/1978
Expires: Indefinite

Easement, including the terms and provisions thereof,
For: Road
In Favor of: Vaagen Bros. Lumber, Inc.
Disclosed by Application No.: 50-090082
Granted: 8/11/2014
Expires: Indefinite

Easement, including the terms and provisions thereof,
For: County Road
In Favor of: Stevens County
Disclosed by Application No.: 50-CR1089
Granted: 3/4/1925
Expires: Indefinite

Easement, including the terms and provisions thereof,
For: County Road
In Favor of: Stevens County
Disclosed by Application No.: 50-CR3262
Granted: 5/5/1934
Expires: Indefinite

Easement, including the terms and provisions thereof,
For: County Road
In Favor of: Stevens County
Disclosed by Application No.: 50-CR3265
Granted: 7/6/1951
Expires: Indefinite

Easement, including the terms and provisions thereof,
For: County Road
In Favor of: Stevens County
Disclosed by Application No.: 50-CR3268
Granted: 11/21/1951
Expires: Indefinite

Section P: Payments and Securities

P-011 Initial Deposit

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

P-020 Payment for Forest Products

Purchaser agrees to pay the total, lump sum contract price of $110,184.00. The total contract price consists of a $0.00 contract bid price plus $110,184.00 in fees. Fees collected shall be retained by the state unless the contract is adjusted via the G-066 clause. Purchaser shall be liable for the entire purchase price, and will not be entitled to any refunds or offsets unless expressly stated in this contract.

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

P-045 Guarantee of Payment

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

P-050 Billing Procedure

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

P-080 Payment Account Refund

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

P-090 Performance Security

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

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

P-100 Performance Security Reduction

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

Section H: Harvesting Operations

H-010 Cutting and Yarding Schedule

Falling and Yarding will not be permitted from March 1 to May 31 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 7 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 5 inches as measured from the natural ground line. To reduce soil damage, the Contract Administrator may require water bars to be constructed, grass seed to be placed on exposed soils, or other mitigation measures. Suspended operations shall not resume unless approval to do so has been given, in writing, by the Contract Administrator.

H-035 Fall Trees Into Sale Area

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

H-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-051 Branding and Painting

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

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

H-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 methods and yarded by tracked/rubber tired skidder, D6 or smaller dozer, or forwarder 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 31 unless authorized in writing by the Contract Administrator .

H-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

a. Protect all ponderosa pine regeneration.

b. Skidding only will be allowed on the E393935K road. If used post haul maintenance will be required as outlined in the road plan.

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

H-190 Completion of Settings

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

H-220 Protection of Residual or Adjacent Trees

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

H-230 Tops and Limbs Outside the Sale Boundary

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

H-250 Additional Falling Requirements

Within all units, all live stems except ponderosa pine and western larch greater than 1 inch in diameter not banded with blue paint, shall be felled concurrently with felling operations. Areas of young or immature timber may be excluded from this requirement by the Contract Administrator.

H-260 Fall Leaners

Trees in Units 1, 2, 3, 4, 5, 6, and 7 that have been pushed over in falling or skidding operations shall be felled.

Section C: Construction and Maintenance

C-040 Road Plan

Road construction and associated work provisions of the Road Plan for this sale, dated 6/1/2016 are hereby made a part of this contract.

C-050 Purchaser Road Maintenance and Repair

Purchaser shall perform work at their own expense on E383901E, E383901F, E393936A, E393936C, E393936J, E393936B, E393935E, E383915A, E383911E, E393936AB, E383903J, E383903F and E383902F road. 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-130 Dust Abatement

Purchaser shall abate dust on the E383915A road used for hauling from July 1 to September 15.

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-050 Cessation of Operations for Low Humidity

During the "closed season", when the humidity is 12 percent or lower on the sale area, all operations must cease unless authority to continue is granted by the State in writing.

S-060 Pump Truck or Pump Trailer

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

S-100 Stream Cleanout

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

S-110 Resource Protection

No skidding or harvesting equipment may operate within the Riparian Mangement Zone unless authority is granted in writing by the Contract Administrator.

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.

Section D: Damages

D-013 Liquidated Damages or Failure to Perform

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

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

substantial injury to the State. Therefore, Purchaser agrees to pay the State the full lump sum contract price in P-020 in the event of failure to perform.

D-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 $1,500.00 per tree for all damaged reserve trees that are not replaced in the units.

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
(Required for both LLC and Inc. Entities)

STATE OF _____)
)
COUNTY OF _____)

On this _____ day of _____, 20___, before me personally appeared _____
_____ to me known to be the _____ of the corporation that executed the within and foregoing instrument and acknowledged said instrument to be the free and voluntary act and deed of the corporation, for the uses and purposes therein mentioned, and on oath stated that (he/she was) (they were) authorized to execute said instrument.

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

_____
Notary Public in and for the State of

_____

My appointment expires _____

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

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOREST EXCISE TAX ROAD SUMMARY SHEET

Region: Northeast

Timber Sale Name: Alice Mae

Application Number: 30- 093947

EXCISE TAX APPLICABLE ACTIVITIES

Construction: 2,365 **linear feet**
Road to be constructed (optional and required) but not abandoned

Reconstruction: 18,490 **linear feet**
Road to be reconstructed (optional and required) but not abandoned

Abandonment: 0 **linear feet**
Abandonment of existing roads not reconstructed under the contract

Decommission: 1,880 **linear feet**
Road to be made undriveable but not officially abandoned.

Pre-Haul Maintenance: 19,640 **linear feet**
Existing road to receive maintenance work (specifically required by the contract) prior to haul

EXCISE TAX EXEMPT ACTIVITIES

Temporary Optional Construction: 0 **linear feet**
Optional roads to be constructed and then abandoned

Temporary Optional Reconstruction: 0 **linear feet**
Optional roads to be reconstructed and then abandoned

New Abandonment: 0 **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 contact. 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: Alice Mae	Region: **Northeast**
Agreement #: 30-093947	District: North Columbia
Contact Forester: Janet Rogers Phone / Location: (509) 675-2189	County(s): Stevens, Choose a county
Alternate Contact: Berny Beardslee Phone / Location: Click here to enter text.	Other information: Click here to enter text.

Type of Sale: Lump Sum	
Harvest System: Ground based Click here to enter text.	100%
Harvest System: Select harvest system Click here to enter text. Enter % of sale acres	Click here to enter percent sale acres.
Harvest System: Select harvest system Click here to enter text.	Click here to enter percent sale acres.

UNIT ACREAGES AND METHOD OF DETERMINATION:

Unit # Harvest R/W or RMZ WMZ	Legal Description (Enter only one legal for each unit) Sec/Twp/Rng	Grant or Trust	Gross Proposal Acres	Deductions from Gross Acres (No harvest acres)				Net Harvest Acres	Acreage Determination (List method and error of closure if applicable)
				RMZ/ WMZ Acres	Leave Tree Acres	Existing Road Acres	Other Acres (describe)		
1	Sec. 35&36, T39R39E	29=03 66=04	96.46	0	0	1.3	0	95.16	GPS (Garmin)
2	Sec. 36 T39R39E	94=03	94.35	0	0	1.1	0	93.25	GPS (Garmin)
3	Sec. 35 T39R39E	49=03 1=04	49.79	0	0	1.2	0	48.59	GPS (Garmin)
4	Sec.2 T39R39E	68=03	69.46	0	.98	1.3	0	67.18	GPS (Garmin)
5	Sec. 3 T39R39E	39=03	39.25	0	0	0	0	39.25	GPS (Garmin)

Revised 03/15/2010 (FRCD)

6	Sec. 3 T39R39E	22=03	22.07	0	0	.75	0	21.32	GPS (Garmin)
7	Sec. 10 T39R39E	26=03	26.78	0	0	.24	0	26.54	GPS (Garmin)
ROW 8 - DNR	Sec.35,36 T39R39E	03	1.1	0	0	NA	0	1.1	GPS This total Includes .58 acres of new construction on DNR
ROW 9- non DNR	Sec. 1 & 2 T38R39E Sec. 3&11, T39R39E		.1	0	0	NA	0	.1	GPS This is new construction on private
TOTAL ACRES			399.36		.98	5.89		392.49	

HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription: (Leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
1,2,3,5,6,7	Harvest boundaries marked in pink ribbon and timber sale tags. All green leave trees are marked with blue paint.		6-7 TPA leave
4	Harvest boundaries marked in pink ribbon and timber sale tags. All green leave trees are marked with blue paint, and there is one leave tree area in the south end that is marked with Leave tree Area tags and pink ribbon.	There is a leave tree area marked with leave tree tags	6-7 TPA leave

ROW 8	Marked with Orange ROW tags when outside unit boundaries	DNR ROW	
ROW 9	Marked with orange ROW tags	NON DNR Timber	

OTHER PRE-CRUISE INFORMATION:

Unit #	Primary,secondary Species / Estimated Volume (MBF)	Access information (Gates, locks, etc.)	Photos, traverse maps required
1,2,3	DF	Combo lock will be added to chain at new haul route location off Onion Creek road– app #	
4,5,6,7	DF	Hurd key needed to enter cable into Unit 4 – on the E393936AB road. This will be changed to combo app # before sale	
TOTAL MBF	Click here to enter total mbf.		

REMARKS:

Prepared By: Janet Rogers Date: 5/10/16	Title: Forester	CC:

Cruise Narrative

Sale Name: Alice Mae	**Region:** Northeast
Agreement Number: 30-093947	**District:** North Columbia
Lead Cruiser: Dan Griggs	**Completion Date:** 5/23/2016
Other Cruisers on sale: Jim Putnam	**Legal:** Sections 2, 3 & 10 T 38 N, R 39 E; Sections 35 & 36 T 39 N, R 39E WM.

Unit Acreage Specifications:

Unit #	Gross Acres	Net Acres	Total Deletions	Existing Roads	Leave Tree Acres	Power Line	Other
1	96.46	95.16	1.30	1.30			
2	94.35	93.25	1.10	1.10			
3	49.79	48.59	1.20	1.20			
4	69.46	67.18	2.28	1.30	0.98		
5	39.25	39.25	0.00				
6	22.07	21.32	0.75	0.75			
7	26.78	26.54	0.24	0.24			
RW8	1.10	1.10	0.00				
Total	399.26	392.39	6.63	5.89	0.98	0.00	0.00

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.

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	27.78	111.11	D4H	280 X 280	25%	29.3%	49
2	27.78	111.11	D4H	280 X 280	25%	24.5%	52
3	27.78	111.11	D4H	280 X 280	25%	27.4%	24
4	27.78	111.11	D4H	280 X 280	25%	29.9%	35
5	27.78	111.11	D4H	280 X 280	25%	29.0%	23
6	33.61	90.00	D4H	280 X 280	37%	39.2%	12
7	33.61	90.00	D4H	280 X 280	37%	28.1%	13
RW8	ITS		D4H		25%	27.1%	3
Total					25%	28.2%	211

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:	**Ponderosa pine:** 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. **All other species:** 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.
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 Firewood: 40 feet where possible, minimum of 12 feet Utility: 16 feet where possible, minimum of 12 feet
Take / Leave tree description:	Harvest all green or dead conifers that meet the minimum cruise specifications and are not banded with blue paint. Leave the forest practice requirement of 2-2-2 on dead timber.
Commercial species observed in sale area, but not in cruise:	
Utility wood:	Comprised of non-board foot volume and volume below the minimum top diameter of 5" or 40% of DOB at 16' to a minimum of a 2.6" top.
Status codes used:	D – Dead tree useable for firewood
Sort codes used	D – saw log, U – utility log, F - firewood
Species table used:	NE 2 inch
Grade table used:	Eastgrad
Other tables used (cruise adjustment):	

RWU8 was cruised was using a Individual Tree Sample (ITS) method.

Douglas-fir and lodgepole pine I cruised every fifth tree.

Western larch I cruised every third tree.

Red cedar, ponderosa pine and engelmann spruce I cruised every tree.

Field Observations:

Location:	Northern Stevens County, 23 road miles north of Colville, Washington.
Aspect:	North, East, South and West
Elevation:	1960 to 4000
Slope:	Unit 1 – 0% to 50%, Average 25% Unit 2 – 0% to 65%, Average 27% with several small rock cliffs Unit 3 – 0% to 55%, Average 32% Unit 4 – 0% to 40%, Average 20% Unit 5 – 0% to 40%, Average 20% Unit 6 – 0% to 40%, Average 20% Unit 7 – 0% to 45%, Average 22%
Harvest Methods:	100% Ground base yarding with the longest skidding of 1200 feet.
Stand Composition:	The stands are second growth Douglas-fir and western larch with larger residual trees. There is a minor component of red cedar, lodgepole pine, grand fir, ponderosa pine and engelmann spruce.
Stand Health:	Much of the Douglas-fir and western larch are infected with dwarf mistletoe. There are several small root rot areas.
Timber Quality:	The timber is a mix of fair quality Douglas-fir (76%), western larch (9%), lodgepole pine (3%), grand fir (1%), ponderosa pine (1%) and Engelmann spruce (less than 1%). Dead Douglas-fir and western larch firewood is about 5% of the volume.
Non-board Foot Volume:	288 mbf of the total sale volume is comprised of utility wood (79 mbf) and firewood (209mbf).
Other Considerations:	

Trust and Counties:

	Based on Volume			Based on Acres	
Unit #	Trust 03 Vol. mbf	Trust 04 Vol. mbf	Combined Vol. mbf	Stevens Co.	Ferry Co.
1	438	829	1267	95.16	
2	900		900	93.25	
3	543	14	557	48.59	
4	329		329	67.18	
5	337		337	39.25	
6	420		420	21.32	
7	280		280	26.54	
RW8	30		30	1.1	
Total	3277	843	4120	392.39	0

Prepared by: Dan Griggs

Title: Forest Check Cruiser 1

CC: Timber Sales Document Center & File #30-093947

TC PSPCSTGR

Species, Sort Grade - Board Foot Volumes (Project)

T38N R39E S02 Ty00U4
THRU
T39N R39E S36 TyRWU8

Project: **ALICEMAE**

Acres **392.39**

Page **1**
Date **5/23/2016**
Time **9:48:02AM**

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent of Net Board Foot Volume: Log Scale Dia. 4-5	6-11	12-16	17+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF	D	2		25	6.6	2,140	1,999	784			82	18			100		32	13	242	1.69	8.3
DF	D	3		49	3.9	4,059	3,902	1,531		98	2		1	2	97		32	8	94	0.70	41.5
DF	D	4		23	3.2	1,947	1,885	740	79	20	2		18	37	45		25	5	32	0.29	58.9
DF	U	UT		3		175	175	69	65			35	34	31	35		21	3	19	0.24	9.1
DF	**Totals**			76	4.3	8,322	7,961	3,124	20	53	22	5	5	11	84		28	7	68	0.57	117.9
DF	D	F	W	100	6.2	453	425	167	4	88		8	7	2	13	77	31	6	53	0.55	8.0
DF	**Totals**			4	6.2	453	425	167	4	88		8	7	2	13	77	31	6	53	0.55	8.0
WL	D	2		6	11.0	66	58	23			100				100		32	14	240	1.68	.2
WL	D	3		70	4.5	713	681	267		91	9				100		32	8	85	0.61	8.0
WL	D	4		22		211	211	83	94	6			29	66	5		25	5	28	0.25	7.5
WL	U	UT		2		14	14	5	100				100				16	3	10	0.16	1.4
WL	**Totals**			9	3.9	1,004	964	378	22	66	12		8	14	78		28	7	56	0.46	17.1
WL	D	F	W	100	3.8	112	108	42	50	35	15		3		40	57	34	6	59	0.50	1.8
WL	**Totals**			1	3.8	112	108	42	50	35	15		3		40	57	34	6	59	0.50	1.8
PP	D	4		24	21.1	38	30	12			100				100		32	12	150	1.18	.2
PP	D	5		76	6.6	98	92	36		100			16	26	58		25	7	48	0.46	1.9
PP	**Totals**			1	10.7	136	122	48		75	25		12	20	68		26	7	58	0.54	2.1
RC	D	3		62	3.7	283	273	107		86	14				100		32	9	110	0.92	2.5
RC	D	4		38	11.6	186	164	64	55	45			39	34	27		23	5	25	0.33	6.4
RC	**Totals**			4	6.8	469	437	171	21	70	9		14	13	73		25	6	49	0.54	8.9
GF	D	3		69	11.3	123	109	43		100					100		32	8	82	0.61	1.3
GF	D	4		31		48	48	19	86	14			24	62	14		24	5	25	0.29	2.0
GF	**Totals**			1	8.1	171	157	62	26	74			7	19	74		27	6	48	0.44	3.3
LP	D	3		35	7.1	114	106	42		100					100		32	8	78	0.52	1.4
LP	D	4		60	4.8	190	181	71	44	56			6	11	83		29	6	43	0.30	4.2
LP	U	UT		5		13	13	5	100				100				16	4	10	0.14	1.3
LP	**Totals**			3	5.4	316	299	117	31	69			8	7	85		27	6	44	0.33	6.8
ES	D	3		89	19.5	26	21	8		45	55				100		32	12	153	1.26	.1
ES	D	4		11		2	2	1	5	95			4	84	12		24	6	32	0.38	.1
ES	**Totals**			0	17.9	29	24	9	1	50	49		0	8	91		29	10	111	1.01	.2
Totals					4.7	11,013	10,497	4,119	20	57	19	4	6	11	79	4	28	7	63	0.54	166.1

TC PSTATS

PROJECT STATISTICS

PROJECT ALICEMAE

DATE 5/23/2016

TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
38N	39E	02	ALICE MAE	00U4	THR	392.39	211	875	S	E
39N	39E	36	ALICE RW	RWU8						

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	211	875	4.1		
CRUISE	115	435	3.8	39,878	1.1
DBH COUNT					
REFOREST COUNT	74	170	2.3		
BLANKS	22				
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	238	69.5	12.7	67	17.2	61.5	8,322	7,961	1,843	1,843
DOUG FIR-D	14	6.9	12.0	48	1.6	5.4	453	425	139	138
W LARCH	60	8.6	12.0	78	2.0	6.8	1,004	964	218	218
W LARCH-D	6	1.6	11.8	69	0.4	1.2	112	108	32	32
WR CEDAR	27	7.4	11.0	37	1.5	4.9	469	437	121	121
LP PINE	61	4.1	9.6	70	0.7	2.1	316	299	61	61
P PINE	19	1.5	12.8	55	0.4	1.3	136	122	30	30
GR FIR	5	2.0	11.3	67	0.4	1.4	171	157	39	39
E SPRUCE	5	.1	19.3	86	0.0	.2	29	24	6	6
TOTAL	*435*	*101.6*	*12.4*	*65*	*24.1*	*84.7*	*11,013*	*10,497*	*2,488*	*2,489*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL 68.1 SD: 1.0	COEFF VAR.%	S.E.%	SAMPLE TREES - BF LOW	AVG	HIGH	# OF TREES REQ. 5	10	INF. POP. 15
DOUG FIR	17.2	1.5	312	317	321			
DOUG FIR-D	134.8	37.3	64	101	139			
W LARCH			238	238	238			
W LARCH-D	128.1	57.0	64	148	233			
WR CEDAR	63.0	14.8	91	107	123			
LP PINE			197	197	197			
P PINE			114	114	114			
GR FIR	53.4	26.5	73	100	127			
E SPRUCE	63.2	31.4	174	254	334			
TOTAL	*36.3*	*2.3*	*245*	*251*	*257*	*52*	*13*	*6*

CL 68.1 SD: 1.0	COEFF VAR.%	S.E.%	SAMPLE TREES - CF LOW	AVG	HIGH	# OF TREES REQ. 5	10	INF. POP. 15
DOUG FIR			75	75	75			
DOUG FIR-D	129.8	36.0	22	34	46			
W LARCH			58	58	58			
W LARCH-D	118.8	52.9	21	44	68			
WR CEDAR	56.0	13.2	29	33	37			
LP PINE			39	39	39			
P PINE			29	29	29			
GR FIR	46.2	23.0	19	24	30			
E SPRUCE	63.9	31.8	41	59	78			
TOTAL	*21.4*	*1.4*	*60*	*61*	*62*	*18*	*5*	*2*

CL 68.1 SD: 1.0	COEFF VAR.%	S.E.%	TREES/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
DOUG FIR	74.2	5.1	66	69	73			
DOUG FIR-D	274.4	18.9	6	7	8			
W LARCH	208.6	14.3	7	9	10			

TC PSTATS

PROJECT STATISTICS

PROJECT ALICEMAE

DATE 5/23/2016

TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
38N	39E	02	ALICE MAE	00U4	THR	392.39	211	875	S	E
39N	39E	36	ALICE RW	RWU8						

CL 68.1 SD: 1.00

TREES/ACRE

	COEFF VAR.	S.E.%	LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
W LARCH-D	609.4	41.9	1	2	2			
WR CEDAR	411.5	28.3	5	7	10			
LP PINE	460.7	31.7	3	4	5			
P PINE	588.9	40.5	1	1	2			
GR FIR	512.2	35.2	1	2	3			
E SPRUCE	1262.7	86.8	0	0	0			
TOTAL	*41.8*	*2.9*	*99*	*102*	*105*	*70*	*17*	*8*

CL 68.1 SD: 1.0

BASAL AREA/ACRE

	COEFF VAR.%	S.E.%	LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
DOUG FIR	62.1	4.3	59	61	64			
DOUG FIR-D	248.1	17.1	4	5	6			
W LARCH	190.2	13.1	6	7	8			
W LARCH-D	478.4	32.9	1	1	2			
WR CEDAR	379.2	26.1	4	5	6			
LP PINE	442.8	30.5	1	2	3			
P PINE	594.4	40.9	1	1	2			
GR FIR	500.6	34.4	1	1	2			
E SPRUCE	1317.7	90.6	0	0	0			
TOTAL	*24.9*	*1.7*	*83*	*85*	*86*	*25*	*6*	*3*

CL 68.1 SD: 1.0

NET BF/ACRE

	COEFF VAR.%	S.E.%	LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
DOUG FIR	66.7	4.6	7,595	7,961	8,326			
DOUG FIR-D	253.9	17.5	351	425	500			
W LARCH	197.1	13.6	834	964	1,095			
W LARCH-D	564.6	38.8	66	108	150			
WR CEDAR	411.7	28.3	313	437	561			
LP PINE	446.7	30.7	207	299	391			
P PINE	601.1	41.3	71	122	172			
GR FIR	506.7	34.9	102	157	212			
E SPRUCE	1310.4	90.1	2	24	45			
TOTAL	*34.9*	*2.4*	*10,245*	*10,497*	*10,749*	*49*	*12*	*5*

CL 68.1 SD: 1.0

NET CUFT FT/ACRE

	COEFF VAR.%	S.E.%	LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
DOUG FIR	64.7	4.5	1,761	1,843	1,925			
DOUG FIR-D	253.2	17.4	114	138	163			
W LARCH	194.3	13.4	189	218	247			
W LARCH-D	520.3	35.8	20	32	43			
WR CEDAR	383.1	26.4	89	121	153			
LP PINE	445.1	30.6	42	61	80			
P PINE	603.5	41.5	17	30	42			
GR FIR	502.2	34.5	26	39	53			
E SPRUCE	1333.3	91.7	1	6	12			
TOTAL	*29.7*	*2.0*	*2,438*	*2,489*	*2,539*	*35*	*9*	*4*

CL 68.1 SD: 1.0

V BAR/ACRE

	COEFF VAR.%	S.E.%	LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
DOUG FIR	41.6	2.9	124	129	135			
DOUG FIR-D	97.8	6.7	65	79	93			
W LARCH	285.4	19.6	122	142	161			
W LARCH-D	490.6	33.7	53	87	120			
WR CEDAR	225.1	15.5	64	90	115			
LP PINE	531.1	36.5	100	145	189			
P PINE	496.4	34.1	55	93	132			
GR FIR	301.0	20.7	75	115	155			
E SPRUCE	906.7	62.4	15	155	295			
TOTAL	*127.8*	*8.8*	*121*	*124*	*127*	*652*	*163*	*72*

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: ALICEMAE

Date 5/23/2016

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T39N R39E S35 T00U1

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
39N	39E	35	ALICE MAE	00U1	95.16	49	51	S	E

T39N R39E S35 T00U1

Spp	ST	Sort	Grade	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-5	6-11	12-16	17+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF		D	2	18	4.9	1,837	1,748	166			100				100		32	13	204	1.53	8.6
DF		D	3	60	1.4	5,849	5,767	549		100					100		32	8	95	0.70	60.5
DF		D	4	20		1,831	1,831	174	84	16			18	43	40		24	5	30	0.26	60.2
DF		U	UT	2		172	172	16	100				28	72			23	3	14	0.14	12.6
DF		**Totals**		71	1.8	9,690	9,519	906	18	64	18		4	9	87		28	7	67	0.55	141.9
DF	D	F	W	100	4.0	284	272	26		100			14			86	29	7	73	0.82	3.7
DF	**D**	**Totals**		2	4.0	284	272	26		100			14			86	29	7	73	0.82	3.7
RC		D	3	59	6.2	686	644	61		75	25				100		32	10	132	1.08	4.9
RC		D	4	41	3.5	459	443	42	58	42			35	53	13		23	6	29	0.29	15.0
RC		**Totals**		8	5.2	1,145	1,086	103	24	61	15		14	21	64		25	7	55	0.54	19.9
WL		D	3	80	4.4	1,161	1,111	106		78	22				100		32	8	88	0.61	12.7
WL		D	4	18		250	250	24	100					100			29	5	36	0.25	7.0
WL		U	UT	2		21	21	2	100				100				16	3	10	0.12	2.1
WL		**Totals**		10	3.5	1,433	1,382	131	20	62	18		2	18	80		30	7	63	0.47	21.8
WL	D	F	W	100		140	140	13	100						100		34	5	40	0.24	3.5
WL	**D**	**Totals**		1		140	140	13	100						100		34	5	40	0.24	3.5
LP		D	3	33	10.8	312	278	26		100					100		32	8	83	0.55	3.4
LP		D	4	60	6.7	535	499	47	16	84				16	84		30	6	46	0.33	10.8
LP		U	UT	7		52	52	5	100				100				16	4	10	0.14	5.2
LP		**Totals**		6	7.8	899	829	79	16	84			6	10	84		27	6	43	0.34	19.4
ES		D	3	90	21.1	101	80	8		47	53				100		32	12	150	1.26	.5
ES		D	4	10		8	8	1		100				100			24	6	30	0.37	.3
ES		**Totals**		1	19.5	109	87	8		52	48			9	91		29	10	110	1.02	.8
Type Totals					2.8	13,699	13,316	1,267	19	65	17		5	11	82	2	28	7	63	0.52	211.0

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: ALICEMAE

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T39N R39E S36 T00U2

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
39N	39E	36	ALICE MAE	00U2	93.25	52	37	S	E

T39N R39E S36 T00U2

Spp	ST	Sort	Grade	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-5	6-11	12-16	17+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF		D	2	28	7.5	2,260	2,090	195			87	13			100		32	13	238	1.73	8.8
DF		D	3	42	5.4	3,281	3,103	289		100					100		32	8	91	0.73	34.0
DF		D	4	28		2,055	2,055	192	85	15			10	36	53		27	5	34	0.27	59.7
DF		U	UT	2		117	117	11	100				100				17	3	10	0.17	11.7
DF		**Totals**		76	4.5	7,713	7,365	687	25	46	25	4	4	10	85		28	6	65	0.55	114.1
DF	D	F	W	100		400	400	37		100						100	36	6	50	0.37	8.0
DF	**D**	**Totals**		4		400	400	37		100						100	36	6	50	0.37	8.0
WL		D	3	77	7.8	895	825	77		100					100		32	8	81	0.63	10.3
WL		D	4	20		208	208	19	80	20			80		20		21	5	23	0.28	9.1
WL		U	UT	3		31	31	3	100				100				16	4	10	0.16	3.1
WL		**Totals**		11	6.2	1,135	1,064	99	18	82			18		82		25	6	47	0.47	22.5
PP		D	4	28	21.1	160	126	12			100				100		32	12	150	1.18	.8
PP		D	5	72	8.1	338	310	29		100			18	32	49		24	7	45	0.47	6.9
PP		**Totals**		5	12.3	498	437	41		71	29		13	23	64		25	7	57	0.56	7.7
LP		D	3	39		153	153	14		100					100		32	7	70	0.46	2.2
LP		D	4	61		230	230	21	100				19		81		26	5	39	0.23	5.9
LP		**Totals**		4		383	383	36	60	40			11		89		28	6	47	0.31	8.1
Type Totals					4.7	10,128	9,648	900	24	53	20	3	6	9	81	4	28	6	60	0.52	160.4

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: ALICEMAE

Date 5/23/2016

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T39N R39E S35 T00U3

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
39N	39E	35	ALICE MAE	00U3	48.59	24	20	S	E

T39N R39E S35 T00U3

Spp	ST	Sort	Grade	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-5	6-11	12-16	17+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF		D	2	33	4.4	3,770	3,604	175			63	37			100		32	14	271	1.73	13.3
DF		D	3	53	2.0	5,749	5,636	274		100				8	92		32	8	94	0.66	60.1
DF		D	4	12	5.1	1,456	1,382	67	51	49			34	12	54		22	5	29	0.33	47.3
DF		U	UT	2		114	114	6	100				100				19	3	10	0.17	11.4
DF		**Totals**		94	3.2	11,089	10,735	522	8	59	21	12	5	6	89		27	7	81	0.66	132.1
DF	D	F	W	100	12.9	318	277	13		100			46		54		20	7	26	0.44	10.6
DF	**D**	**Totals**		2	12.9	318	277	13		100			46		54		20	7	26	0.44	10.6
WL		D	3	71		256	256	12		100					100		32	6	50	0.32	5.1
WL		D	4	29		103	103	5	100				100				16	5	20	0.17	5.1
WL		**Totals**		3		359	359	17	29	71			29		71		24	6	35	0.27	10.3
WL	D	F	W	100		85	85	4	100							100	40	5	40	0.29	2.1
WL	**D**	**Totals**		1		85	85	4	100							100	40	5	40	0.29	2.1
Type Totals					3.3	11,850	11,456	557	9	60	20	12	7	5	87	1	27	7	74	0.62	155.1

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: ALICEMAE

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T38N R39E S02 T00U4

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
38N	39E	02	ALICE MAE	00U4	67.18	35	20	S	E

T38N R39E S02 T00U4

Spp	ST	Sort	Grade	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-5	6-11	12-16	17+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF		D	3	49	13.3	1,935	1,677	113		100					100		32	8	90	0.79	18.7
DF		D	4	51	8.2	1,838	1,688	113	98	2			25	41	34		25	5	27	0.25	61.6
DF		**Totals**		69	10.8	3,773	3,365	226	49	51			12	21	67		26	6	42	0.40	80.3
DF	D	F	W	100		321	321	22		100					69	31	34	6	59	0.50	5.4
DF	**D**	**Totals**		7		321	321	22		100					69	31	34	6	59	0.50	5.4
WL		D	3	52		499	499	34		100					100		32	9	97	0.71	5.1
WL		D	4	48		450	450	30	100					100			28	5	32	0.23	14.2
WL		**Totals**		19		949	949	64	47	53				47	53		29	6	49	0.37	19.3
WL	D	F	W	100		62	62	4		100						100	40	7	70	0.59	.9
WL	**D**	**Totals**		1		62	62	4		100						100	40	7	70	0.59	.9
RC		D	4	100	50.0	206	103	7	100				100				20	5	10	0.34	10.3
RC		**Totals**		2	50.0	206	103	7	100				100				20	5	10	0.34	10.3
PP		D	5	100		96	96	6		100					100		32	7	70	0.41	1.4
PP		**Totals**		2		96	96	6		100					100		32	7	70	0.41	1.4
Type Totals					9.5	5,408	4,896	329	45	55			11	23	63	3	27	6	42	0.40	117.7

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

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T38N R39E S03 T00U5

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
38N	39E	03	ALICE MAE	00U5	39.25	23	20	S	E

T38N R39E S03 T00U5

Spp	ST	Sort	Grade	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-5	6-11	12-16	17+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF		D	2	19	7.1	933	867	34			28	72			100		32	17	460	2.91	1.9
DF		D	3	24		1,106	1,106	43		100					100		32	8	80	0.52	13.8
DF		D	4	51		2,302	2,302	90	60	40			14	20	66		27	5	40	0.34	57.8
DF		U	UT	6		247	247	10	100				4	96			27	3	19	0.30	12.8
DF		**Totals**		53	1.4	4,588	4,522	177	36	45	5	14	7	16	77		28	6	52	0.43	86.3
DF	D	F	W	100	8.0	1,084	997	39	6	94			6			94	32	6	47	0.49	21.2
DF	**D**	**Totals**		12	8.0	1,084	997	39	6	94			6			94	32	6	47	0.49	21.2
GF		D	3	69	9.5	1,040	941	37		100					100		32	8	79	0.58	11.9
GF		D	4	31		414	414	16	100				28	72			23	5	23	0.29	18.2
GF		**Totals**		16	6.8	1,454	1,356	53	31	69			8	22	69		27	6	45	0.43	30.1
RC		D	3	70		716	716	28		100					100		32	7	81	0.71	8.9
RC		D	4	30		300	300	12	30	70					100		32	6	50	0.46	6.0
RC		**Totals**		12		1,016	1,016	40	9	91					100		32	7	68	0.61	14.9
WL		D	2	66	11.8	454	401	16			100				100		32	16	300	1.90	1.3
WL		D	3	31	12.5	214	187	7		100					100		32	10	140	0.97	1.3
WL		U	UT	3		13	13	1	100				100				20	3	10	0.30	1.3
WL		**Totals**		7	11.8	681	601	24	2	31	67		2		98		28	10	150	1.16	4.0
WL	D	F	W	100		88	88	3	100						100		32	5	40	0.86	2.2
WL	**D**	**Totals**		1		88	88	3	100						100		32	5	40	0.86	2.2
Type Totals					3.7	8,912	8,580	337	27	59	8	7	6	12	71	11	28	6	54	0.48	158.7

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Species, Sort Grade - Board Foot Volumes (Type)

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T38N R39E S03 T00U6

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
38N	39E	03	ALICE MAE	00U6	21.32	12	20	S	E

T38N R39E S03 T00U6

Spp	ST	Sort	Grad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-5	6-11	12-16	17+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF		D	2	35	8.4	6,011	5,509	117			82	18			100		32	14	245	1.76	22.5
DF		D	3	42		6,288	6,288	134		90	10			8	92		32	8	100	0.64	63.1
DF		D	4	14	18.3	2,793	2,283	49	46	30	24		17	52	31		24	6	38	0.44	60.7
DF		U	UT	9		1,229	1,229	26	8			92	8		92		20	6	111	1.00	11.1
DF Totals				78	6.2	16,322	15,310	326	7	41	37	14	3	11	86		28	8	97	0.78	157.4
DF	D	F	W	100	13.3	1,601	1,388	30	14	43		43		14		86	35	7	86	1.00	16.1
DF D Totals				7	13.3	1,601	1,388	30	14	43		43		14		86	35	7	86	1.00	16.1
WL		D	3	90		1,161	1,161	25		100					100		32	9	100	0.57	11.6
WL		D	4	10		116	116	2	100				100				20	5	20	0.20	5.8
WL Totals				6	.0	1,277	1,277	27	9	91			9		91		28	7	73	0.48	17.4
WL	D	F	W	100		357	357	8		100			17			83	30	9	90	0.78	4.0
WL D Totals				2		357	357	8		100			17			83	30	9	90	0.78	4.0
RC		D	3	84		817	817	17		100					100		32	9	110	0.92	7.4
RC		D	4	16		149	149	3		100			100				16	6	20	0.32	7.4
RC Totals				5		966	966	21		100			15		85		24	8	65	0.72	14.9
GF		D	3	68	21.4	342	269	6		100					100		32	10	110	0.89	2.4
GF		D	4	32		122	122	3		100					100		32	6	50	0.37	2.4
GF Totals				2	15.8	464	391	8		100					100		32	8	80	0.63	4.9
Type Totals					6.2	20,987	19,688	420	7	50	29	14	4	9	79	8	28	8	92	0.77	214.7

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: ALICEMAE

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T38N R39E S10 T00U7

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
38N	39E	10	ALICE MAE	00U7	26.54	13	9	S	E

T38N R39E S10 T00U7

Spp	ST	Sort	Grade	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-5	6-11	12-16	17+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF		D	2	35	9.7	3,795	3,425	91			100				100		32	14	230	1.58	14.9
DF		D	3	45	10.9	4,973	4,431	118		87	13		13		87		29	9	97	0.82	45.5
DF		D	4	20		1,909	1,909	51	96	4			15	66	19		25	5	30	0.27	64.2
DF		**Totals**		93	8.5	10,677	9,765	259	19	40	41		9	13	78		27	8	78	0.67	124.6
WL		D	2	55	11.1	252	224	6			100				100		32	12	160	1.38	1.4
WL		D	3	38		154	154	4		100					100		32	9	110	0.61	1.4
WL		D	4	7		28	28	1		100			100				18	6	20	0.32	1.4
WL		**Totals**		4	6.5	434	406	11		45	55		7		93		27	9	97	0.85	4.2
WL	D	F	W	100	14.8	424	362	10	2	33	65		2			98	31	10	173	1.58	2.1
WL	**D**	**Totals**		3	14.8	424	362	10	2	33	65		2			98	31	10	173	1.58	2.1
Type Totals					8.7	11,535	10,533	280	17	40	42		9	12	76	3	27	8	80	0.69	130.9

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Species, Sort Grade - Board Foot Volumes (Type)

Project: ALICEMAE

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T39N R39E S36 TRWU8

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
39N	39E	36	ALICE RW	RWU8	1.10	3	258	S	E

T39N R39E S36 TRWU8

Spp	ST	Sort	Grade	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-5	6-11	12-16	17+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF		D	2	27		5,055	5,055	6			77	23			100		32	15	309	2.27	16.4
DF		D	3	55		10,282	10,282	11		86	14				100		32	9	122	0.94	84.5
DF		D	4	17		3,127	3,127	3	76	24			42	28	31		22	5	29	0.34	107.3
DF		U	UT	1		91	91	0	100				100				16	5	20	0.29	4.5
DF	**Totals**			67		18,555	18,555	20	13	52	29	6	8	5	88		27	8	87	0.80	212.7
WL		D	2	26		1,145	1,145	1			100				100		32	13	210	1.67	5.5
WL		D	3	50	9.0	2,418	2,200	2		100					100		32	8	65	0.56	33.6
WL		D	4	22		1,000	1,000	1	95	5			32	22	46		22	5	28	0.24	36.4
WL		U	UT	2		55	55	0	100				100				16	4	10	0.12	5.5
WL	**Totals**			16	4.7	4,618	4,400	5	23	51	26		8	5	87		27	7	54	0.51	80.9
LP		D	3	31		818	818	1		100					100		32	8	90	0.54	9.1
LP		D	4	67	5.0	1,827	1,736	2	92	8			14	13	73		27	5	36	0.26	48.2
LP		U	UT	2		45	45	0	100				100				16	4	10	0.11	4.5
LP	**Totals**			9	3.4	2,691	2,600	3	63	37			11	9	80		27	5	42	0.30	61.8
RC		D	3	44	13.5	336	291	0		31	69				100		32	9	107	1.32	2.7
RC		D	4	56		364	364	0	53	47			50		50		22	5	31	0.49	11.8
RC	**Totals**			2	6.5	700	655	1	29	40	31		28		72		24	6	45	0.70	14.5
PP		D	5	100		573	573	1		100			38	19	43		22	7	42	0.50	13.6
PP	**Totals**			2		573	573	1		100			38	19	43		22	7	42	0.50	13.6
ES		D	3	80		691	691	1		33	67				100		32	12	190	1.29	3.6
ES		D	4	20		164	164	0	28	72			22	17	61		23	6	45	0.47	3.6
ES	**Totals**			3		855	855	1	5	40	54		4	3	93		28	9	118	0.94	7.3
Type Totals					1.3	27,991	27,636	30	19	51	26	4	9	5	86		26	7	71	0.65	390.9

TC PSPCTLTCM

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

T38N R39E S02 Ty00U4	67.1
T38N R39E S03 Ty00U5	39.2
T39N R39E S36 TyRWU	1.1

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Species	ST	Total Trees	Total Logs	Total Tons	Net Cubic Ft/ Tree	Net Cubic Ft/ Log	CF/ LF	Total CCF Gross	Total CCF Net	Total MBF Gross	Total MBF Net
DOUG FIR		27,258	46,248	20,607	26.53	15.64	0.57	7,231	7,232	3,265	3,124
W LARCH		3,394	6,701	2,049	25.16	12.74	0.47	854	854	394	378
WR CEDAR		2,910	3,504	1,119	16.37	13.59	0.54	476	476	184	171
DOUG FIR	D	2,699	3,152	1,551	20.13	17.24	0.55	544	543	178	167
LP PINE		1,608	2,667	574	14.87	8.96	0.33	239	239	124	117
GR FIR		766	1,286	443	20.19	12.02	0.45	155	155	67	62
P PINE		571	827	279	20.39	14.07	0.55	116	116	53	48
W LARCH	D	643	722	299	19.35	17.23	0.50	124	124	44	42
E SPRUCE		29	84	64	84.24	29.42	1.02	25	25	11	9
Totals		39,878	65,191	26,986	24.49	14.98	0.55	9,764	9,765	4,321	4,119

Wood Type Species	Total Trees	Total Logs	Total Tons	Net Cubic Ft/ Tree	Net Cubic Ft/ Log	CF/ LF	Total CCF Gross	Total CCF Net	Total MBF Gross	Total MBF Net
C	39,878	65,191	26,986	24.49	14.98	0.55	9,764	9,765	4,321	4,119
Totals	39,878	65,191	26,986	24.49	14.98	0.55	9,764	9,765	4,321	4,119

TC PLOGSTVB

Log Stock Table - MBF

T38N R39E S02 Ty00U4
THRU
T39N R39E S36 TyRWU8

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Acres 392.39

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Spp	ST	Sort	Grade	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches 2-4	5-6	7-10	11-12	13-14	15-16	17-18	19-20	21-23	24-29	30-39	40+
DF		D	2	32	840	6.6	784	25.1				247	276	123	81	32	24			
DF		D	3	14	15		15	.5					15							
DF		D	3	28	21		21	.7				21								
DF		D	3	30	10		10	.3		10										
DF		D	3	32	1,546	4.0	1,484	47.5		98	1173	213								
DF		D	4	12	3		3	.1		1	2									
DF		D	4	14	12		12	.4		11	1									
DF		D	4	16	55		55	1.8		51	5									
DF		D	4	18	18		18	.6		18										
DF		D	4	20	43		43	1.4		38	5									
DF		D	4	22	27		27	.9		27										
DF		D	4	24	66		66	2.1		62	4									
DF		D	4	26	68		68	2.2		68										
DF		D	4	28	48		48	1.5		48										
DF		D	4	30	68	1.0	68	2.2		68										
DF		D	4	32	356	6.7	332	10.6		304	16		12							
DF		U	UT	14	4		4	.1	4											
DF		U	UT	16	8		8	.3	8	0										
DF		U	UT	18	4		4	.1	4											
DF		U	UT	20	8		8	.3	8											
DF		U	UT	24	3		3	.1	3											
DF		U	UT	28	18		18	.6	18											
DF		U	UT	32	24		24	.8									24			
DF		Totals			3,265	4.3	3,124	75.8	45	804	1205	482	303	123	81	32	49			
DF	D	F	W	12	2		2	1.5		2										
DF	D	F	W	14	4		4	2.5			4									
DF	D	F	W	16	1		1	.8		1										
DF	D	F	W	20	6	32.3	4	2.5		4										
DF	D	F	W	28	4		4	2.4		4										
DF	D	F	W	32	15		15	8.9		7	8									
DF	D	F	W	33	7		7	4.3			7									
DF	D	F	W	36	37		37	22.3		37										
DF	D	F	W	40	100	9.0	91	54.7		33	46				13					
DF		Totals			178	6.2	167	4.1		89	65				13					
WL		D	2	32	26	11.0	23	6.1				6	1	16						

TC PLOGSTVB

Log Stock Table - MBF

T38N R39E S02 Ty00U4
THRU
T39N R39E S36 TyRWU8

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Spp	ST	Sort	Grade	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches 2-4	5-6	7-10	11-12	13-14	15-16	17-18	19-20	21-23	24-29	30-39	40+
WL		D	3	32	280	4.5	267	70.6		23	206	38								
WL		D	4	14	0		0	.0		0										
WL		D	4	16	5		5	1.4		5										
WL		D	4	18	1		1	.2		1										
WL		D	4	20	18		18	4.7		18										
WL		D	4	24	0		0	.1		0										
WL		D	4	26	6		6	1.5		6										
WL		D	4	28	27		27	7.2		27										
WL		D	4	30	21		21	5.6		21										
WL		D	4	32	4		4	1.2		4										
WL		U	UT	16	5		5	1.3	5											
WL		U	UT	20	1		1	.1	1											
WL		Totals			394	3.9	378	9.2	5	106	206	44	1	16						
WL	D	F	W	14	0		0	.4		0										
WL	D	F	W	20	1		1	3.0			1									
WL	D	F	W	32	3		3	8.1		3										
WL	D	F	W	34	13		13	31.6		13										
WL	D	F	W	40	26	6.5	24	56.9		4	14			6						
WL		Totals			44	3.8	42	1.0		21	15			6						
PP		D	4	32	15	21.1	12	24.6				12								
PP		D	5	14	0		0	.1			0									
PP		D	5	16	5		5	11.4			5									
PP		D	5	20	0		0	.2			0									
PP		D	5	24	6		6	13.0		6										
PP		D	5	28	4	19.4	3	6.8		3										
PP		D	5	32	23	7.8	21	43.9			21									
PP		Totals			53	10.7	48	1.2		9	27	12								
RC		D	3	32	111	3.7	107	62.5		15	47	46	0							
RC		D	4	16	3		3	1.9		3										
RC		D	4	20	28	24.3	22	12.6		22	0									
RC		D	4	24	18		18	10.3			18									
RC		D	4	30	6	25.0	5	2.7		5										
RC		D	4	32	17		17	10.1		17										
RC		Totals			184	6.8	171	4.2		62	64	46	0							

TC PLOGSTVB

Log Stock Table - MBF

T38N R39E S02 Ty00U4
THRU
T39N R39E S36 TyRWU8

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Spp	ST	Sort	Grade	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches 2-4	5-6	7-10	11-12	13-14	15-16	17-18	19-20	21-23	24-29	30-39	40+
GF		D	3	32	48	11.3	43	69.3			43									
GF		D	4	14	2		2	3.1		2										
GF		D	4	20	3		3	4.2		3										
GF		D	4	26	4		4	7.1		4										
GF		D	4	30	7		7	12.0		7										
GF		D	4	32	3		3	4.2		3										
GF		Totals			67	8.1	62	1.5		19	43									
LP		D	3	32	45	7.1	42	35.4		4	37									
LP		D	4	16	4		4	3.5		4										
LP		D	4	20	0		0	.1		0										
LP		D	4	24	4		4	3.7		4										
LP		D	4	26	4		4	3.1		4										
LP		D	4	32	62	5.7	59	49.9		52	7									
LP		U	UT	16	5		5	4.3	5											
LP		Totals			124	5.4	117	2.9	5	68	44									
ES		D	3	32	10	19.5	8	89.9			4	0	4	0						
ES		D	4	16	0		0	.4		0										
ES		D	4	24	1		1	8.2		1										
ES		D	4	28	0		0	.3		0										
ES		D	4	32	0		0	1.2			0									
ES		Totals			11	17.9	9	.2		1	4	0	4	0						
Total		All Species			4,321	4.7	4,119	100.0	55	1179	1673	583	309	145	94	32	49			

TC TSTATS

STATISTICS

PROJECT ALICEMAE

DATE 5/23/2016

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
39N	39E	35	ALICE MAE	00U1	95.16	49	174	S	E

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	49	174	3.6		
CRUISE	32	51	1.6	10,877	.5
DBH COUNT					
REFOREST COUNT	15	41	2.7		
BLANKS	2				
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	32	72.9	13.2	75	19.2	69.7	9,690	9,519	2,192	2,192
DOUG FIR-D	2	1.9	16.8	76	0.7	2.8	284	272	89	89
WR CEDAR	5	16.1	10.8	31	3.1	10.2	1,145	1,086	270	270
W LARCH	4	9.2	13.0	93	2.4	8.5	1,433	1,382	304	304
W LARCH-D	1	3.5	7.7	76	0.4	1.1	140	140	29	29
LP PINE	6	10.5	9.9	73	1.8	5.7	899	829	178	178
E SPRUCE	1	.3	19.8	90	0.1	.6	109	87	24	24
TOTAL	*51*	*114.3*	*12.6*	*70*	*27.8*	*98.6*	*13,699*	*13,316*	*3,087*	*3,087*

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	56.7	10.0	166	184	202			
DOUG FIR-D	31.9	29.9	109	155	201			
WR CEDAR	72.1	35.9	85	132	179			
W LARCH	61.3	35.0	114	175	236			
W LARCH-D								
LP PINE	19.3	9.6	99	110	121			
E SPRUCE								
TOTAL	*58.8*	*8.3*	*156*	*170*	*184*	*138*	*34*	*15*

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	55.1	9.7	39	43	47			
DOUG FIR-D	28.2	26.4	37	50	64			
WR CEDAR	78.6	39.0	21	35	49			
W LARCH	52.7	30.1	26	38	49			
W LARCH-D								
LP PINE	27.4	13.6	21	24	28			
E SPRUCE								
TOTAL	*58.4*	*8.3*	*37*	*41*	*44*	*136*	*34*	*15*

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	72.7	10.4	65	73	80			
DOUG FIR-D	363.3	51.9	1	2	3			
WR CEDAR	294.8	42.1	9	16	23			
W LARCH	168.1	24.0	7	9	11			
W LARCH-D	489.8	69.9	1	4	6			
LP PINE	284.2	40.6	6	11	15			
E SPRUCE	700.0	99.9	0	0	1			
TOTAL	*28.1*	*4.0*	*110*	*114*	*119*	*32*	*8*	*4*

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	57.6	8.2	64	70	75			

STATISTICS

PROJECT **ALICEMAE**

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
39N	39E	35	ALICE MAE	00U1	95.16	49	174	S	E

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-D	360.3	51.4	1	3	4			
WR CEDAR	281.7	40.2	6	10	14			
W LARCH	166.1	23.7	6	9	11			
W LARCH-D	489.8	69.9	0	1	2			
LP PINE	264.2	37.7	4	6	8			
E SPRUCE	700.0	99.9	0	1	1			
TOTAL			*99*	*99*	*99*			

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	57.1	8.2	8,743	9,519	10,295			
DOUG FIR-D	360.3	51.4	132	272	412			
WR CEDAR	281.1	40.1	650	1,086	1,522			
W LARCH	167.1	23.9	1,052	1,382	1,711			
W LARCH-D	489.8	69.9	42	140	238			
LP PINE	265.4	37.9	515	829	1,143			
E SPRUCE	700.0	99.9	0	87	175			
TOTAL			*13,316*	*13,316*	*13,316*			

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	56.5	8.1	2,016	2,192	2,369			
DOUG FIR-D	360.4	51.4	43	89	135			
WR CEDAR	277.9	39.7	163	270	378			
W LARCH	166.6	23.8	232	304	377			
W LARCH-D	489.8	69.9	9	29	49			
LP PINE	259.2	37.0	112	178	244			
E SPRUCE	700.0	99.9	0	24	47			
TOTAL			*3,087*	*3,087*	*3,087*			

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			125	137	148			
DOUG FIR-D	172.7	24.6	47	96	145			
WR CEDAR	125.4	17.9	64	106	149			
W LARCH			124	162	201			
W LARCH-D	338.9	48.4	37	124	210			
LP PINE	201.1	28.7	91	146	202			
E SPRUCE	700.0	99.9	0	154	309			
TOTAL	*319.6*	*45.6*	*135*	*135*	*135*	*4,079*	*1,020*	*453*

TC TSTATS

STATISTICS

PROJECT ALICEMAE

DATE 5/23/2016

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
39N	39E	36	ALICE MAE	00U2	93.25	52	151	S	E

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	52	151	2.9		
CRUISE	25	37	1.5	9,402	.4
DBH COUNT					
REFOREST COUNT	24	48	2.0		
BLANKS	3				
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	25	70.6	12.5	67	16.9	59.8	7,713	7,365	1,746	1,746
DOUG FIR-D	1	8.0	9.9	37	1.4	4.3	400	400	107	107
W LARCH	6	11.4	12.1	69	2.6	9.1	1,135	1,064	270	270
P PINE	3	5.0	13.3	57	1.3	4.8	498	437	110	110
LP PINE	2	5.9	9.1	68	0.9	2.7	383	383	68	68
TOTAL	*37*	*100.8*	*12.1*	*65*	*23.2*	*80.7*	*10,128*	*9,648*	*2,301*	*2,301*

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	89.1	18.2	154	189	223			
DOUG FIR-D								
W LARCH	61.3	27.3	92	127	161			
P PINE	72.7	50.3	55	110	165			
LP PINE	40.4	37.8	44	70	96			
TOTAL	*91.1*	*15.0*	*138*	*162*	*186*	*332*	*83*	*37*

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	79.9	16.3	37	45	52			
DOUG FIR-D								
W LARCH	61.6	27.4	24	33	42			
P PINE	74.6	51.6	14	28	43			
LP PINE	56.4	52.8	6	13	20			
TOTAL	*82.4*	*13.5*	*34*	*39*	*44*	*271*	*68*	*30*

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	44.1	6.1	66	71	75			
DOUG FIR-D	298.7	41.4	5	8	11			
W LARCH	176.2	24.4	9	11	14			
P PINE	321.8	44.6	3	5	7			
LP PINE	375.7	52.1	3	6	9			
TOTAL	*25.7*	*3.6*	*97*	*101*	*104*	*26*	*7*	*3*

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	29.6	4.1	57	60	62			
DOUG FIR-D	298.7	41.4	3	4	6			
W LARCH	168.3	23.3	7	9	11			
P PINE	317.9	44.1	3	5	7			
LP PINE	371.8	51.5	1	3	4			
TOTAL			*81*	*81*	*81*			

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	32.6	4.5	7,032	7,365	7,698			

TC TSTATS

STATISTICS

PROJECT **ALICEMAE**

DATE 5/23/2016

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
39N	39E	36	ALICE MAE	00U2	93.25	52	151	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
DOUG FIR-D	298.7	41.4	234	400	565			
W LARCH	171.6	23.8	811	1,064	1,317			
P PINE	323.0	44.8	241	437	632			
LP PINE	371.9	51.5	186	383	580			
TOTAL			*9,648*	*9,648*	*9,648*			

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	31.4	4.3	1,670	1,746	1,822			
DOUG FIR-D	298.7	41.4	63	107	151			
W LARCH	170.1	23.6	206	270	334			
P PINE	320.1	44.4	61	110	159			
LP PINE	373.1	51.7	33	68	104			
TOTAL			*2,301*	*2,301*	*2,301*			

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			118	123	129			
DOUG FIR-D			55	94	132			
W LARCH	43.9	6.1	89	117	145			
P PINE	112.8	15.6	50	91	131			
LP PINE	179.6	24.9	69	143	217			
TOTAL	*393.9*	*54.6*	*120*	*120*	*120*	*6,197*	*1,549*	*689*

TC TSTATS

STATISTICS

PROJECT ALICEMAE

DATE 5/23/2016

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
39N	39E	35	ALICE MAE	00U3	48.59	24	73	S	E

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	24	73	3.0		
CRUISE	10	20	2.0	4,022	.5
DBH COUNT					
REFOREST COUNT	10	31	3.1		
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	15	65.0	14.6	74	19.7	75.2	11,089	10,735	2,386	2,386
DOUG FIR-D	3	10.6	10.0	20	1.8	5.8	318	277	95	93
W LARCH	1	5.1	9.1	83	0.8	2.3	359	359	66	66
W LARCH-D	1	2.1	10.0	57	0.4	1.2	85	85	25	25
TOTAL	*20*	*82.8*	*13.7*	*67*	*22.8*	*84.5*	*11,850*	*11,456*	*2,571*	*2,570*

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	80.8	22.4	211	272	333			
DOUG FIR-D	96.4	66.7	11	33	56			
W LARCH								
W LARCH-D								
TOTAL	*101.3*	*23.9*	*161*	*212*	*262*	*433*	*108*	*48*

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	68.3	18.9	47	58	69			
DOUG FIR-D	87.0	60.2	4	11	18			
W LARCH								
W LARCH-D								
TOTAL	*87.1*	*20.5*	*36*	*46*	*55*	*320*	*80*	*36*

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	40.6	8.5	59	65	70			
DOUG FIR-D	266.1	55.4	5	11	16			
W LARCH	338.8	70.6	2	5	9			
W LARCH-D	489.9	102.1		2	4			
TOTAL	*35.3*	*7.4*	*77*	*83*	*89*	*52*	*13*	*6*

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	40.0	8.3	69	75	82			
DOUG FIR-D	244.3	50.9	3	6	9			
W LARCH	338.8	70.6	1	2	4			
W LARCH-D	489.9	102.1		1	2			
TOTAL	*24.7*	*5.1*	*80*	*84*	*89*	*25*	*6*	*3*

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	40.3	8.4	9,834	10,735	11,637			
DOUG FIR-D	234.4	48.8	142	277	412			
W LARCH	338.8	70.6	106	359	612			
W LARCH-D	489.9	102.1		85	172			
TOTAL	*30.4*	*6.3*	*10,730*	*11,456*	*12,182*	*39*	*10*	*4*

TC TSTATS

STATISTICS

PROJECT **ALICEMAE**

DATE 5/23/2016

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
39N	39E	35	ALICE MAE	00U3	48.59	24	73	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	40.6	8.5	2,184	2,386	2,588			
DOUG FIR-D	233.8	48.7	48	93	138			
W LARCH	338.8	70.6	19	66	113			
W LARCH-D	489.9	102.1		25	50			
TOTAL	*28.8*	*6.0*	*2,416*	*2,570*	*2,724*	*35*	*9*	*4*

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			131	143	155			
DOUG FIR-D	186.8	38.9	24	48	71			
W LARCH	228.4	47.6	46	155	264			
W LARCH-D	489.9	102.1		73	148			
TOTAL	*407.3*	*84.8*	*127*	*136*	*144*	*6,911*	*1,728*	*768*

TC TSTATS

STATISTICS

PROJECT ALICEMAE

DATE 5/23/2016

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
38N	39E	02	ALICE MAE	00U4	67.18	35	67	S	E

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	35	67	1.9		
CRUISE	15	20	1.3	6,419	.3
DBH COUNT					
REFOREST COUNT	12	18	1.5		
BLANKS	8				
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	11	63.3	10.1	57	11.0	34.9	3,773	3,365	849	850
DOUG FIR-D	3	5.4	11.6	64	1.2	4.0	321	321	93	93
W LARCH	3	14.2	10.1	69	2.5	7.9	949	949	210	210
W LARCH-D	1	.9	12.8	76	0.2	.8	62	62	21	21
WR CEDAR	1	10.3	9.2	22	1.6	4.8	206	103	70	70
P PINE	1	1.4	10.3	50	0.2	.8	96	96	18	18
TOTAL	*20*	*95.5*	*10.1*	*55*	*16.7*	*53.2*	*5,408*	*4,896*	*1,261*	*1,262*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL: 68.1 %	COEFF		SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	73.0	23.1	65	85	104			
DOUG FIR-D	16.7	11.5	53	60	67			
W LARCH	70.0	48.4	52	100	148			
W LARCH-D								
WR CEDAR								
P PINE								
TOTAL	*69.4*	*15.9*	*66*	*78*	*90*	*203*	*51*	*23*

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	84.0	26.5	18	24	30			
DOUG FIR-D	18.7	12.9	15	17	20			
W LARCH	68.3	47.3	12	23	34			
W LARCH-D								
WR CEDAR								
P PINE								
TOTAL	*75.7*	*17.4*	*18*	*21*	*25*	*241*	*60*	*27*

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	98.6	16.7	53	63	74			
DOUG FIR-D	249.5	42.1	3	5	8			
W LARCH	174.1	29.4	10	14	18			
W LARCH-D	591.6	99.9	0	1	2			
WR CEDAR	360.3	60.9	4	10	17			
P PINE	591.6	99.9	0	1	3			
TOTAL	*62.4*	*10.5*	*85*	*96*	*106*	*155*	*39*	*17*

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	95.2	16.1	29	35	41			
DOUG FIR-D	248.5	42.0	2	4	6			
W LARCH	160.4	27.1	6	8	10			

TC TSTATS

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PROJECT **ALICEMAE**

DATE 5/23/2016

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
38N	39E	02	ALICE MAE	00U4	67.18	35	67	S	E

CL: 68.1 %	COEFF		**BASAL AREA/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15
W LARCH-D	591.6	99.9	0	1	2			
WR CEDAR	360.3	60.9	2	5	8			
P PINE	591.6	99.9	0	1	2			
TOTAL	*57.2*	*9.7*	*48*	*53*	*58*	*131*	*33*	*15*

CL: 68.1 %	COEFF		**NET BF/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	97.2	16.4	2,812	3,365	3,917			
DOUG FIR-D	248.8	42.0	186	321	456			
W LARCH	161.5	27.3	690	949	1,208			
W LARCH-D	591.6	99.9	0	62	124			
WR CEDAR	360.3	60.9	40	103	166			
P PINE	591.6	99.9	0	96	192			
TOTAL	*62.2*	*10.5*	*4,381*	*4,896*	*5,411*	*155*	*39*	*17*

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	96.2	16.2	712	850	988			
DOUG FIR-D	248.9	42.0	54	93	132			
W LARCH	161.7	27.3	153	210	267			
W LARCH-D	591.6	99.9	0	21	42			
WR CEDAR	360.3	60.9	28	70	113			
P PINE	591.6	99.9	0	18	36			
TOTAL	*58.3*	*9.9*	*1,138*	*1,262*	*1,387*	*136*	*34*	*15*

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			81	96	112			
DOUG FIR-D	181.9	30.7	47	81	115			
W LARCH	29.5	5.0	87	120	152			
W LARCH-D	591.6	99.9	0	78	157			
WR CEDAR			8	22	35			
P PINE	591.6	99.9	0	121	242			
TOTAL	*376.7*	*63.6*	*82*	*92*	*102*	*5,666*	*1,416*	*630*

TC TSTATS

STATISTICS

PROJECT ALICEMAE

DATE 5/23/2016

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
38N	39E	03	ALICE MAE	00U5	39.25	23	69	S	E

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	23	69	3.0		
CRUISE	14	20	1.4	4,636	.4
DBH COUNT					
REFOREST COUNT	7	19	2.7		
BLANKS	2				
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	8	68.4	10.5	54	12.7	41.1	4,588	4,522	1,033	1,033
DOUG FIR-D	2	14.9	12.2	64	3.5	12.1	1,084	997	331	331
GR FIR	4	18.2	11.0	65	3.6	12.1	1,454	1,356	341	341
WR CEDAR	4	13.1	12.3	61	3.1	10.9	1,016	1,016	292	292
W LARCH	1	1.3	22.3	75	0.8	3.6	681	601	131	131
W LARCH-D	1	2.2	17.4	33	0.9	3.6	88	88	60	60
TOTAL	*20*	*118.1*	*11.4*	*57*	*24.7*	*83.3*	*8,912*	*8,580*	*2,187*	*2,187*

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	170.3	64.2	64	180	296			
DOUG FIR-D	40.4	37.8	44	70	96			
GR FIR	56.4	32.2	58	85	112			
WR CEDAR	84.3	48.2	51	98	144			
W LARCH								
W LARCH-D								
TOTAL	*149.6*	*34.3*	*92*	*140*	*188*	*941*	*235*	*105*

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	155.4	58.6	17	41	65			
DOUG FIR-D	36.7	34.4	15	23	31			
GR FIR	39.9	22.8	16	21	25			
WR CEDAR	64.7	37.0	17	27	37			
W LARCH								
W LARCH-D								
TOTAL	*125.0*	*28.7*	*25*	*34*	*44*	*657*	*164*	*73*

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	144.0	30.7	47	68	89			
DOUG FIR-D	152.8	32.5	10	15	20			
GR FIR	154.4	32.9	12	18	24			
WR CEDAR	213.1	45.4	7	13	19			
W LARCH	264.0	56.2	1	1	2			
W LARCH-D	264.0	56.2	1	2	3			
TOTAL	*68.0*	*14.5*	*101*	*118*	*135*	*193*	*48*	*21*

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	139.6	29.7	29	41	53			
DOUG FIR-D	152.3	32.5	8	12	16			
GR FIR	152.3	32.5	8	12	16			
WR CEDAR	200.0	42.6	6	11	16			
W LARCH	264.0	56.2	2	4	6			

TC TSTATS

STATISTICS

PROJECT **ALICEMAE**

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TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
38N	39E	03	ALICE MAE	00U5	39.25	23	69	S	E

CL: 68.1 %	COEFF		**BASAL AREA/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15
W LARCH-D	264.0	56.2	2	4	6			
TOTAL	*51.2*	*10.9*	*74*	*83*	*92*	*110*	*27*	*12*

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	140.2	29.9	3,171	4,522	5,873			
DOUG FIR-D	152.6	32.5	673	997	1,321			
GR FIR	155.3	33.1	907	1,356	1,804			
WR CEDAR	198.9	42.4	586	1,016	1,447			
W LARCH	264.0	56.2	263	601	939			
W LARCH-D	264.0	56.2	38	88	137			
TOTAL	*56.3*	*12.0*	*7,552*	*8,580*	*9,609*	*132*	*33*	*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	139.5	29.7	726	1,033	1,340			
DOUG FIR-D	152.5	32.5	223	331	438			
GR FIR	153.1	32.6	230	341	452			
WR CEDAR	197.0	42.0	169	292	414			
W LARCH	264.0	56.2	57	131	204			
W LARCH-D	264.0	56.2	26	60	94			
TOTAL	*47.9*	*10.2*	*1,964*	*2,187*	*2,410*	*96*	*24*	*11*

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			77	110	143			
DOUG FIR-D			56	83	109			
GR FIR	8.9	1.9	75	112	149			
WR CEDAR	83.0	17.7	54	94	133			
W LARCH	127.5	27.2	73	166	259			
W LARCH-D	127.5	27.2	11	24	38			
TOTAL	*389.4*	*83.0*	*91*	*103*	*115*	*6,331*	*1,583*	*703*

TC TSTATS

STATISTICS

PROJECT ALICEMAE

DATE 5/23/2016

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
38N	39E	03	ALICE MAE	00U6	21.32	12	51	S	E

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	12	51	4.3		
CRUISE	10	20	2.0	2,402	.8
DBH COUNT					
REFOREST COUNT	1	3	3.0		
BLANKS	1				
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	12	80.3	15.4	68	26.4	103.6	16,322	15,310	3,427	3,427
DOUG FIR-D	3	14.7	15.6	53	5.0	19.6	1,601	1,388	569	569
WR CEDAR	2	7.4	14.4	73	2.2	8.4	966	966	256	256
W LARCH	1	5.8	13.3	118	1.5	5.6	1,277	1,277	235	235
W LARCH-D	1	2.0	16.1	88	0.7	2.8	357	357	93	93
GR FIR	1	2.4	14.5	91	0.7	2.8	464	391	98	98
TOTAL	*20*	*112.7*	*15.2*	*70*	*36.6*	*142.8*	*20,987*	*19,688*	*4,680*	*4,680*

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	64.5	19.4	263	327	390			
DOUG FIR-D	136.9	94.7	11	213	415			
WR CEDAR								
W LARCH								
W LARCH-D								
GR FIR								
TOTAL	*69.3*	*16.3*	*237*	*283*	*329*	*203*	*51*	*23*

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	58.7	17.7	60	73	86			
DOUG FIR-D	118.3	81.8	14	75	136			
WR CEDAR								
W LARCH								
W LARCH-D								
GR FIR								
TOTAL	*65.4*	*15.4*	*58*	*68*	*79*	*181*	*45*	*20*

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			80	80	80			
DOUG FIR-D	123.1	37.1	9	15	20			
WR CEDAR	248.6	74.9	2	7	13			
W LARCH	233.5	70.3	2	6	10			
W LARCH-D	346.4	104.3		2	4			
GR FIR	346.4	104.3		2	5			
TOTAL			*113*	*113*	*113*			

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			104	104	104			
DOUG FIR-D	114.6	34.5	13	20	26			
WR CEDAR	248.6	74.9	2	8	15			
W LARCH	233.5	70.3	2	6	10			
W LARCH-D	346.4	104.3		3	6			

TC TSTATS

STATISTICS

PROJECT **ALICEMAE**

DATE 5/23/2016

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
38N	39E	03	ALICE MAE	00U6	21.32	12	51	S	E

CL: 68.1 %	COEFF		**BASAL AREA/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15
GR FIR	346.4	104.3		3	6			
TOTAL			*143*	*143*	*143*			

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			15,310	15,310	15,310			
DOUG FIR-D	124.0	37.3	870	1,388	1,906			
WR CEDAR	248.6	74.9	243	966	1,689			
W LARCH	233.5	70.3	379	1,277	2,176			
W LARCH-D	346.4	104.3		357	729			
GR FIR	346.4	104.3		391	798			
TOTAL			*19,688*	*19,688*	*19,688*			

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			3,427	3,427	3,427			
DOUG FIR-D	117.3	35.3	368	569	771			
WR CEDAR	248.6	74.9	64	256	448			
W LARCH	233.5	70.3	70	235	401			
W LARCH-D	346.4	104.3		93	190			
GR FIR	346.4	104.3		98	201			
TOTAL			*4,680*	*4,680*	*4,680*			

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			148	148	148			
DOUG FIR-D			44	71	97			
WR CEDAR	217.4	65.5	29	115	201			
W LARCH	147.7	44.5	68	228	388			
W LARCH-D	346.4	104.3		127	260			
GR FIR	346.4	104.3		140	285			
TOTAL	*222.5*	*67.0*	*138*	*138*	*138*	*2,154*	*539*	*239*

TC TSTATS

STATISTICS

PROJECT ALICEMAE

DATE 5/23/2016

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
38N	39E	10	ALICE MAE	00U7	26.54	13	32	S	E

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	13	32	2.5		
CRUISE	6	9	1.5	1,861	.5
DBH COUNT					
REFOREST COUNT	5	10	2.0		
BLANKS	2				
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	7	68.0	14.0	69	19.4	72.4	10,677	9,765	2,265	2,265
W LARCH	1	1.4	18.4	87	0.6	2.6	434	406	97	97
W LARCH-D	1	.7	26.1	97	0.5	2.6	424	362	103	103
TOTAL	*9*	*70.1*	*14.2*	*70*	*20.6*	*77.6*	*11,535*	*10,533*	*2,465*	*2,465*

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	64.2	26.1	171	231	292			
W LARCH								
W LARCH-D								
TOTAL	*59.4*	*21.0*	*213*	*270*	*327*	*158*	*40*	*18*

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	61.0	24.8	40	53	67			
W LARCH								
W LARCH-D								
TOTAL	*64.2*	*22.7*	*51*	*66*	*81*	*185*	*46*	*21*

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	49.1	14.1	58	68	78			
W LARCH	360.6	103.9		1	3			
W LARCH-D	360.6	103.9		1	1			
TOTAL	*44.2*	*12.8*	*61*	*70*	*79*	*85*	*21*	*9*

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	41.7	12.0	64	72	81			
W LARCH	360.6	103.9		3	5			
W LARCH-D	360.6	103.9		3	5			
TOTAL	*32.5*	*9.4*	*70*	*78*	*85*	*46*	*11*	*5*

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	42.9	12.4	8,559	9,765	10,971			
W LARCH	360.6	103.9		406	828			
W LARCH-D	360.6	103.9		362	738			
TOTAL	*35.4*	*10.2*	*9,458*	*10,533*	*11,607*	*54*	*14*	*6*

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	43.0	12.4	1,984	2,265	2,545			
W LARCH	360.6	103.9		97	198			
W LARCH-D	360.6	103.9		103	210			
TOTAL	*34.7*	*10.0*	*2,218*	*2,465*	*2,712*	*52*	*13*	*6*

TC TSTATS

STATISTICS

PAGE 2

PROJECT **ALICEMAE**

DATE 5/23/2016

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
38N	**39E**	**10**	**ALICE MAE**	**00U7**	26.54	13	32	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

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			118	135	152			
W LARCH	360.6	103.9		157	320			
W LARCH-D	360.6	103.9		140	285			
TOTAL	*345.5*	*99.6*	*122*	*136*	*150*	*5,157*	*1,289*	*573*

TC TSTATS

STATISTICS

PROJECT ALICEMAE

DATE 5/23/2016

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
39N	39E	36	ALICE RW	RWU8	1.10	3	258	S	E

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	3	258	86.0		
CRUISE	3	258	86.0	258	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	128	116.4	15.5	51	38.9	153.4	18,555	18,555	4,558	4,560
W LARCH	43	39.1	13.1	57	10.1	36.4	4,618	4,400	1,098	1,098
LP PINE	53	48.2	9.1	36	7.2	21.6	2,691	2,600	511	511
WR CEDAR	15	13.6	12.8	28	3.4	12.2	700	655	244	244
P PINE	15	13.6	12.0	27	3.1	10.6	573	573	149	149
E SPRUCE	4	3.6	16.2	59	1.3	5.2	855	855	189	189
TOTAL	*258*	*234.5*	*13.7*	*47*	*64.7*	*239.3*	*27,991*	*27,636*	*6,750*	*6,751*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL: 68.1 % SD: 1.0

	COEFF VAR.%	S.E.%	SAMPLE TREES - BF LOW	AVG	HIGH	# OF TREES REQ. 5	10	INF. POP. 15
DOUG FIR			785	785	785			
W LARCH			323	323	323			
LP PINE			260	260	260			
WR CEDAR	60.9	22.9	69	90	111			
P PINE			126	126	126			
E SPRUCE	76.0	43.4	133	235	337			
TOTAL			*441*	*441*	*441*			

CL: 68.1 % SD: 1.0

	COEFF VAR.%	S.E.%	SAMPLE TREES - CF LOW	AVG	HIGH	# OF TREES REQ. 5	10	INF. POP. 15
DOUG FIR			193	193	193			
W LARCH			81	81	81			
LP PINE			51	51	51			
WR CEDAR	55.7	21.0	27	34	41			
P PINE			33	33	33			
E SPRUCE	75.8	43.3	29	52	74			
TOTAL			*108*	*108*	*108*			

CL: 68.1 % SD: 1.0

	COEFF VAR.%	S.E.%	TREES/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
DOUG FIR	50.1	34.6	76	116	157			
W LARCH	96.3	66.6	13	39	65			
LP PINE	52.6	36.4	31	48	66			
WR CEDAR	87.2	60.3	5	14	22			
P PINE	173.2	119.8		14	30			
E SPRUCE	114.6	79.3	1	4	7			
TOTAL	*25.2*	*17.5*	*194*	*235*	*275*	*37*	*9*	*4*

CL: 68.1 % SD: 1.0

	COEFF VAR.%	S.E.%	BASAL AREA/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
DOUG FIR	53.9	37.3	96	153	211			
W LARCH	85.9	59.4	15	36	58			
LP PINE	54.1	37.4	14	22	30			
WR CEDAR	94.9	65.6	4	12	20			
P PINE	173.2	119.8		11	23			

TC TSTATS

STATISTICS

PROJECT **ALICEMAE**

DATE 5/23/2016

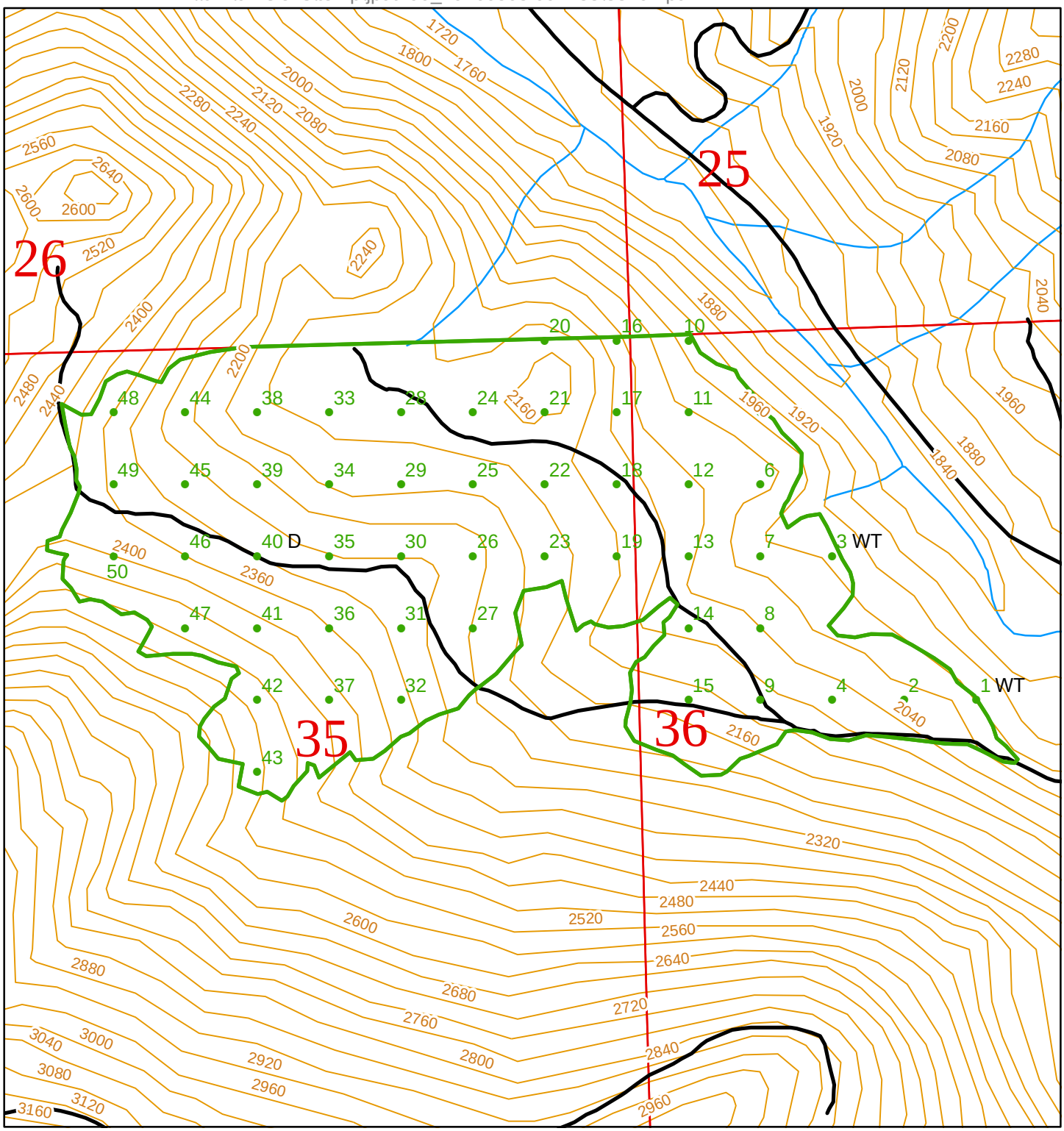
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
39N	39E	36	ALICE RW	RWU8	1.10	3	258	S	E

CL: 68.1 %	COEFF		**BASAL AREA/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15
E SPRUCE	121.7	84.2	1	5	10			
TOTAL	*37.7*	*26.1*	*177*	*239*	*302*	*82*	*20*	*9*

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	52.5	36.3	11,818	18,555	25,291			
W LARCH	82.5	57.1	1,889	4,400	6,911			
LP PINE	48.2	33.3	1,733	2,600	3,467			
WR CEDAR	109.3	75.6	160	655	1,149			
P PINE	173.2	119.8		573	1,259			
E SPRUCE	129.1	89.3	91	855	1,618			
TOTAL	*37.8*	*26.2*	*20,406*	*27,636*	*34,867*	*82*	*21*	*9*

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	54.2	37.5	2,850	4,560	6,269			
W LARCH	83.3	57.6	465	1,098	1,731			
LP PINE	53.2	36.8	323	511	699			
WR CEDAR	105.3	72.9	66	244	422			
P PINE	173.2	119.8		149	327			
E SPRUCE	125.9	87.1	24	189	353			
TOTAL	*38.5*	*26.6*	*4,953*	*6,751*	*8,548*	*85*	*21*	*9*

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	47.7	33.0	77	121	165			
W LARCH	92.8	64.2	52	121	190			
LP PINE	31.5	21.8	80	120	161			
WR CEDAR	91.8	63.5	13	54	94			
P PINE	173.2	119.8		54	118			
E SPRUCE	116.7	80.8	18	165	312			
TOTAL	*28.2*	*19.5*	*85*	*115*	*146*	*46*	*11*	*5*



FMU POLYGON AND SAMPLE POINT INFORMATION

FMU_NM:	ALICE MAE U1	Township:	T39R39E
FMU_ID:	88192	DNR Region:	NORTHEAST
Acres:	95	Total Sample Points:	50
County:	STEVENS	Spacing Between Points:	Width: 280 Height: 280
Deleted Plot	D	Point Rotation Degrees:	0
Walk Through Plot	WT		

N

0 190 380 760 1,140 1,520 Feet

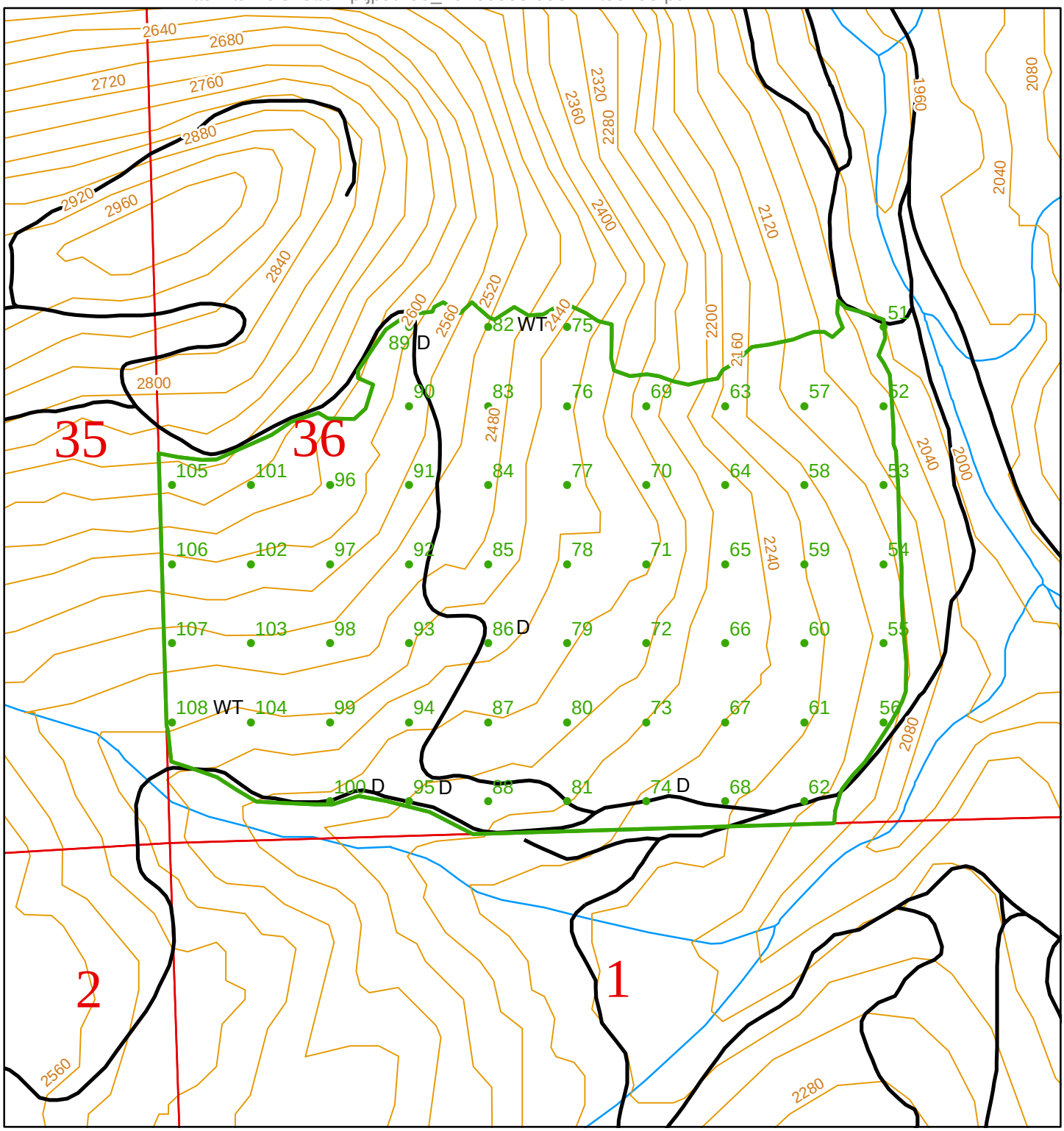
Scale 1:6,600

Legend

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

Washington State Department of Natural Resources
Peter Goldmark, Commissioner of Public Lands

May 03, 2016 09:24 AM



FMU POLYGON AND SAMPLE POINT INFORMATION

FMU_NM:	ALICE MAE U2	Township:	T39R39E
FMU_ID:	88193	DNR Region:	NORTHEAST
Acres:	93	Total Sample Points:	58
County:	STEVENS	Spacing Between Points:	Width: 280 Height: 280
Walk Through Plot	WT	Point Rotation Degrees:	0
Deleted Plot	D		

N

0 175 350 700 1,050 1,400 Feet

Scale 1:6,000

Legend

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

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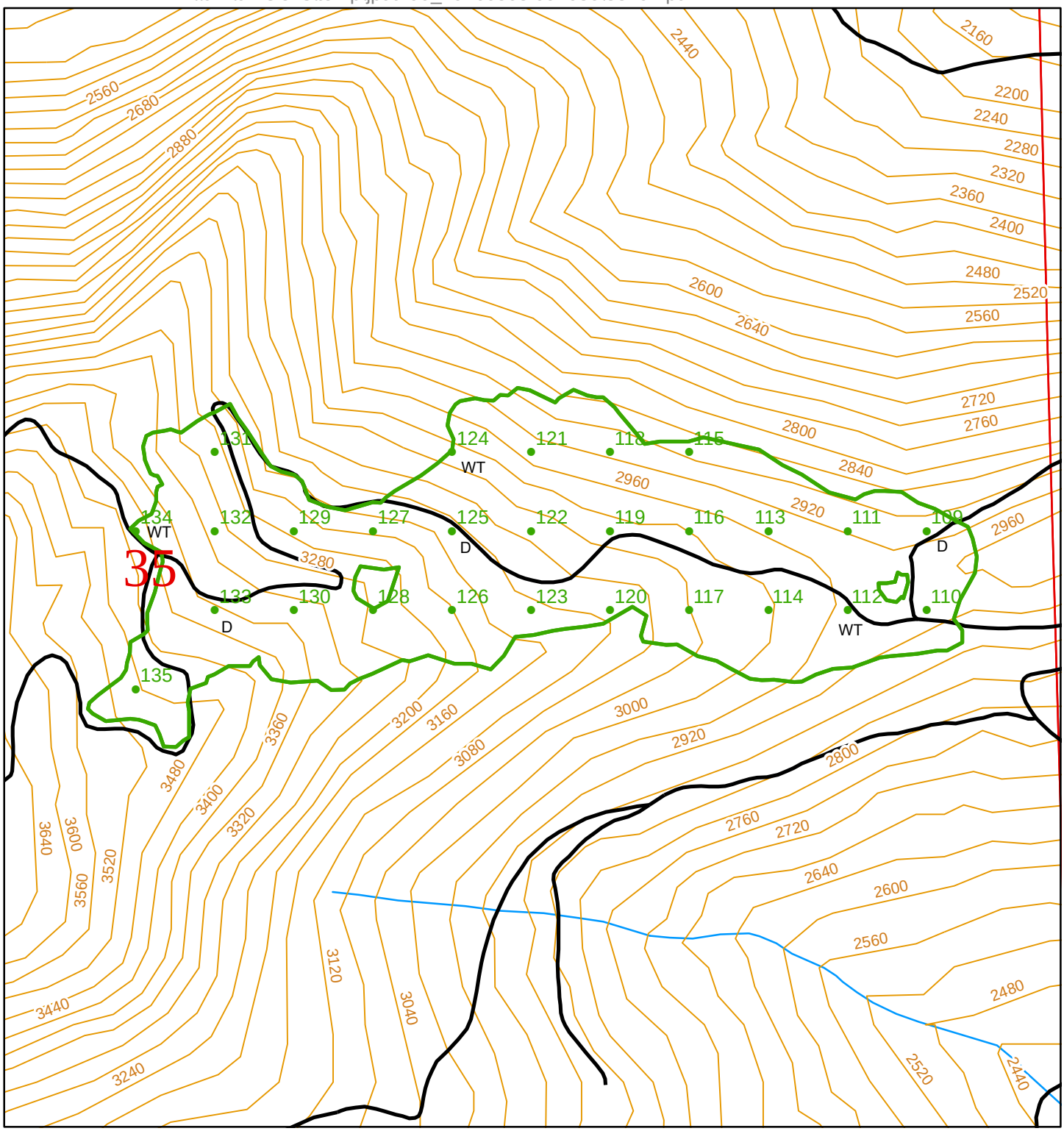
May 03, 2016 09:37 AM



FMU POLYGON AND SAMPLE POINT INFORMATION

FMU_NM:	ALICE MAE U3	Township:	T39R39E
FMU_ID:	88194	DNR Region:	NORTHEAST
Acres:	49	Total Sample Points:	27
County:	STEVENS	Spacing Between Points:	Width: 280 Height: 280
Deleted Plot	D	Point Rotation Degrees:	0
Walk Through Plot	WT		

N

0 175 350 700 1,050 1,400 Feet

Scale 1:6,000

Legend

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

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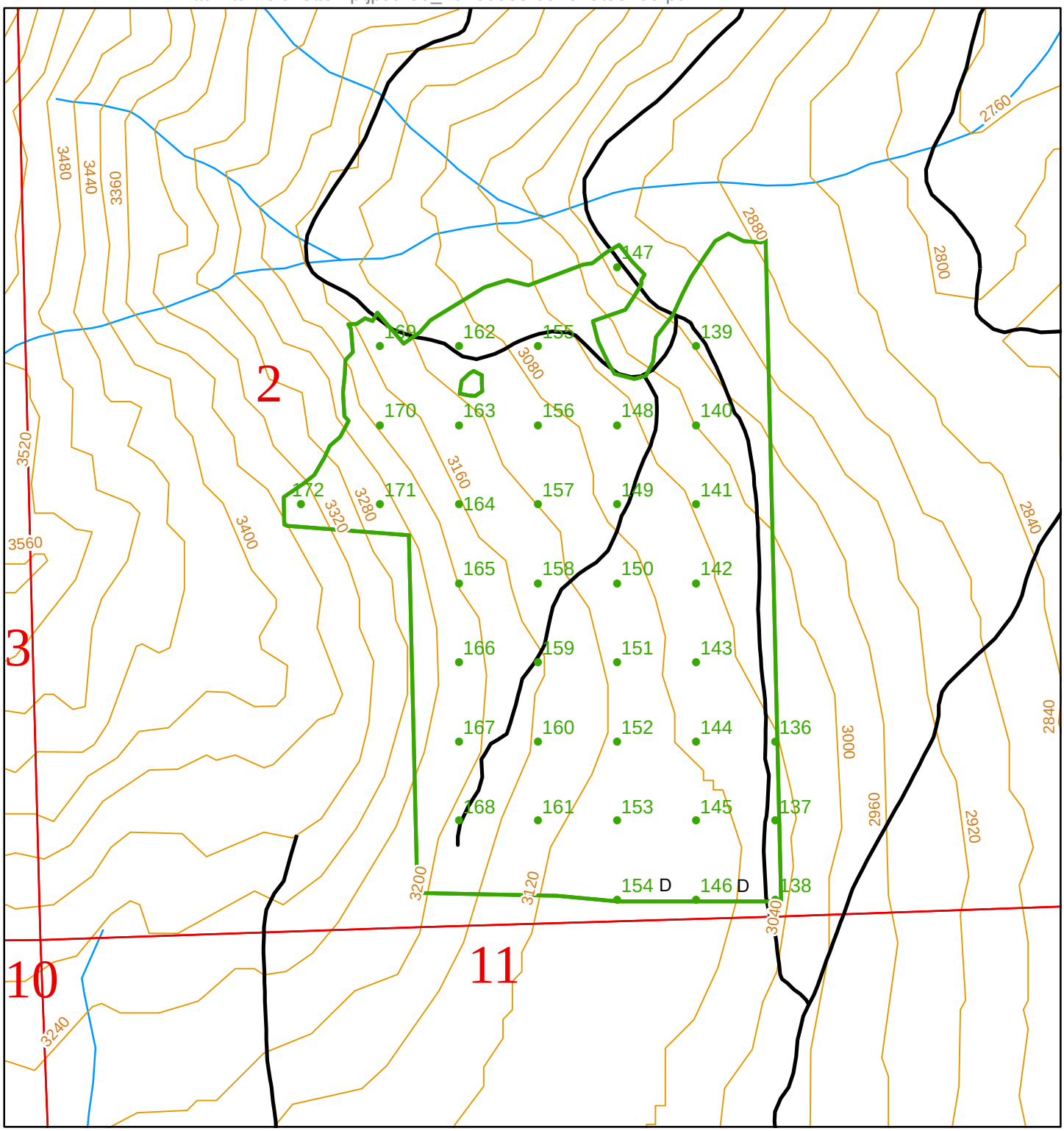

FMU POLYGON AND SAMPLE POINT INFORMATION

FMU_NM:	ALICE MAE U4	Township:	T38R39E
FMU_ID:	88195	DNR Region:	NORTHEAST
Acres:	67	Total Sample Points:	37
County:	STEVENS	Spacing Between Points:	Width: 280 Height: 280
Deleted Plot	D	Point Rotation Degrees:	0

N

0 175 350 700 1,050 1,400 Feet

Scale 1:6,000

Legend

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

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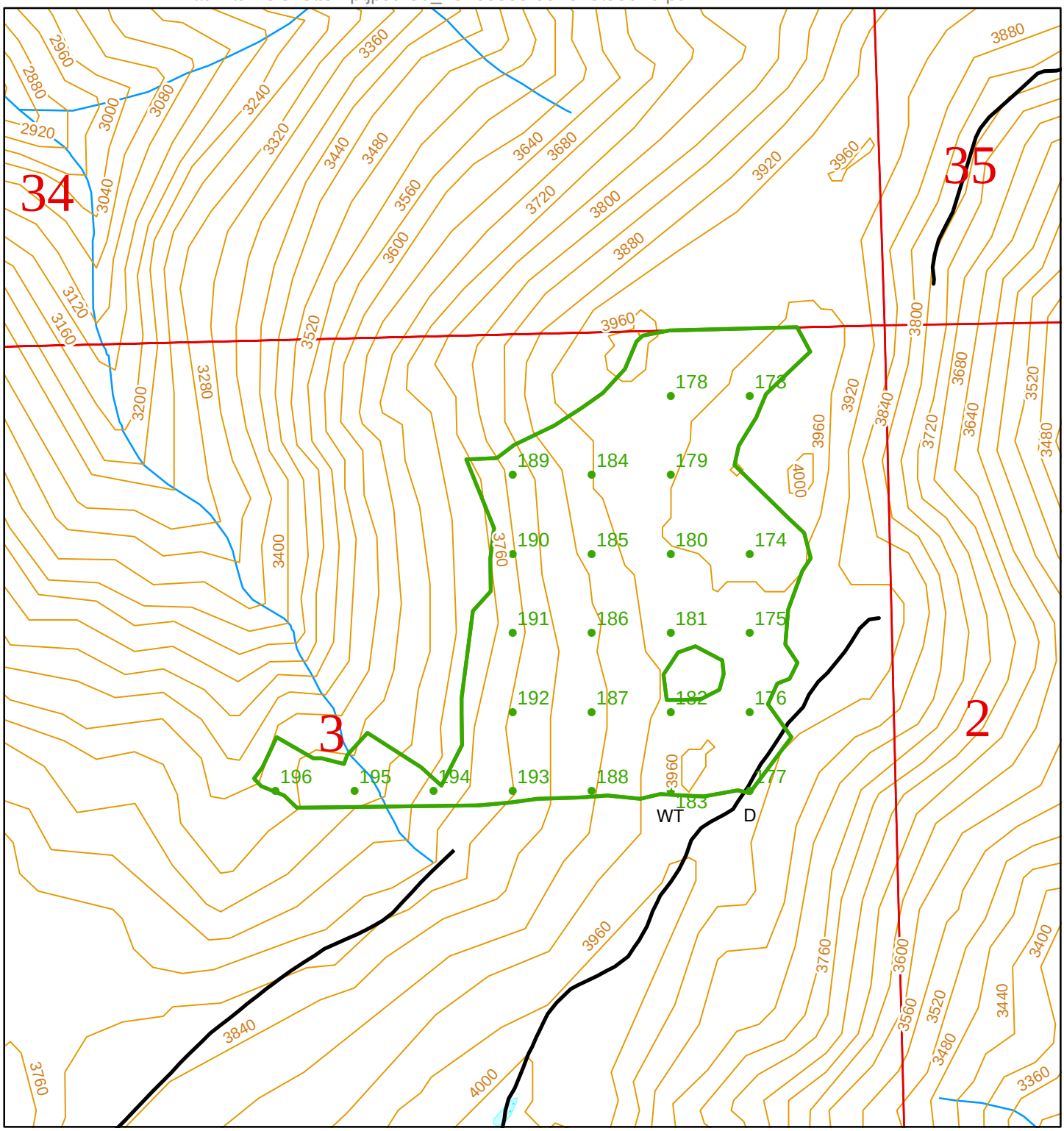

FMU POLYGON AND SAMPLE POINT INFORMATION

FMU_NM:	ALICE MAE U5	Township:	T38R39E
FMU_ID:	95016	DNR Region:	NORTHEAST
Acres:	39	Total Sample Points:	24
County:	STEVENS	Spacing Between Points:	Width: 280 Height: 280
Deleted Plot	D	Point Rotation Degrees:	0
Walk Through Plot	WT		

N

0 175 350 700 1,050 1,400 Feet

Scale 1:6,000

Legend

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

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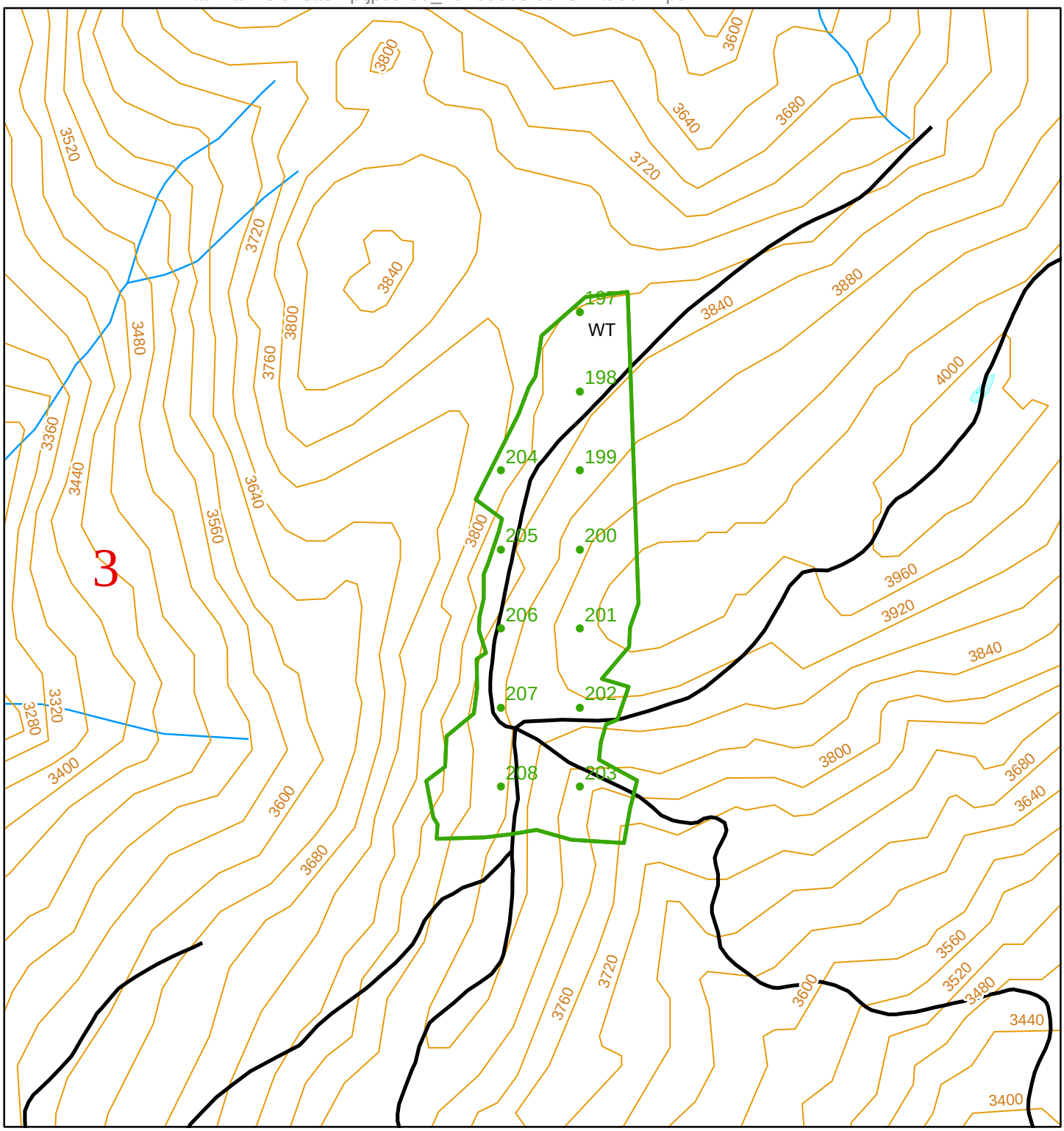
Peter Goldmark, Commissioner of Public Lands

May 03, 2016 09:46 AM



FMU POLYGON AND SAMPLE POINT INFORMATION

FMU_NM:	ALICE MAE U6	Township:	T38R39E
FMU_ID:	95017	DNR Region:	NORTHEAST
Acres:	21	Total Sample Points:	12
County:	STEVENS	Spacing Between Points:	Width: 280 Height: 280
Walk Through Plot	WT	Point Rotation Degrees:	0

N

0 175 350 700 1,050 1,400 Feet

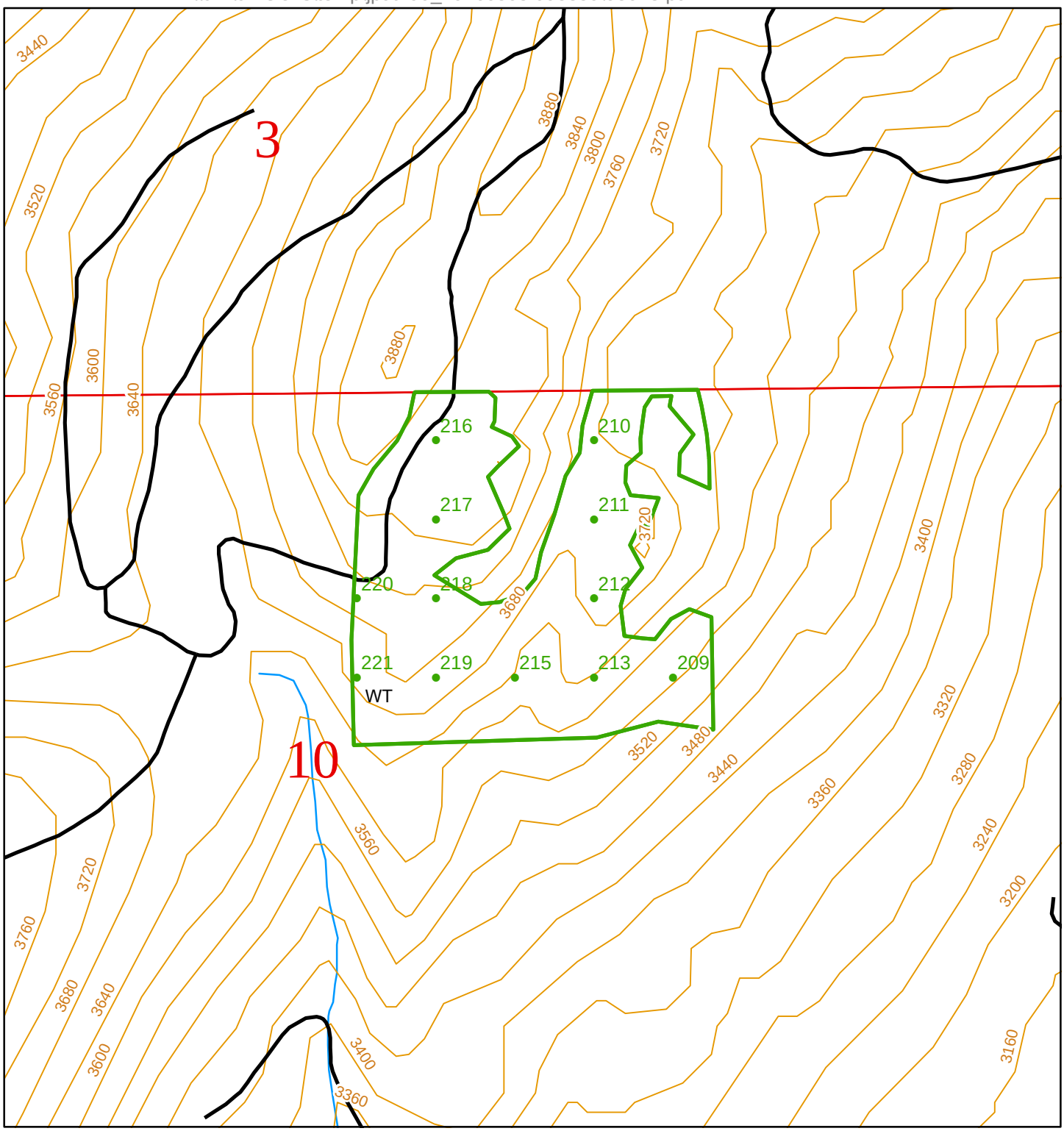
Scale 1:6,000

Legend

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

Washington State Department of Natural Resources
Peter Goldmark, Commissioner of Public Lands

May 03, 2016 09:48 AM



FMU POLYGON AND SAMPLE POINT INFORMATION

FMU_NM:	ALICE MAE U7	Township:	T38R39E
FMU_ID:	95018	DNR Region:	NORTHEAST
Acres:	27	Total Sample Points:	13
County:	STEVENS	Spacing Between Points:	Width: 280 Height: 280
Walk Through Plot	WT	Point Rotation Degrees:	0

N

0 175 350 700 1,050 1,400 Feet

Scale 1:6,000

Legend

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

Washington State Department of Natural Resources
Peter Goldmark, Commissioner of Public Lands

May 03, 2016 09:54 AM

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

FPA/N No:	3021072
Effective Date:	07/27/2016
Expiration Date:	07/27/2019
Shut Down Zone:	687
EARR Tax Credit:	[x] Eligible [ ] Non-eligible
Reference:	DNR/ALICE MAE
	1,2,3,10,11,15-38-39/35,36-39-39

Forest Practices Application/Notification
Notice of Decision

Decision

[ ] **Notification** Operations shall not begin before the effective date.

[x] **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 [x] Class III [ ] Class IVG [ ] Class IVS

Number of Years Granted on Multi-Year Request

[ ] 4 years [ ] 5 years

Conditions on Approval / Reasons for Disapproval

Work associated with stream crossing (C-1) shall be conducted from July 1 – September 30.

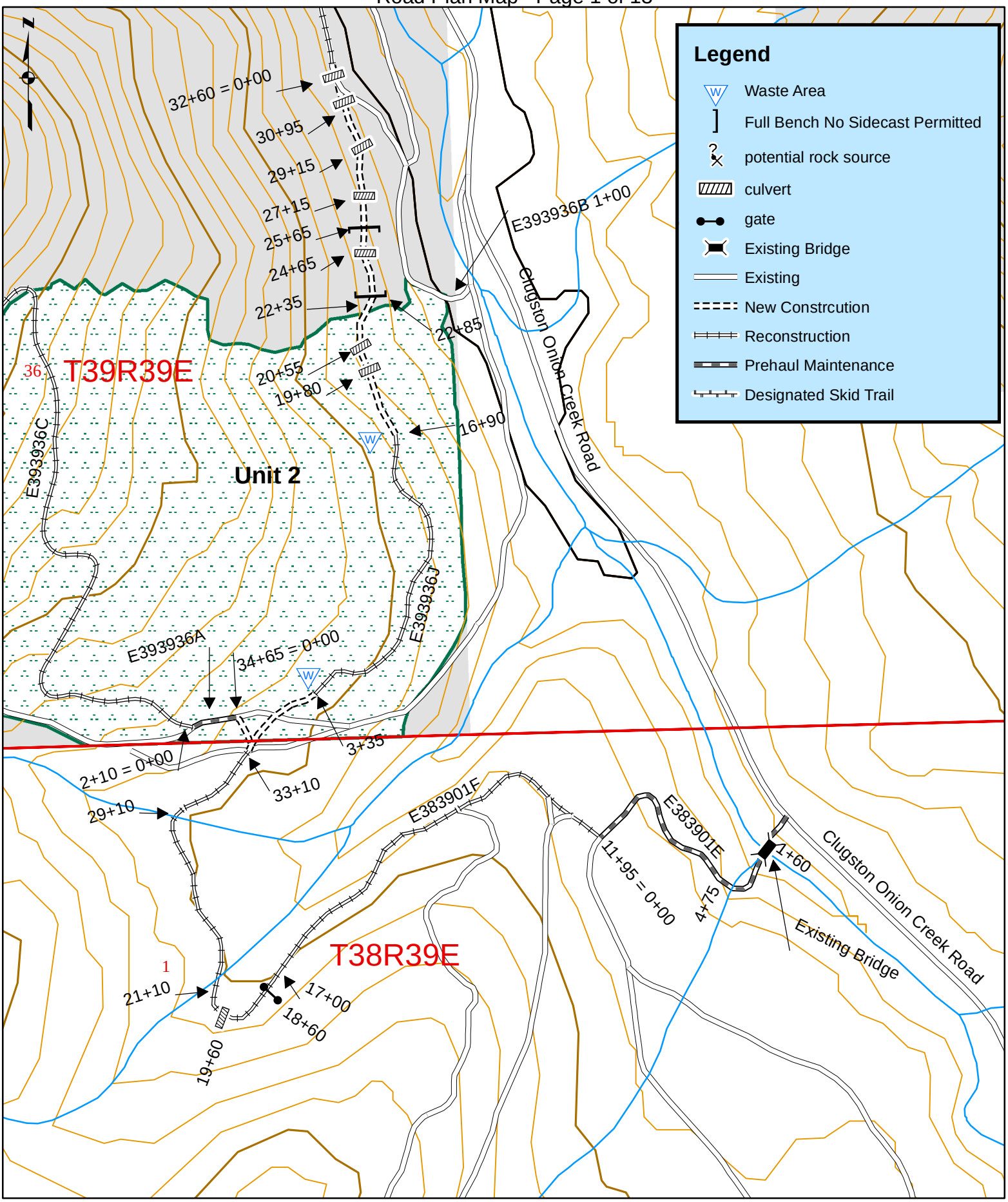
Issued By: ROBERT HINDS **Region:** Northeast

Title: FOREST PRACTICES FORESTER **Date:** 07/27/2016

Copies to: [ ] Landowner, Timber Owner and Operator.

Issued in person: [x] Landowner [ ]Timber Owner [ ] Operator By: Nondis Taylor

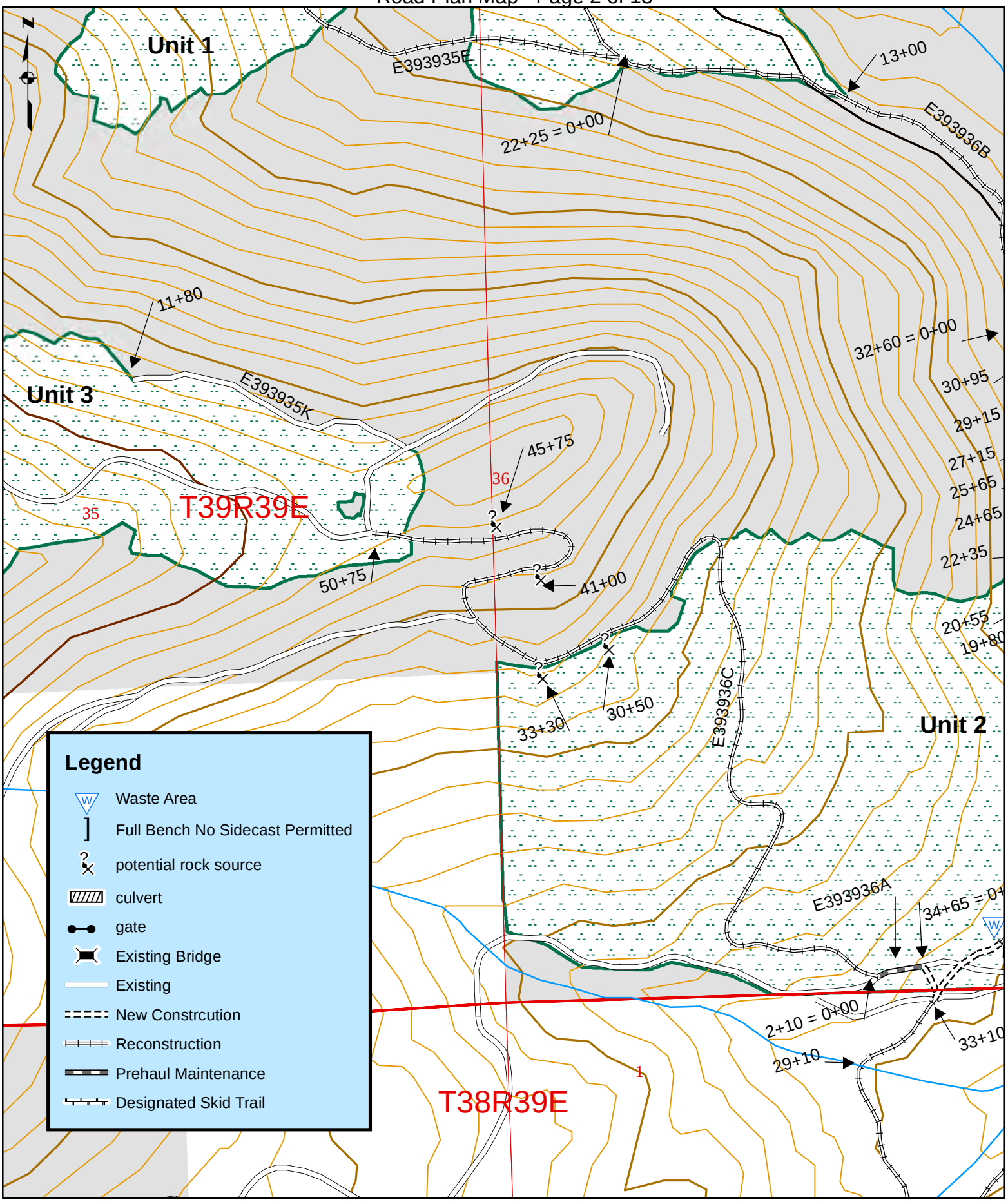
Washington State Department of Natural Resources
Sale Name: Alice Mae County: Stevens
Agreement No.: 30-093947 Region: Northeast
Road Plan Map Page 1 of 13



0 187.5 375 750 1,125 1,500 Feet

1 inch = 500 feet

Washington State Department of Natural Resources
Sale Name: Alice Mae County: Stevens
Agreement No.: 30-093947 Region: Northeast
Road Plan Map



0 187.5 375 750 1,125 1,500 Feet

1 inch = 500 feet

Washington State Department of Natural Resources
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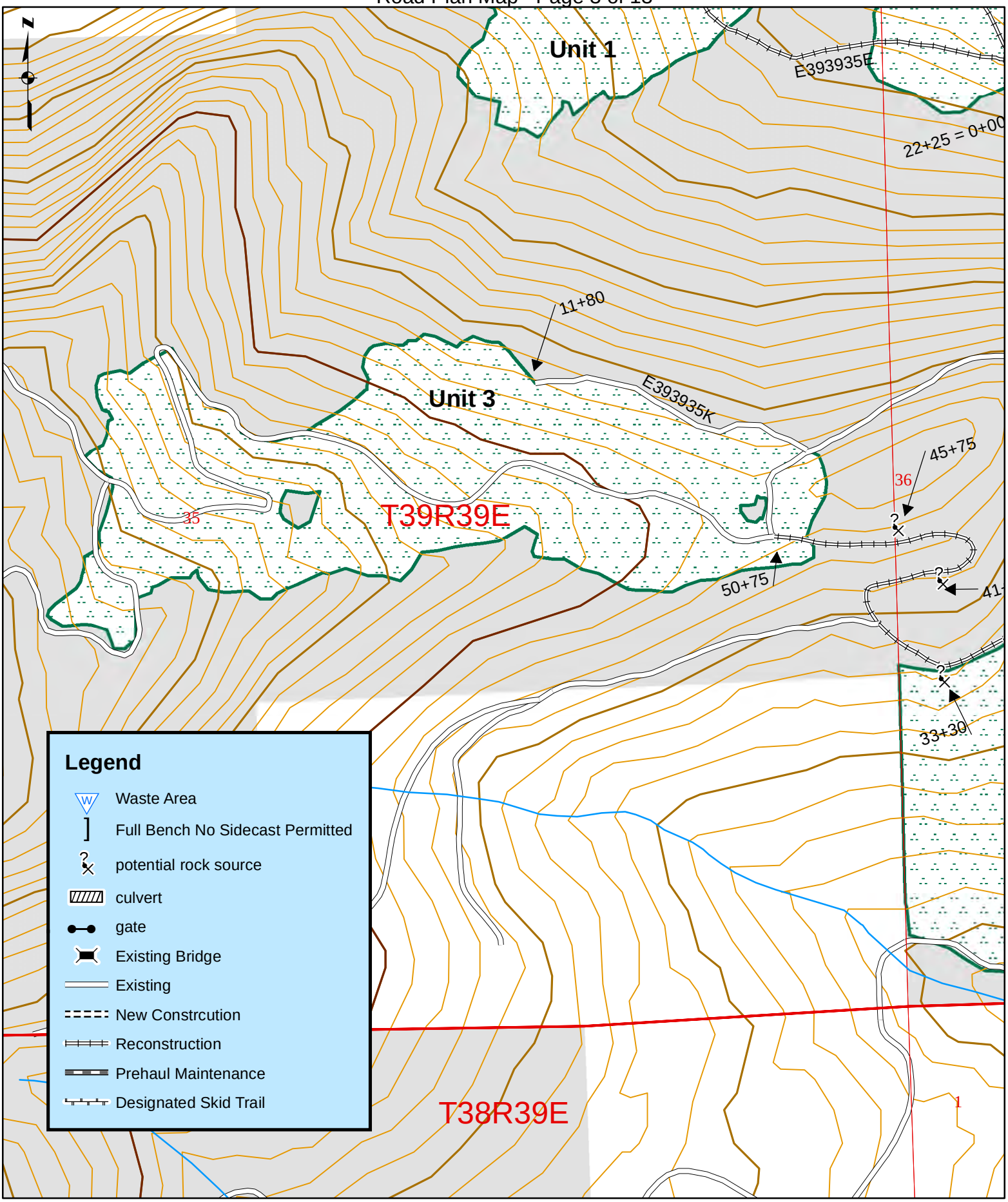
Road Plan Map



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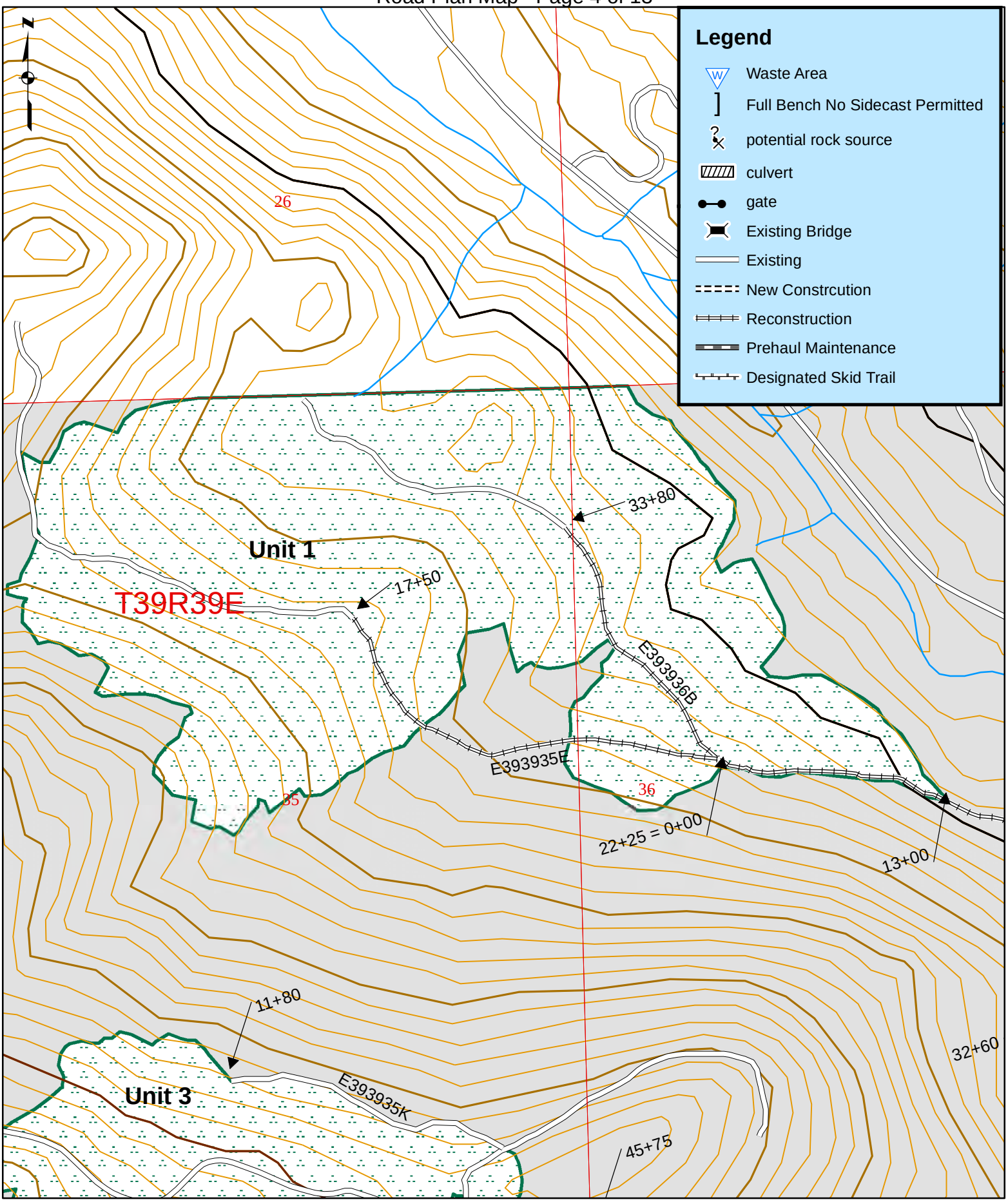

Feet
0 187.5 375 750 1,125 1,500

1 inch = 500 feet

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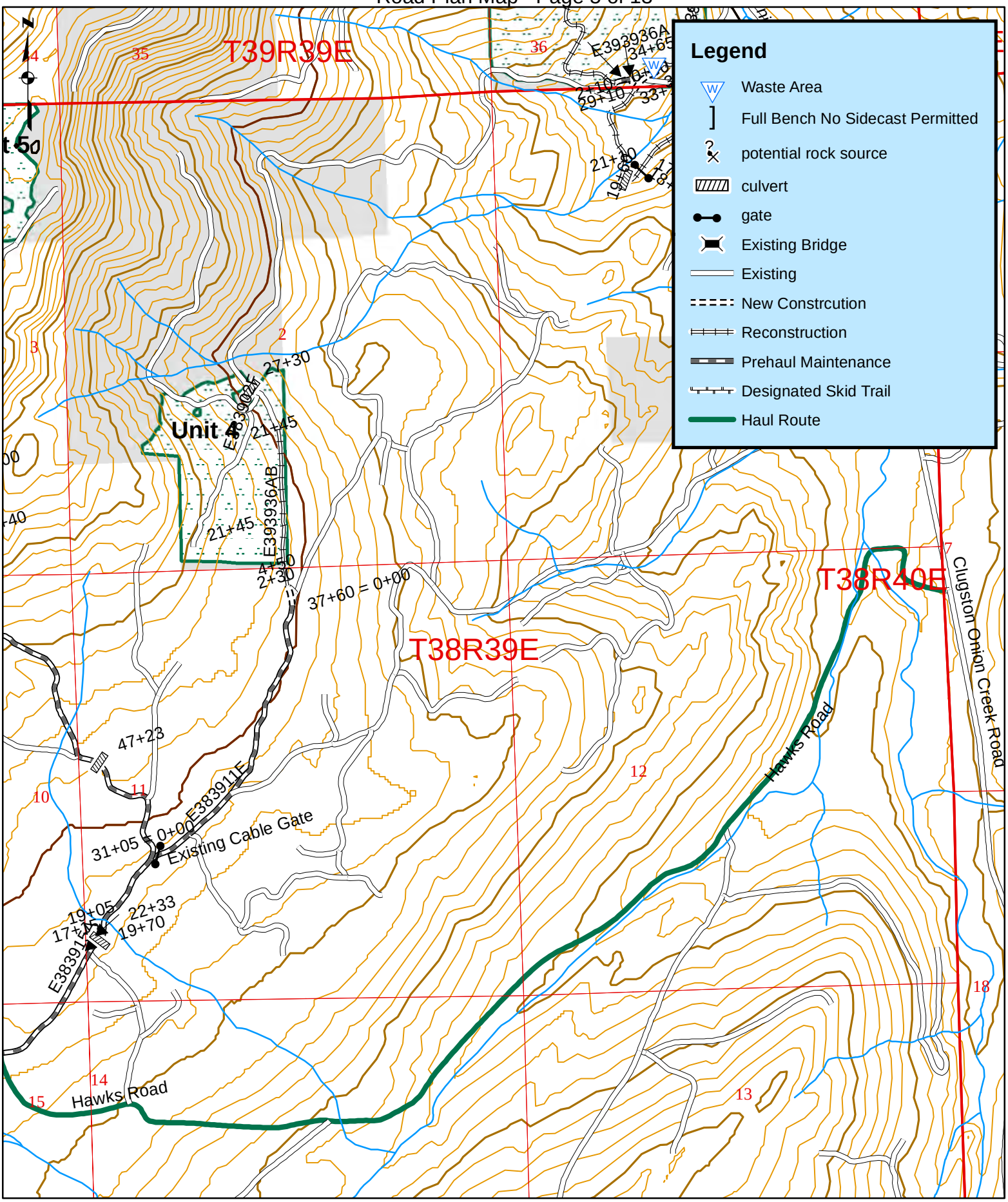

0 375 750 1,500 2,250 3,000 Feet

1 inch = 1,500 feet

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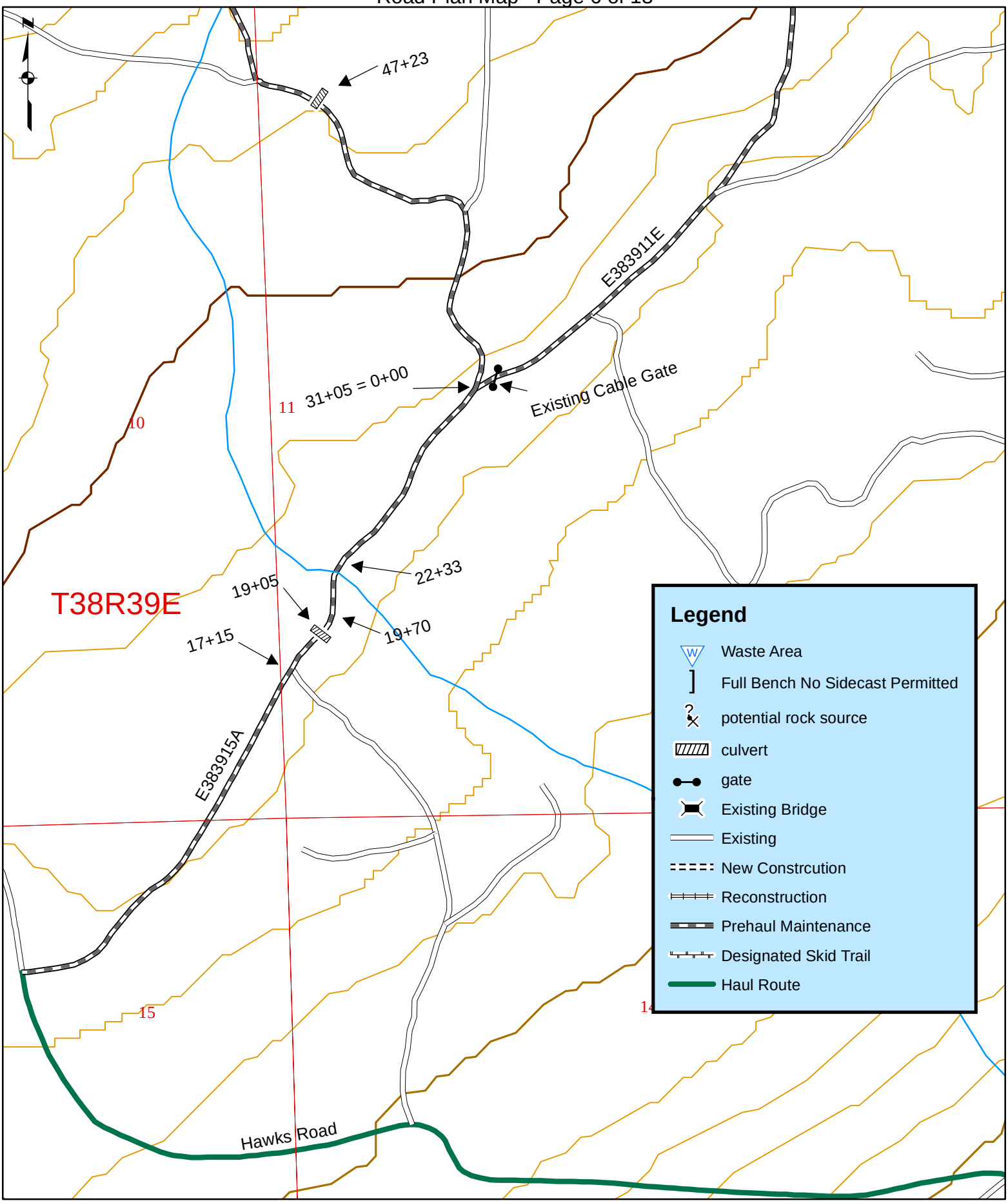

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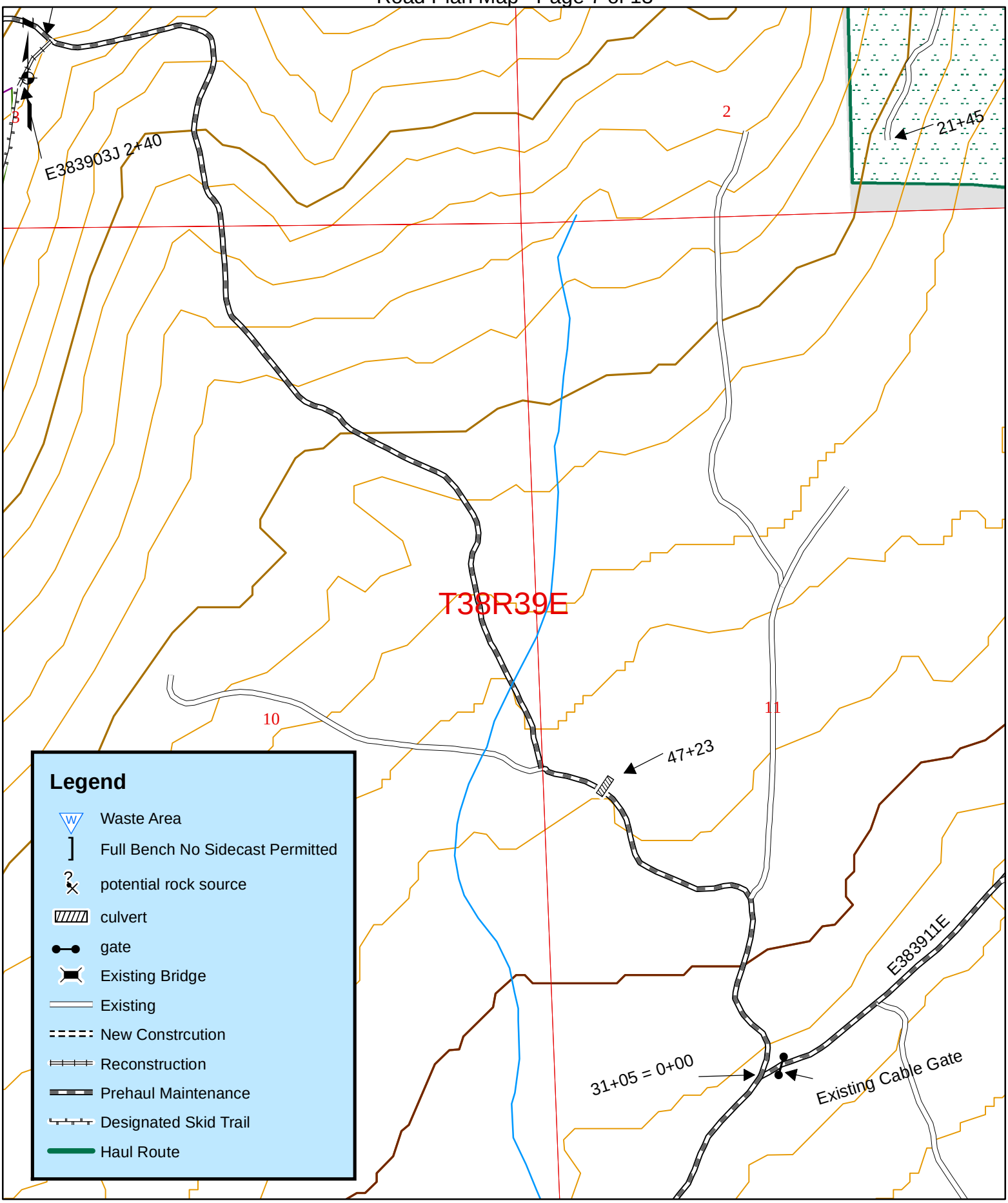
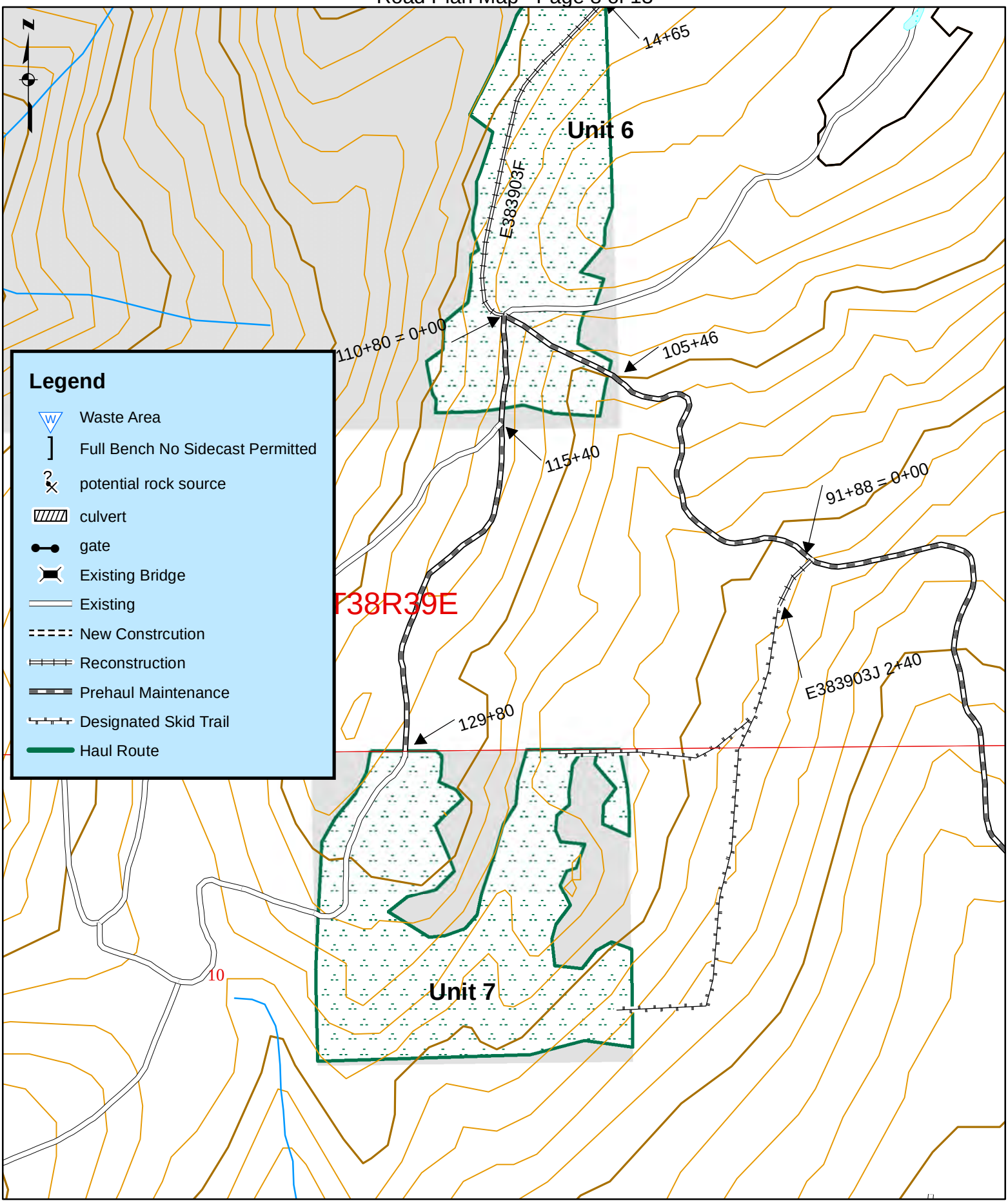


0 187.5 375 750 1,125 1,500 Feet

1 inch = 500 feet

Washington State Department of Natural Resources
Sale Name: Alice Mae County: Stevens
Agreement No.: 30-093947 Region: Northeast
Road Plan Map Page 8 of 13



0 187.5 375 750 1,125 1,500 Feet

1 inch = 500 feet

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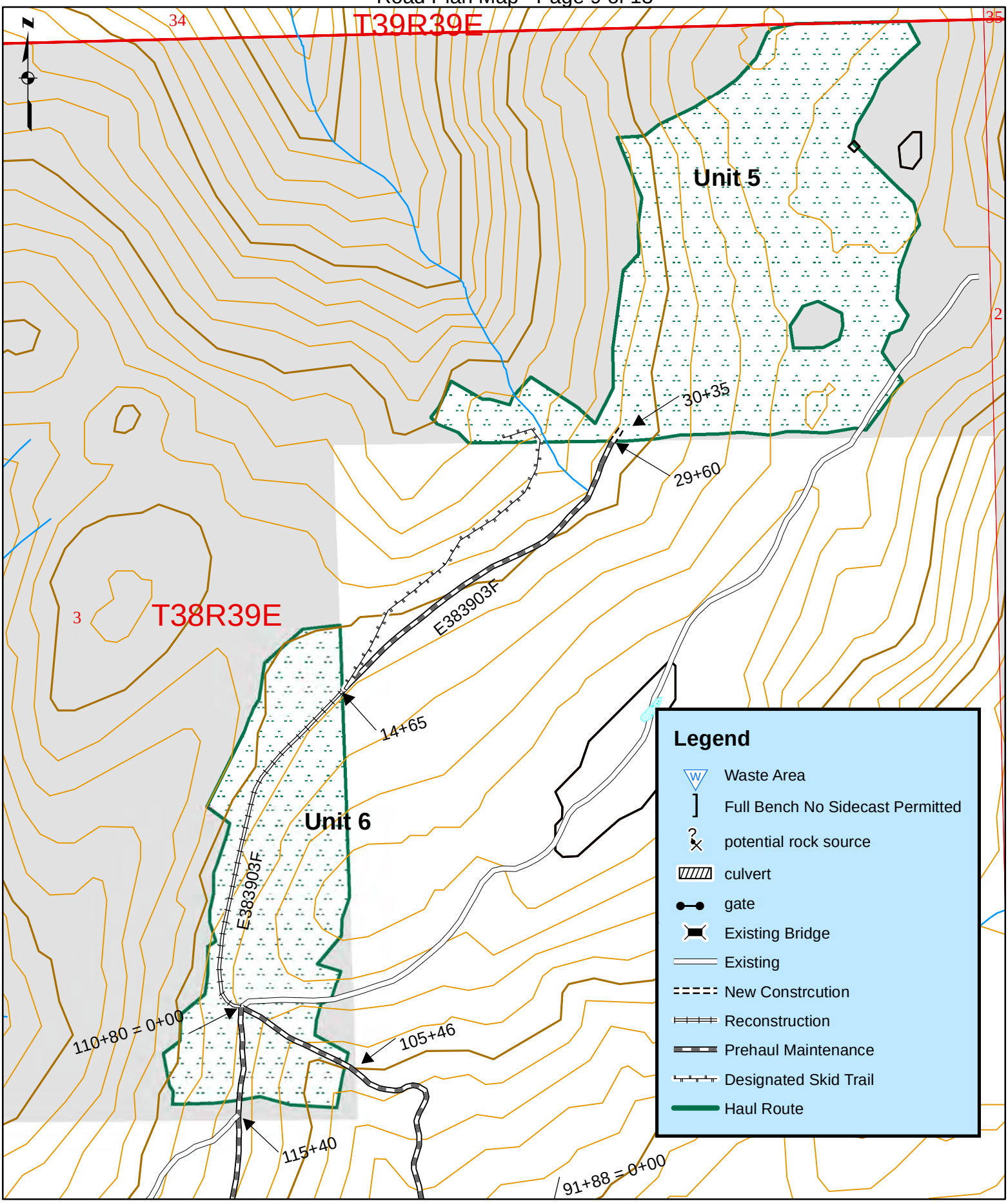

0 187.5 375 750 1,125 1,500 Feet

1 inch = 500 feet

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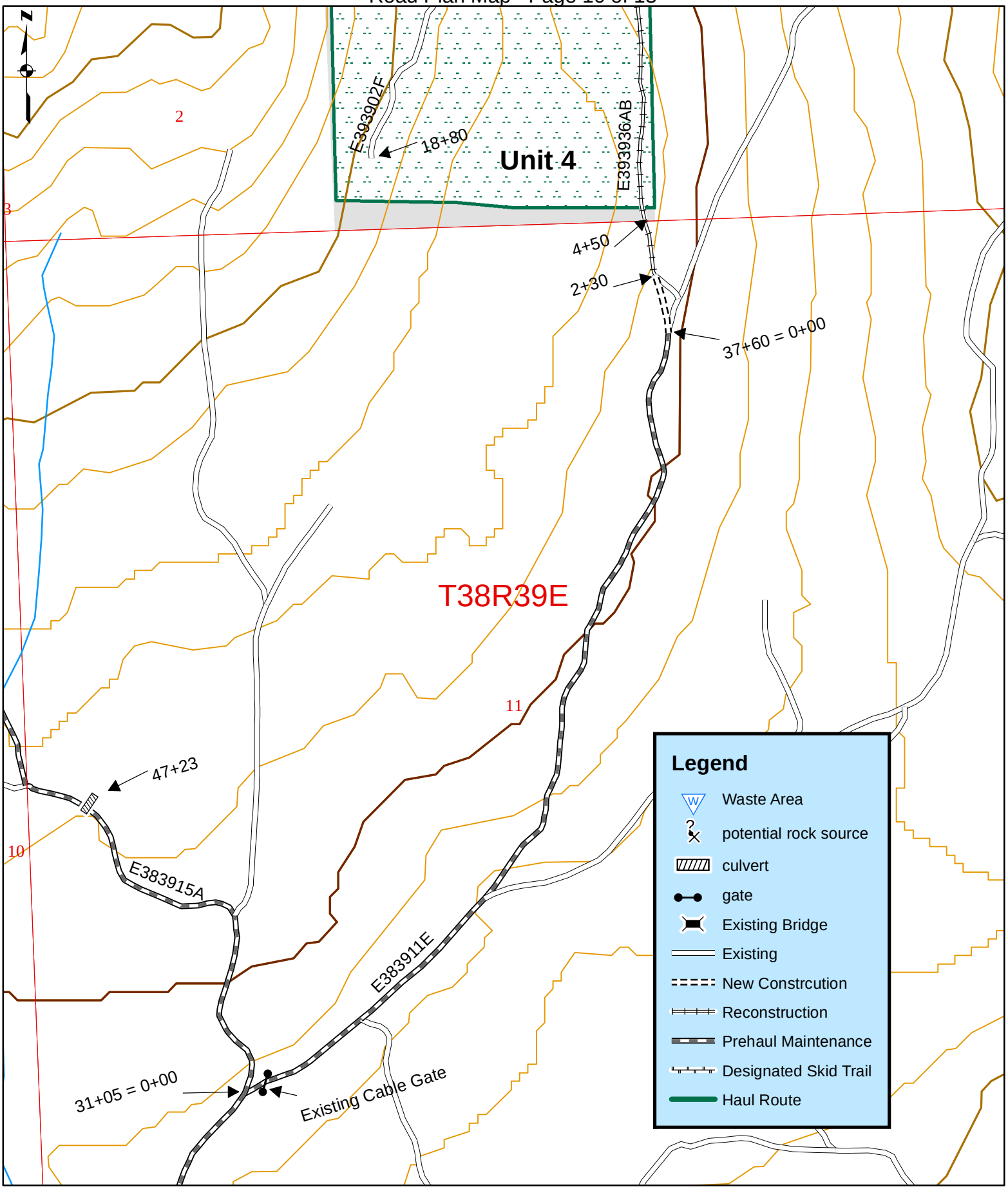

0 187.5 375 750 1,125 1,500 Feet

1 inch = 500 feet

Washington State Department of Natural Resources
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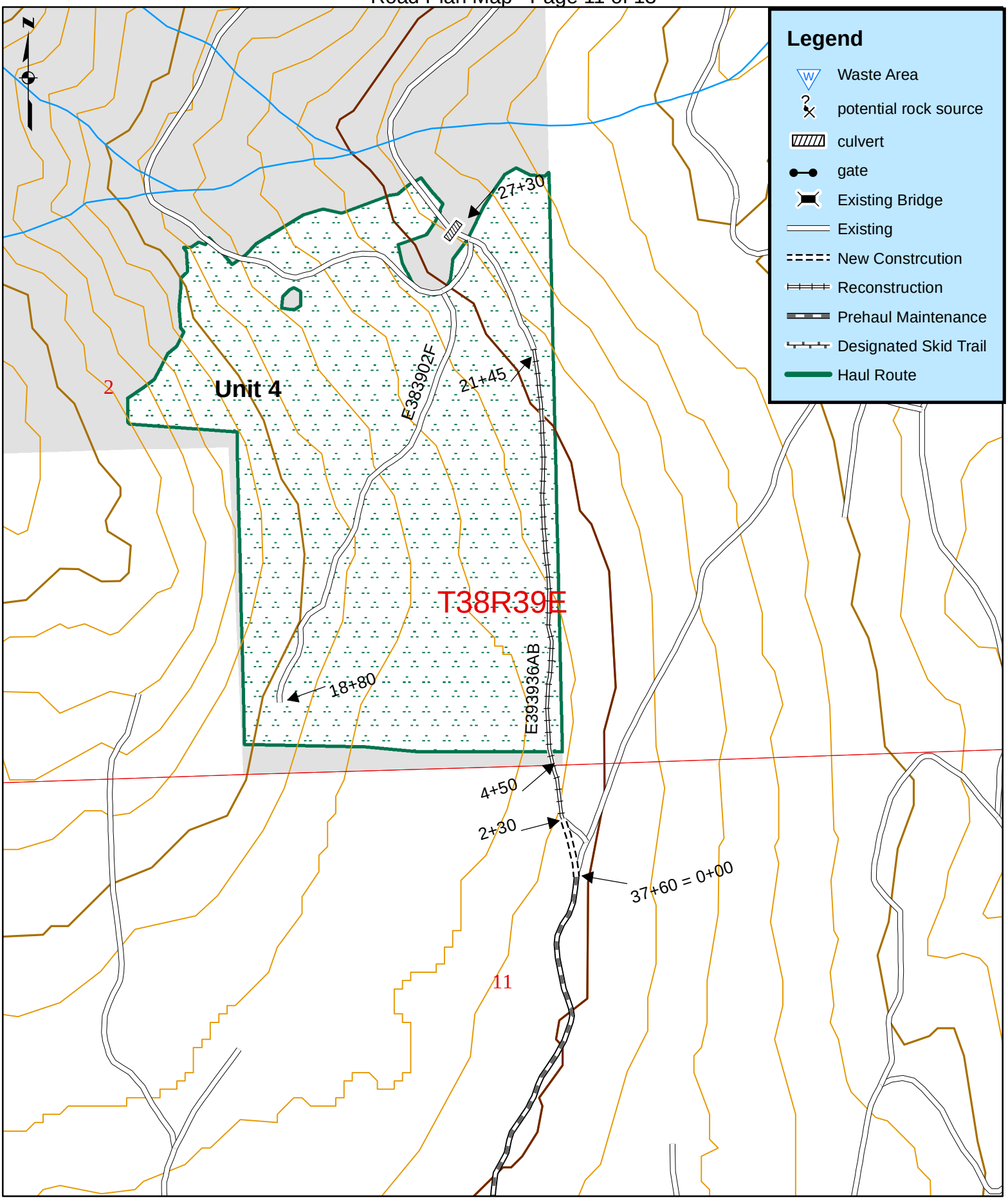
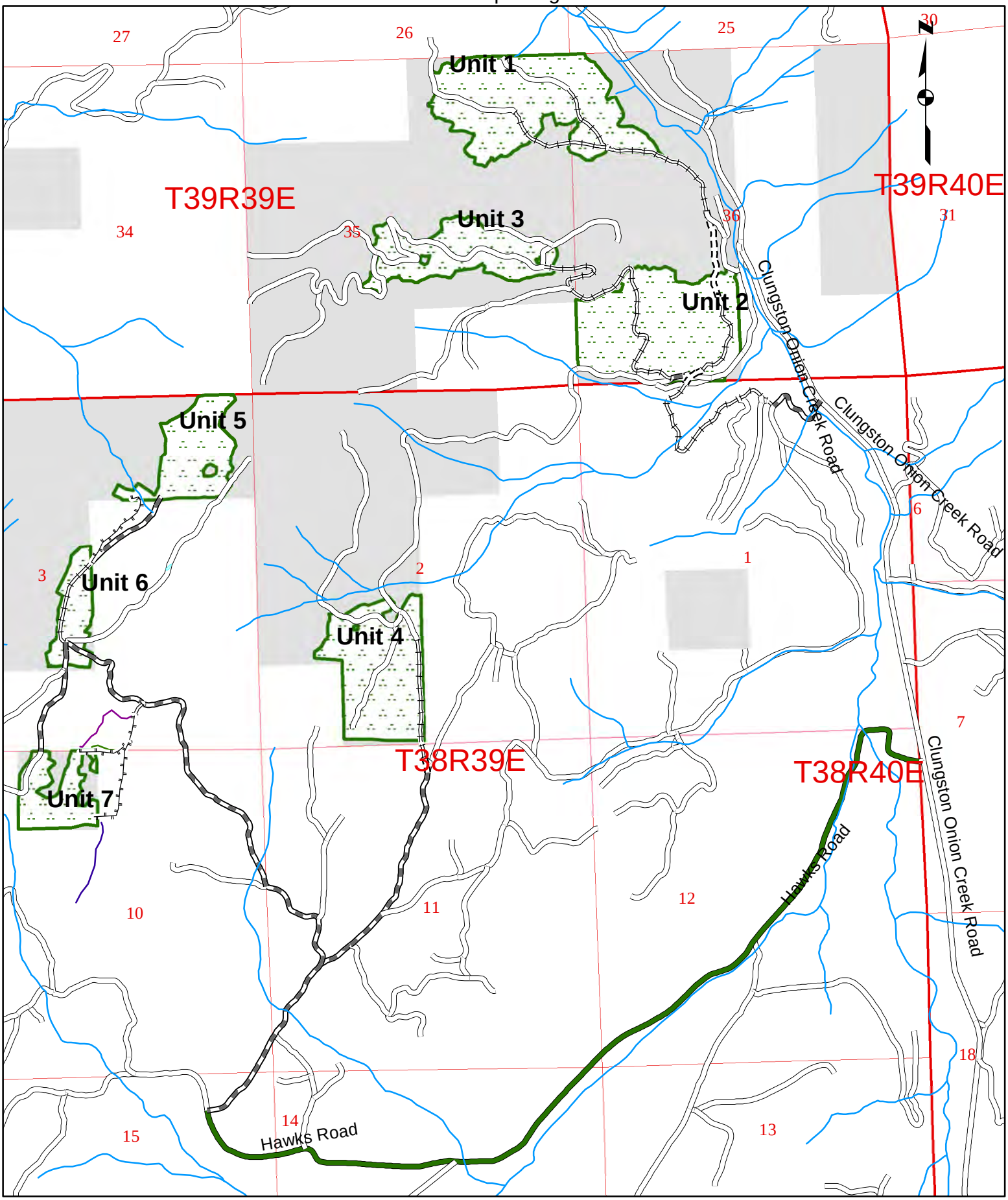


0 187.5 375 750 1,125 1,500 Feet

1 inch = 500 feet

Washington State Department of Natural Resources
Sale Name: Alice Mae County: Stevens
Agreement No.: 30-093947 Region: Northeast
Road Plan Map Page 12 of 13



0 750 1,500 3,000 4,500 6,000 Feet

1 inch = 2,000 feet

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Sale Name: Alice Mae County: Stevens
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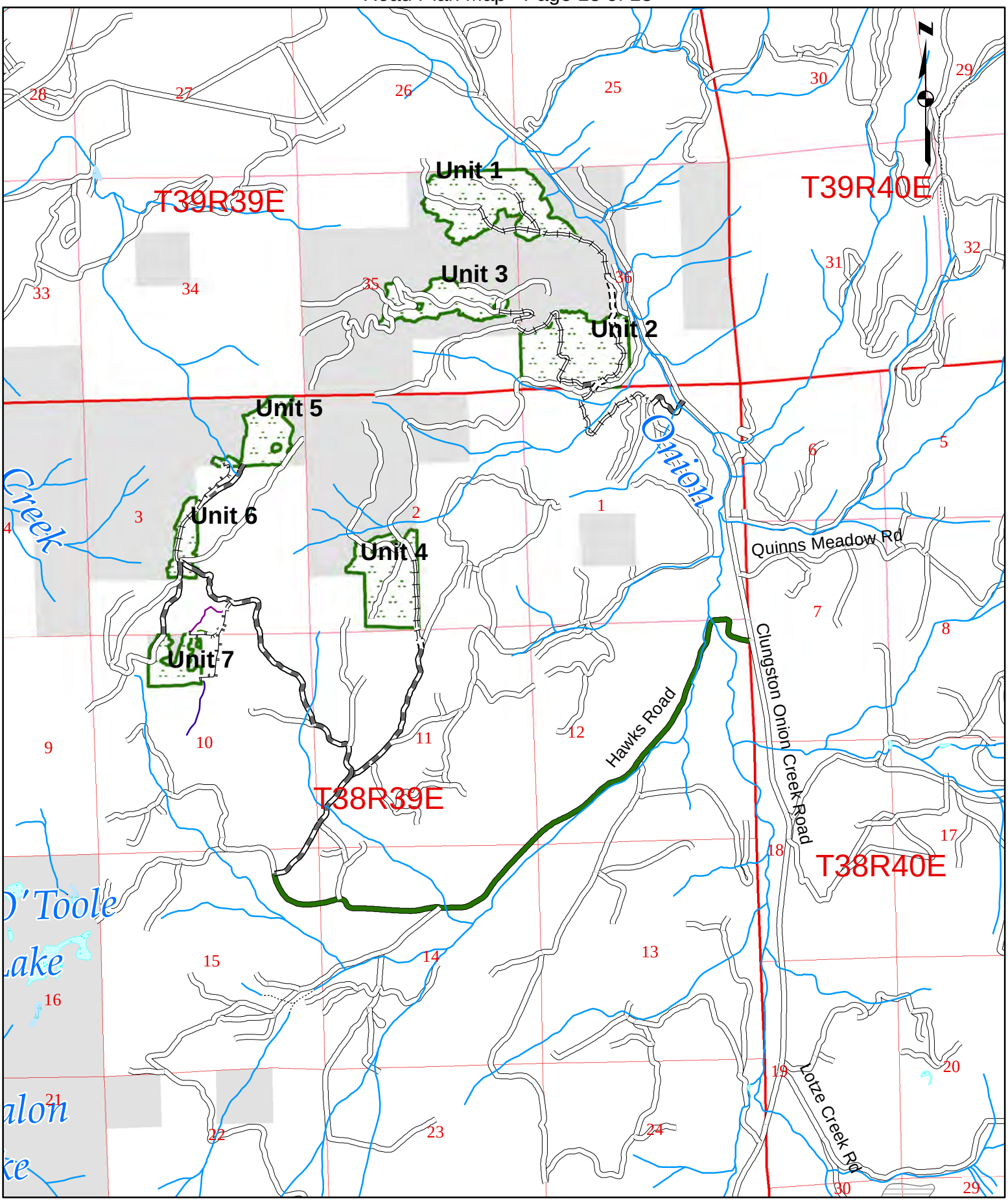
Road Plan Map Page 13 of 13



0 1,125 2,250 4,500 6,750 9,000 Feet

1 inch = 3,000 feet

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

ALICE MAE TIMBER SALE ROAD PLAN
STEVENS COUNTY
NORTH COLUMBIA DISTRICT

AGREEMENT NO.: 30-093947 STAFF ENGINEER: GENE GIBBS

DATE: 6/1/2016 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.

Road	Stations	Type
E383901E	0+00 to 11+95	Prehaul Maintenance
E383901F	0+00 to 33+10	Reconstruction
E383901F	33+10 to 34+65	New Construction
E393936A	0+00 to 2+10	Prehaul Maintenance
E393936C	0+00 to 50+75	Reconstruction
E393936J	0+00 to 3+35	New Construction
E393936J	3+35 to 16+90	Reconstruction
E393936J	16+90 to 32+60	New Construction
E393936B	0+00 to 33+80	Reconstruction
E393935E	0+00 to 17+50	Reconstruction
E383915A	0+00 to 129+80	Prehaul Maintenance
E383911E	0+00 to 37+60	Prehaul Maintenance
E393936AB	0+00 to 2+30	New Construction
E393936AB	2+30 to 21+45	Reconstruction
E383903J	0+00 to 2+40	Reconstruction
E383903F	0+00 to 14+65	Reconstruction
E383903F	14+65 to 29+60	Prehaul Maintenance
E383903F	29+60 to 30+35	New Construction

0-4 CONSTRUCTION

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

Road	Stations	Requirements
E383901F	33+10 to 34+65	Construct Road in accordance to Typical Section.
E393936J	0+00 to 3+35	Construct Road in accordance to Typical Section.
E393936J	16+90 to 32+60	Construct Road in accordance to Typical Section, Culvert and Drainage Sheet, and Rocklist. See clauses 4-12 and 4-37 for full bench end haul locations.
E393936AB	0+00 to 2+30	Construct Road in accordance to Typical Section.
E383903F	29+60 to 30+35	Construct Road in accordance to Typical Section.

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 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:

Road	Stations	Requirements
E383901F	0+00 to 33+10	Reconstruct road in accordance to Typical Section, Rock List, and Culvert and Drainage Sheet. Brush road in accordance to Brushing Detail.
	18+60	Install state supplied vehicle gate
	19+60	Install state supplied 9’x44’ Stream Simulation Culvert as per attached design.
	29+10	Clean culvert inlet and outlet.
E393936C	0+00 to 50+75	Reconstruct road in accordance to Typical Section, Rock List, and Culvert and Drainage Sheet. Brush road in accordance to Brushing Detail.
E393936J	3+35 to 16+90	Reconstruct road in accordance to Typical Section. Brush road in accordance to Brushing Detail.

E393936B	0+00 to 33+80	Reconstruct road in accordance to Typical Section. Brush road in accordance to Brushing Detail.
E393935E	0+00 to 17+50	Reconstruct road in accordance to Typical Section. Brush road in accordance to Brushing Detail.
E393936AB	2+30 to 21+45	Reconstruct road in accordance to Typical Section. Brush road in accordance to Brushing Detail. Install temporary culvert in NP stream at 27+30, crib with logs, and cover with no less than 2 layers of woven geotextile then, cover with minimum 18" fill. No sediment will be allowed to enter the stream during installation, logging activities, or crossing removal.
E383903J	0+00 to 2+40	Reconstruct road in accordance to Typical Section.
E383903F	0+00 to 14+65	Reconstruct road in accordance to Typical Section. Brush road in accordance to Brushing Detail.

Reconstruction includes, but is not limited to clearing & grubbing, subgrade reconstruction, rolling dip, cross drain, and culvert 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:

Road	Stations	Requirements
E383901E	0+00 to 11+95	Reshape road to provide drainage as needed. Light spot brushing required. Rock 50 feet to approaches for rail car bridge at 1+60. Reconstruct catch basin at 4+75 and armor headwall with 10 CY Rip Rap.
E393936A	0+00 to 2+10	Reshape road to provide drainage as needed.

E383915A	0+00 to 17+15	Reshape road to provide drainage as needed. Spot brushing required. Brush in accordance to brushing detail.
	17+15 to 19+70	Reshape road to provide drainage as needed. Spot brushing required. Brush in accordance to brushing detail. Construct ditch, install relief culvert, and spot patch 20 cubic yards over relief culvert.
	19+70 to 110+80	Reshape road to provide drainage as needed. Spot brushing required. Brush in accordance to brushing detail. Spot patch 20 CY at 22+33, and install relief culvert at 47+23.
	110+80 to 129+80	Reshape road to provide drainage as needed. Light brushing required. Brush in accordance to brushing detail.
E383911E	0+00 to 37+60	Reshape road to provide drainage as needed. Spot brushing required. Brush in accordance to brushing detail.
E383903F	14+65 to 29+60	Reshape road to provide drainage as needed. Spot brushing required. Brush in accordance to brushing detail.

Maintenance includes, but is not limited to brushing, clearing, grubbing, subgrade reshaping, rolling dip, cross drain, 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.

0-9 DECOMMISSIONING

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

0-12 DEVELOP ROCK SOURCE

Purchaser may develop a new rock source. Rock source development will involve digging and sorting potential in bank rock sources. Work for developing rock sources is listed in Section 6 ROCK AND SURFACING.

0-13 STRUCTURES

Purchaser shall install 9'x44' fish passable culvert and 1 vehicle gate. Requirements for these structures are listed in Section 7 STRUCTURES.

SECTION 1 – GENERAL

1-1 ROAD PLAN CHANGES

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

1-2 UNFORESEEN CONDITIONS

Quantities established in this road plan are minimum acceptable values. Additional quantities required by the state due to unforeseen conditions, or Purchaser's choice of construction season or techniques 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.

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

1-5 DESIGN DATA

Culvert design data is available upon request at the Department of Natural Resources Northeast Region Office in Colville, WA. For installation of 9' x 44' fish passable culvert to be installed on the E383901F road at station 18+60.

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 any road for more than 5 consecutive days. E393936A and E383915A access private residences and may not be closed at any time.

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.

1-15 ROAD MARKING

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

- centerlines flagged with orange flagging for new construction
- Stationing marked with flagging and or stationing cards.

1-16 CONSTRUCTION STAKES SET BY STATE

Purchaser shall perform work on the following road(s) in accordance with the benchmarks and reference points set in the field for grade and alignment.

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 7 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

1-25 ACTIVITY TIMING RESTRICTION

Construction restrictions apply to this contract. All construction, reconstruction 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.

<u>November 15 to May 31</u>

1-26 OPERATING DURING CLOSURE PERIOD

If permission is granted to operate during a closure period listed in Clause 1-25 ACTIVITY TIMING RESTRICTIONS, the Contractor shall provide a maintenance plan to include further protection of state resources. The Contract Administrator must approve the maintenance plan, in writing, before operation in the closure period. The Contractor shall be required to maintain all haul roads including those listed in Contract Clause C-060 DESIGNATED ROAD MAINTAINER.

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 roads.
- Wheel track rutting exceeds 2 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.
- 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, the Contractor will be required to cease operations, or perform corrective maintenance or repairs, subject to specifications within this road plan. Before and during any suspension, Contractor shall protect the work from damage or deterioration.

1-32 BRIDGE AND ASPHALT SURFACE RESTRICTION

Use of the existing rail car bridge in Section 36, Township 39, Range 39 is prohibited; except for light passenger truck passage. Once the new haul route is completed through the E383901F not further passage will be permitted.

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

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.

2-4 PASSAGE OF LIGHT VEHICLES

Purchaser shall maintain road(s) 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. Purchaser shall accomplish all grading using a motor grader with a minimum of 175 horsepower.

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. Contractor shall remove brushing debris from the road surface, ditchlines, and culvert inlets and outlets.

3-5 CLEARING

Purchaser shall fall all vegetative material larger than 3 inches DBH or over 6 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.

3-10 GRUBBING

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

3-14 STUMPS WITHIN DESIGNATED WASTE AREAS

In the following waste area(s), Purchaser is not required to remove stumps within waste areas if they are cut flush with the ground.

Road	Waste Area	Stations
E393936J	Waste Adjacent to road prism on side slopes less than 30%.	3+35, 16+90

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.

3-23 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, wetland, or within the riparian management zone.
- On road subgrades or embankments.
- On slopes greater than 40%.
- Within the operational area for cable landings where debris may shift or roll.
- On locations where brush will fall into the ditch or onto the road surface.
- Against standing timber.

3-24 BURYING ORGANIC DEBRIS RESTRICTED

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

3-30 EXCLUSION OF DOZER BLADES

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

3-31 PILING

Right-of-way debris shall be piled. Debris piles shall be made to be burnable, clean, tight, and free of rock or soil. Piles shall be made no closer than 20 feet from standing timber, and no higher than 10 feet. Debris piles shall be placed within the cleared right-of-way, or in natural openings, as designated by the Contract Administrator. Placement of debris piles outside of the right-of-way limits is subject to the written approval of the Contract Administrator.

3-32 END HAULING ORGANIC DEBRIS

On slopes greater than 45%, Purchaser shall end haul or push organic debris to the designated waste areas specified in Clause 3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS or to a waste area located by the Contract Administrator.

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 shall not extend past construction that will be completed during the current construction season. Pioneering shall not extend more than 1000 feet beyond completed construction unless approved in writing by the Contract Administrator. In addition, the following actions shall be taken as pioneering progresses:

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

4-3 ROAD GRADE AND ALIGNMENT STANDARDS

Purchaser shall follow these standards for road grade and alignment except as designed**.**

- Grade and alignment must have smooth continuity, without abrupt changes in direction.
- Maximum grades may not exceed 18 percent favorable and 12 percent adverse.
- Minimum curve radius is 60 feet at centerline.
- Maximum grade change for sag vertical curves is 5% in 100 feet.
- Maximum grade change for crest vertical curves is 4% in 100 feet.

4-4 SWITCHBACK STANDARDS

A switchback is defined as a curved segment of road between a beginning and end of the same curve, where the change of traffic travel direction is greater than 90 degrees. Purchaser shall follow these standards for switchbacks:

- Maximum adverse grades for switchbacks is 10% **.**
- Maximum favorable grades for switchbacks is 12%.
- Maximum transition grades entering and leaving switchbacks is a 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:

Material Type	Excavation Slope Ratio	Excavation Slope Percent
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:

Material Type	Embankment Slope Ratio	Embankment Slope Percent
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 following 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 end haul waste material to the location specified in Clause 4-37 WASTE AREA LOCATION.

Road	Full Bench Location	Comments
E393936J	22+85 to 25+65	Full bench end haul, waste material as directed by 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. Minimum dimensions are shown on the TYPICAL SECTION SHEET.

4-22 TURNAROUNDS

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

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

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

4-28 DITCH DRAINAGE

Ditches must drain to cross-drain culverts or ditchouts.

4-29 DITCHOUTS

Purchaser shall construct ditchouts as identified and as needed and as directed by the Contract Administrator. Ditchouts shall be constructed in a manner that diverts ditch water onto the forest floor and shall 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 55% 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

Waste material shall be deposited in areas designated or approved by the Contract Administrator. The amount of material to be contained in a waste area shall be at the discretion of the Contract Administrator**.**

Road	Waste Area Location	Comments
E393936J	3+35, 16+90	Waste adjacent to the road prism on side slopes less than 30%.

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.
- Against standing timber.
- Outside the clearing limits.

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. No rocks greater than 3 inches in any dimension will be permitted within 1 foot of any structure.

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 all shaping using a motor grader with a minimum of 175 horsepower.

4-56 DRY WEATHER SHAPING AND COMPACTING

At any time of year, the Contract Administrator may require the application of water to facilitate shaping and compaction 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. A vibratory tamper or compactor must be used for embankment segments too narrow to accommodate equipment.

4-61 SUBGRADE COMPACTION

Purchaser shall compact constructed or reconstructed subgrades deeper than 3 feet at the road shoulder by routing equipment over the entire width. Contractor shall obtain written approval from the Contract Administrator for subgrade compaction before Rock application.

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.

4-70 SUBGRADE REINFORCEMENT

On the following road(s), Purchaser shall provide and install 1 new roll of geotextile fabric a minimum of 300 feet in length and 14 feet in width. Subgrade reinforcement must be installed to a width that is 2 feet more than the subgrade width, including turnouts. Geotextile fabric must overlap by a minimum of 2 feet at all joints. The geotextile fabric must be covered with a minimum of 12 inches of compacted size rock or material type as specified in Clause 10-3 GEOTEXTILE FOR STABILIZATION. Purchaser shall apply rock in one-foot lift(s) over the geotextile in accordance with the manufacturer's specifications. Geotextile fabric must meet the specifications in Clause 10-3 GEOTEXTILE FOR STABILIZATION. Unused material will remain the property of the state.

Road	Stations
E383901F	19+35 to 19+85

SECTION 5 – DRAINAGE

5-1 REMOVAL OF SHOULDER BERMS

Berms shall be removed 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 must be installed concurrently with subgrade work and must be installed before subgrade compaction and rock application. Culvert locations and the minimum requirements for culvert length and diameter are designated on the CULVERT & DRAINAGE LIST. Culvert, downspout, and flume lengths may be adjusted to fit as-built conditions and may not terminate directly on unprotected soil. 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 culvert in Type Np stream. Crib with logs, and cover with no less than 2 layers of woven geotextile then, cover with minimum 18” fill. No sediment will be allowed to enter the stream during installation, logging activities, or crossing removal. Remove before the termination of this contract.

Road	Stations
E393936AB	27+30

5-10 STATE SUPPLIED CULVERTS

The following culverts will be supplied by the state and are available at location.

Road	Size	Comments
E383901F 18+60	108” x 44’	It is the purchaser’s responsibility to mobilize all culvert components from NE Region Headquarters to the installation site, any damage or loss occurring in mobilization will be at the cost of the purchaser.

5-11 UNUSED MATERIALS STATE PROPERTY

On required roads, any materials listed on the CULVERT & DRAINAGE LIST that are not installed will become the property of the state.

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" the Corrugated Polyethylene Pipe Association's "Recommended Installation Practices for Corrugated Polyethylene Pipe and Fittings". Corrugated Polyethylene pipe must 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 shall 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 shall be installed with a depth of cover specified in the Engineer's design, or to the minimum depth recommended by the culvert manufacturer for the type of cover material over the pipe, whichever is greater.

5-20 ENERGY DISSIPATERS

Energy dissipaters shall be installed to prevent erosion and are subject to approval by the Contract Administrator. The type of energy dissipater and the amount of material shall be consistent with the specifications listed on the CULVERT AND DRAINAGE SPECIFICATION DETAIL.

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 unless specified otherwise on the CULVERT AND DRAINAGE LIST.

5-26 HEADWALLS FOR CROSS DRAIN CULVERTS

Purchaser shall construct headwalls accordance with CULVERT AND DRAINAGE SPECIFICATION DETAIL at all cross drain culverts, except for temporary culverts. Headwalls shall also be constructed at all culverts identified on the CULVERT AND DRAINAGE LIST that specifies the placement of rock. Rock shall be placed by zero drop height methods. 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 diameters above the top of the culvert.

5-27 ARMORING FOR STREAM CROSSING CULVERTS

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

Road	Stations	Rock Type
E383901F	19+60	Light Loose Rip Rap

5-31 ROLLING DIP CONSTRUCTION

Rolling dips shall be constructed 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 waterbarred by November 1. Purchaser shall construct waterbars according to the attached NON-DRIVABLE 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 POTENTIAL ROCK SOURCE ON STATE LAND

Rock used in accordance with the quantities on the ROCKLIST may be obtained from the following source(s) on state land at no charge to the Contractor. Use of material from any other source must have prior written approval from the Contract Administrator. If other operators are using, or desire to use the rock source(s), a joint operating plan shall be developed. All parties shall follow this plan. The Contractor shall notify the Contract

Administrator a minimum of 5 calendar days before starting any operations in the listed locations.

Source	Location	Rock Type
Potential bank run	E393936C 30+50, 33+30, 41+00, 45+75	unknown

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.

6-12 ROCK SOURCE SPECIFICATIONS

Rock sources must be in accordance with the following specifications, unless otherwise specified in the ROCK SOURCE DEVELOPMENT AND RECLAMATION 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.

6-20 ROCK GRADATION TYPES

Purchaser shall provide or manufacture rock in accordance with the types and amounts listed in the ROCK LIST. Rock shall meet the following specifications for gradation and uniform quality. The exact point of evaluation for conformance to specifications will be determined by the Contract Administrator.

6-21 IN-PLACE PROCESSING

Purchaser may use in-place processing, such as a grid roller or other method, if suitable crushing can be demonstrated to meet the surfacing size 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.

6-38 4-INCH IN-PLACE ROCK

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

In-place rock may not contain more than 5 percent by weight of organic debris and trash. No more than 40 percent of rock may be larger than 8 inches in any dimension and no rock may be larger than 12 inches in any dimension.

6-44 STREAM SIMULATION ROCK

Stream simulation rock must be manufactured on site or in a rock pit by mixing the components shown below with an excavator or front-end loader. The following gradation specification will be used as guide to create the stream simulation rock.

% Passing 24” square sieve	80 - 90%
% Passing 10” square sieve	70 - 80%
% Passing 4” square sieve	40 - 50%
% Passing 1” square sieve	15 - 30%
% Passing U.S. #4 sieve	5 - 16%
% Passing U.S. #200 sieve	5% maximum

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

Stream simulation rock must be well graded and should generally meet the following parameters. Q_{100} = 36 inches, Q_{84} = 17 inches, Q_{50}= 7 inches, and Q_{16} = 2 inches. Additionally a few larger 24 to 36 inch boulders shall be scattered throughout the channel (one or two per 10 feet of reconstructed channel) to provide channel stability.

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:

At Least/Not More Than	Weight Range	Size Range
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. Contractor shall apply adequate amounts of rock to meet the specified rock depths. Specified rock depths are minimum requirements, and are not subject to reduction.

6-70 APPROVAL BEFORE ROCK APPLICATION

Purchaser shall obtain written approval from the Contract Administrator for approved completion of subgrade and drainage installations 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. The Contract Administrator will direct locations for rock that is to be applied as spot patching. Road surfaces must be compacted by routing equipment over the entire width.

6-73 ROCK FOR WIDENED PORTIONS

Purchaser shall apply rock to turnarounds, turnouts, and areas with curve widening to the same depth and specifications as the traveled way unless otherwise specified in the ROCK LIST.

6-80 WATERING FOR DUST ABATEMENT

Purchaser shall use water for dust abatement on the following roads as directed by the Contract Administrator.

Road	Stations
E383915A	0+00 to 48+00

SECTION 7 – STRUCTURES

7-5 STRUCTURE DEBRIS

Purchaser shall not allow debris from the installation or removal of structures to enter any stream. Purchaser shall maintain a clean jobsite, with all materials stored away from the high water mark or other area presenting a risk of the materials entering a stream.

7-6 STREAM CROSSING INSTALLATION

Purchaser shall install stream crossing structures in accordance with the manufacturer's requirements, attached design, and FPA.

7-7 BANK PROTECTION FOR STREAM CROSSING STRUCTURES

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

7-17 INSTALLATION PRODUCTION SCHEDULE

Purchaser shall provide the Contract Administrator and the District Engineer, with a production schedule showing projected start and completion dates for the following items before starting construction of the structure(s). Production schedule must include:

- construction staking
- Dewatering plan
- excavation
- placement of structure
- backfill compaction, rock application and compaction
- stream release

Purchaser must receive written approval of the Production Schedule from the District Engineer and the Contract Administrator prior to beginning work.

7-18 INSTALLATION STAGE ACCEPTANCE

Purchaser shall ensure that all materials and procedures used during construction comply with the design. Purchaser shall have each stage inspected and approved by the District Engineer and obtain written approval from the Contract Administrator prior to proceeding to the subsequent stage of construction, listed in Clause 7-17 INSTALLATION PRODUCTION SCHEDULE, before starting next stage. Purchaser shall notify the Contract Administrator in writing when each construction stage is complete.

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 NCSPA Installation Manual can be found at 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.

7-58 MATERIAL INSIDE CULVERT

Purchaser shall provide and install insert rock type rock inside the following culvert(s) as specified in the insert design. Insert rock type must meet the specifications in Clause 6-44 STREAM SIMULATION ROCK and the minimum quantities listed in the CULVERT & DRAINAGE LIST.

Road	Stations
E383901F	19+60

SUBSECTION GATE CLOSURE

7-70 GATE CLOSURE

On the following road(s), Purchaser shall keep gates closed and locked except during periods of haul. All gates that remain open during haul must be locked or securely fastened in the open position. All gates must be closed at termination of use.

Road	Station
E383901F	18+60
E383901E	1+60

7-76 GATE INSTALLATION

Purchaser shall install the listed gate(s)**.** Gate installations must be installed within 30 days of insert requirement.

Road	Station	Type*	Provided by
E383901F	18+60	Vehicle	state

* Tubular gate installation(s) must be in accordance with the VEHICLE GATE INSTALLATION DIAGRAM AND DETAILS.

The gate and lock box must be installed plumb and aligned to ensure all mating components match with precision. Each post must be filled with concrete capped and set in a minimum of 2 cubic yards of poured-in-place concrete. The gate must be installed with a post and locking device to allow the gate to be locked in an open position. The Contract Administrator will provide Purchaser with a padlock.

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

The gate must be primed and painted in accordance with the VEHICLE GATE INSTALLATION DIAGRAM AND DETAILS.

If fences exist at the site of gate installation(s), Purchaser shall connect the fencing to the posts of the new installation.

7-78 GATE SUPPLIED BY STATE

State shall provide all gates specified for installation in Clause 7-76 GATE INSTALLATION. Purchaser shall be responsible for mobilization of gate from NE Region headquarters to installation site.

SECTION 8 – EROSION CONTROL

8-1 SEDIMENT CONTROL STRUCTURES

Sediment control shall be accomplished using sediment traps, silt fences, settling ponds, slash windrows, or other methods as approved in writing by the Contract Administrator.

8-2 PROTECTION FOR EXPOSED SOIL

Purchaser shall provide and evenly spread a 6-inch layer of straw to all exposed soils *at culvert installations. Soils must be covered before the first anticipated storm event. Soils may not sit exposed during any rain event.

SECTION 9 – POST-HAUL ROAD WORK

9-1 EARTHEN BARRICADES

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

Road	Stations	Comments
E393936B	1+00	Block road with a series of 3 soils berms touching at the toe of each berm, Install to be impassible for standard vehicle.

9-5 POST-HAUL MAINTENANCE

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

Road	Stations	Additional Requirements
E393935K	0+00 to 11+80	Reshape road to provide drainage as needed.

9-10 LANDING DRAINAGE

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

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.

Road	Stations	Type
E383902F	0+00 to 18+80	Light

9-22 LIGHT DECOMMISSIONING

- 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 100 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.
- Block roads with earthen barricades according to the attached NE SPOILS BERM DETAIL.
- Scatter woody debris onto decommissioned road surfaces.

SECTION 10 MATERIALS

10-3 GEOTEXTILE FOR STABILIZATION

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

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

The purchaser will be required to provide 1 unused roll a minimum of 300 feet in length for use through the duration of the sale. Any unused geotextile will remain the property of the purchaser.

10-15 CORRUGATED STEEL CULVERT

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

10-17 CORRUGATED PLASTIC CULVERT

Polyethylene culverts shall 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.

10-20 FLUME AND DOWNSPOUT

Downspouts and flumes shall 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 shall 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.

Diameter	Gage	Corrugation
18"	16 (0.064")	2 $^{2}/_{3}$" X $^{1}/_{2}$"
24" to 48"	14 (0.079")	2 $^{2}/_{3}$" X $^{1}/_{2}$"
54" to 96"	14 (0.079")	3" X 1"

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.

Sturctures

- 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

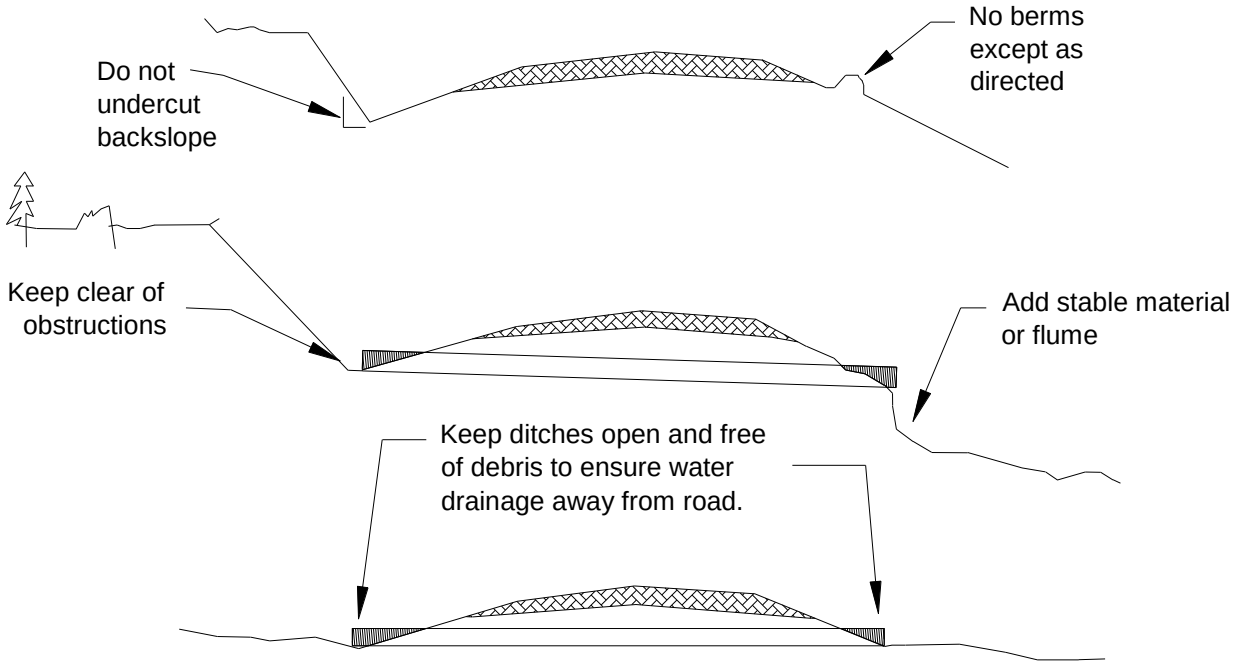
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

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.

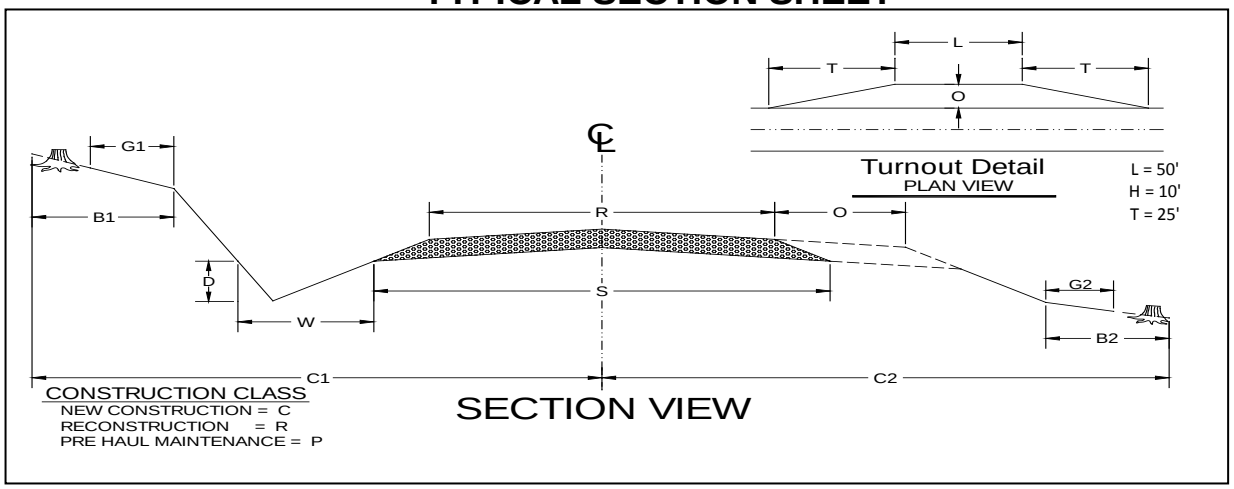


STATE OF WASHINGTON

DEPARTMENT OF NATURAL RESOURCES

Application No.: 30-093947 **Name of Sale: Alice Mae**

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)	R/W CUT CLEARING (C1)	R/W FILL CLEARING (C2)
E383901E	0+00	11+95	P		C	14	12		4										
E383901F	0+00	33+10	R		C	14	12		4										
E383901F	33+10	34+65	C		C	18	16		4					2	2	4	4		
E393936A	0+00	2+10	P		C	14	12		4										
E393936C	0+00	50+75	R		C	14	12		4					2	2	4	4		
E393936J	0+00	3+35	C		C	14	12		4					2	2	4	4		
E393936J	3+35	16+90	R		C	14	12		4					2	2	4	4		
E393936J	16+90	18+15	C		C	14	12		4					2	2	4	4		
	18+15	32+60	C		C	14	12	4			3	1		2	2	4	4		
E393936B	0+00	33+80	R		C	14	12		4					2	2	4	4		
E393935E	0+00	17+50	R		C	14	12		4					2	2	4	4		
E383915A	0+00	17+15	P		C	14	12		4										
	17+15	19+70	P		C	14	12			4	2	1							
	19+70	129+80	P		C	14	12		4										
E383911E	0+00	37+60	P		C	14	12		4										
E393936AB	0+00	2+30	C		C	14	12		4					2	2	4	4		
	2+30	21+45	R		C	14	12		4					2	2	4	4		
E383903J	0+00	2+40	R		C	14	12		4					2	2	4	4		
E383903F	0+00	14+65	R		C	14	12		4					2	2	4	4		
	14+65	29+60	P		C	14	12		4										
	29+60	30+35	C		C	14	12		4					2	2	4	4		

DATE: 5/12/2016 *Optional Page One of One DRAWN BY: RK

STATE OF WASHINGTON

DEPARTMENT OF NATURAL RESOURCES

Application No.: 30-093947 **Name of Sale: Alice Mae** **Date: 6/1/2016**

CULVERT & DRAINAGE LIST

Road Name	Station	CULVERT			LENGTH			RIPRAP			Ditch	Staked	Rolling Dip	Notes
		Diameter (in)	Gauge	Skew	Culvert (ft)	Downspout	Flume	Inlet C.Y.	Outlet C.Y.	Catchbasin				
E383901F	19+60	108	10		44			15	25					See Design
E393936J	19+80	18	16		30			5	5		X			1,6,10
	20+55	24	14		40			10	5					1,6,10,11
	22+35												X	w/rock
	24+65	24	14		34			3	2					1,6,10
	27+15	18	16		30			1/4	1/4					1,6,10
	29+15	18	16		30			1/4	1/4					1,6,10
	30+95	18	16		30			1/4	1/4					1,6,10
	32+60	18	16		34			1/4	1/4					1,6,10
E383915A	19+05	18	16		28			1/4	1/4					w/ditchout
	47+23	18	16		28			1/4	1/4					1,6,10
E393936AB	27+30	24	14		28			1/4	1/4					1,6,10

STRUCTURE NOTES

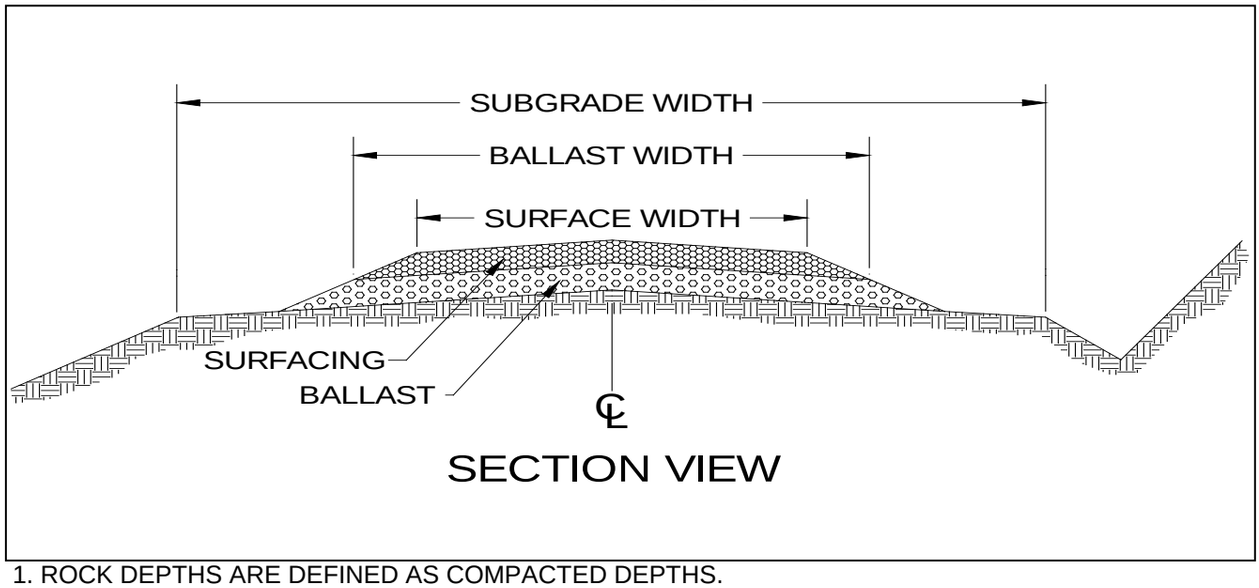
1. **Install Headwall - See Detail D1**
2. **Install Catchbasin - See Detail D1**
3. **Armor Catchbasin - See Detail D1**
4. **Armor Ditch**
5. **Heavy Loose RipRap**
6. **Light Loose RipRap**
7. **Step Bevel Pipe Ends**
8. **Remove Existing Pipe**
9. **See Rolling Dip Detail D5**
10. **See Pipe Installation Detail D1**
11. **Install Energy dissipator - See D1**
12. **Install Ditchout**
13. **Reshape Rolling Dip**

STATE OF WASHINGTON

DEPARTMENT OF NATURAL RESOURCES

Application No.: 30-093947 **Name of Sale: Alice Mae**

ROCK LIST

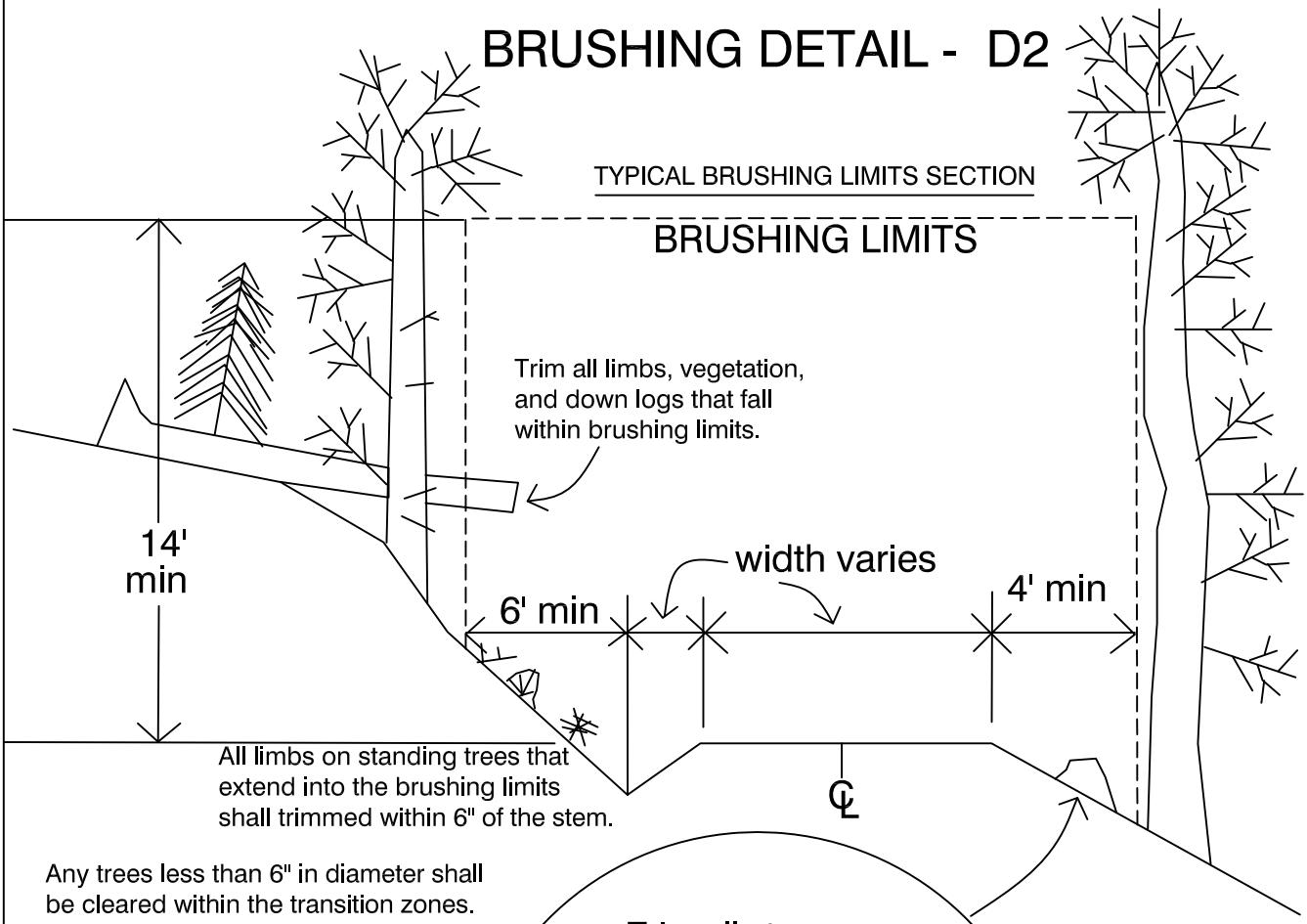


1. ROCK DEPTHS ARE DEFINED AS COMPACTED DEPTHS.
2. LOOSE YARD QUANTITIES ARE DEPENDANT ON SOURCE.
3. ROCK SLOPES SHALL BE 1.5(H) : 1(V).
4. ALL ROCK SOURCES ARE SUBJECT TO APPROVAL BY THE CONTRACT ADMINISTRATOR.
5. THE ROCK QUANITIES SHOWN ASSUME AN EXPANSION FACTOR OF 25%

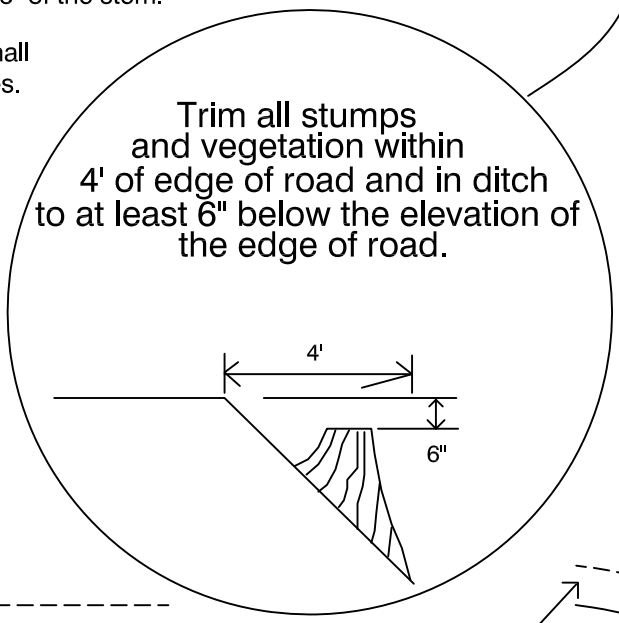
ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	BALLAST SOURCE	BALLAST WIDTH (ft)	BALLAST DEPTH (in)	BALLAST QUANTITY (cu.yd./sta)	SURFACE SOURCE	SURFACE WIDTH (ft)	SURFACE DEPTH (in)	SURFACE QUANTITY (cu.yd./sta)	FABRIC WIDTH (ft)
E383901E	0+85	1+35	16				0		14	6	34	
	1+85	2+35	16				0		14	6	34	
10 CY Rip Rap	4+75						0				0	
E383901F	17+00	21+10	14				0		12	6	30	
70 CY streambed material	19+60						0				0	
40 CY Rip Rap	19+60						4				0	
E383901F	19+35	19+85	22		20	9	73				0	20
E383901F 1 1/4" crushed rock	19+10	20+10	21				0	C	20	6	48	
E393936J 10 CY Rip Rap	19+80						0				0	
15 CY Rip Rap	22+55						0				0	
10 CY rock	22+35						0				0	
34 CY Rip Rap for culvert inlet and outlets							0				0	
E383915A	19+05	20 CY spot patch					0				0	
	22+33	20 CY spot patch					0				0	
							0				0	
							0				0	
Additional rock to be apply		120 CY spot patch					0				0	
per the Contract Administrator							0				0	
							0				0	

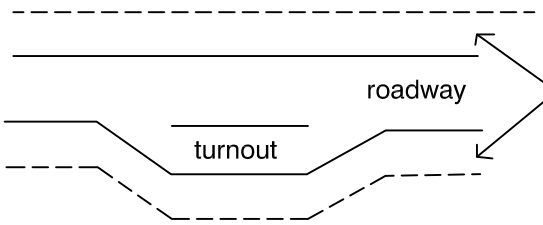
DATE:Month 5/11/2016 C = Comercial Source

BRUSHING DETAIL - D2



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

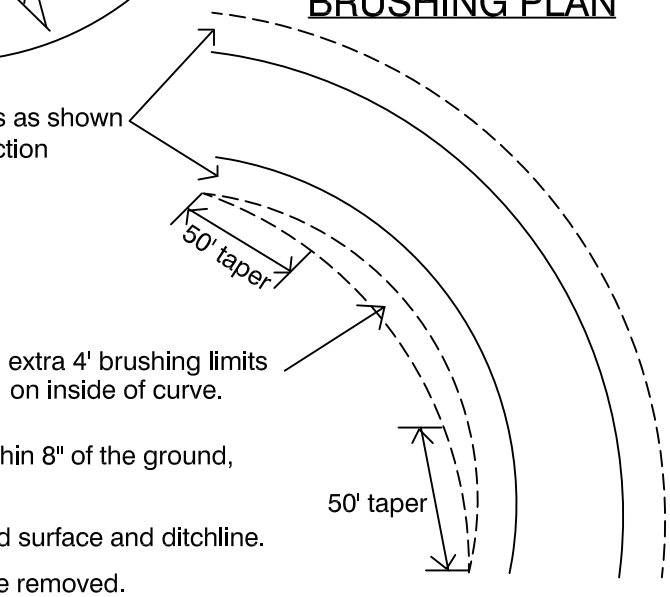




TURNOUT BRUSHING PLAN

Brushing limits as shown on Typical Section

CURVE BRUSHING PLAN

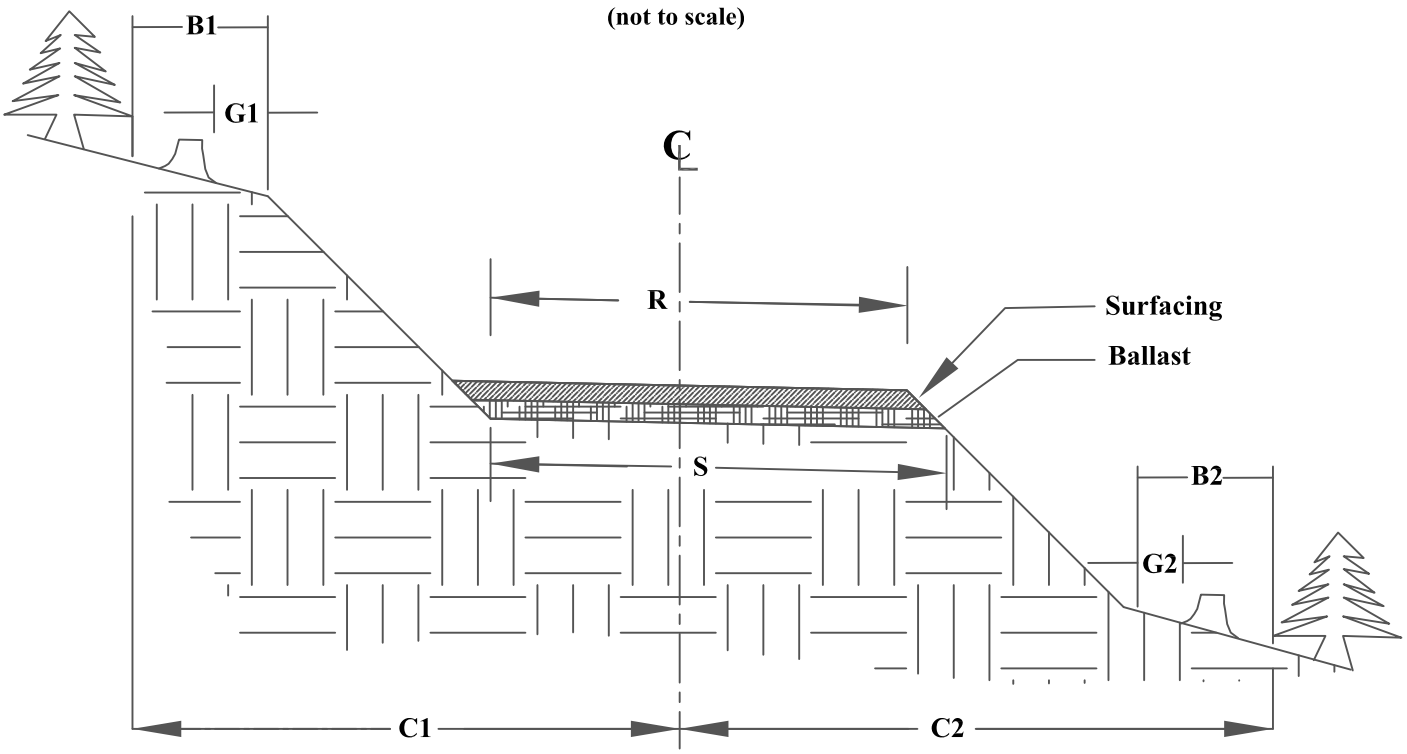


1. All vegetation within the brushing limits shall be cut to within 8" of the ground, unless otherwise directed by the contract administrator.
2. All brush, trees, limbs, etc. shall be removed from the road surface and ditchline.
3. All debris that may roll or migrate into the ditchline shall be removed.

Drawn by: GP. Rev. 11-13-2012 by: JE

OUTSLOPED ROAD CROSS-SECTION

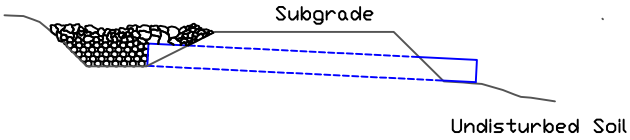
DETAIL D3



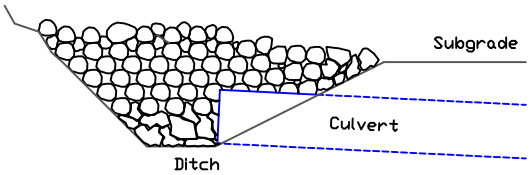
Drawn by: JBB 2/18/03

Revised: JE 01/14/20162

CULVERT AND DRAINAGE SPECIFICATIONS DETAIL - D1



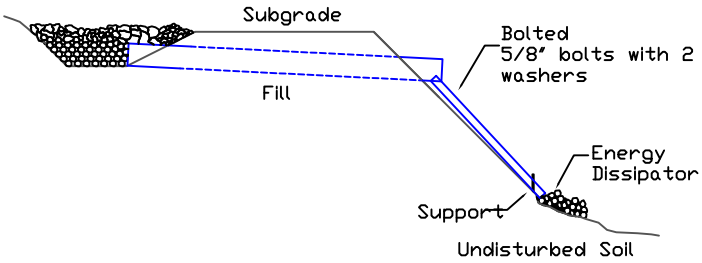
HEADWALLS



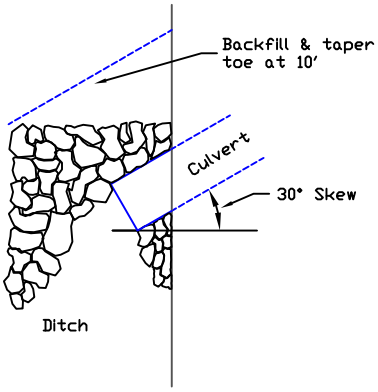
Headwall to be constructed of material that will resist erosion

FLUME

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

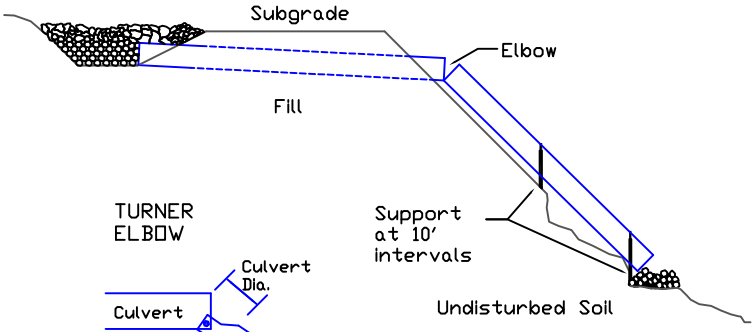


PLAN VIEW

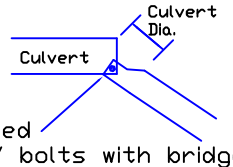


DOWNSPOUT

Use where ground conditions are irregular.



TURNER ELBOW



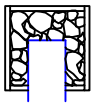
Bolted 5/8" bolts with bridge washers on both sides

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

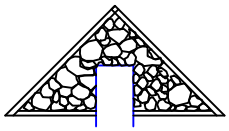
Minimum Cover	Minimum Bed Depth	Min. Trench Width	Nominal Diameter
A	B	C	D
12"	6"	36"	18"
12"	6"	42"	24"
12"	6"	48"	30"
12"	6"	54"	36"

DISSIPATOR SPEC'S
Size in Culvert Diameters

Area	2 X 2
Depth	1
Aggragate	1/3



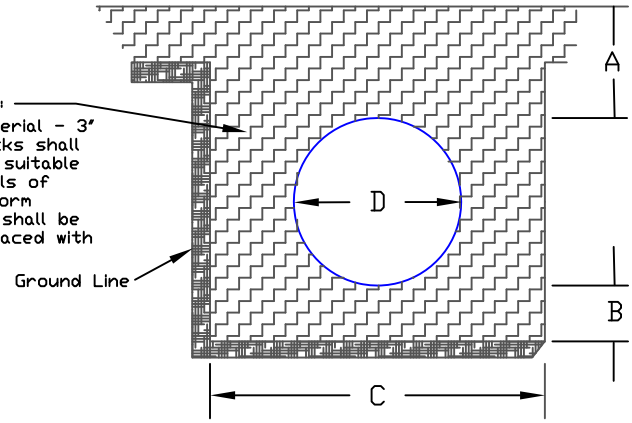
Level



Side Hill

ROAD SURFACE

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. Minimum skew is 30°, and the maximum skew is 45°.

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

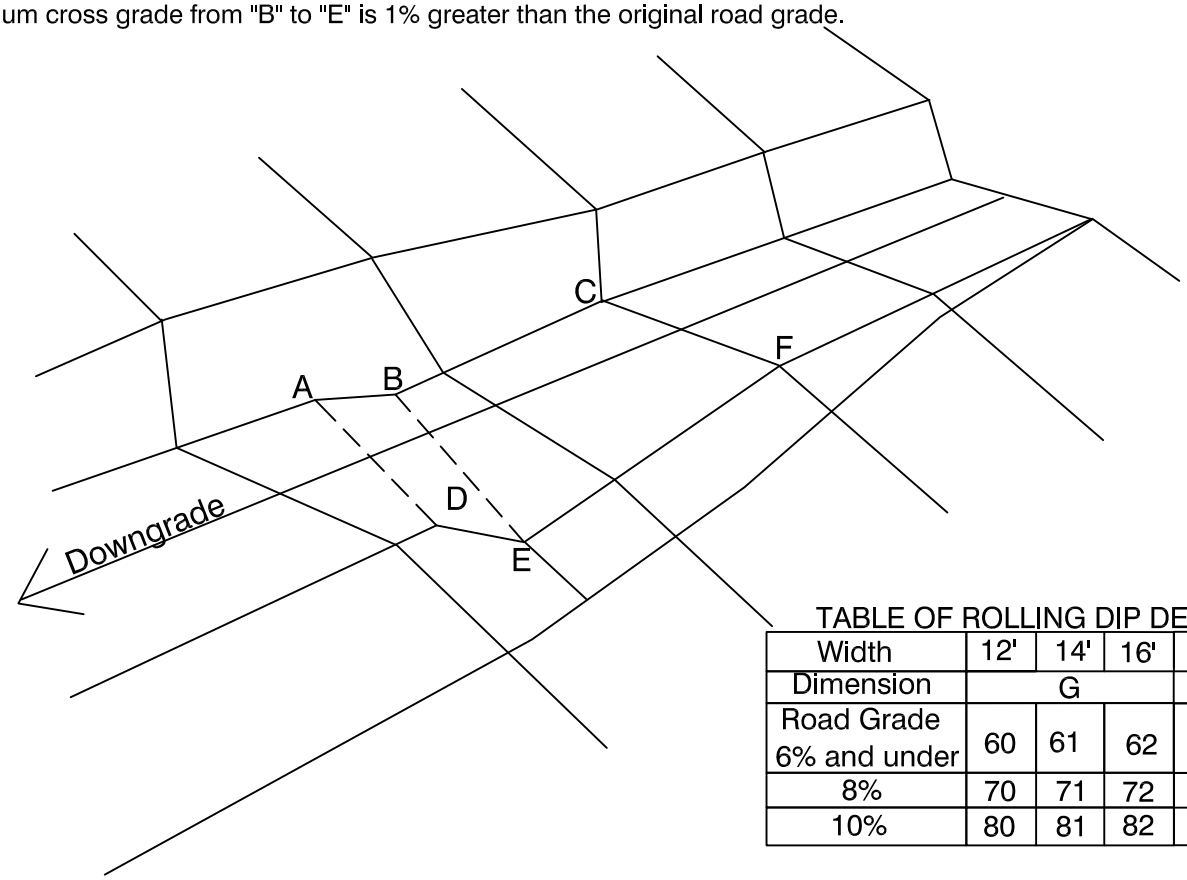
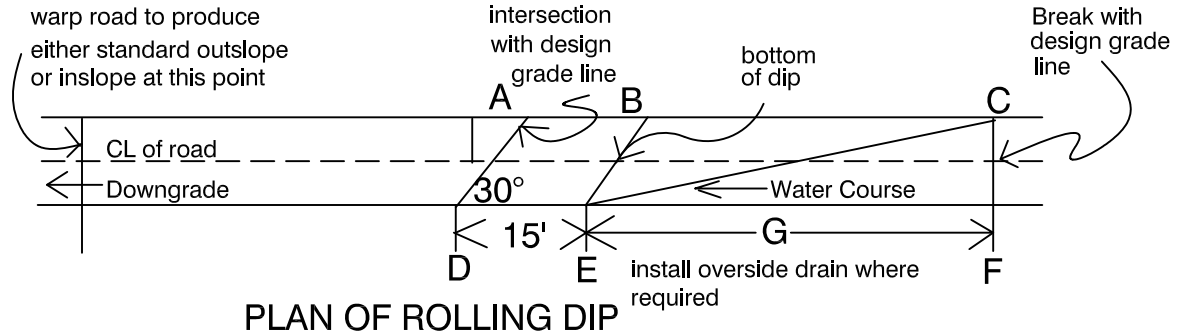
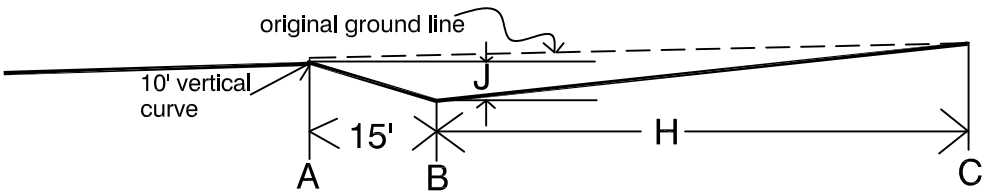


TABLE OF ROLLING DIP DEMENSIONS

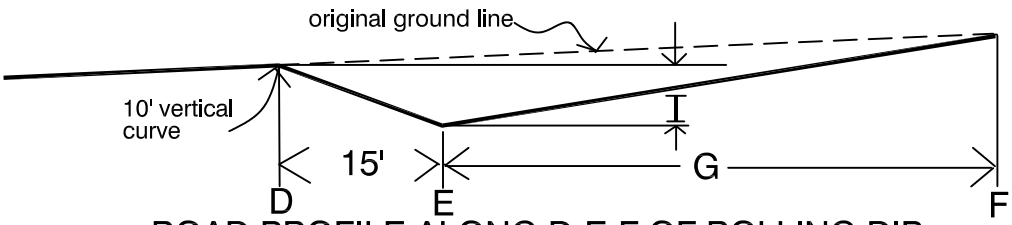
Width	12'	14'	16'	ALL		
Dimension	G			H	I	J
Road Grade 6% and under	60	61	62	52	.8	0.3
8%	70	71	72	62	1.0	0.2
10%	80	81	82	72	1.1	0.1



PLAN OF ROLLING DIP



ROAD PROFILE ALONG A-B-C OF ROLLING DIP

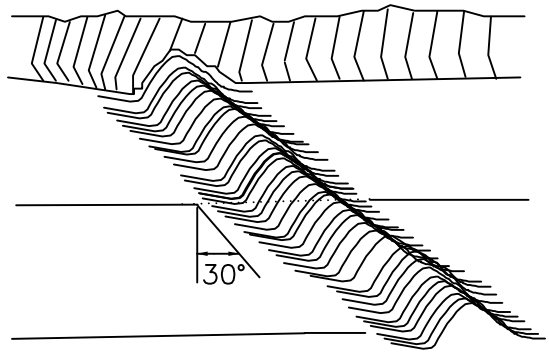


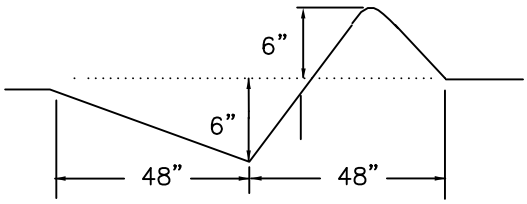
ROAD PROFILE ALONG D-E-F OF ROLLING DIP

Drawn by: GP

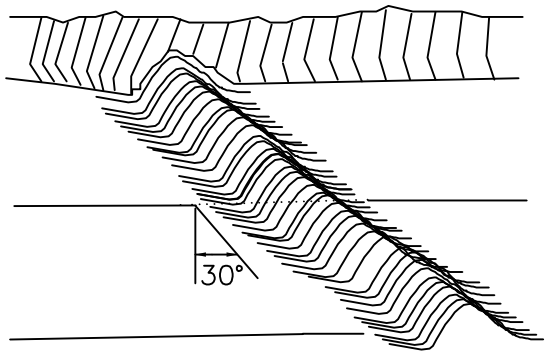
WATERBAR DETAIL–D6

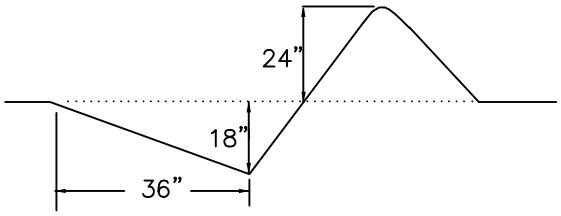
DRIVABLE WATERBAR





NON DRIVABLE WATERBAR



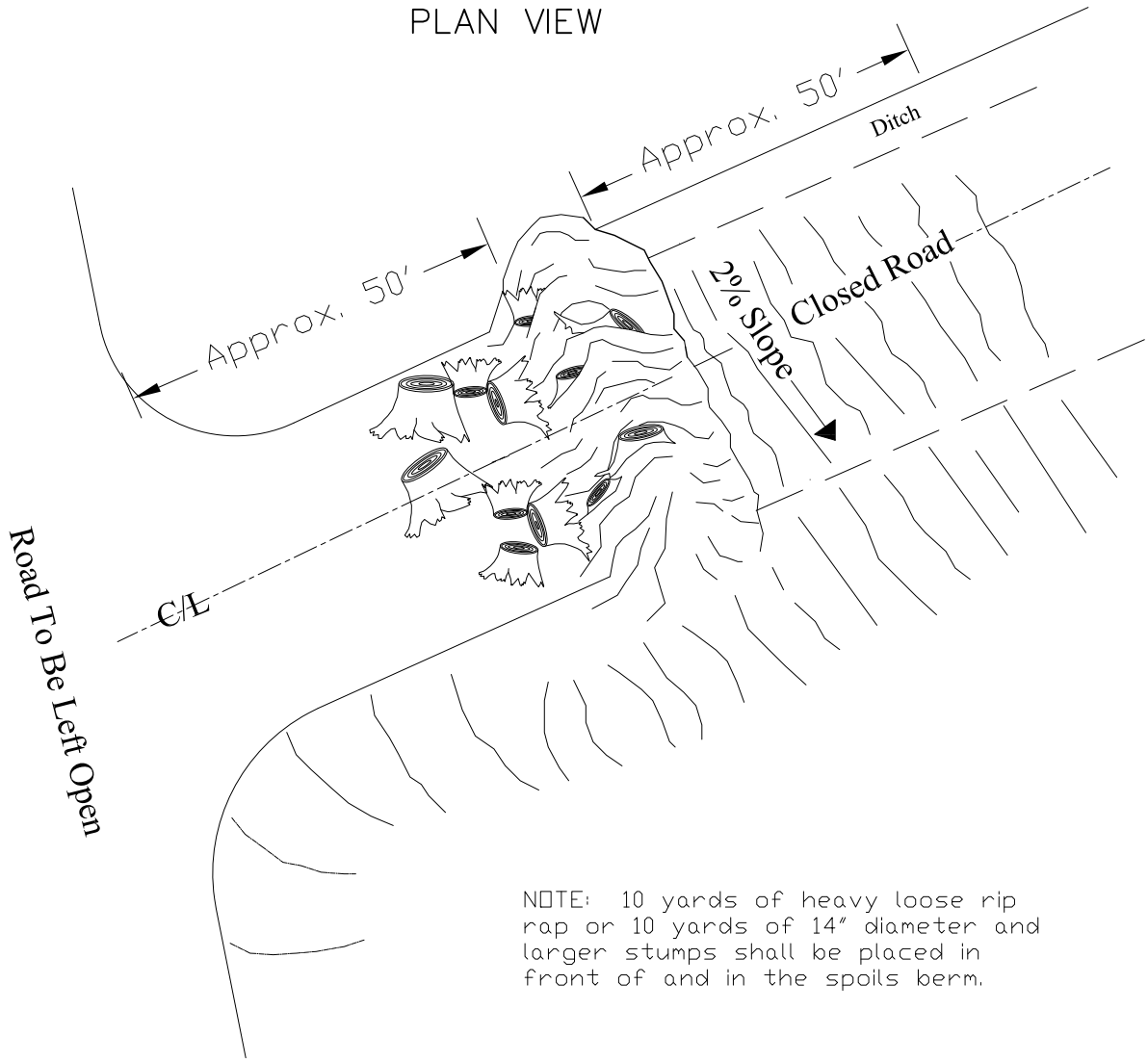


1. Waterbar construction for forest roads Specifications are average and may be adjusted to conditions.
2. Waterbar shall keyed into the bank.
3. The waterbar shall be outsloped for proper drainage.
4. Rock outlet if fill slope is present.

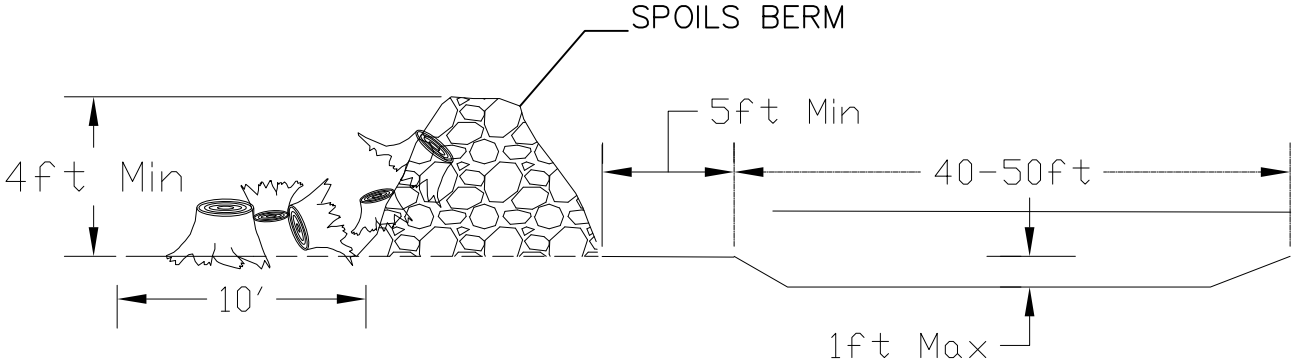
Revised: 05/21/2012

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.

Revised 8-29-2008

Alice Mae F Crossing Installation

Alice Mae TBS

E383901F Sta 19+60

NE ¼ of NW ¼ of Section 1, Township 38, Range 39

6/7/2016

The site for this culvert installation project is located off of Clugston Onion Creek road crossing a Tributary of Onion Creek in Stevens County. The existing E383901F road has had the crossing removed and the existing stream channel has regraded to near natural conditions.

The project is to install a 108”x 44’ round culvert utilizing stream simulation methods. This tributary to Onion Creek at this location has a bank full width of approximately 4.0 feet. The design including length of culvert and clearance over stream bed has been done to provide fish passage, and provide high flow passage should a 100 year flow event occur. Peak flow rate estimates for this project have been derived from a USGS web site utilizing regression equations, and equates to 25 CFS at this location. http://water.usgs.gov/osw/streamstats/Washington.html

See attached designs

Re- vegetation site restoration plan:

-The exposed fill slopes and any other disturbed ground sloping towards live water will be grass seeded and covered with straw.

Dewatering plan:

-The existing stream bed and bank location will be excavated and reconstructed within the culvert. Depending on flows at time of construction and construction methods the stream will either be pumped around the project site or a temporary bypass will be installed.

-A temporary bypass or work isolation system may be installed to capture stream water and contain it through the work site.

-If a bypass is installed then a sandbag revetment or similar device shall be installed at the bypass inlet to divert the entire flow through the bypass.

-If a bypass is installed it will be of sufficient size to pass all flows and debris for the duration of the project.

-Any device used for diverting water from a fish bearing stream shall be equipped with a fish guard to prevent fish passage into the diversion device. The device intake shall be screened with 3/32-inch mesh to prevent fish from entering the system. The screened intake shall consist of a facility with enough surface area to ensure the water velocity through the screen is less than 0.4 feet per second.

Plan for fish capture and exclusion:

-Fish within the dewatered work site shall be caught using nets appropriate for the size of fish and buckets. Captured fish shall be immediately and safely transferred to free flowing water downstream of the project site. Two nets and two buckets will be on site for any and all dewatering activities.

-Intakes for pumps and diversions shall be screened with 3/32-inch mesh to prevent fish from entering the system.

Sediment or erosion control measures:

-Erosion control methods shall be used to prevent silt-laden water from entering the stream. These may include, but are not limited to, straw bales, filter fabric, temporary sediment ponds, check dams of pea gravel filled burlap bags or other material, and/or immediate mulching of exposed areas.

-Waste water from project activities and water removed from within the work area shall be routed to an area landward of the ordinary high water line to a location that will allow for ponding letting sediment filter out of the water.

-All waste materials such as construction debris, silt, excess dirt or overburden resulting from this project shall be deposited above the limits of floodwater in approved upland waste sites outside of the RMZ of any live streams.

-If high flow conditions that may cause siltation occur during this project, work shall stop until the high flows subside.

-Extreme care shall be taken that no petroleum products, hydraulic fluid, or any other foreign and/or toxic or deleterious materials are allowed to enter or leach into the stream.

Equipment to be used:

-Excavator, jumping jack compactor.

-Possible equipment used: bull dozer, log loader, trash pumps, skid steer, tractor.

-Equipment used for this project shall be free of external petroleum-based products while working around the stream. Accumulations of soil, and debris shall be removed from any part of the machine that will be working over live water.

-Equipment shall be checked for leaks daily, and any necessary repairs shall be completed prior to commencing work activities along the stream.

Waste areas:

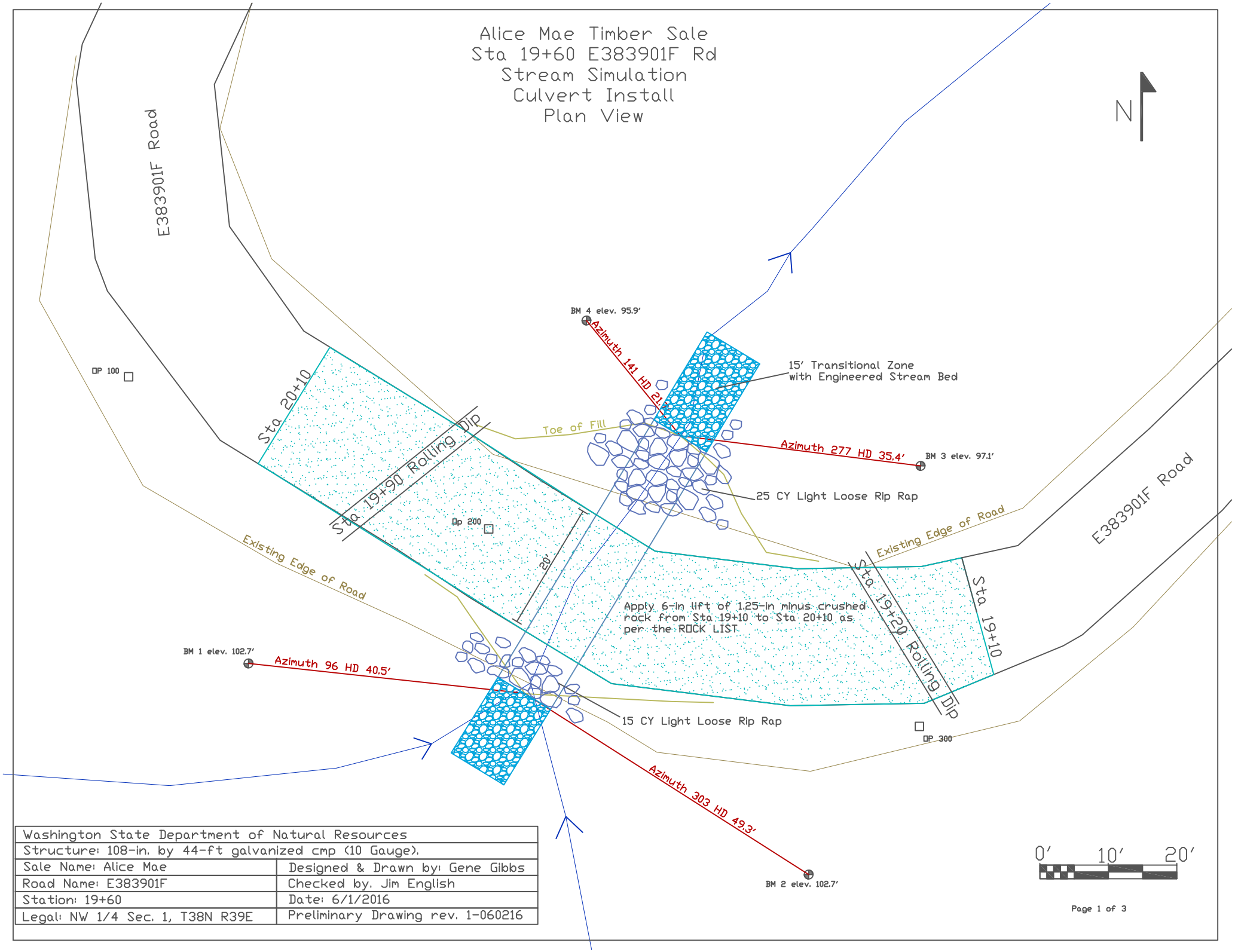
Waste produced from this project will likely be used for fill to the approaches to the culvert. In the event the excavated material is unusable it will be wasted outside of any RMZ's on side slopes less than 30%.

Gene Gibbs

Gene.Gibbs@dnr.wa.gov

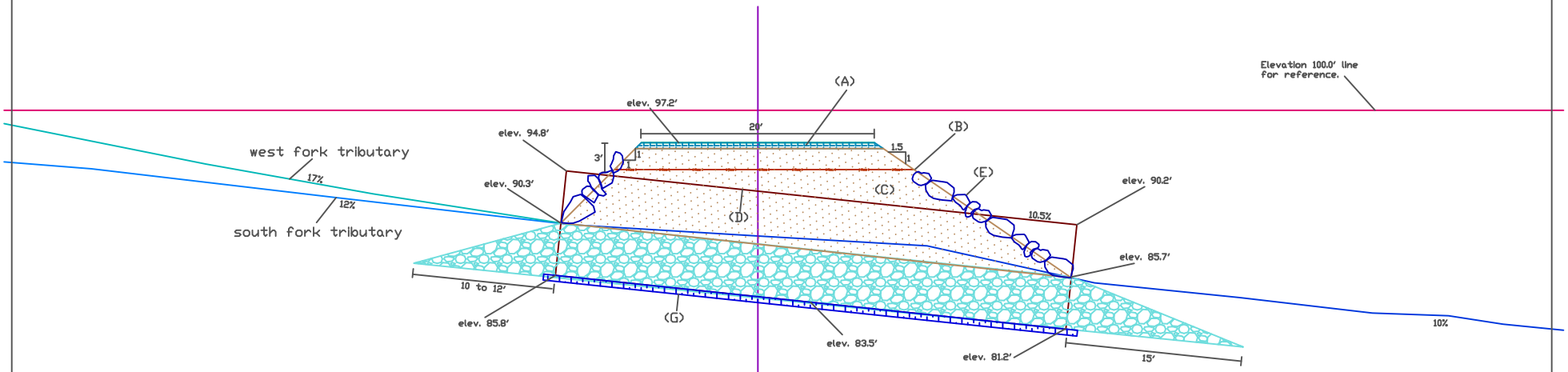
1-509-675-0872

Alice Mae Timber Sale
Sta 19+60 E383901F Rd
Stream Simulation
Culvert Install
Plan View



Washington State Department of Natural Resources	
Structure: 108-in. by 44-ft galvanized cmp (10 Gauge).	
Sale Name: Alice Mae	Designed & Drawn by: Gene Gibbs
Road Name: E383901F	Checked by. Jim English
Station: 19+60	Date: 6/1/2016
Legal: NW 1/4 Sec. 1, T38N R39E	Preliminary Drawing rev. 1-060216

Alice Mae Timber Sale
Sta 19+60 E383901F Rd
Stream Simulation
Culvert Install
Profile View



(A) = 1 1/4-in minus crushed rock
Not shown 9-in lift of ballast under crushed rock.
(B) = 2 layers of geotextile (See clause 10-3 Geotextile for stabilization).
(C) = Select Borrow approved by Contract Administrator. Compacted with jumping jack compactor in 12-in lifts.
(D) 108-in x 44-ft CMP supplied by the State and installed at 10.5%.
(E) Stream Simulation Rock (See clause 6-Stream Simulation Rock).

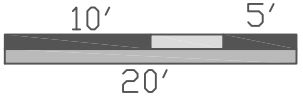
%Passing 24" square sieve	80 - 90%
%Passing 10" square sieve	70 - 80%
%Passing 4" square sieve	40 - 50%
%Passing U.S. #4 sieve	15 - 30%
%Passing U.S. #200 sieve	5% maximum

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

Minimum fill over culvert is 3 feet. Compact fill to 90% relative density, typically 3 or 4 complete passes. Top layer of geotextile shall be placed below the ballast and crushed rock.

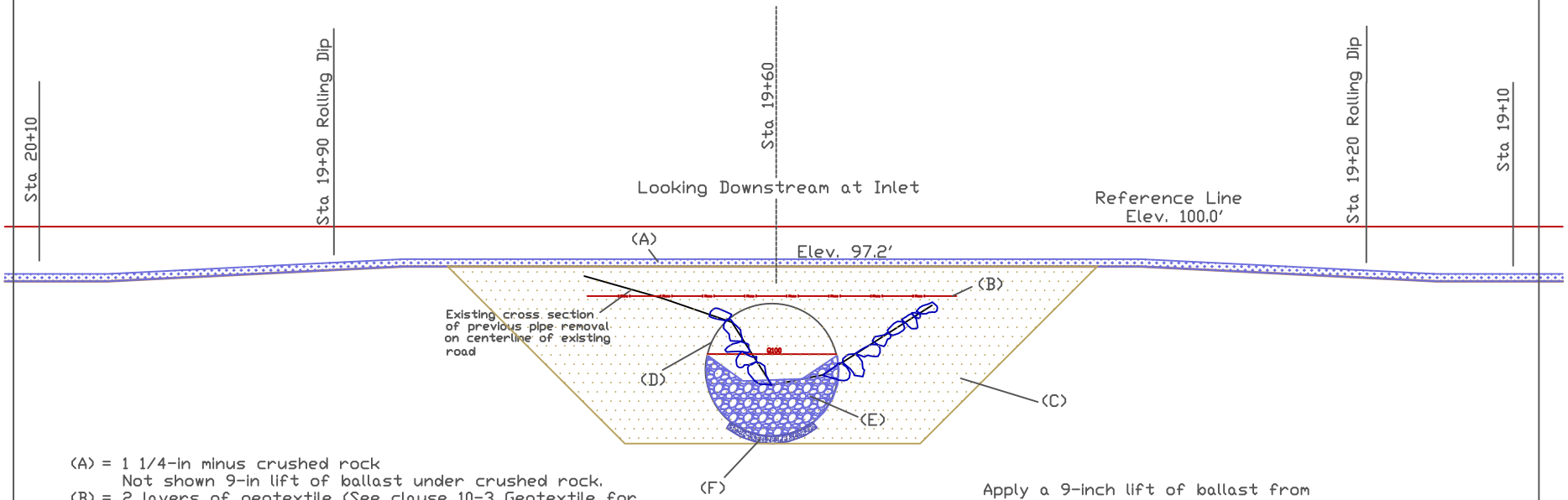
Stream simulation rock must be well graded and should generally meet the following parameters. Q_{100} = 36 inches, Q_{84} = 17 inches, Q_{50} = 7 inches, and Q_{16} = 2 inches. Additionally a few larger 24 to 36 inch boulders shall be scattered throughout the channel (one or two per 10 feet of reconstructed channel) to provide channel stability.

Stream Information:
Drainage Area = 1.11 square miles
Annual Precipitation = 20.9 inches
Average Bankful Width = 4.0 feet
Average Stream Gradient = 10.5%
2-yr peak flow, Q_2 = 5 cfs
100-yr peak flow, Q_{100} = 25 cfs



Washington State Department of Natural Resources	
Structure: 108-in. by 44-ft galvanized cmp (10 Gauge).	
Sale Name: Alice Mae	Designed & Drawn by: Gene Gibbs
Road Name: E383901F	Checked by. Jim English
Station: 19+60	Date: 6/1/2016
Legal: NW 1/4 Sec. 1, T38N R39E	Preliminary Drawing rev. 1-060216

Alice Mae Timber Sale
Sta 19+60 E383901F Rd
Stream Simulation
Culvert Install
Cross Section View



(A) = 1 1/4-in minus crushed rock
Not shown 9-in lift of ballast under crushed rock.
(B) = 2 layers of geotextile (See clause 10-3 Geotextile for stabilization).
(C) = Select Borrow approved by Contract Administrator. Compacted with jumping jack compactor in 12-in lifts.
(D) 108-in x 44-ft CMP supplied by the State and installed at 10.5%.
(E) Stream Simulation Rock (See clause 6-Stream Simulation Rock).

%Passing 24" square sieve	80 - 90%
%Passing 10" square sieve	70 - 80%
%Passing 4" square sieve	40 - 50%
%Passing U.S. #4 sieve	15 - 30%
%Passing U.S. #200 sieve	5% maximum

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

Minimum fill over culvert is 3 feet. Compact fill to 90% relative density, typically 3 or 4 complete passes. Top layer of geotextile shall be placed below the ballast and crushed rock.

Stream simulation rock must be well graded and should generally meet the following parameters. Q_{100} = 36 inches, Q_{84} = 17 inches, Q_{50} = 7 inches, and Q_{16} = 2 inches. Additionally a few larger 24 to 36 inch boulders shall be scattered throughout the channel (one or two per 10 feet of reconstructed channel) to provide channel stability.

Apply a 9-inch lift of ballast from Sta 19+35 to Sta 19+85.
Apply a 6-inch lift 1.25-inch minus crushed rock from sta 19+10 to Sta 20+10.
Install rolling dips at Sta 19+20 and Sta 19+90.
See ROCK LIST for specifications.

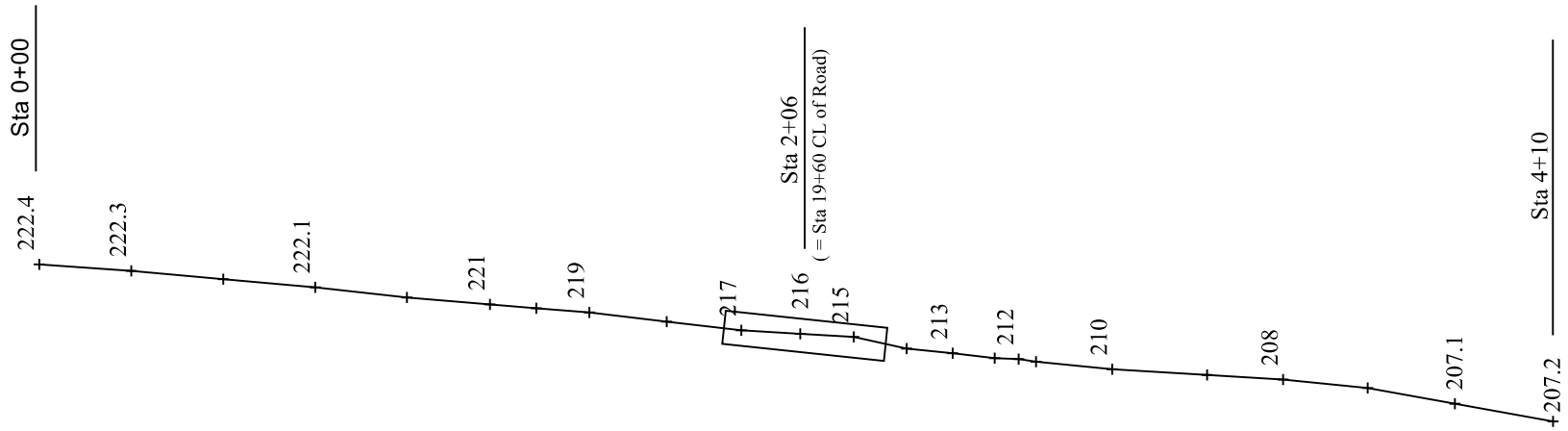
Stream Information:
Drainage Area = 1.11 square miles
Annual Precipitation = 20.9 inches
Average Bankful Width = 4.0 feet
Average Stream Gradient = 10.5%
2-yr peak flow, Q_2 = 5 cfs
100-yr peak flow, Q_{100} = 25 cfs

Washington State Department of Natural Resources	
Structure: 108-in. by 44-ft galvanized cmp (10 Gauge).	
Sale Name: Alice Mae	Designed & Drawn by: Gene Gibbs
Road Name: E383901F	Checked by. Jim English
Station: 19+60	Date: 6/1/2016
Legal: NW 1/4 Sec. 1, T38N R39E	Preliminary Drawing rev. 1-060216

NW 1/4 of Sec. 1, T38N R39E

Alice Mae Timber Sale
Type F Stream Crossing
Sta 19+60 E383901F Road

Long Profile



1 inch = 50 feet

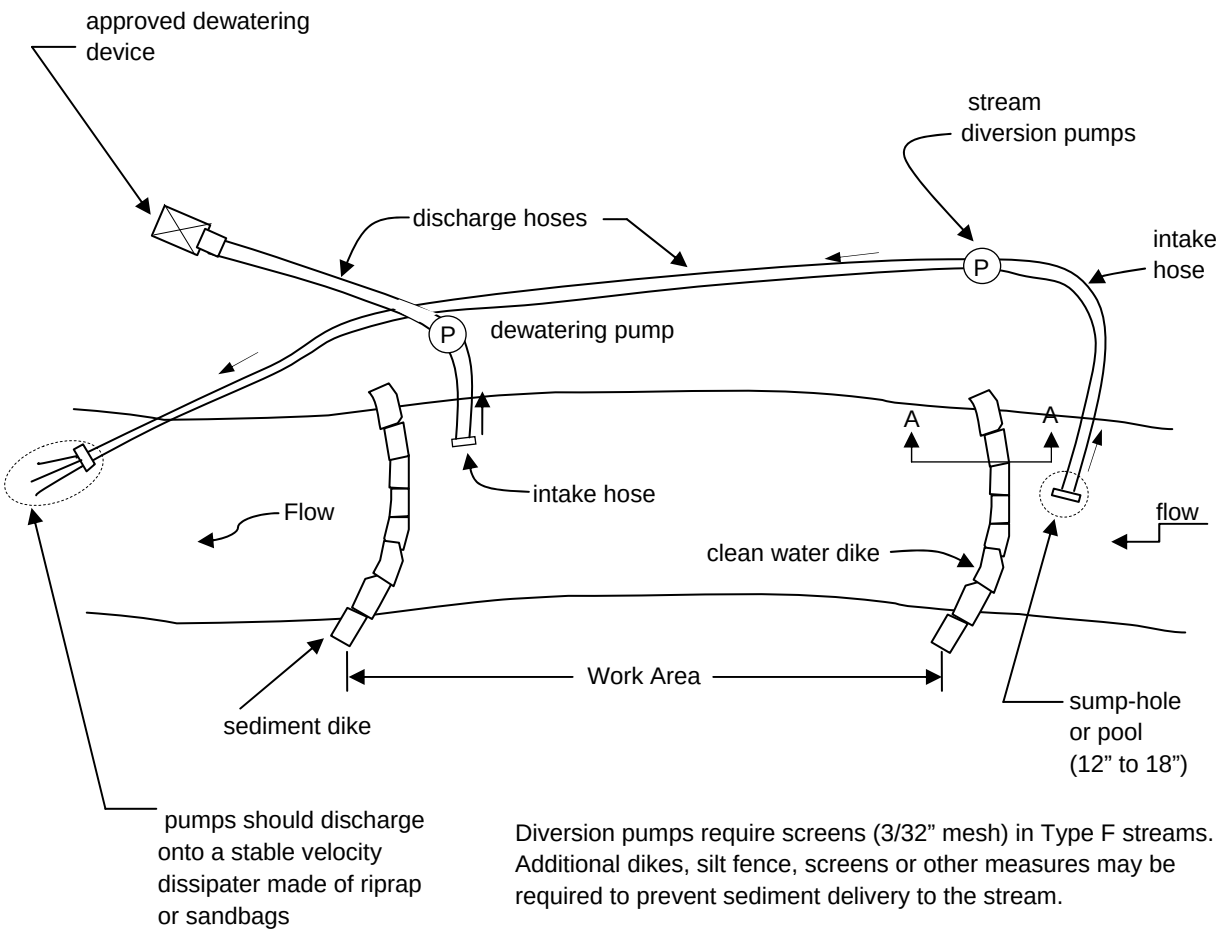
Pt	Sta	Elev
222.4	0+00	108.01'
216	2+06	89.22'
207.2	4+10	65.50'

Pt 222.4 to Pt 216 the slope is 9.1%.
Pt 216 to Pt 207.2 the slope is 11.6%.
Pt 222.4 to Pt 207.2 the average slope is 10.4%.

Traverse PC

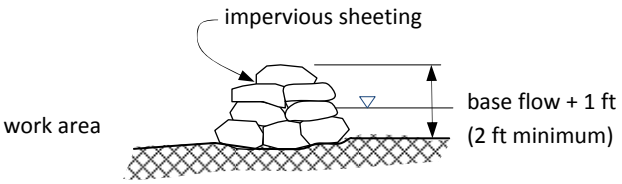
DIVERSION OR PUMP AROUND DETAIL

PLAN VIEW



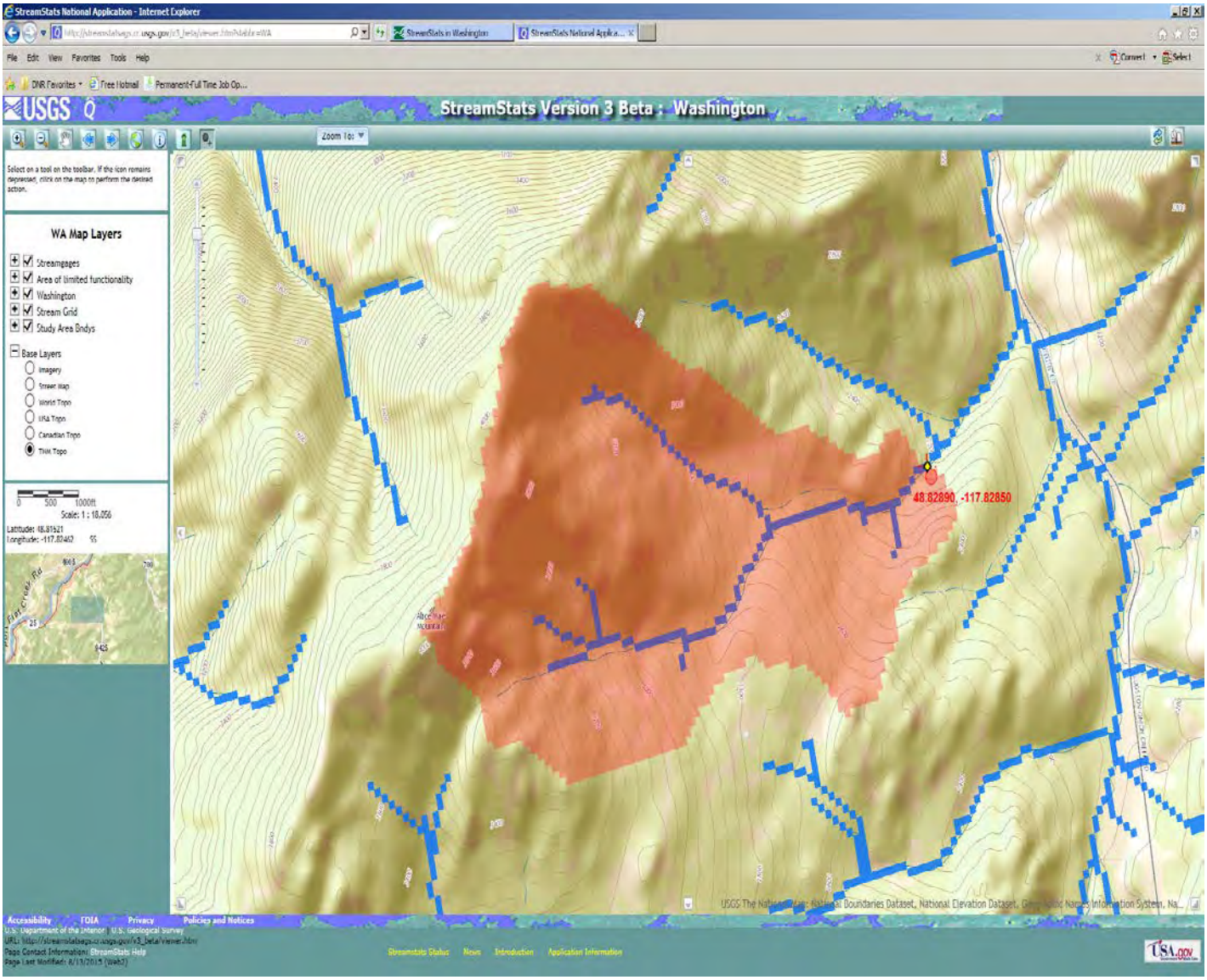
Diversion pumps require screens (3/32" mesh) in Type F streams. Additional dikes, silt fence, screens or other measures may be required to prevent sediment delivery to the stream.

SECTION A-A



cross section of sandbag dike

Temporary In-stream Construction Measures	Northeast Region Rev. je 2/25/2012	Washington State Department of Natural Resources


StreamStats National Application - Internet Explorer
File Edit View Favorites Tools Help
DNR Favorites
Free Hotmail
Permanent-Full Time Job Op...
USGS
StreamStats Version 3 Beta : Washington
Zoom To:
Select on a tool on the toolbar. If the icon remains depressed, click on the map to perform the desired action.
WA Map Layers
Streamgages
Area of limited functionality
Washington
Stream Grid
Study Area Bndys
Base Layers
Imagery
Street Map
World Topo
USA Topo
Canadian Topo
TNM Topo
0 500 1000ft
Scale: 1 : 18,056
Latitude: 48.81521
Longitude: -117.83462
48.82890, -117.82850
Accessibility
FOIA
Privacy
Policies and Notices
U.S. Department of the Interior | U.S. Geological Survey
URL: http://streamstatsags.cr.usgs.gov/v3_beta/viewer.htm
Page Contact Information: StreamStats Help
Page Last Modified: 8/13/2015 (Web7)
Streamstats Status
News
Introduction
Application Information
USA.gov

StreamStats Flow Statistics Report - Internet Explorer

http://streamstatsags.cr.usgs.gov/v3_beta/FTreport.htm?rcode=WA&workspaceID=WA20150814173806115000&includeflowtypes=PeakFlows

USGS Q StreamStats Version 3 Beta Print

Flow Statistics Ungaged Site Report

Date: Fri Aug 14, 2015 4:39:31 PM GMT-7
Site Location: Washington
NAD 1983 Latitude: 48.8292 (48 49 45)
NAD 1983 Longitude: -117.829 (-117 49 45)
Drainage Area: 1.11 mi2

Peak-Flow Basin Characteristics

100% Region 4 (1.11 mi2)

Parameter	Value	Regression Equation Valid Range	
		Min	Max
Drainage Area (square miles)	1.11	0.66	2220
Mean Annual Precipitation (inches)	20.9	12	108

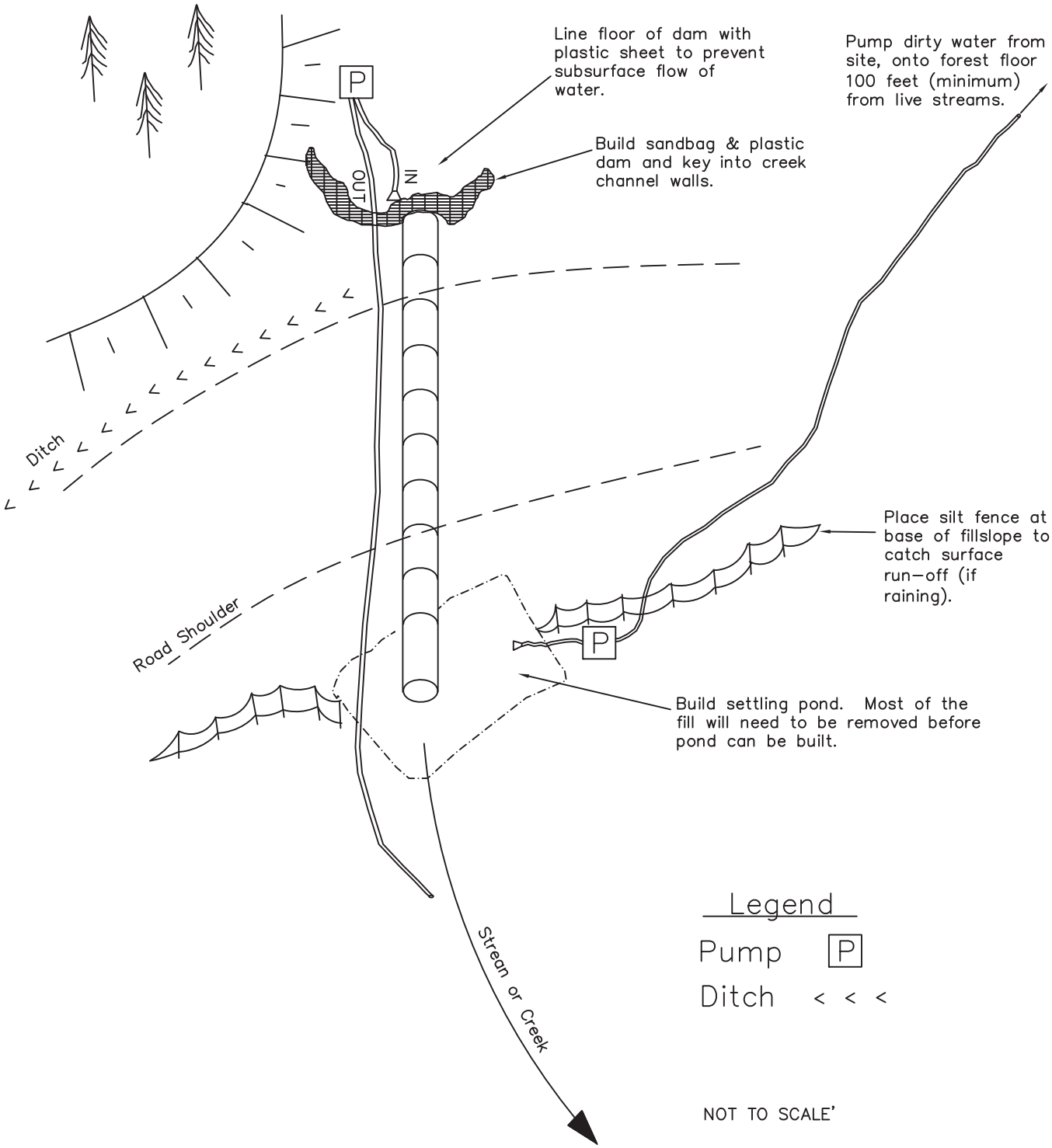
Peak-Flow Statistics

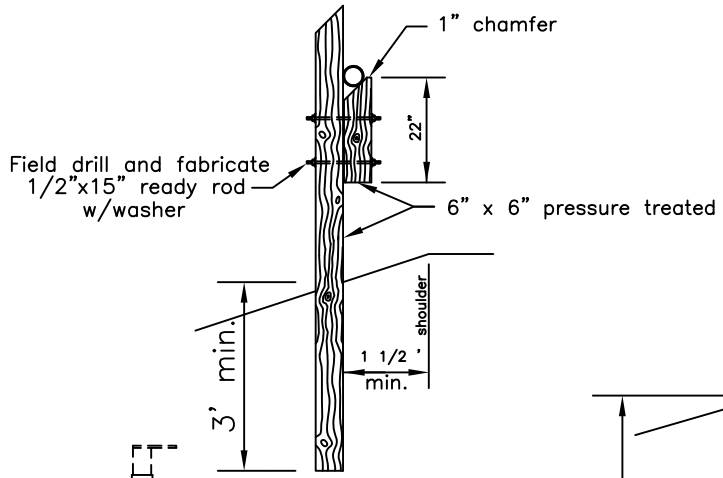
Statistic	Value	Unit	Prediction Error (percent)	Equivalent years of record	90-Percent Prediction Interval	
					Min	Max
PK2	4.81	cfs	82	1		
PK10	12.6	cfs	84	1		
PK25	17.2	cfs	87	1		
PK50	21.2	cfs	90	2		
PK100	25.3	cfs	92	2		
PK500	35.7	cfs				

http://pubs.er.usgs.gov/usgspubs/wri/wri974277

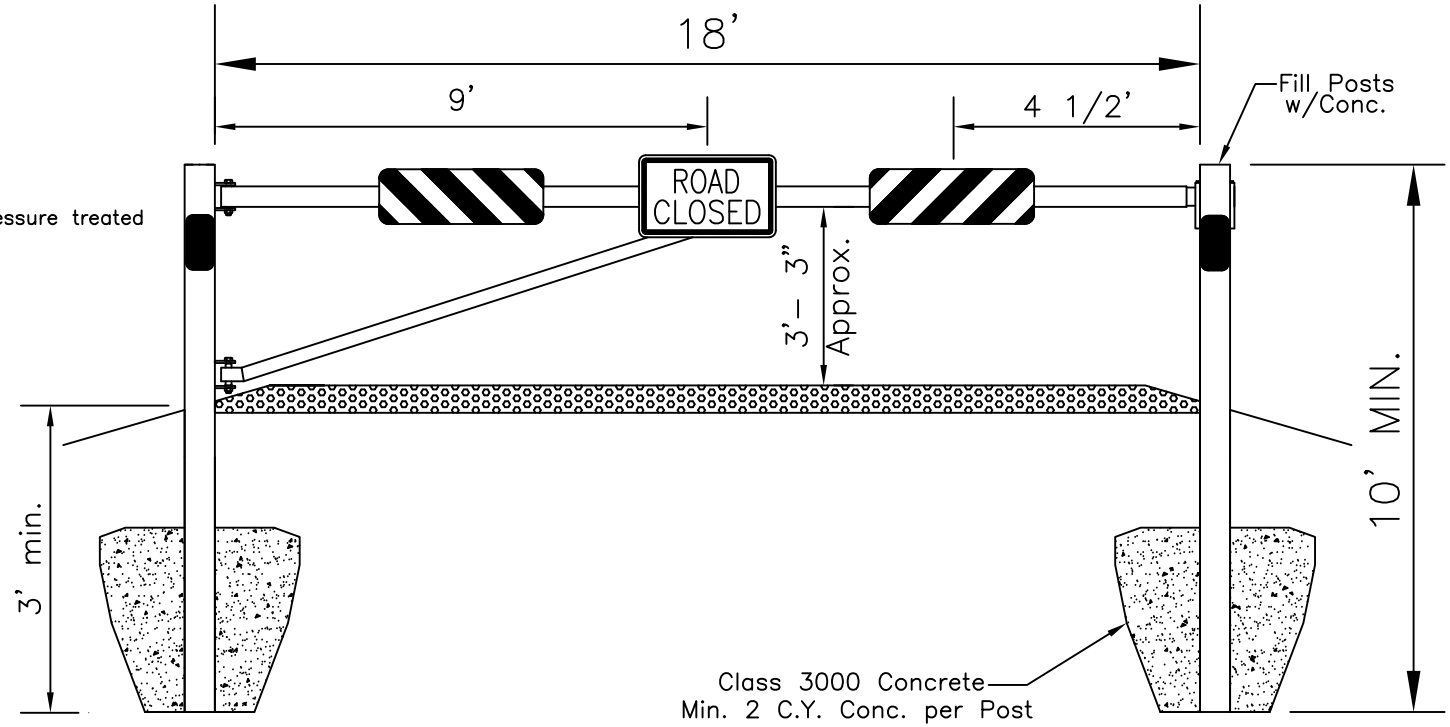
100%

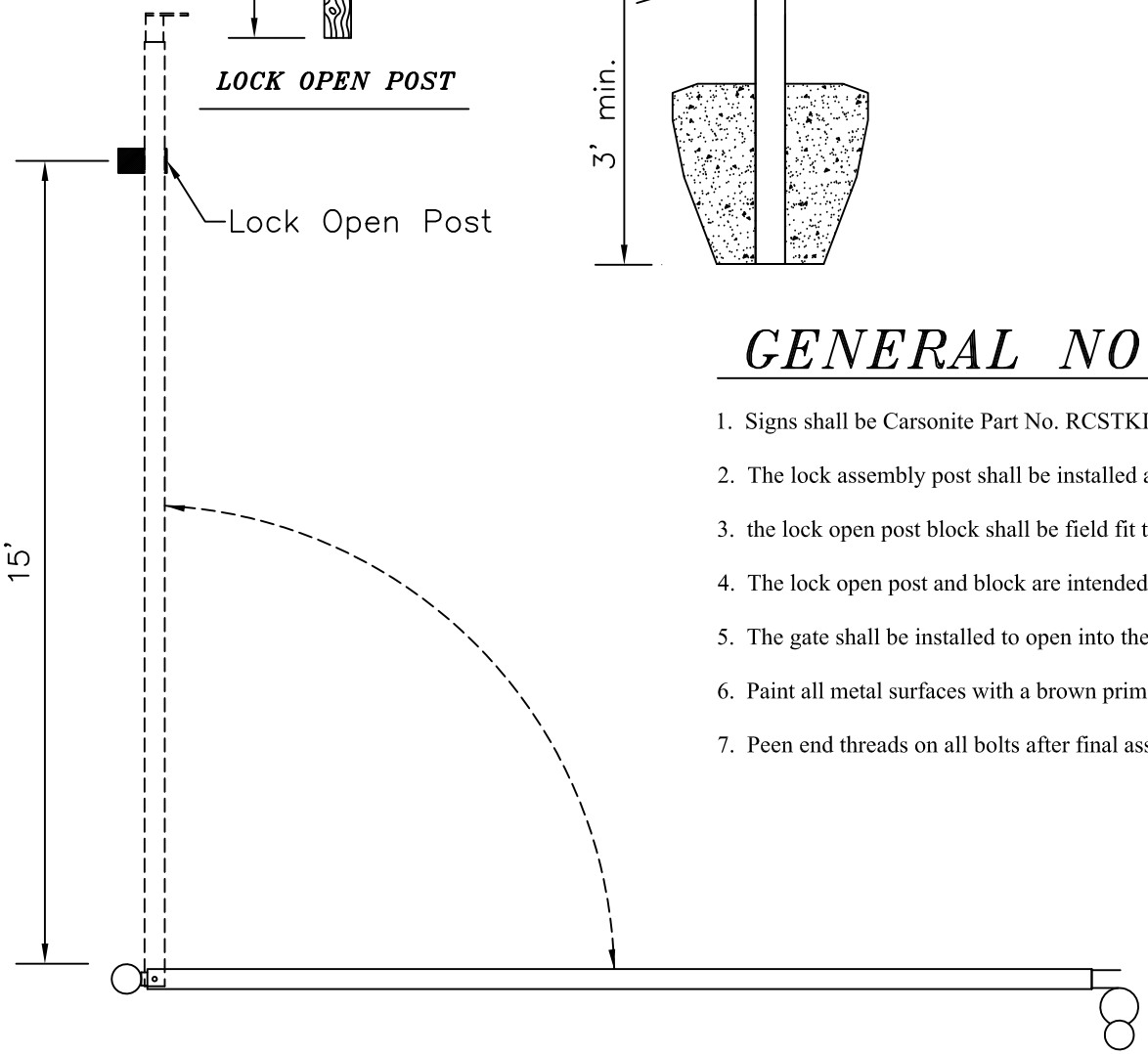
SETTLING POND AND PUMP DETAIL





LOCK OPEN POST





GENERAL NOTES

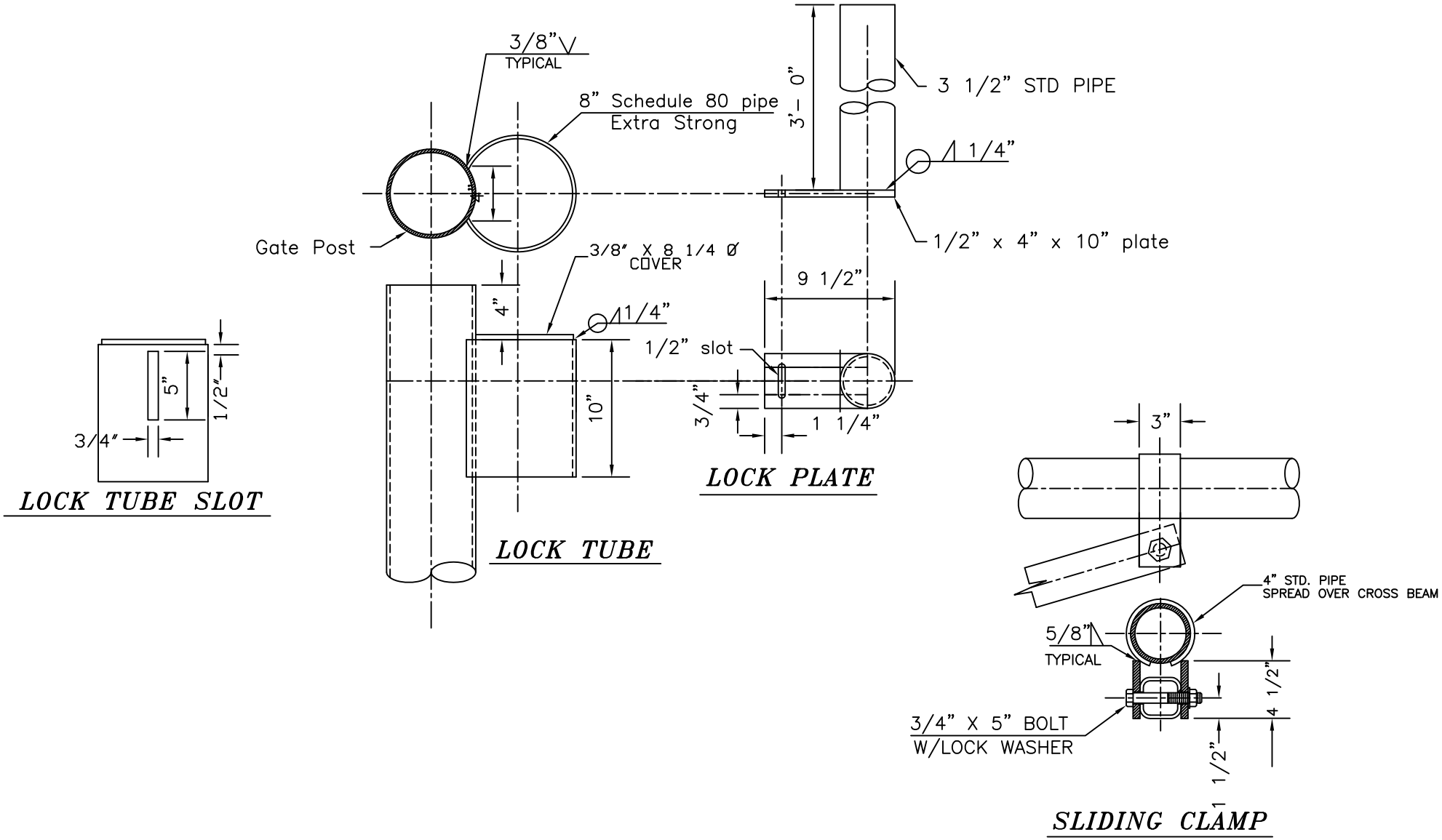
1. Signs shall be Carsonite Part No. RCSTKIT (Road Closure Kit). Signs will be install by the purchaser.
2. The lock assembly post shall be installed and adjusted for proper operation of the latch plate, with the cross beam level.
3. the lock open post block shall be field fit to the completed gate in the open position.
4. The lock open post and block are intended to be fabricated from a 10' piece.
5. The gate shall be installed to open into the area closed. Concrete shall be curred for 3 days prior to supporting any load.
6. Paint all metal surfaces with a brown primer meeting AASHTO M299. The final coat shall be OSHA YELLOW.
7. Peen end threads on all bolts after final assembly and adjustment.

VEHICLE GATE INSTALLATION DIAGRAM

NORTHEAST REGION
COLVILLE, WASHINGTON

WASHINGTON STATE DEPARTMENT OF
Natural Resources

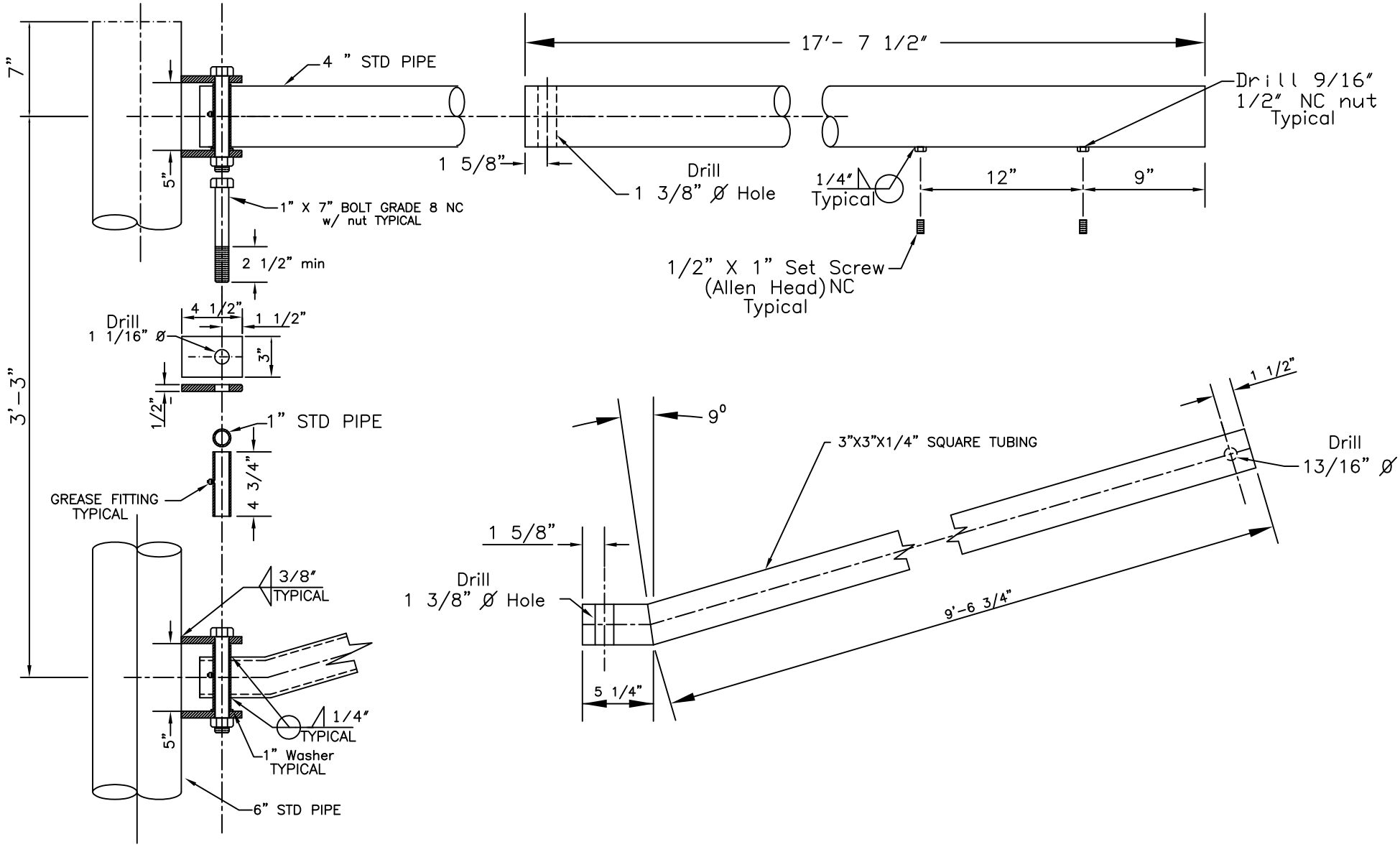
DESIGNED BY:	DANELL/MORGAN	05/09/1997	Page
DRAWN BY:	DANELL/MORGAN	05/09/1997	1 of 3



NOTES:

1. Pipe sizes are nominal unless otherwise noted.
2. Fabricate sliding clamp with 1/4 " thick spacer washers against each side of brace tubing to provide for clamping compression for final assembly.

VEHICLE GATE FABRICATION DETAILS			
NORTHEAST REGION COLVILLE, WASHINGTON			
WASHINGTON STATE DEPARTMENT OF Natural Resources			
DESIGNED BY:	DANELL/MORGAN	05/09/1997	Page
DRAWN BY:	DANELL/MORGAN	05/09/1997	2 of 3



NOTES:

1. Pipe sizes are nominal unless otherwise noted.
2. Fabricate sliding clamp with 1/4 " thick spacer washers against each side of brace tubing to provide for clamping compression for final assembly.

VEHICLE GATE FABRICATION DETAILS

NORTHEAST REGION
COLVILLE, WASHINGTON

WASHINGTON STATE DEPARTMENT OF
Natural Resources

DESIGNED BY:	DANELL/MORGAN	05/09/1997	Page
DRAWN BY:	DANELL/MORGAN	05/09/1997	3 of 3

Sale Name Alice Mae **SUMMARY - Road Development Costs**

REGION: Northeast CONTRACT #: 30-093947 ENGINEER: Gene Gibbs

DISTRICT: North Columbia DATE: 9/6/2016

	Construction	*Reconstruction*	*Maintenance*	*Deactivation*	
ROAD NUMBERS:	E383901F, E393936J, E393936AB, E383903F	E383901F, E393936C, E393936J, E393936B, E393935E, E393936AB, E383903J, E383903F,	E383901E, E383915A, E383911E, E383903F, E393936A	E383902F	Additional Items
ROAD STANDARD:	*Construction*	*Reconstruction*	*Maintenance*	*Deactivation*	*Additional Items*
NUMBER OF STATIONS:	***23.65***	***184.90***	***196.40***	***18.80***	
CLEARING & GRUBBING:	$710	$4,835			
EXCAVATION AND FILL:	$9,700	$6,424		$564	
MISC. MAINTENANCE:	$154	$31,381	$3,347		
ROAD ROCK:	$473	$3,510	$1,148		
ADDITIONAL ROCK:					$1,620
CULVERTS AND FLUMES:	$4,799	$728	$1,046		
STRUCTURES/MATERIALS:					$450

TOTAL COSTS:	$15,835	$46,877	$5,540	$564	$2,070
COST PER STATION:	*$670*	*$254*	*$28*	*$30*	*$0*

	$/per move	# of moves	Total
MOBILIZATION:	$300	5	$1,500

TOTAL (All Roads) =	$72,386
SALE VOLUME mbf =	4,119
TOTAL $/MBF =	$17.57

Engineer's Notes: